ofgem
Making a positive difference
for energy consumers

Decision

RIIO-2 Final Determinations - NGGT Annex (REVISED)

Publication date	03 February 2021	**Contact:**	RIIO Team
		Team:	Network Price Controls
		Tel:	020 7901 7000
		Email:	RIIO2@ofgem.gov.uk

Our aim for the RIIO-2 price controls is to ensure that energy consumers across GB get better value for money, better quality of service and environmentally sustainable outcomes from their networks.

In 2019, we set out the framework for the price controls in our Sector Specific Methodology Decisions. In December 2019, Transmission and Gas Distribution network companies and the Electricity System Operator (ESO) submitted their business plans to Ofgem setting out proposed expenditure for RIIO-2. We assessed these plans and published our consultation on Draft Determinations in July 2020.

This document and others published alongside it, set out our Final Determinations for company allowances under the RIIO-2 price control, which will commence on 1 April 2021.

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

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

This publication is available at www.ofgem.gov.uk. Any enquiries regarding the use and re-use of this information resource should be sent to: psi@nationalarchives.gsi.gov.uk

Contents

1. Introduction and overall package

Purpose of this document

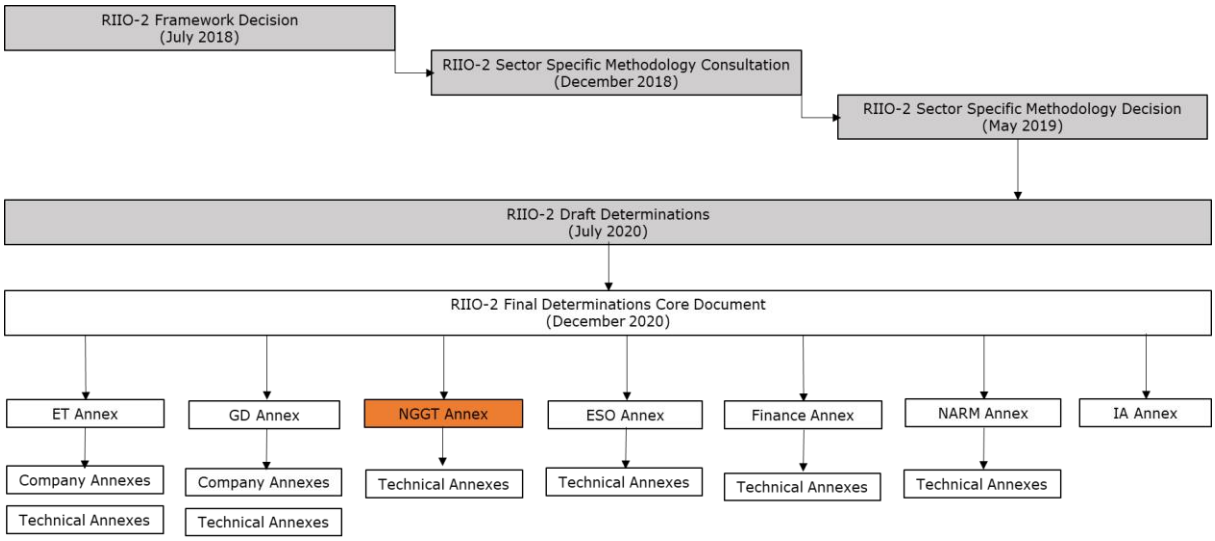
1.1 This document sets out our Final Determinations for the Gas Transmission (GT) price control RIIO-GT2 for the areas that are specific to National Grid Gas Transmission (NGGT) focusing on its:

- Baseline cost allowances
- Output package, including Licence Obligations (LOs), Output Delivery Incentives (ODIs)[1] and Price Control Deliverables (PCDs)
- Uncertainty Mechanisms (UMs)
- The level of Network Innovation Allowance (NIA).
- Business Plan Incentive (BPI) and Totex Incentive Mechanism (TIM) performance

1.2 All figures are in 2018/19 prices except where otherwise stated.

1.3 This document should be read alongside other Final Determinations documents, as set out in the next section. Figure 1 sets out where you can find information about other areas of our RIIO-2 Final Determinations.

Figure 1: RIIO-2 Final Determinations documents map



[1] ODIs can be reputational (ODI-R) or financial (ODI-F).

An overview of NGGT's RIIO-2 price control

1.4 This section focuses on bringing together the key aspects of NGGT's RIIO-2 Final Determinations.

1.5 We present a summary of NGGT's baseline totex in Table 1. This reflects our view of efficient costs including ongoing efficiency over RIIO-GT2. For further details of any values, please refer to Chapter 3.[2]

Table 1: NGGT's submitted versus allowed baseline totex (£m, 2018/19)

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Draft Determination corrected for errors (£m)	Final Determination (£m)
Load related capex	11.59	2.74	2.74	2.74
Non-load related capex	898.74	584.71	585.22[3]	711.94
Non-op capex	296.50	74.46	74.46	250.02
Other Costs	545.80	233.91	208.06[4]	294.36[5]
Network operating costs	389.51	379.65	379.65	379.65
Indirect costs	518.24	411.10	411.10	475.18
Capitalised opex adjustment	-	-77.17	-16.93[6]	4.03
Ongoing efficiency	-57.92	-50.50	-91.24[7]	-107.61
Core Baseline	**2,602.46**	**1,558.90**	**1,553.06**	**2,010.31**
RPEs	152.01	74.53	74.53	81.69
Modelled Totex	**2,754.47**	**1,633.43**	**1,627.59**	**2,092.00**
Pass through				763.97
Other Allowances				145.46
Total Upfront Funding				**3,001.43**

[2] Where the source document is not stated, we are referring to this document (Draft Determinations NGGT Annex, abbreviated as NGGT Annex).
[3] Increase of £0.5m due to minor error and price base.
[4] Cyber IT overstated by £29m due to erroneous inclusion of proposed uncertain costs and Physical security capex understated by £3m due to asset refresh omitted.
[5] £8.3m included for Net Zero and re-opener development
[6] Adjustment did not recognise the reduction to opex due to capex already removed from plan.
[7] Incorrect OE adjustment applied to capex.

1.6 In addition to the core baseline we have also made allowances of £991.12m for estimated pass through items including pensions, the strategic innovation fund, initial RPE allowances and the network innovation allowance.

1.7 Table 2 sets out the package of outputs that will apply to NGGT during RIIO-2. Further details are contained within Chapter 2, in the Core Document and in separate NARM and Cyber Annexes.

Table 2: RIIO-2 outputs package for NGGT

Output name	Output type	Applicable to?	Further detail
Meeting the needs of consumers and network users			
Customer satisfaction survey	ODI-F	NGGT	Chapter 2
Stakeholder satisfaction survey	ODI-R	NGGT	Chapter 2
Quality of demand forecast	ODI-F	NGGT	Chapter 2
Maintenance	ODI-F	NGGT	Chapter 2
Entry and exit capacity constraint management	ODI-F	NGGT	Chapter 2
Residual balancing	ODI-F	NGGT	Chapter 2
Modernising energy data	LO	All	Core Document
Maintaining a safe and resilient network			
Network asset risk metric (NARM)	PCD	GT, GD, ET sectors	Chapter 2 NARM Annex
Cyber resilience OT	UIOLI, PCD	GT, GD, ET sectors	Core Document
Cyber resilience IT	PCD	GT, GD, ET sectors	Core Document
Physical resilience	PCD	All	Core Document
Annual Network Capability Report (ANCAR)	LO	NGGT	Chapter 2
Exit capacity	LO	NGGT GDNs	Chapter 2 GD Sector Annex
Asset health - non lead assets	PCD	NGGT	Chapter 2
Bacton terminal site redevelopment	PCD	NGGT	Chapter 2
King's Lynn subsidence	PCD	NGGT	Chapter 2
Large Project Delivery (LPD)	PCD	GT, GD, ET sectors	Core Document
Delivering an environmentally sustainable network			
Greenhouse gas emissions (venting)	ODI-F	NGGT	Chapter 2
NTS shrinkage	ODI-R	NGGT	Chapter 2
Annual Environmental Report	LO	GT, GD, ET sectors	Chapter 2
Environmental incentive	ODI-F	NGGT	Chapter 2

Output name	Output type	Applicable to?	Further detail
Redundant assets	PCD	NGGT	Chapter 2
Incremental capacity	Re-opener	NGGT	Chapter 4
Compressor emissions – Wormington	PCD	NGGT	Chapter 2
Compressor emissions – King's Lynn	PCD	NGGT	Chapter 2
Compressor emissions – Peterborough	PCD	NGGT	Chapter 2
Compressor emissions – St Fergus	PCD	NGGT	Chapter 2
Hatton	PCD	NGGT	Chapter 2

Delivering a balanced incentive package

1.8 The financial Output Delivery Incentive (ODI) package has been designed to encourage NGGT to deliver outputs and service quality that consumers and wider stakeholders want to see. The package comprises six ODIs continued from RIIO-GT1 (Customer satisfaction survey, Quality of demand forecast, Maintenance, Entry and exit capacity constraint management, Greenhouse gas emissions (venting)) and a new Environmental incentive.

1.9 We consider that we have developed a balanced ODI package that allows an efficient and proactive gas Transmission Owner (TO) and System Operator (SO) to earn positive financial rewards. The ODI package also contains scope for downside financial penalties where NGGT does not provide the level of service expected by consumers and wider stakeholders.

1.10 We have set incentive targets, caps and collars that we consider to be more stretching and ambitious than those in RIIO-GT1. This reflects stakeholders' desire for improved service and our own expectation that an efficient company should improve its performance over time.

1.11 For most consumers and transmission network users, a good service from NGGT means the ability to reliably put gas onto and take gas out of the NTS at a time and location that suits them. We want to ensure that through stretching targets and commitments, NGGT delivers to its customers' expectations.

1.12 Our RIIO-GT2 package of SO incentives continues to place obligations on NGGT to provide network users with access to the NTS, and encourages NGGT to minimise the overall cost of system operation, whilst supporting the efficient operation of the wholesale gas market.

1.13 For RIIO-GT2 we are seeking to embed the significant improvements we have observed in network maintenance and expand the scope of this incentive to new areas of maintenance activity. We are sharpening the focus of demand forecasting activity to reflect stakeholder views and place more focus on NGGT's D-1 forecasting activity, but discontinuing the financial incentive associate with D-2 to D-5 forecasts for which the benefits to users were not clear.

1.14 Where NGGT has demonstrated clear consumer value we have accepted its RIIO-GT2 Business Plan proposals and this is the case for both residual balancing and greenhouse gas emissions incentives. Where such benefits were not demonstrated we have made the incentive reputational only. For example, our decision on NTS shrinkage is to make this cost pass-through with enhanced reporting obligations.

1.15 In the case of incentives where historical data is a less reliable indicator of future risk and performance we have recalibrated the targets and rewards/penalties such that the licensee and consumers are not exposed to undue risks of large financial penalties or excessive rewards. An example of this is our approach to capacity constraint management where we have taken a critical view of the performance over RIIO–GT1 and recalibrated the incentive taking into account future network capability and risk.

1.16 Overall, this is a challenging SO incentives package which offers realistic upside but maintains the overall aim of tightening the incentives from RIIO-1, in line with our SSMD and Draft Determination.

1.17 For the TO incentives, in the case of the new environmental incentive where historical data is not available, we have set targets and rewards/penalties such that NGGT and consumers are not exposed to undue risks. The targets in this incentive encourage NGGT to achieve beyond its Environmental Action Plan commitments and also apply over bounded performance thresholds which effectively contain the level of reward and penalty in any year at a pre-defined level.

1.18 In the case of the customer satisfaction survey incentive we have significantly increased the performance target to reflect the improvements in service made in RIIO-GT1 and to ensure NGGT is only rewarded for performance that shows ongoing improvement relative to current service levels.

Dealing with uncertainty

1.19 We set out the UMs that will apply to NGGT during RIIO-2 price control period in Table 3. Further detail is in Chapter 4 and Chapter 7 of the Core Document.

Table 3: RIIO-2 Uncertainty Mechanism package for NGGT

UM Name	UM type[8]	Applicable to?	Further detail
Real Price Effects	Indexation	All	Core Document
Coordinated Adjustment Mechanism	Re-opener	All	Core Document
Cyber resilience OT	UIOLI Re-opener (PCD)	All	Core Document
Cyber resilience IT	Re-opener (PCD)[9]	All	Core Document
Non-operational IT and Telecoms capex	Re-opener	All	Core Document
Physical security (PSUP)[10]	Re-opener (PCD)	All	Core Document
Net Zero	Re-opener	GT, GD, ET sectors	Core Document
Net Zero and re-opener development	UIOLI	GT, GD, ET sectors	Core Document
Net Zero pre-construction and small projects	Re-opener	GT, GD sectors	Core Document
Cadent Hynet FEED study	Pass-through	Cadent NGGT	Cadent Annex
Cost of debt indexation	Indexation	All	Finance Annex
Cost of equity indexation	Indexation	All	Finance Annex
Inflation indexation of RAV and Allowed Return	Indexation	All	Finance Annex
Pensions (pension scheme established deficits)	Re-opener	All	Finance Annex
Tax review	Re-opener	All	Finance Annex
Bad debt	Pass-through	All	Finance Annex
Business rates	Pass-through	All	SSMD, 9.11
Ofgem Licence Fee	Pass-through	All	SSMD, 9.11
Independent systems	Pass-through	NGGT	Chapter 4
Policing costs associated with Counter Terrorism Act 2008	Pass-through	NGGT	Chapter 4
Central Data Services Provider costs	Pass-through	NGGT	Chapter 4
Incremental capacity	Re-opener	NGGT	Chapter 4
Quarry and Loss	Re-opener	NGGT	Chapter 4
Pipeline diversions	Re-opener	NGGT	Chapter 4
Bacton terminal site redevelopment	Re-opener (PCD)	NGGT	Chapter 4

[8] For UMs listed as Re-opener (PCD) allowances resulting from the re-opener will be attached to PCDs.
[9] PCD element of the cyber resilience IT does not apply to the ESO.
[10] Allowances provided through this UM will form part of the Physical resilience PCD

UM Name	UM type[8]	Applicable to?	Further detail
King's Lynn subsidence	Re-opener (PCD)	NGGT	Chapter 4
Asset health	Re-opener (PCD)	NGGT	Chapter 4
Compressors	Re-opener (PCD)	NGGT	Chapter 4
GT Opex escalator	Volume driver	NGGT	Chapter 4

1.20 Table 4 summarises the outcome of NGGT's RIIO-2 BPI performance for each of the four stages of the incentive. See Chapter 6 for our Final Determination on NGGT's BPI.

Table 4: RIIO-2 BPI performance for NGGT

BPI stage	Final Determination
Stage 1 - Minimum requirements	Fail. -£8.75m penalty
Stage 2 – CVP reward	Not eligible due to Stage 1 failure
Stage 3 – Low cost confidence penalty	-£12.95m
Stage 4 – High cost confidence reward	Not eligible due to Stage 1 failure
Total	**-£21.70m**

1.21 We have decided to set NGGT's RIIO-2 Totex Incentive Mechanism (TIM) rate at 39%. Further details about TIM can be found in Chapter 6.

1.22 Table 5 summarises the financing arrangements that we have decided to apply to NGGT. Please refer to the Finance Annex for more detail on these areas.

Table 5: RIIO-2 financing arrangements for NGGT[11]

Finance parameter	Rate	Source
Notional gearing	60%	Finance Annex
Cost of equity	4.55%	
Expected outperformance	0.25%	
Allowed return on equity	4.30%	
Allowed return on debt	1.82%	
Allowed return on capital	2.81%	

[11] We present here a forecast average of RIIO-2 allowed returns. Final allowances for debt and equity from 2022/2023 onwards will reflect changes in market observations. Please see Finance Annex for further detail.

2. Setting outputs

Introduction

2.1 This chapter sets out our decisions for each output area that will apply to NGGT. It is structured under the headings of the RIIO-2 outcomes:

- meet the needs of consumers and network users
- maintain a safe and resilient network
- deliver an environmentally sustainable network.

2.2 This section sets out each of NGGT's outputs related to meeting the needs of consumers and network users that will apply in RIIO-GT2.

Meet the needs of consumers and network users

Customer satisfaction survey ODI-F

Purpose: To drive improvements in the quality of customer service through customer satisfaction surveys.

Benefits: To encourage NGGT to become more outwardly focused, and to drive improvements in the service quality of its customer services.

Output parameter	Final Determination	Draft Determination[12]
ODI type	Financial	Same as FD
Incentive type	Reward and penalty	Same as FD
Performance measure	Annual average customer satisfaction scores from 1-10	Same as FD
Performance target	7.8/10	Same as FD
Incentive value	Each incremental performance deviation from the target is worth +/- 0.07% of annual average ex-ante Base Revenue	Same as FD
Cap	+0.5% of annual average ex-ante Base Revenue, for scores of 8.5/10 and above	Same as FD
Collar	-0.5% of annual average ex-ante Base Revenue, for scores of 7.1/10 and below	Same as FD

[12] RIIO-2 Draft Determinations - NGGT Annex paragraphs 2.5 to 2.8

Output parameter	Final Determination	Draft Determination[12]
Reporting method	Annual RRP reporting	Same as FD
Applied to	NGGT only	Same as FD
Licence condition	SpC 4.2	N/A
Key question	'Based on your experience of [service touchpoint][13], how satisfied are you with National Grid Gas?' (scores 1-10)	Same as FD

Final Determination rationale and Draft Determination responses

2.3 We received 3 consultation responses relating to the overall proposal and the RIIO-GT2 performance target. NGGT and the NGGT User Group agreed with our Draft Determination without any modification, while an industry body responded that the proposed target may not be challenging enough, given NGGT's RIIO-T2 performance.

2.4 We have decided to proceed with the proposal made in our Draft Determination. Whilst we acknowledge stakeholder concern that the performance target could be more challenging, we consider that the proposed target represents an appropriate challenge to build on RIIO-GT1 performance. The RIIO-GT2 target is in excess of the average RIIO-GT1 performance over 6 years (7.6), and the target has only been surpassed on one occasion in that period. We therefore consider that this target presents a sufficient challenge for NGGT to outperform in RIIO-GT2.

Stakeholder satisfaction survey ODI-R

Purpose: To encourage NGGT to provide high levels of stakeholder satisfaction.

Benefits: To provide insights that help NGGT meet its stakeholders' expectations.

Output parameter	Final Determination	Draft Determination
ODI type	Reputational	Same as FD
Measurement	Annual average stakeholder satisfaction survey scores from 1-10	Same as FD

[13] Touchpoints: Planning application process, The future use of our network, Gas construction, Gas markets policy and change services, Connections / disconnections and diversions services, Day to day account management, Energy balancing services (including allocations and measurements), Maintenance services, Events, Engagements, Forums, Capacity auctions.

Output parameter	Final Determination	Draft Determination
Performance target	7.4/10	Same as FD
Reporting method	Annual Reporting in RRP	Same as FD
Applied to	NGGT only	Same as FD
Licence condition	No	Same as FD

Final Determination rationale and Draft Determination responses

2.5 We received 2 responses to our Draft Determination, from NGGT and an industry body, both of which supported our proposal.

2.6 We have decided to proceed with the ODI-R as set out in our Draft Determination. We maintain that high-quality engagement should now be considered business as usual (BAU) and should therefore not be incentivised financially.

Quality of demand forecast ODI-F

Purpose: To encourage the NTS System Operator (SO) to make improvements in the accuracy of its gas demand forecasts.

Benefits: Improved accuracy of NGGT's forecasts of gas demand to support the industry in making efficient decisions about its use of the network.

Output parameter	Final Determination	Draft Determination[14]
ODI type	Financial	Same as FD
Incentive type	Reward and penalty	Same as FD
Performance measure	D-1 demand forecast measured against actual daily demand.	Same as FD
Performance target	D-1 annual average absolute forecast error target of 8.35mcm/d with the demand forecast storage adjustment up to +1mcm/d	Same as FD
Incentive value	Each incremental 1 mcm/d performance movement from the target is worth +/- £390k.	Each incremental 1 mcm/d performance movement from the target is worth +/- £180k.
Cap/collar	+/- £1.5m symmetrical cap/collar for D-1. D-2 to D-5 demand forecasts to be reputational only.	Same as FD
Reporting method	Annual RRP reporting	Same as FD

[14] RIIO-2 Draft Determinations - NGGT Annex paragraphs 2.9 to 2.12

Output parameter	Final Determination	Draft Determination[14]
Licence condition	SpC 4.5: NTS System Operator external incentives, costs and revenues	N/A

Final Determination rationale and Draft Determination responses

2.7 There were six responses to our Draft Determination, with the majority of respondents agreeing with the proposed changes to the incentive and the focus on the D-1 forecast. One shipper agreed that the financial incentive for D-2 to D-5 forecast should be removed since no evidence has been presented demonstrating the consumer benefit of incentivised performance in this area. A storage operator agreed demand forecasting needs to be improved and welcomed the incentive to improve D-1 forecasting. Two other respondents favoured a focus on D-1 forecasting, as proposed in our Draft Determination.

2.8 A storage operator said that with the market focusing more (in its view) on within-day balancing, more incentive is needed to provide within-day forecasting and greater detail is needed in the D-1 forecasts. It also wanted a strong incentive to encourage provision of accurate forecasts by NGGT for downstream parties, whilst removing interconnector export and storage from the incentive as it saw those as balancing tools. Furthermore, it suggested incentivised forecasts for changes in pressure in different sections of the NTS.

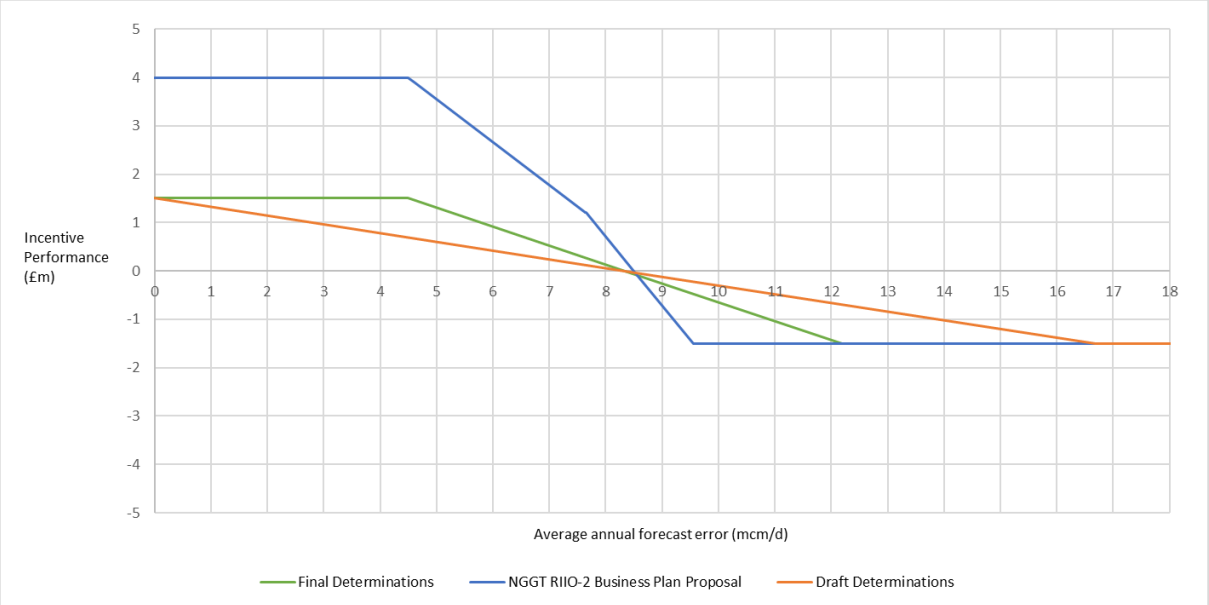
2.9 NGGT said the reduced upsides and lower incentive rate proposed in our Draft Determination meant it would be hard to justify further investment in improving D-1 forecasts. NGGT also said that the removal of the financial incentive for D-2 to D-5 forecasts would mean it is more likely forecasting accuracy for that time period will deteriorate.

2.10 We recognise the challenges faced in maintaining current levels of demand forecast accuracy. However, maintaining current levels of demand forecasting performance should be regarded as BAU remunerated via the price control allowances, and not via an incentive. The incentive should be for improving forecast accuracy over and above BAU. To incentivise NGGT for merely achieving BAU levels of demand forecast accuracy would lead to double counting the allowances for this activity. Our decision is wholly consistent with this aim, and the focus on D-1 forecasts is supported by the majority of respondents.

2.11 We do not agree with NGGT's view that the incentive proposed in our Draft Determination is too small to warrant further investment in improving demand forecasting accuracy. As we said in our Draft Determination, we expect NGGT to make further improvements in its demand forecasting performance and consider that a stricter target will encourage further investment activity and innovation beyond NGGT's current forecasting capability.

2.12 We have adjusted the incentive strength to ensure the rewards and penalties provide a sharp incentive to maintain and improve demand forecasting accuracy. The errors to reach the cap and collar have been tightened around the target from 0mcm/d (cap) and 16.7mcm/d (collar), to 4.5mcm/d (cap) and 12.2mcm/d (collar). This means that each incremental 1mcm/d performance movement from the target leads to a reward / penalty of +/- £390k. This strengthens the incentive from that proposed in our Draft Determination where each incremental 1mcm/d performance movement from the target led to a reward / penalty of around £180k.

Figure 2: D-1 Demand Forecasting Comparison



2.13 We will also introduce a new Licence Obligation requiring NGGT to report annually on the activities and investments made to improve its D-1 performance, as proposed in our Draft Determination.

2.14 We set out our rationale for setting a lower target, cap, and collar for D-1 forecasting in our Draft Determination, based on NGGT's RIIO-GT1 actual

performance. Our decision, which is unchanged from Draft Determination, is to introduce an absolute forecast error target of 8.35mcm/d per year on average for D-1 demand forecasts, with a symmetrical cap and a collar of +/- £1.5m.

2.15 Our decision on the application of the Demand Forecast Storage Adjuster (DFSA) is also unchanged. This allows for the D-1 target to be increased by a maximum of 1mcm/d. The DFSA methodology will be amended for the RIIO-GT2 period so that a mathematically negative value cannot be produced within the algebraic formula.

2.16 Our decision, which is unchanged from our Draft Determination, is that the D-2 to D-5 demand forecasts should be reputational only because there is no clear evidence of consumer value from the D-2 to D-5 scheme in RIIO-GT1. NGGT's RIIO-GT2 Business Plan (BP) provided little evidence of benefit, value, or demand for the D-2 to D-5 demand forecasts. AFRY's report also found that customers saw D-1 forecasting as more important than D-2 to D-5 forecasting. Four respondents to our Draft Determination were broadly supportive of the decision that the D-2 to D-5 demand forecasts should be reputational only.

2.17 We will require NGGT to continue to report on the accuracy of its D-2 to D-5 forecasts. We will include a licence obligation on NGGT to report annually on its D-2 to D-5 demand forecasting, and the corresponding average annual absolute forecasting error.

2.18 Within-day forecasts and an incentive around forecasts for changes in pressure are outside the scope of this incentive and we did not receive any firm proposals in this area. Similarly, there were no proposals to change the components of the D-1 incentive to exclude interconnector export and storage from the incentive. Our decision is to preserve the forecast parameters of the D-1 incentive in its current form as there was no clear justification provided for the changes suggested.

Maintenance ODI-F

Purpose: To incentivise the SO in efficient planning of network maintenance at direct exit connections from the NTS.

Benefits: To minimise the impact of maintenance work on NGGT's customers and minimise disruption to customer operations

Output parameter	Final Determination	Draft Determination[15]
ODI type	Financial	Same as FD
Incentive type	Three schemes: Use of Days for RVO Work, Changes Scheme and, Use of Days for non-RVO Work.	Same as FD
Performance measure	Downside only for the existing components covering use of maintenance days for RVO work, and changes to the maintenance plan; reward and penalty for the new component covering non-RVO work.	Downside only for the existing components covering use of maintenance days for RVO work, and changes to the maintenance plan, and for the new component covering non-RVO work.
Performance target	11 days for the Use of Days for RVO Works Scheme; 7.25% for the Changes Scheme; 75% alignment for the Use of Days for Non-RVO Work Scheme	Same as FD
Incentive value	A penalty of £20k per change under the Use of Days for the RVO Work scheme, and a penalty of £50k per each change day above the target under the Changes Scheme, and a reward/penalty of £50k per each change day below/above the target for the Use of Days for Non-RVO Work.	A penalty of £20k per change under the Use of Days for the RVO Work scheme, and a penalty of £50k per each change day above the target under the Changes Scheme, and a penalty of £50k per each change day above the target for the Use of Days for Non-RVO Work.
Incentive cap/collar	Financial incentive with a collar of -£500k for each scheme, (-£1.5m in total), and a cap of +£500,000 for the Non-RVO work scheme.	Downside only financial incentive with a collar of -£500k for all three schemes, (-£1.5m in total). Penalty only scheme with no upside.
Reporting method	Annual RRP reporting.	Same as FD
Licence condition	SpC 4.5: NTS System Operator external incentives, costs and revenues	N/A

Final Determination rationale and Draft Determination responses

2.19 There were five responses to our Draft Determination.

2.20 NGGT raised concerns with our proposal, stating that a lack of financial reward will shift its focus to protecting its incentive performance rather than improving it.

[15] RIIO-2 Draft Determinations - NGGT Annex paragraphs 2.12 to 2.16

2.21 Regarding the use of days for non-RVO work scheme, NGGT said it is not appropriate to include a new additional element as a downside-only incentive.

2.22 Two stakeholders expressed concerns with our Draft Determination. A shipper was unsure how the targets for the incentive were derived, while a storage operator suggested the maintenance incentive package presented a weakened link to consumers.

2.23 An industry body said that the RIIO-1 incentives do not cover the full range of maintenance activities but stated that if the RIIO-1 incentivised practices are now fully embedded within NGG in its approach to maintenance, then the incentive package is appropriate.

2.24 Some respondents thought that a downside-only incentive could reduce the incentive for NGGT to outperform on activities that NGGT had improved on in RIIO-1. We recognise good performance has been achieved during RIIO-1 for the Use of Maintenance Days scheme and the Change of Days scheme. NGGT's engagement with customers to minimise disruption across these two schemes has now become BAU. Therefore, we consider the Use of days and Changes of days maintenance schemes should no longer have a financial upside. This view was shared by most stakeholders that responded, who recognise that BAU performance should not be further rewarded.

2.25 NGGT had proposed to widen the incentive to include an additional scheme to cover non-RVO works, comprising In-Line Inspection runs. NGGT raised concerns about including this non-RVO element as downside-only, as we had proposed in our Draft Determination, and explained that industry benefitted from the successful planning of non-RVO works on the network.

2.26 In our Draft Determination, we acknowledged that there appears to be room for improving the planning of maintenance days for certain non-RVO works. One respondent thought that links to customers could be weakened under our proposal and we acknowledge that if this new scheme for incentivising non-RVO work offered some upside for NGGT, this would incentivise NGGT to plan this work to benefit customers.

2.27 We acknowledge NGGT's concern that adding the non-RVO work scheme without a potential financial reward could discourage NGGT from proposing new incentives. We recognise that this is an important area for network users and consumers and

agree that there is justification to provide an upside for non-RVO maintenance work where NGGT can improve its performance. We have based our decision about an appropriate target on NGGT's Business Plan proposal for the non-RVO maintenance work.

2.28 Our decision is to accept NGGT's proposal for the non-RVO maintenance work incentive scheme as set out in its Business Plan. This will introduce a cap of £500,000 for this element, in addition to the collar of -£500,000 we set out in our Draft Determination.

2.29 The rest of this incentive remains as set out in our Draft Determination.

Entry and exit capacity constraint management ODI-F

Purpose: To deliver an efficient overall cost of SO constraint management actions and encourage balanced risk versus reward decisions in the release of additional capacity.

Benefits: Lower overall costs of constraint management actions

Output parameter	Final Determination	Draft Determination[16]
ODI type	Financial	Same as FD
Incentive type	Reward and penalty	Same as FD
Performance measure	Reward for a percentage of underspend against the CCM target (taking account of constraint costs and applicable revenue), and a penalty of a similar percentage for the net overspend against the CCM target.	Same as FD
Performance target	£8.5m per year	£0.2m per year
Incentive value	Revenue from entry overrun charges and the sale of interruptible/off-peak capacity where NGGT scale back no longer feed into the CCM incentive. Reward using the Totex Incentive Mechanism rate of the net underspend against the CCM target (taking account of constraint costs and applicable revenue), and similarly a penalty using the Totex Incentive Mechanism rate of the net overspend against the CCM target.	Revenue from entry overrun charges and the sale of interruptible/off-peak capacity where NGGT scale back no longer feed into the CCM incentive. Reward of 20% of the net underspend against the CCM target (taking account of constraint costs and applicable revenue), and similarly a penalty of 20% of the net overspend against the CCM target.
Incentive cap/collar	+/- £5.2m per year	+/- £3.2m per year
Reporting Method	Annual RRP reporting.	Same as FD
Licence Condition	SpC 4.4: Entry Capacity and Exit Capacity Constraint Management	N/A

[16] RIIO-2 Draft Determinations - NGGT Annex paragraphs 2.17 to 2.21

Final Determination rationale and Draft Determination responses

2.30 There were six responses to our Draft Determination. Four respondents broadly agreed with our proposal but expressed reservations about certain elements of the incentive. One respondent, whilst agreeing with the principle of minimising costs and encouraging capacity release, thought the proposals would not sufficiently incentivise this behaviour and wanted to see other reforms to system flexibility.

2.31 An industry body agreed with the removal of capacity overruns from the incentive, and also said that as constraints rarely occur it is difficult to design an incentive scheme to efficiently incentivise behaviours for low probability-high impact events. It noted that in the long run it may be better for industry to save on the cost of the incentive through the lower proposed targets and face the constraint costs as they occur rather than continue to routinely pay incentive rewards to NGGT.

2.32 A shipper broadly agreed with our proposals but thought there may be an interaction with the new obligations on NGGT to ensure that GDN exit capacity bookings are efficiently made.

2.33 One respondent disagreed with our Draft Determination because it thought that NGGT needed to have a stronger incentive to avoid constraints and that implementing our proposal would remove the incentive to avoid buybacks.

2.34 NGGT disagreed with our proposal and provided detail on the elements of the incentive it considered to be flawed. It noted that our Draft Determination placed too much emphasis on historical performance (arguing that historical performance was a product of the RIIO-GT1 incentive) and that it incorrectly assumes RIIO-GT1 incentive performance was a good approximation of the future risk. NGGT also responded that this did not take adequate account of its network capability analysis and the way that this was used by NGGT to forecast future constraint risks. It also stated that Ofgem had failed to recognise that the CCM incentive had successfully incentivised NGGT to take the actions necessary to mitigate constraints on the NTS.

2.35 NGGT was also disappointed we had stated in our Draft Determination that there would not be a re-opener to review the scheme if the annual cap/collar is breached.

2.36 NGGT disagreed with the removal of entry overruns and said their removal could weaken incentives on shippers to book entry capacity. NGGT argued that because all revenues would be shared with shippers through neutrality,[17] in the unlikely event all shippers overrun they will be credited back any overrun charges in their entirety, removing financial incentives to book capacity.

2.37 Our Final Determination decision is a change from our Draft Determination position. We have re-assessed the data submitted in NGGT's BP and considered additional information provided in consultation responses and in further discussions with NGGT during late October 2020.[18]

2.38 We have decided to apply the TIM rate to this incentive. In its response, NGGT identified some occasions where there was a potential trade-off between SO and TO actions in managing constraints and it believed these choices could be distorted if a different sharing factor was applied to actions by the TO and SO. Whilst we believe that there are limited circumstances where this would be the case, we agree that on balance consumers' interests are likely to be better protected if the same sharing factor is applied to both TO and SO actions. This removes any potential distortions which could result in less efficient actions being taken. Also, the way that constraint costs are captured within the incentive sufficiently excludes disturbance of other factors, for example in executing works where the costs/penalties of rescheduled delivery of assets would have a different sharing factor applied to them than for constraint costs which might otherwise arise.

2.39 We agree that GDN capacity bookings should be efficiently made, and we consider this is one of the many variables that need to be taken into account in assessing network capability and in the subsequent extension of this analysis to come up with forecasts of constraint risk. We do not consider that the new enhanced obligations on GDN capacity bookings change the overall approach to this process.

2.40 Whilst we welcome the views on potential reforms to system flexibility, we do not agree that these should be considered as part of the incentive design. Instead, these should be considered alongside other industry-led initiatives such as NGGT's Capacity Access Review[19] and/or its Gas Master Plan initiatives. This will allow a

[17] The neutrality charge is part of charging arrangements: it is a mechanism whereby balancing costs are either recovered from, or returned to shippers.
[18] Including additional reports from consultants engaged by NGGT.
[19] This is being taken forward as a UNC Review Group (UNC705R)

full discussion from all parties on the justification and merits of any potential changes to these industry arrangements.

2.41 There was some support for the removal of revenues from overrun charges from the incentive revenue calculation. We do not agree with NGGT's view that this might cause a distortion as overrun charges would be smeared across all parties (via the neutrality charge) thereby removing the incentive on shippers to avoid overrunning. We think that this is extremely unlikely as it would need all shippers to overrun by similar amounts on all occasions to diminish the incentive effect of the overrun charge. We see this outcome as highly improbable.

2.42 We have re-examined the assumptions underpinning the forecasts which were used by NGGT in its Business Plan to estimate the likelihood of constraints and we have taken on board the comments from stakeholders who argued that there was some value in a stronger, more generous incentive which encouraged NGGT to take actions to avoid buybacks. We recognise that there is some merit in this and striking the right balance will provide a good outcome for consumers. We therefore asked consultants[20] to undertake further analysis, and carefully consider the new information provided by NGGT. As a result, we have recalibrated the incentive with an increased cost target and higher cap and collar.

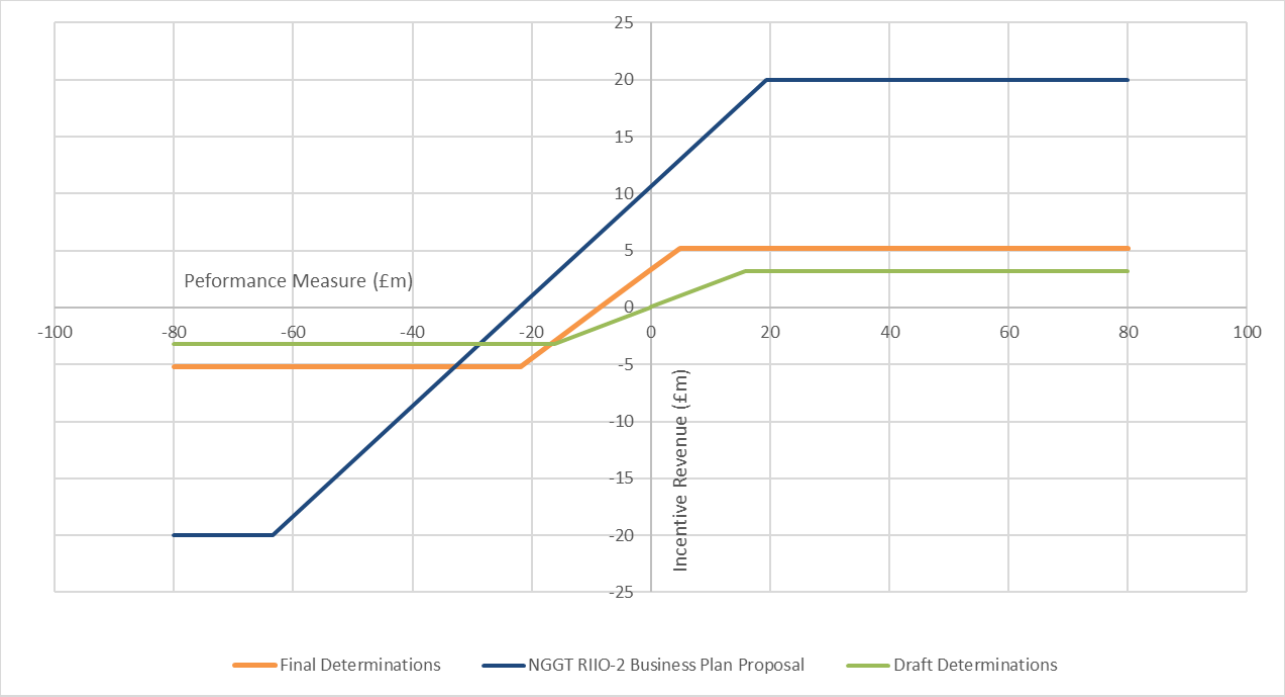
2.43 We have analysed the additional data and re-assessed the way in which NGGT has calculated its target for this incentive in its Business Plan. One of our main concerns is the way in which the "raw" constraint risk calculated from NGGT's network capability analysis was adjusted to allow for the proportion of this risk which is managed as BAU, and the assumed forecast constraint risk costs split between buyback actions and pre-emptive locational buys/sells. We have calculated a revised target, and the associated cap and collar, based on new information (including an adjustment around revised capability in the South West) and by changing the proportion of constraint risk which would be managed by buyback and pre-emptive actions based on our own assessment and our consultants' analysis.[21] This recalibration of the target places more reliance on NGGT's capability analysis and forecast constraint risk, adjusted to better reflect how historic constraints have actually been managed by NGGT. We consider that these adjustments present a more balanced outcome and provide an appropriate

[20] AFRY Managing Consulting
[21] Further detail of the underlying analysis can be found in the AFRY report on CCM calibration.

incentive to encourage minimisation of constraints on the network and reduction of the proportion of risk borne by consumers.

2.44 Our decision is to implement the incentive as described in our Draft Determination but with a revised target, cap and collar. Our decision is to implement a CCM target cost of £8.5m with a symmetrical cap and collar of £5.2m.

Figure 3: Constraint Management Incentive Scheme Comparison



2.45 We recognise that there remains a residual risk that constraints requiring buyback actions could occur, however such actions are considered low probability events. To ensure that consumers are adequately protected if the targets we have set are shown to be wrong, we have decided to review the CCM incentive if the annual cap or collar of the scheme is reached, in-line with the arrangements proposed in NGGT's Business Plan.

Residual balancing ODI-F

Purpose: To incentivise the residual balancing of supply and demand of the SO while minimising the impact of any actions on market prices.

Benefits: A more balanced supply and demand with minimised impact on market prices and cost to consumers.

Output parameter	Final Determination	Draft Determination[22]
ODI type	Financial	Same as FD
Incentive type	Reward and penalty	Same as FD
Performance measure	Reward/penalty for performance against the targets in both schemes, PPM and LPM, while incorporating a performance range (2.8mcm/d to 5.6mcm/d) within which no incentive would apply for the LPM mechanism during the shoulder months.[23]	Same a FD
Performance target	PPM: 1.5% of SAP LPM: 2.8mcm/d (non-shoulder months) and 5.6mcm/d with a 2.8mcm/d to 5.6mcm/d zero performance dead-band (shoulder months)	Same as FD
Incentive value	A stepped incentive with tiered daily payments up to £1.2k (PPM scheme) and £3.2k (LPM scheme) and penalties down to -£24k for performance against the PPM and LPM targets.	Same as FD
Incentive cap/collar	£1.6m/-£2.8m across both schemes	Same as FD
Reporting method	Annual RRP reporting.	Same as FD
Licence condition	SpC 4.5: NTS System Operator external incentives, costs and revenues	N/A

Final Determination rationale and Draft Determination responses

2.46 There were five responses to our Draft Determination on residual balancing, which was to accept the proposal set out in NGGT's Business Plan. All five respondents were in broad agreement with our proposal and considered it appropriate. The RIIO-2 CEG Challenge Group said that the proposal would deliver benefits for consumers with a lower potential reward than for RIIO-GT1.

2.47 A storage operator expressed qualified support. Whilst it welcomed the continuation of the incentive, it disagreed with the reduction in the caps as it believes that more importance should be placed on this incentive. In addition, it was disappointed that this (or a similar) incentive is not applied to shoulder months. It would be keen to see a stronger incentive to minimise market price impacts and discourage balancing of the system through the intensive use of linepack. The respondent argues that high usage of linepack and predictable NGGT trading on the market continue to dis-incentivise the wider industry to balance the system. It said this dis-incentivises the use of storage facilities, increases within-

[22] RIIO-2 Draft Determinations - NGGT Annex paragraphs 2.22 to 2.25
[23] March, April, September, October

day price volatilities and therefore NGGT's balancing costs (increased cost to consumers), whilst leaving storage facilities heavily under-utilised.

2.48 We consider reducing the overall incentive cap and collar by 20% to £1.6m and -£2.8m (and mirroring this 20% reduction across the daily incentive performance measures) is appropriate to make this incentive more challenging, and is in line with our SSMD. We disagree that lowering the cap and collar is reducing the importance of this incentive and agree with other stakeholders that this reflects NGGT taking on the challenge to deliver more for consumers with a lower reward.

2.49 We disagree with a storage operator that the incentive will "continue to dis-incentivise the wider industry to balance the system". Gas shippers are incentivised to balance their flows onto and off the system on a daily basis and face clear penalties if they do not do so. NGGT's role as a residual balancer, and therefore its trading activity, cannot be considered as predictable since it will only intervene in circumstances where the market is not in balance or is forecast not to be in balance at the end of the gas day, and these instances are inherently uncertain.

2.50 The incentive does apply to shoulder months in respect of the PPM element but, during these shoulder months, the LPM element (between 2.8mcm/d and 5.6mcm/d), has no incentive reward or penalty. We believe that this preserves the focus on the PPM but avoids any potential distortions to the LPM measure that might arise as a result of seasonal adjustments to linepack volumes or the operational realities of the NTS.

Maintain a safe and resilient network

2.51 This section sets out each of NGGT's outputs related to maintaining a safe and resilient network that will apply in RIIO-GT2.

Network asset risk metric PCD

2.52 For details of our Final Determination on Network Asset Risk Metric (NARM) see the NARM Annex.

Cyber resilience IT PCD and Cyber resilience OT UIOLI and PCD

2.53 Cyber resilience IT and OT outputs are confidential and not discussed in this document in the interests of national security. Confidential Cyber Resilience Annexes containing our Final Determination have been shared with each network company.

Physical resilience PCD

Purpose: To ensure NGGT delivers physical security upgrades at sites designated as Critical National Infrastructure (CNI).

Benefits: Allowances are returned to consumers in the event changes to the CNI list mean NGGT is not required to deliver the outputs for which it has received baseline funding.

Output parameter	Final Determination	Draft Determination[24]
Type	Evaluative	Same as FD
Output	PSUP upgrades at specified number of sites[25]	Same as FD
Delivery date	End of RIIO-GT2	Same as FD
Totex baseline allowances	£26.46m	Same as FD
Re-opener	Yes – for changes to BEIS CNI list. See Chapter 7 in the Core Document.	Same as FD
Reporting method	PCD Report Annual RRP reporting.	Same as FD
Adjustment mechanism	Ex post review	Same as FD
Companies applied to	NGGT only	Same as FD
Licence obligation	SpC 3.4: Security Re-opener and PCD	N/A

Final Determination rationale and Draft Determination responses

2.54 See Chapter 3 of the Core Document for our Final Determinations rationale and Draft Determinations responses

Annual network capability assessment report (ANCAR) LO

Purpose: To implement a process that brings greater transparency to the physical capability of the NTS, and to facilitate better consideration of the physical capability of

[24] RIIO-2 Draft Determinations - NGGT Annex paragraphs 2.26 to 2.29
[25] Site and volume details confidential for security purposes

the NTS in decision making relating to new network investment, operational constraint management and the management of network access.

Benefits: Decisions relating to network investments, constraint management, and access to the NTS are driven by a better understanding of the physical capability of the NTS.

Output parameter	**Final Determination**	**Draft Determination[26]**
New licence obligations for RIIO-2	NGGT to submit ANCAR, including: Flow forecasts across all network Entry and Exit Zones. The level of physical Network Capability for each of these Entry and Exit Zones. The level of Network Capability that can be delivered using commercial tools for each of these Entry and Exit zones. Changes to the level of physical network capability at all Entry and Exit Zones compared to the previous year, including an explanation of the drivers of these changes. A forecast of the target level of physical Network Capability in 10 years' time, taking account of the needs of NTS users.	Same as FD
Applied to	NGGT only	Same as FD
Licence reference	SpC 9.10: Long Term Network Planning	N/A
Network capability targets	No network capability targets for the RIIO-2 period	Same as FD
Capacity baselines	NGGT to reduce capacity baselines at two entry points at the start of RIIO-2 period, namely: St Fergus from 1670.7 GWh/d to 1500 GWh/d Theddlethorpe from 610.7 GWh/d to 0 GWh/d. NGGT to initiate a comprehensive review of baseline capacities ahead of the next price control review.	Same as FD

Final Determination rationale and Draft Determination responses

2.55 We received seven consultation responses relating to the ANCAR LO, network capability targets for the RIIO-2 period, and adjustment to the capacity baselines at two entry points on the NTS.

2.56 We are implementing our Draft Determination proposal to introduce a new LO on NGGT to submit an ANCAR. We believe that ANCAR can deliver value by providing

[26] RIIO-2 Draft Determinations - NGGT Annex paragraphs 2.27 to 2.29

a sound basis for NGGT to make future network investment decisions. The consultation responses supported this position.

2.57 We are implementing our Draft Determination proposal not to set network capability targets for the RIIO-2 period. This was supported by all bar one stakeholder, who stated there was a need for network capability targets to be set, alongside network utilisation incentives. After considering all consultation responses, we have decided that network capability targets would not be appropriate for the RIIO-GT2 period due to the uncertainty around the appropriate level of network capability targets and how those should be met (i.e. the balance between physical capability and the use of commercial tools).[27]

2.58 We are implementing our Draft Determination proposal to reduce capacity baselines at two entry points at the start of RIIO-2 period. This was supported by most stakeholders; however, three stakeholders disagreed and asked for further evidence to substantiate these reductions. We consider that the evidence NGGT submitted alongside its BP[28] is sufficient to support the reductions.

Exit capacity LO

Purpose: To encourage efficient management of the exit capacity booking process.

Benefits: Efficient capacity booking optimises use of existing capacity and minimises the risk of redundant network reinforcement.

Output parameter	**Final Determination**	**Draft Determination[29]**
New obligations for RIIO-2	A new Associated Document (the Exit Capacity Planning Guidance) will set out obligations relating to methodologies, engagement and reporting relating to the annual exit capacity booking process	Same as FD
Applied to	NGGT, GDNs	Same as FD
Licence reference	SSC A57: Exit Capacity Planning	N/A

Final determination rationale and Draft Determination responses

2.59 We have decided to implement our Draft Determination proposal to introduce an Enhanced Obligations framework for the exit capacity booking process, which we

[27] Commercial tools include Capacity Buybacks, Locational Energy Trades, Turn Up/Turn Down Contracts.
[28] Baseline Obligated Capacities Report, NGGT, December 2019.
[29] RIIO-2 Draft Determinations - NGGT Annex paragraphs 2.3 to 2.33

will implement through a new licence condition and associated document (the Exit Capacity Planning Guidance). NGGT will have its own specific set of obligations within this framework, since an efficient process will need NGGT to work with the GDNs in the right ways.

2.60 We have set out further details and a summary of the responses received in Chapter 2 of the GD Annex.

Asset health – non-lead assets PCD

Purpose: To fund asset health expenditure that is not covered by NARM.

Benefits: To ensure consumers are protected from any non-delivery of RIIO-GT2 allowed volumes for non-lead assets.

Output parameter	Final Determination	Draft Determination
Type	Evaluative	Same as FD
Output	Delivery of allowed intervention type volumes associated with this PCD. See technical annex for full list	Same as FD
Delivery date	31 March 2026	Same as FD
Totex baseline allowances	£48.90m	£48.07m
Re-opener	Yes – Cab infrastructure element of this PCD subject to Asset health re-opener	Same as FD
Reporting method	PCD Report Annual RRP reporting	Same as FD
Adjustment mechanism	Ex post review	Same as FD
Companies applied to	NGGT only	Same as FD
Licence obligation	SpC 3.13: Asset Health Non-lead assets PCD	n/a

Final Determination rationale and Draft Determination responses

2.61 See Chapter 3 for our Final Determinations decision rationale.

Bacton terminal site redevelopment PCD

Purpose: To fund development costs for the Bacton Terminal Redevelopment project.

Benefits: To ensure NGGT can go ahead with project development whilst protecting consumers from inefficient expenditure.

Output parameter	Final Determination	Draft Determination[30]
Type	Evaluative	Same as FD
Output	PCD to ensure NGGT delivers a Final Options Selection Report (FOSR) and Re-opener submission.	Same as FD
Delivery date	Feb 2022	Apr 2022
Totex baseline allowances	£10.82m	£6.97m
Re-opener	Yes	Same as FD
Reporting method	PCD Report Annual RRP reporting	Same as FD
Adjustment mechanism	Ex post review	Same as FD
Companies applied to	NGGT	Same as FD
Licence condition	SpC 3.8: Bacton terminal site redevelopment Re-opener and PCD	n/a

Final Determination rationale and Draft Determination responses

2.62 See Chapter 3 for our Final Determinations decision rationale.

King's Lynn subsidence PCD

Purpose: To fund development costs for the King's Lynn Subsidence project.

Benefits: To ensure NGGT can proceed with project development whilst protecting consumers from inefficient expenditure.

Output parameter	Final Determination	Draft Determination
Type	Evaluative	Same as FD
Output	PCD to ensure NGGT delivers a Final Options Selection Report and Re-opener submission.	Same as FD.
Delivery date	April 2022	Same as FD
Totex baseline allowances	£1.19m	£1.05m
Re-opener	Yes	Same as FD
Reporting method	PCD Report Annual RRP reporting	Same as FD

[30] RIIO-2 Draft Determinations - NGGT Annex paragraphs 4.18 to 4.22

Output parameter	Final Determination	Draft Determination
Adjustment mechanism	Ex post review	Same as FD
Companies applied to	NGGT	Same as FD
Licence condition	SpC 3.10 King's Lynn subsidence Re-opener and PCD	n/a

Final Determination rationale and Draft Determination responses

2.63 See Chapter 3 for our Final Determinations decision rationale.

Deliver an environmentally sustainable network

2.64 The Gas Transmission network and related business activities can be harmful to the environment and stakeholders expect NGGT to take appropriate steps to mitigate its environmental impact.

2.65 In this section we set out our decisions on the outputs related to delivering an environmentally sustainable network that will apply to the GT sector.

Greenhouse gas emissions (venting) ODI-F

Purpose: To encourage the SO to consider environmental impacts when making decisions about venting from NTS compressors.

Benefits: Reduced environmental impact from compressor venting

Output parameter	Final Determination	Draft Determination[31]
ODI type	Financial	Same as FD
Incentive type	Reward and penalty	Same as FD
Performance measure	Reward/penalty for performance against the target for compressor venting.	Same as FD
Performance target	2,897 tonnes of natural gas per year	Same as FD
Incentive value	A reward/penalty of approx. £1.7k for every tonne vented below/above target up to the incentive cap/floor.	Same as FD
Incentive cap/collar	+/- £1.5m	Same as FD

[31] RIIO-2 Draft Determinations - NGGT Annex paragraphs 2.59 to 2.62

Output parameter	Final Determination	Draft Determination[31]
Reporting method	Annual RRP reporting.	Same as FD
Licence condition	SpC 4.5: NTS System Operator external incentives, costs and revenues	N/A

Final Determination rationale and Draft Determination responses

2.66 There were six responses to our Draft Determination, all of which welcomed the proposal.

2.67 One industry body said there should be some element of Corporate Social Responsibility (CSR) here and a consumer group agreed that it is important monopoly network companies are operated in a way that demonstrates good CSR and in a way that minimises their environmental impact.

2.68 Given the overall support expressed in the responses, our decision on this incentive is to implement our Draft Determination proposal.

NTS shrinkage ODI-R

Purpose: To incentivise the SO in efficient procurement and management of own use gas and electricity for the operation of compressors and energy that cannot be billed.

Benefits: To reduce the cost and amount of shrinkage on the NTS.

Output parameter	Final Determination	Draft Determination[32]
ODI type	Reputational	Same as FD
Measurement	Simplified incentive design with removal of the performance measure against the target. We will introduce licence obligations on NGGT to report on the costs of procured energy compared to 'perfect foresight' and 'pure on the day' purchases scenarios. We will also introduce a licence obligation on NGGT to investigate the causes of unaccounted for gas and calorific value shrinkage on a regular basis and to improve on metering and inspection activities.	Same as FD
Performance target	NGGT to continue to efficiently procure the energy required for running its network and to report to use the actual annual costs incurred compared to the 'perfect foresight' and 'pure on the day' purchases scenarios.	Same as FD

[32] RIIO-2 Draft Determinations - NGGT Annex paragraphs 2.64 to 2.67

Output parameter	Final Determination	Draft Determination[32]
Reporting method	Annual RRP reporting.	Same as FD
Licence condition	SpC 4.5: NTS System Operator external incentives, costs and revenues.	N/A

Final Determination rationale and Draft Determination responses

2.69 Our Final Determination decision is unchanged from our Draft Determination position with regard to the incentive. However, we have decided to use a revised form of the shrinkage volume forecast methodology. Our decision is to remove the performance measure against the target and make the incentive reputational only. We will introduce licence obligations on NGGT to report on the costs of procured energy compared to 'perfect foresight' and 'pure on the day' purchases scenarios. We expect NGGT to continue to control the volumes of shrinkage where it is able and we will introduce a licence obligation on NGGT to investigate the causes of UAG and CVS[33] on a regular basis and to improve on metering and inspection activities and simplify the shrinkage volume forecast methodology.

2.70 There were seven responses to our Draft Determination. Four respondents agreed with our proposal with one offering qualified support. Two respondents were not in support whilst one welcomed the work to reduce both the cost and the amount of shrinkage but did not comment on the nature of the incentive. Three stakeholders acknowledged NGGT had limited control over the variables that determine the incentive reward.

2.71 One shipper agreed that the incentive should be removed as it has not been demonstrated that performance is sufficiently under the control of NGGT and retaining the incentive would have created the potential for windfall gains or losses, neither of which is in the consumers' interests.

2.72 An Enhanced Engagement group agreed that NGGT has very little influence on the level of shrinkage and the incentive is related to efficient procurement of uncertain gas volumes as for most normal industrial customers.

2.73 An industry body said that historically NGGT has performed well against the incentive, but some of this has been fortuitous by either reduced volume

[33] Unaccounted for Gas and Calorific Value Shrinkage.

requirements or falling prices rather than NGGT direct actions. It also agreed that it is appropriate for NGGT to report on its shrinkage procurement costs.

2.74 One respondent thought that it was difficult to ascertain whether the current incentive has resulted in more economic procurement of shrinkage/reduced shrinkage volumes, or if success resulted from factors outside of NGGT's control. It agreed that scrutiny of shrinkage costs in a NGGT report to Ofgem would help the regulator and network users to better understand this. However, it was concerned that removal of the financial incentive could lead to NGGT taking more within-day balancing actions, increase imbalance exposure for network users, and lead to higher costs for consumers as well as limit within-day flexibility and liquidity.

2.75 One respondent's main concern was that the change to the incentive structure will impact price formation in the balancing mechanism and distort cash out prices.

2.76 NGGT disagreed with our proposals and underlying rationale as it believes that removing a financial incentive for NTS Shrinkage means the provision of shrinkage is more likely to become process driven and alter the balance of risk as NGGT becomes less focused on cost targets with a risk of increased costs for consumers.

2.77 We disagreed in our Draft Determination with NGGT's proposal to financially incentivise volume reductions of shrinkage, as it is extremely difficult to predict what a reasonable baseline is and it may not be clear how much of the variation against a baseline/target is attributable to concrete actions by NGGT. That remains our view having considered all the responses. We asked consultants[34] to undertake analysis of NGGT's BP proposal, including modelling the value at risk for all three components of NGGT's proposal. We concluded there was little value for consumers from a financial incentive for NGGT to make efforts to minimise expected costs and associated risk when procuring shrinkage energy on a day-to-day basis. We have not seen any new evidence which would challenge those conclusions and our decision is unchanged from our Draft Determination.

2.78 We received a new proposal from NGGT in late October 2020 for a much narrower incentive which focused exclusively on the gas component of shrinkage. However, as neither NGGT nor Ofgem have been able to consult on this proposal and seek

[34] AFRY

stakeholders' views, and because we did not see any persuasive new arguments to justify its consideration, we have not taken this further.

2.79 In our Draft Determination, we said that we propose to dispense with the target and the methodology that underpins the calculation of the target as set out in the NTS Shrinkage Methodology Statement. In order to calculate the 'perfect foresight' purchase scenario, a form of shrinkage methodology statement will be required for calculating gas volume forecasts.

2.80 We are introducing a revised shrinkage methodology statement that NGGT will be required to maintain in place of the previous methodology statement. We will dispense with the target and methodology underpinning the calculation of the energy variance of compressor fuel usage and calorific value shrinkage, as well as the forward electricity volume target, as these will no longer be required for the purposes of the revised incentive.

2.81 We are encouraged by stakeholder support to make this incentive reputational and also for the enhanced reporting we will introduce to increase transparency. We are conscious that some stakeholders who expressed support for our decision for a reputational incentive on shrinkage wanted to ensure that there was adequate scrutiny of the shrinkage costs during RIIO-GT2. In addition to the enhanced reporting set out above, our decision is to introduce a review of the performance of shrinkage after two years, and to assess how well NGGT is managing shrinkage costs. We will introduce new licence provisions setting out the terms of such a review.

2.82 Some respondents commented on the likelihood that NGGT would need to take more within-day balancing actions, and expressed the view that this could result in increased imbalance exposure for network users, impact price formation in the balancing mechanism, and distort cash out prices. However, we did not receive any firm evidence or analysis to support these views. We do not agree that the absence of a financial incentive will promote such outcomes since NGGT will still need to procure similar quantities of shrinkage and we have introduced measures to increase transparency through enhanced reporting.

2.83 NGGT provided further clarification on the point about within-day balancing actions on the basis that the comment could mean that our proposals would encourage NGGT to take more within-day shrinkage trades. This means a higher proportion of shrinkage trading could be left to prompt or cash out. However, as

the daily gas shrinkage volumes are relatively small any shrinkage volume left to cash-out could potentially have some impact on overall NTS imbalance over time, but the likelihood is that this would only have a marginal impact on residual balancing actions.

2.84 In our Draft Determination, we said that NGGT is under a statutory duty under section 9 of the Gas Act 1986 to develop and maintain an efficient and economical pipeline system for the conveyance of gas. As part of this we would expect NGGT to – among other things - efficiently procure the energy required for running its network and to procure shrinkage energy through forward markets as appropriate. The change to a reputational incentive does not diminish this obligation and we expect NGGT to continue to act in a prudent manner in its shrinkage procurement activities.

Environmental Action Plan and Annual Environmental Report

Purpose: To ensure that NGGT takes responsibility for the environmental impacts arising from its network and is more transparent in what it is doing to mitigate these.

Benefits: These mechanisms will support cross-sector consistency and greater environmental ambition from the companies to mitigate their impact on the environment.

NGGT's EAP commitments

Output parameter	Final Determination	Draft Determination[35]
EAP commitments	We are accepting all NGGT's EAP commitments (that are not bespoke PCD, ODI or UM) for: Business Carbon Footprint reduction and related initiatives Sustainable resource use, recycling and reducing waste Reducing pollution to the local environment Enhancing biodiversity and natural capital	Same as FD
Measurement	Milestones and metrics as specified in NGGT's EAPs	Same as FD
Performance target	Targets as specified by the licensee in its EAP	Same as FD
Reporting method	Annual Environmental Report	Same as FD
Applied to	NGGT	Same as FD

[35] RIIO-2 Draft Determinations - NGGT Annex paragraphs 2.37 to 2.54

Output parameter	Final Determination	Draft Determination[35]
Licence condition	None	n/a

Final Determination rationale and Draft Determination responses

2.85 We have decided to implement the proposal set out in our Draft Determination.

2.86 The rationale for our Final Determination and our consideration of consultation responses in relation to our overall approach to the Environmental Action Plan is in the Core Document.

2.87 The rationale for our Final Determination and consideration of consultation of responses in relation to NGGT's EAP is summarised below.

Annual environmental report LO

Purpose: To ensure transparent and comparable reporting on the environmental performance of the licensee.

Benefits: To reduce adverse environmental impacts of the gas transmission network and to protect and enhance the natural environment for current and future consumers.

Output parameter	Final Determination	Draft Determination[36]
Licence obligation	Requirement to publish an Annual Environmental Report, showing progress in achieving the licensee's EAP commitments and relevant ODIs, PCDs and UMs. NGGT also to include an annual update on the environmental impact of its network.	Same as FD
Applied to	Cross-sector licence obligation - All ET, GT, and GD companies.	Same as FD
Licence reference	SpC 9.1: Annual Environmental Report	N/A

Final Determination rationale and Draft Determination responses

2.88 We have decided to implement our Draft Determination proposal.

[36] RIIO-2 Draft Determinations - NGGT Annex paragraphs 2.37 to 2.54

2.89 We received two responses concerning this LO's application to NGGT.[37]

2.90 A consumer group welcomed the provision of baseline allowance for initiatives to help reduce NGGT's BCF and resource use while increasing biodiversity and natural capital and welcomed Ofgem's acceptance of many of NGGT's EAP commitments. However, it noted that NGGT's commitment to replacing 30% of its fleet with Electric Vehicles (EVs) seemed significantly lower than NGETs (60%), SHET's (50%) and SPT's (100%). The respondent urged Ofgem to ensure targets are comparable where appropriate.

2.91 One network company stated that treatment of Opex investment relating to the Closely Associated Indirects (CAI) puts at risk delivery of NGGT's environmental commitments.

2.92 In relation to the difference in targets between NGGT and other network companies, we do not consider it appropriate to pursue consistency in the level of ambition. A network company's EAP commitments depend on the circumstances of its specific network. NGGT provided good evidence in its BP that it had tested its EAP commitment, including the level of ambition, with stakeholders and its Enhanced Engagement group. In our view it is appropriate that the companies worked with stakeholders and their Enhanced Engagement group to set the level of ambition that was appropriate to their circumstances. Overall, we are satisfied that NGGT's ambition in relation to EV targets is justified.

2.93 We have updated our Opex CAI allowance to take into account NGGT's environmental commitments - see Chapter 3 for details.

Environmental incentive ODI-F

Purpose: To incentivise NGGT to outperform selected RIIO-2 targets in their Environmental Action Plan (EAP).

Benefits: To further reduce carbon emissions, improve the environment, and reduce resource use for the benefit of existing and future consumers.

[37] Responses to our approach to EAP commitments and AER requirement from all Transmission and Gas Distribution network companies as depicted in the DD core document are summarised in the relevant section in the FD Core Document.

Output parameter	Final determination	Draft Determination[38]
ODI type	Financial	Same as FD
Incentive type	Reward and penalty	Same as FD
Performance measure	Percentage change in following impact areas: • Operational transport emissions • Business mileage emissions • Office and operational waste recycling • Office waste reduction • Office water use reduction • Environmental value of non-operational land • Biodiversity net gain on new network projects	Same as FD
Performance target	Annual reward and penalty thresholds for impact areas a) to g) are set out in Appendix 2	specific performance targets were not included in DD
Incentive value	Incentive is calculated by comparing actual percentage change in each impact area to annual performance reward/penalty thresholds. If outturn is above or below relevant threshold NGGT will receive a reward or a penalty. There will be no penalty or reward if the outturn is between penalty threshold 1 and reward threshold 1. Incentive rates are based on the economic value of change in each impact area calculated at the threshold (see Table 6 for information on economic values used to set incentives). TIM is applied to overall payment.	We consulted on two options for calibrating incentive rates: Economic value of impact Cost plus approach
Cap	Circa £0.22pa in year 1 and £0.38m pa in years 2-5 before TIM is applied. Total for RIIO2: £1.75m	Cap and Collar were not discussed in DD
Collar	Circa -£0.22m pa for year 1 and £-038m pa for years 2-5 before TIM is applied. Total for RIIO-2: £-1.75m	Cap and Collar were not discussed in DD
Reporting method	Annual RRP reporting and Annual Environmental Report	Same as FD
Applied to	NGGT	Same as FD
License condition	SpC 4.3: Environmental scorecard ODI	N/A

[38] RIIO-2 Draft Determinations - NGGT Annex paragraphs 2.55 to 2.58

Table 6: Calibration of incentive rate

Impact area	Calibration of incentive rate
Reduction in operational transport emissions	Non-traded value of carbon, HMT Green Book Supplementary Guidance[39] Nitrogen Oxide (NOx) damage cost, DEFRA Air Quality Damage Guidance Cost Appraisal[40] Particulate Matter damage cost, DEFRA Air Quality Damage Guidance Cost Appraisal
Reduction in business mileage emissions	As above
Operational and office waste that is recycled	Non-traded value of carbon, HMT Green Book Supplementary Guidance Government Landfill tax, HRMC[41]
Reduction in waste created at NGGT offices	As above
Reduction in water use for main offices	Non-traded value of carbon, HMT Green Book Supplementary Guidance
Increase in environmental value of non-operational land	Estimates of natural capital value from NG National Capital Valuation tool[42]
Net gain on all construction projects	To be based on replacement cost plus margin[43]

2.94 See Appendix 2 for the annual reward and penalty thresholds that will apply to NGGT.

Final determination rationale and Draft Determination responses

2.95 We received three responses to our Draft Determination, from a network company, a consumer group and an energy supplier.

2.96 Another network company flagged that although it did not provide direct response to this consultation question and did not review NGGT's BP, its response to NGET's environmental proposal may also be relevant to NGGT's environmental ODI. In its

[39] Valuation of energy use and GHG emissions appraisal: https://www.gov.uk/government/publications/valuation-of-energy-us-and-greenhouse-gas-emissions-for-appraisal
[40] Air quality appraisal: damage cost guidance: https://www.gov.uk/government/publications/assess-the-impact-of-air-quality/air-quality-appraisal-damage-cost-guidance
[41] Environmental taxes, reliefs and schemes for businesses: https://www.gov.uk/green-taxes-and-reliefs/landfill-tax
[42] NGGT shared their internal National Capital Valuation tool. As this has been developed using commercial arrangement, the full tool will not be published. However, NGGT flagged that subject to commercial agreement it will provide information publicly on how this tool provides estimate of natural capital value.
[43] NGGT was not in a position to provide assessment of the cost of such activity and we accepted their proposal to gather evidence in the first year of RIIO-2 and provide such information in due course. Once we are satisfied with NGGT's assessment we will update the value in the respective licence condition using a direction.

response it stated that a financial incentive in this space will benefit existing and future consumers.

2.97 NGGT welcomed our recognition of the consumer benefit of an environmental incentive and accepted the basic design of the incentive. NGGT also provided its views on the changes we proposed to its original incentive design.

2.98 NGGT was concerned that we proposed to split the scorecard ODI into seven mini-ODIs in our Draft Determination. It stated that it preferred one scorecard ODI as it provides a single, relatively large incentive rate to focus the attention of NGGT and stakeholders on the importance of delivering the EAP. NGGT stated that our concern about the size of the incentive rate could be addressed by adjusting the overall incentive rate while preserving the scorecard nature of the ODI.

2.99 NGGT accepted our proposal to reduce the weighting of the elements relating to reduction in office waste, operational waste and water use to a third of the other four metrics, if we were to adopt the single incentive rate as above .

2.100 Following further engagement with NGGT we agree that each element of the ODI-F should be calculated separately, and the total value of the ODI-F will be the total of the individual elements.

2.101 NGGT stated its preferred option is to equate the incentive value to the environmental benefit rather than the abatement cost wherever possible because this means the incentive rate more closely reflects the actual benefits its actions are delivering.

2.102 In relation to the metric around percentage increase in environmental value (the seventh element - Environmental Net Gain) on major construction projects, NGGT stated that this may not be measurable in all years given the timings of major construction project delivery. NGGT asked that this element of the incentive should be drafted within the licence to enable it to be "turned off" in years without major construction projects.

2.103 We acknowledge the fact that NGGT will not have major construction projects every year. We will draft the licence condition so that the value of this element of the incentive will remain zero until the Authority directs otherwise.

2.104 We have further engaged with NGGT on each element of the ODI-F and have decided to take a hybrid approach in relation to setting the incentive value: we

have decided that only one element (Environmental Net Gain) will be calculated using estimated costs plus a margin. We decided that for the other six elements social values were more appropriate.

2.105 The incentive rate for the seventh impact area, biodiversity net gain on new projects, will be based on the replacement cost plus a 10% margin. This is a pragmatic option because of the significant challenges of monetising biodiversity gain, which would include its non-use value, as well as its direct use value.[44]

2.106 An energy supplier stated that it has not been made clear why out-performance of the targets would be of benefit to consumers or goes beyond business-as-usual expectations. It further stated that it is not clear which behaviours beyond those needed to meet baseline targets the incentive is meant to encourage. The supplier thought that a reputational incentive would be more appropriate.

2.107 Although we agree that reputational incentive will lead to change in behaviour it will only incentivise the company to achieve its obligations. The ODI-F in this area was set to encourage NGGT to go beyond their EAP commitment, and thus goes beyond business as usual.

2.108 A consumer group noted that Ofgem's intention to recalibrate the incentive rate appears to ensure that rewards are proportionate to the outcomes and welcomed Ofgem's flexibility in consulting on two options which can be combined to ensure rewards are appropriate and proportionate. The group flagged that its preferred option is to equate the incentive to the economic value of the disbenefit/benefit arising from the performance level in each area as this represent value for consumers.

2.109 The consumer group also noted that Ofgem's proposed changes to the incentive are similar to those proposed for NGET. In relation to Ofgem's proposal to reduce the weight of the 3 metrics relating to waste, recycling and resource use, it flagged that while this does seem appropriate and proportionate it urged Ofgem to ensure that it is satisfied that where financial rewards are available they would not act as a double reward where an activity also reduces operational costs.

[44] Non-use value is the value that is not associated with human use, either direct or indirect, of the environment, its resources, or services. Direct use value includes the ways in which biodiversity is used or consumed by humans eg food provision or carbon sequestration, as well as the way it contributes to well-being of human through recreation, aesthetic appreciation.

Redundant Assets PCD

Purpose: To provide funding for NGGT to decommission network assets that are now redundant.

Benefits: To reduce opex costs and reduce risk of environmental harm, and to ensure allowances are returned to consumers if NGGT does not deliver its decommissioning outputs.

Output parameter	Final Determination	Draft Determination[45]
PCD Type	Evaluative	Same as FD
Summary of Outputs	Decommission 80 redundant assets/asset sites, five customer sites and four compressors[46]	Same as FD
Delivery date(s)	31 March 2026	Same as FD
Totex baseline allowances	£81.92m	£81.80m
Re-opener	No	Same as FD
Reporting method	PCD Report. Annual RRP reporting.	Same as FD
Adjustment mechanism	Ex post review	Same as FD
Companies applied to	NGGT only	Same as FD
Licence obligation	SpC 3.14: Redundant assets PCD	NA

Final Determination rationale and Draft Determination responses

2.110 See Chapter 3 for our Final Determinations decision rationale.

Compressor Emissions PCD

Purpose: To fund development costs for the Compressor Emissions projects that are subject to a UM.

Benefits: To ensure NGGT can go ahead with project development whilst protecting consumers from inefficient expenditure.

[45] RIIO-2 Draft Determinations - NGGT Annex paragraphs 2.37 to 2.54
[46] Compressor decommissioning for legislative emissions compliance

Output parameter	Final Determination	Draft Determination[47]
Type	Evaluative	Same as FD
Output	PCD to ensure NGGT delivers a Final Options Selection Report, long lead items and Reopener submission.	Same as FD.
Delivery date	Wormington: May 2022 King's Lynn: Oct 2022 St Fergus: Dec 2022 Peterborough: Apr 2022	Wormington: Feb 2022 King's Lynn: Sep 2022 St Fergus: Jun 2023 Peterborough: Oct 2024
Totex baseline allowances	£61.80m (see table 11 for individual site allowances)	£37.08m
Re-opener	Yes	Same as FD
Reporting method	PCD Report Annual RRP reporting	Same as FD
Adjustment mechanism	Ex post review	Same as FD
Companies applied to	NGGT	Same as FD
Licence condition	SpC 3.9: Compressor emissions Re-opener and PCD	n/a

Final Determination rationale and Draft Determination responses

2.111 See Chapter 3 for our Final Determinations decision rationale.

Hatton PCD

Purpose: To fund delivery of the Hatton compressor emissions project.

Benefits: To hold NGGT to account for delivering a solution that delivers an appropriate level of compression capability.

Output parameter	Final Determination	Draft Determination
Type	Evaluative	Same as FD
Output	PCD to ensure NGGT deliver emissions compliance at Hatton with a new unit scoped and procured to deliver 41MW mechanical output power.	Delivery of Epsilon option
Delivery date	31 March 2025	31 December 2023
Totex baseline allowances	£74.51m (£5.38m RIIO-GT1, £69.12m RIIO-GT2)	£61.00m (£16.00m RIIO-GT1, £45.00m RIIO-GT2)
Re-opener	No	Same as FD
Reporting method	PCD Report, as well as RRPs	Same as FD

[47] RIIO-2 Draft Determinations - NGGT Annex paragraphs 4.34 to 4.38

Output parameter	Final Determination	Draft Determination
Adjustment mechanism	Ex post review	Same as FD
Companies applied to	NGGT	Same as FD
Licence condition	SpC 3.9: Compressor emissions Re-opener and PCD	n/a

Final Determination rationale and Draft Determination responses

2.112 See Chapter 3 for our Final Determinations decision rationale.

3. Setting baseline allowances

Introduction

3.1 This chapter sets out our Final Determination decisions on allowances for the different cost areas for NGGT in RIIO-GT2. We have set baseline totex allowances for NGGT only where we are satisfied of the need for and certainty of the proposed work, and where there is sufficient certainty of the efficient cost of the work.

3.2 Table 7 below sets out the RIIO-GT2 totex allowances for NGGT, grouped by the main cost categories within the BPDT.

Table 7: NGGT RIIO-GT2 totex components

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Draft Determination corrected for errors (£m)	Final Determination (£m)
Load related capex	11.59	2.74	2.74	2.74
Non-load related capex	898.74	584.71	585.22[48]	711.94
Non-op capex	296.50	74.46	74.46	250.02
Other costs	545.80	233.91	208.06[49]	294.36[50]
Network operating costs	389.51	379.65	379.65	379.65
Indirect costs	518.24	411.10	411.10	475.18
Capitalised opex adjustment	-	-77.17	-16.93[51]	4.03
Ongoing efficiency	-57.92	-50.50	-91.24[52]	-107.61
Total	**2,602.46**	**1,558.90**	**1,553.06**	**2,010.31**

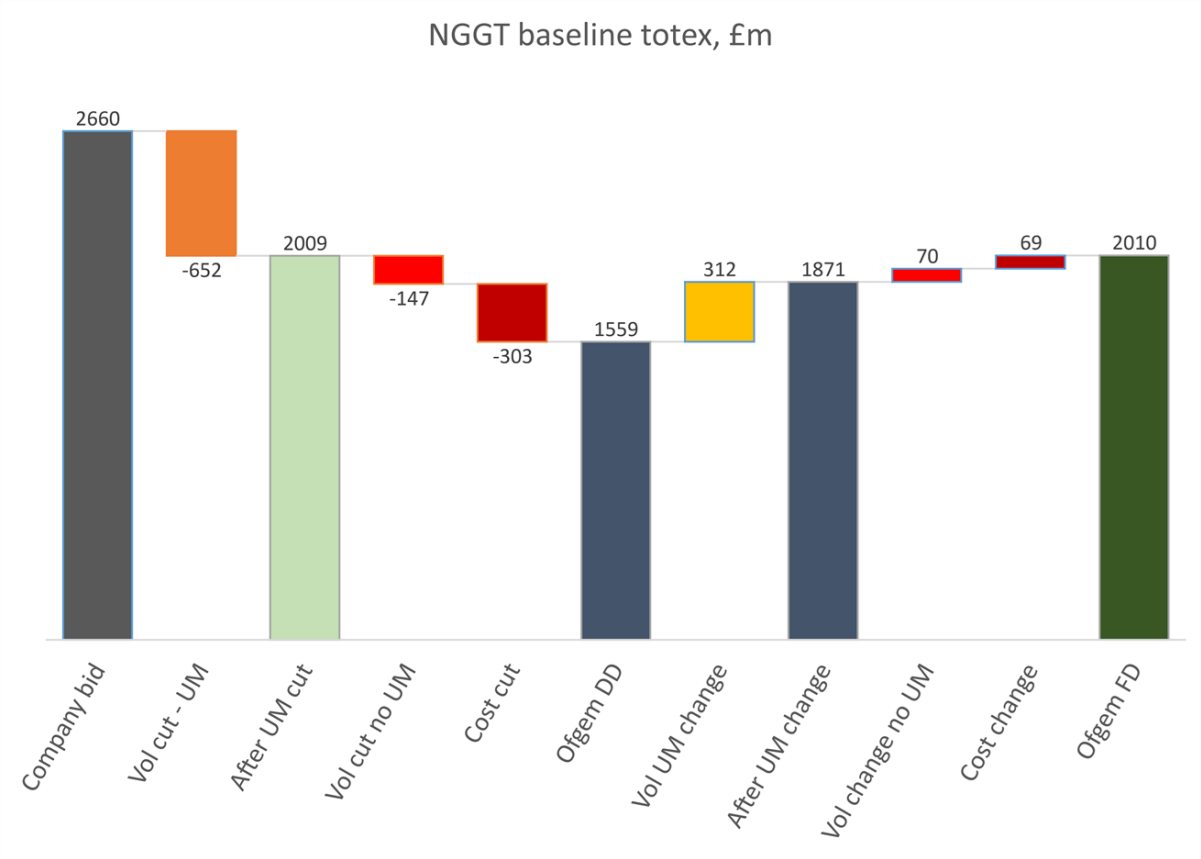
3.3 We have decided to allow £2,010m of NGGT's £2,602m baseline request. Of this baseline allowance, we have decided to tie £687.11m to PCDs, including NARM, to ensure NGGT is held accountable for delivery of its specified outputs and £230.49

[48] Decrease of £0.5m due to correction of minor error in price base.
[49] Cyber IT overstated by £29m due to erroneous inclusion of proposed uncertain costs and Physical security capex understated by £3m due to asset refresh being omitted.
[50] Includes £8.3m for Net Zero and reopener development
[51] Adjustment did not recognise the reduction to opex due to capex already removed from plan.
[52] Incorrect OE adjustment applied to capex.

as a UIOLI allowance. We have also decided to set a number of uncertainty mechanisms to assess further potential expenditure during RIIO-GT2.

3.4 Figure 4 shows how we made adjustments to NGGT's requested baseline funding.

Figure 4: NGGT baseline allowance



3.5 Of the total baseline totex allowance, we determine £1,243.23m to be of high-confidence and £423.30m of lower-confidence. This results in a sharing factor for the Totex Incentive Mechanism of 39%.

3.6 Where we have removed costs that are lower-confidence and poorly justified these costs are subject to a Stage 3 BPI penalty of £12.95m. Further detail of our decision is set out in Chapter 6 and in the Core Document.

3.7 The following sections set out our Final Determination on NGGT's allowances, and any differences from the allowances requested by NGGT in its submissions. These are structured according to Table 8 below.

3.8 The GT Asset Health cost assessment Annex contains our Final Determinations decisions on NGGT's Asset health proposals.

Table 8: Structure of the Setting Baseline Allowances chapter

Totex component	Sub sections	Projects required
Load related capex	Network capability	Blackrod reinforcement
		Changing customer needs
		Tactical access (Tirley AGI)
	Offtakes	
Non-load related capex	Compressor emissions	GT Project Assessment Process
		Hatton
		St Fergus
		Recompression
		Methane Detection and Quantification
	Asset health	See Asset Health Annex
	Other asset health costs	St Fergus subsidence
		Bacton site terminal redevelopment
		King's Lynn subsidence
		Stopples
		GRAID
		Decommissioning
Non-operational capex	IT & Telecoms	N/A
	Strategic spares	Small tools, equipment, plant and machinery
	Non-operational property	N/A
	Vehicle fleet	N/A
Other costs	Physical security	N/A
Network operating costs	Faults	N/A
	Inspection and Maintenance	N/A
	Operational property	N/A
Indirect costs	Business Support Costs	N/A
	Closely Associated Indirects	N/A
	Quarry and Loss	N/A
Assessment of risk	N/A	N/A
Ongoing efficiency	N/A	N/A

3.9 As appropriate, we set out the following for each cost area:

- Description
- Final Determination decision

- Final Determination rationale and consultation responses.

3.10 Where there is significant uncertainty around the scope or timing of work and/or the efficient costs of delivery, we have not provided baseline funding and instead included a number of re-openers to adjust allowances during RIIO-GT2 – See Chapter 4 for full details.

Load related Capex

3.11 LR capex relates to investment to expand current network capacity or connect with new demand sources. NGGT only requested LR capex allowances for the Transmission Owner (TO)[53] business.

Table 9: LR capex RIIO-GT2 allowances

All costs £m 18/19	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)	Associated Uncertainty Mechanism
Entry	-	-	-	Yes
Exit	-	-	-	No
Network capability	11.59	2.74	2.74	No
Offtakes	7.42	7.42	7.42	No
Offtakes (customer contributions)	-7.42	-7.42	-7.42	N/A
Capitalised Opex adjustment	-	-0.30	0.01	N/A
Total	**11.59**	**2.44**	**2.75**	

[53] NGGT acts as both Transmission Owner (TO) and System Operator (SO) for the Gas Transmission sector. In its role as TO, NGGT 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 SO. In its role as SO, NGGT 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.

Network capability

Description

3.12 NGGT proposed to construct a pipeline connecting two feeder pipes to provide additional resilience at the Blackrod offtake. This would increase the ease of network maintenance and reduce the risk of flood damage from a nearby dam.

3.13 NGGT also proposed to install new metering equipment to accurately measure gas flows (changing customer needs), and install additional valves to enable maintenance of the Tirley Above Ground Installation (AGI) without restricting flows from the Milford Haven terminals (tactical access).

Final Determination decision

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)
Blackrod reinforcement	8.85	-	-
Changing customer needs	1.73	1.73	1.73
Tactical access	1.01	1.01	1.01
Total	**11.59**	**2.74**	**2.74**

Final Determination rationale and Draft Determination responses

3.14 We have decided to implement our Draft Determination proposal to reject the Blackrod project due to not agreeing with the justification for the project. We have decided to implement our Draft Determination proposals and set allowances of £1.73m for changing customer needs and £1.0m for tactical access, as no concerns were raised in the consultation responses.

3.15 NGGT disagreed with our proposal to reject the Blackrod Reinforcement project. NGGT's response included a Quantitative Risk Assessment (QRA) which gave an overview of the probability of failure of the associated pipeline and gave an update on mitigation actions taken to date. Cadent also disagreed with Ofgem's proposal to reject this project as it expressed the view that there is a need to increase the resilience of the gas network in the North West of England.

3.16 Our view is NGGT's QRA does not demonstrate that this pipeline carries more risk than European Gas Pipeline Incident Data Group (EGIG) standards of pipeline risk or other parts of the NTS. Therefore, there is not a justifiable need case for intervention both from an objective and comparative perspective.

3.17 Additionally, no concerns have been raised around the condition of the existing pipeline, and improvement work for Heapey Dam is expected to be completed by 2021, mitigating one of the major risks NGGT cited in its initial needs case.

3.18 We also have concerns about the Cost Benefit Analysis (CBA) and QRA NGGT submitted, specifically:

- We disagree with the 10 days per year NGGT has assumed a transmission pipeline failure would have significant impact as flows are forecast to reduce between now and 2049, the expected operating life of the pipeline
- We disagree with NGGT's assumptions used for outage lengths in its CBA.

3.19 We therefore do not consider there to be a need for investment to improve the resilience of this pipeline given the above points and have made £8.85m of workload reductions to the baseline request for network capability.

Offtakes

Description

3.20 NGGT will incur costs to complete customer connection projects which began in RIIO-GT1. These costs are funded in full by customer contributions.

Final Determination decision

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)
Offtakes	7.42	7.42	7.42
(customer contributions)	(7.42)	(7.42)	(7.42)

Final Determination rationale and Draft Determination responses

3.21 We are adopting our Draft Determination position and setting an allowance for £7.42m, as supported by the only consultation response from NGGT. As these

costs are customer funded, we have excluded them from the BPI and sharing factor calculation.

Non-load related capex

3.22 This section sets out our Final Determination decisions on non-load related (NLR) capex. These are costs associated with the replacement or refurbishment of assets, which are either at the end of their useful life due to their condition or need to be replaced on safety or environmental grounds. NGGT only proposed NLR capex costs for the TO business.

Table 10: NLR capex RIIO-GT2 allowances

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)
Compressor Emissions	145.54	85.19	135.39
Asset Health	616.11	389.68	456.24
Other Asset Health costs	137.09	109.84	120.31
Capitalised Opex adjustment	-	-67.20	3.11
Total	898.74	517.51	715.05

Compressor Emissions

Final determination

3.23 NGGT proposed five major projects under Compressor Emissions:

- Hatton compressors
- St Fergus compressors and subsidence[54]
- Wormington compressors
- King's Lynn compressors
- Peterborough and Huntingdon compressors.

[54] At Draft Determination we proposed to include subsidence costs as part of the compressor assessment process.

3.24 Our Final Determination for each compressor project, recompression and methane detection costs is presented below.

Table 11: Compressor Emissions allowances

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)
Hatton compressors	55.13	45.00	69.12
St Fergus compressors and subsidence	5.15	15.69	21.22
Wormington compressors	78.49	7.92	15.20
King's Lynn compressors	0.75	8.30	15.20
Peterborough and Huntingdon compressors	0.75	5.18	10.20
Recompression	4.33	2.16	3.52
Methane detection	0.94	0.94	0.94

3.25 We have presented our Final Determination rationale for development costs as part of the GT PAP section below. Separately, we also consider specific consultation responses for Hatton, St Fergus, Recompression and methane detection.

3.26 We have decided to implement our Draft Determination view that Wormington should be funded via a UM rather than baseline.

Gas Transmission Project Assessment Process (GT PAP)

Summary of Draft Determination position

3.27 In our Draft Determination we set out our approach for reviewing major GT compressor and major asset health projects that aligned with NGGT's own ND500 project process. We also proposed project allowances for development costs.

3.28 Rather than a single re-opener window covering a project in full, we proposed to use a two-step process whereby we would review an Options Selection report early in the price control and a cost submission once a project had gone through a full Front End Engineering and Design (FEED) and tender process.

3.29 For each site assessed using this approach we proposed to provide a baseline allowance to cover development costs and deposits on long-lead items[55], subject to a true-up during the associated re-opener.

Final Determination rationale and Draft Determination responses

3.30 NGGT agreed with our overall approach, including having a true-up for long lead item deposits but proposed ex-ante allowances instead of a true-up of development costs.

3.31 We have considered the additional information that NGGT submitted, however these costs have been built up using a single tendered data source as validation. We still consider there to be uncertainty associated with the costs of delivering this work efficiently. Additionally, we believe there is potential for changes in scope for these projects during the development phase. Given we do not agree with a number of NGGT's current preferred options, we consider it appropriate to adopt our Draft Determination view that these costs should be subject to true-up.

3.32 NGGT also provided an updated view on development costs based on a recent project. The costs were built on a bottom-up basis using the forecast duration of a project and resources required to deliver it, along with an updated view on when the submission windows for each project should fall.

3.33 We assessed these costs and have decided to make one adjustment to the contractor rates NGGT proposed in line with our Hatton assessment. Overall, the additional information submitted has led to an increase in funding baseline funding for the Compressor Emissions, Bacton redevelopment and King's Lynn subsidence projects. Our funding decision is set out in relevant section for each project in this chapter.

3.34 One stakeholder agreed with our process and gave the view that the GT PAP aligns with its own experience of managing projects of this type.

3.35 Three other respondents broadly agreed that our approach should deliver better results than the RIIO-T1 re-opener process for compressor emissions and major asset health projects, with one suggesting that indicative dates may be more

[55] Equipment which needs to be ordered in advance, eg compressor units

appropriate than fixed dates for the reopener windows, to account for changes during the development process.

3.36 We agree with stakeholders' view that flexibility is required with the re-opener windows and have decided to include the ability to direct a change to the reopener window in the licence. Our view is that this strikes the right balance between flexibility and certainty of times to ensure effective resource planning.

3.37 In its response, NGGT also provided an updated view of re-opener window timings which we have decided to accept. Some of the new submission windows provided by NGGT fall within the final year of the RIIO-T2 price control. These will fall during the assessment period for the RIIO-T3 BP. Following our assessment of these re-openers we will determine the total project cost, including the costs incurred to date within RIIO-T2[56] and forecast RIIO-T3[57] costs.

3.38 Given unanimous stakeholder support, our Final Determination decision is to use the GT PAP to assess the following compressor and major asset health projects[58]:

- St Fergus compressors and subsidence
- Wormington compressors
- King's Lynn compressors
- Peterborough and Huntingdon compressors
- Bacton terminal site
- King's Lynn subsidence.

Hatton

Description

3.39 Hatton compressor station is one of the highest utilisation sites on the National Transmission System (NTS) and supports flows from the North Sea gas terminals to major demand centres in the South East of England.

3.40 The site has three Industrial Emissions Directive (IED)[59] on-compliant compressor units, two of which must be decommissioned by 31/12/2023, and one of which is

[56] Directed through the Annual Iteration Process or RIIO-T2 close-out.
[57] Costs will either be included in our RIIO-T3 Final Determination or directed through the Annual Iteration Process
[58] Our decision on Major asset health project allowances is included within the Other Asset Health section.
[59] Industrial Emissions Directive

allowed to operate up to 500 hours per year under derogation. NGGT has proposed to build a single new compressor unit to provide resilience for the remaining electric variable speed drive compressor.

Summary of Draft Determination position

3.41 We gave an initial placeholder view for Hatton of a £60m baseline allowance across RIIO-T1 and RIIO-T2 (in line with the proposals from our 2019 Needs Case Assessment).

3.42 At the time of our Draft Determination, we were still awaiting additional information from NGGT on an updated cost and build approach and said we would assess these proposals for our Final Determination.

Final Determination rationale and consultation responses

3.43 NGGT submitted updated Engineering Justification Papers (EJPs) for Hatton in March, May and August 2020, with an updated funding request of £80.00m.

3.44 We assessed the updated EJPs for Hatton and requested additional information that gave a detailed bottom-up view of costs.

3.45 We assessed this breakdown of costs, along with the risk register for the site, and gave an initial view to NGGT of £66.57m.

3.46 We also proposed that NGGT should be responsible for any costs incurred as a result of ensuring 1-in-20 compliance is met in the event that the Hatton project is not completed by the 31/12/2023 LCP compliance deadline.

3.47 NGGT responded to our proposals on Hatton with an updated view of costs of £81.108m, and provided additional supporting information on risk, contractor rates and construction costs.

3.48 We have reached an overall view of £74.51m allowance for this project, with £5.38m in RIIO-T1[60] and £69.12m in RIIO-T2.

[60] We intend to adjust NGGT's RIIO-T1 allowance as part of RIIO-1 close-out.

Our Cost Assessment

3.49 We reviewed the additional information and made adjustments to uplift rates, assumptions about construction costs, risk allocation and estimated costs.

3.50 As NGGT is still engaging in a commercial tendering process and full details of the cost estimate are confidential, full details of our assessment are set out in our confidential Hatton Cost Book annex.

3.51 The main outcomes of our assessment were:

- We updated our view on Engineering Procurement Contractor (EPC) fees
- We allowed an uplift on construction costs to account for the relative size of the new unit to be installed at the site
- We adjusted costs that did not come from a clear tendered source, in line with our asset health assessment.

Risk

3.52 We have decided to allow NGGT's P50[61] view on risk, as this gave an overall allocation of 8.884%, which we considered to be reasonable for this type of project.

Contracting Costs

3.53 NGGT has proposed that due to the current projected commissioning date for Hatton falling after the IED compliance date of 31/12/2023, a turn-up supply contract may be required to ensure 1-in-20 compliance is met whilst the site has lower overall resilience.

3.54 NGGT has forecast costs in the range of £7m per annum for such contracts and has proposed these be handled as pass-through costs or an Uncertainty Mechanism.

3.55 NGGT claims that these costs have arisen due to the efficient decision to delay the solution until there was greater certainty around the solution and cost. It also claims that these costs are due to Ofgem's decision not to accept NGGT's funding requests.

[61] P50 risk is a level of monetised risk that represents a 50% probability of being equalled or exceeded by actual risks realised.

3.56 For each submission during RIIO-T1[62] NGGT requested baseline funding for a specific solution, we determined that either further certainty was needed or decided that NGGT had not fully considered relevant options. Therefore, we disagree with NGGT's claim that it efficiently delayed this project.

3.57 Our view is that delays to the Hatton project are due to NGGT's failure to secure regulatory funding via the RIIO-1 reopener process, specifically due to deficiencies in its options development and tendering process.

3.58 As such, we view that NGGT should be responsible for any turn-up contracts required to ensure 1-in-20 compliance.

St Fergus

Description

3.59 St Fergus compressor station is the highest utilisation site on the NTS and brings gas from the North Sea Midstream Partnership (NSMP) sub-terminal up to NTS pressure.

3.60 The site has four Rolls Royce Avon compressor units that do not meet the requirements of the Medium Combustion Plants (MCP) directive[63], as such these will need to cease operation or face limited operating hours from 2030.

Summary of Draft Determination position

3.61 We agreed on the need for NGGT to develop its options for emissions compliance at St Fergus, and we proposed to provide a baseline allowance for this options selection process. We also stated that we were considering the issue of who should pay for compressor capital costs at St Fergus given that the assets provide compression to NTS pressures for the NSMP terminal only.

3.62 We proposed to combine a £4m request from NGGT to address subsidence issues at the site with the overall St Fergus UM, which already included £6m for subsidence costs.

[62] Ofgem 2015 IED reopener decision letter, Ofgem 2018 IED reopener decision, and St. Fergus and Hatton - Ofgem decision
[63] Medium Combustion Plants Directive

Final Determination rationale and Draft Determination responses

3.63 We have updated our views on the level of funding for development costs at St Fergus, as outlined in the GT PAP section.

3.64 We have had constructive engagement with NGGT to discuss the issue of who pays for compressor capital works at St Fergus. We expect NGGT to take reasonable steps within its powers to ensure that an appropriate solution representing a fair balance between consumers and terminal users is in place before an application under the St Fergus reopener mechanism is submitted to Ofgem. As part of this process we expect NGGT to consider a range of solutions including putting forward and progressing a modification to the UNC charging provisions. We intend to review NGGT's progress on a regular basis following Final Determinations.

3.65 We are maintaining our Draft Determination position that the £4m request for St Fergus subsidence costs should be included in the UM for the site.

Recompression

Description

3.66 NGGT requested to install two new recompression units at the Pipeline Maintenance Centre (PMC). The site has historically operated on three recompression units, one of which is no longer operational.

Summary of Draft Determination position

3.67 We stated that there was no justification to increase the number of recompression units to four and proposed an allowance of £2.16m – half the requested amount – to bring the total number of units back up to three.

Final Determination rationale and Draft Determination responses

3.68 NGGT provided full EJP and CBA supporting documents for this project as part of its response.

3.69 NGGT's response provided additional supporting material for increasing the number of units to four, and that this could be done for a lower cost than provided in the initial BP submission.

3.70 We accept NGGT's additional justification. We agree with the CBA and NGGT's explanation of the improved functionality that the new units enable, particularly given this project contributes towards NGGT's goal of reducing methane venting from planned maintenance outages.

3.71 We accept the Original Equipment Manufacturer (OEM) quotes provided by NGGT and have decided to allow the updated view of costs in full.

Methane detection and quantification

Description

3.72 NGGT requested £0.94m to rollout the RIIO-GT1 innovation project called Monitoring of Real-time Fugitive Emissions (MoRFE) to establish baseline methane emissions levels at compressor stations.

Final Determination rationale and Draft Determination responses

3.73 We are maintaining our Draft Determination position and setting an allowance for £0.94m, as supported by the one consultation response we received from NGGT.

Asset Health

Final Determination decision

Table 12: Asset health allowances

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)	Applicable UM
Valves	63.15	50.83	54.13	Yes – in part[64]
Compressor	113.69	69.51	82.65	No
Pipelines	143.53	112.13	155.91	No
Plant & Equipment	156.44	82.28	84.00	Yes – all UIDs
Civils	79.54	39.97	40.80	No
Electrical	28.48	20.58	24.07	No

[64] We have moved NGGT's proposal to replace the valve actuators at St Fergus to within the scope of the asset health re-opener, the scope of this is limited insofar as it for the final solution to address the defects associated with the actuating gas ring main.

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)	Applicable UM
Cab Infrastructure	31.29	14.38	14.67	Yes – all UIDs

Table 13: Asset health cost movements between Draft and Final Determination

Cost category	Final Determination baseline movements (£m)
Draft Determination Baseline	389.68
Allowed volumes	52.82
Allowed costs	15.36
St Fergus actuators	-0.57
Civils	-
Profiling of re-opener costs[65]	-1.06
FD Baseline	456.24

Final Determination rationale and Draft Determination responses

3.74 We received three responses to our proposed allowances for Asset Health. Stakeholders who responded raised concerns about the level of divergence in Ofgem and NGGT's views, and whether the level of cost reductions would ultimately lead to increased costs to network users. One respondent considered our Draft Determination did not demonstrate that we had considered asset performance during RIIO-2 but recognised these may need to be dealt with through uncertainty mechanisms.

3.75 NGGT's response challenged our proposals in terms of both allowed volumes and costs. These challenges were backed up by additional information and evidence. Where NGGT did not agree with our proposed cost or workload reductions it provided further evidence where it was able to do so. It provided clarifications where it did not accept our interpretation of the data and proposed corrections where it identified errors in its own data or Ofgem's calculations.

[65] At DD we had not adjusted the allowance profile to recognise the baseline allowance element was for years 1-3 and the UM element was years 4-5. We have now removed the final 2 years of costs, and fund 60% of the total request, minus any volume adjustments and a cost adjustment at the overall level of reduction across the wider plan. This results in a reduction in baseline allowances of £1.063m at FD compared with DD.

3.76 Within its response, NGGT also submitted justification for additional work over and above the original BP submission. The scope of this work is to address the condition of the actuating gas ring main at St Fergus (at a cost of £15.49m).

3.77 NGGT agreed with our proposal to move Plant & Equipment and Cabs project themes to an uncertainty mechanism. NGGT also proposed to extend the scope of the UM to include elements of the Civils project theme - seeking to secure ex-ante funding to assess the condition of the asset and provide justification for the workload through the re-opener.

Allowed Volumes

3.78 We engaged Atkins, our engineering consultants, to undertake a further review of the additional volume evidence presented by NGGT. We have considered Atkins' report and have decided to accept all of its recommendations. Details of our assessment approach can be found in the Asset Health Engineering Annex, which is published alongside this document.

3.79 Atkins was unable to form a view on the proposed gas generator overhaul at Carnforth, as the justification was based on its ability to provide resilience to other sites on the NTS. In response to this, Ofgem assessed the information and we have decided to allow this overhaul, as the refurbishment of this compressor unit provides resilience for Hatton, a site at which a new Compressor is to be installed and commissioned in RIIO-GT2.

3.80 A summary of the areas in which we have changed our Draft Determination position based on Atkins recommendations and decided to allow NGGT's proposed volumes is set out below:

- The treatment of drainage tanks and bunds, monitoring of structural integrity assets
- Compressor train breakdown budget
- RB211 gas generator overhauls
- UPS and DC chargers
- Cathodic protection and ILI digs
- CIPS for capital refurbishment
- Nitrogen sleeve remediation
- PSSR inspections
- Vent and sealant line refurbishment.

3.81 We also changed position from our Draft Determination in relation to Lockerley compressors. However, we do not agree with the need to undertake the full suite of work on both units and therefore have decided to allow NGGT's proposed refurbishment on one unit in full, but a scaled back refurbishment on the second. This is because the first refurbishment will release spares for the second unit and this balance between new and existing equipment is appropriate for the expected runtime of the units at the site.

3.82 At Draft Determination we proposed removing £106.55m of costs due to workload reductions, NGGT's response proposed to reinstate £55.89m of workload volume. Having considered NGGT's evidence as outlined above we have decided to increase baseline asset health allowance from Draft Determination by £52.82m.

Allowed Costs

3.83 Ofgem considered each of the 58 additional evidence files provided by NGGT. We either accepted NGGTs additional evidence in full, accepted in part or rejected it based on our detailed assessment. The detailed response to each of these challenges can be found in our Asset Health Technical Annex with a summary of our position outlined below.

3.84 We have decided to accept NGGT's additional evidence in full for the following costs:

- ILI and CP Digs
- Site lighting external column major refurbishments.

3.85 We have decided to accept NGGT's additional evidence in part and have updated our view of costs from our DD position for:

- Power turbine overhaul GE HSPT
- Gas generators – generic
- Mopico motor compressor replacement (refurbishment)[66]
- Inline inspections
- Cathodic protection – remote monitoring
- Nitrogen sleeve grouting
- Valve replacement

[66] The scope of this intervention type has changed from replacement to refurbishment between Draft Determinations and Final Determinations

- St Fergus Actuators[67]
- Re-lifing of pipe supports and pits at compressor sites – hydro demolition
- Remove chamber walls, inspect and backfill
- Remove frame and cover, inspect and backfill.

3.86 We have decided to reject NGGT's additional evidence and maintain our DD position for:

- Gas generator Overhauls – Rolls Royce Avons
- Replacement of existing transformer rectifiers
- Vent and sealant line replacement.

3.87 At Draft Determinations we removed £45.89m of costs that we considered to be unjustified and NGGT's response proposed to reinstate £39.30m of these costs. Having considered NGGT's evidence as outlined above we have decided to increase baseline asset health allowance from Draft Determinations by £15.36m.

Our assessment approach

3.88 In its response to our Draft Determination, NGGT questioned aspects of our overall approach to cost assessment, our responses to which are detailed below.

Maintaining network monetised risk

3.89 In its response, NGGT raised concerns that our proposed reduction to its workload would result in an increase in network risk, thereby ignoring the basis of its plan - to maintain a level of network risks supported by its stakeholders. It highlighted the consequence of increased risk on the network being a higher risk of constraints, limiting the ability of its customers to bring gas on and off the network where and when they want.

3.90 We set out in SSMD our expectation and guidance for network companies to use network asset risk metric (NARM) alongside engineering judgement and CBA in a toolbox approach to justifying and assessing their proposed investments and preferences for chosen strategies.

3.91 NGGT's investment plan was built using observed defects and asset condition data as the basis to generate a worklist of items that needed to be repaired or replaced

[67] We have included this within the scope of the Asset Health re-opener.

during RIIO-T2. It then produced the NARM profiles to check that the plan was in line with its intention to maintain network risk at the same level at the end of RIIO-2 as it is at the start of the period and presented these in its EJP's and CBA's.

3.92 We acknowledge the usefulness of NARM as a decision support tool, however, recognise limitations remain as the work to calibrate the mechanism is still ongoing and therefore the impact of increasing or decreasing network risk is not yet fully understood.

3.93 We used independent engineering consultants to undertake a detailed review of NGGT's plan and they assessed the technical methodologies used in deriving the proposed workload in RIIO-T2.

3.94 Stakeholder engagement is a key aspect of RIIO-2 and has provided valuable input, however, on its own cannot replace the need to undertake an in depth review of highly technical areas such as asset health to ensure company proposals are justified and efficient.

3.95 Based on the above considerations, we have decided to our assessment approach to set funding for asset health work is in the best interests of consumers.

Legislative Requirements

3.96 NGGT raised concerns that the asset health allowances in our Draft Determination only allows it to deliver 83% of its legislative requirements but recognises that we are proposing uncertainty mechanisms relevant to this area of spend. NGGT has presented no specific information to demonstrate this shortfall. Where NGGT has presented additional justification for its proposed volumes, we have assessed this information and updated our view for our Final Determination.

Increased efficiency challenge

3.97 NGGT consider that our assessment methodology amounts to an increased efficiency challenge. Where we have accepted NGGT’s cost evidence we have assessed and adjusted costs in line with the evidence to form a view of the true cost of carrying out the proposed work. We have challenged NGGT’s cost builds and removed costs that were unjustified to reach a view of the true baseline unit cost for the purposes of setting allowances. We consider NGGT could and should have scrutinised the information contained within its submission further and presented ‘clean’ data in support of its costs. Therefore, our assessment simply

establishes the cost of delivering work based on the information provided by NGGT, it does not apply a further efficiency challenge as claimed.

Extrapolation of our cost assessment

3.98 NGGT stated we should not have extrapolated out cost adjustments across the wider plan. It considered our approach unjustified and disproportionate, stating we should only have adjusted these costs where we had specific information to do so. We consider that this was a proportionate adjustment, targeted within each project theme, backed up by regulatory precedent in RIIO-T1 and an approach that was agreed with NGGT prior to Draft Determinations. We consider our approach to be proportionate given the materiality of these costs was in the region of £180m. As we identified errors and inaccuracies in the information submitted in support of the other costs, we consider that these anomalies will most likely broadly exist across the plan. As part of our ongoing engagement with NGGT, we articulated our proposed approach and offered NGGT the opportunity to propose alternative methods to treat these unjustified costs, it chose not to do so and agreed with our approach.

3.99 NGGT claimed Ofgem should not scrutinise asset health costs <£1m as we do not scrutinise IT costs <£1m in the same way. The overall materiality of both sets of costs are quite different and Ofgem consider that it is justified and proportionate to apply our extrapolated cost adjustment to these costs on that basis.

Benchmarking

3.100 NGGT responded highlighting its efforts to obtain benchmarking data in support of its submission and the difficulties it faced obtaining like for like data. Ofgem recognises the difficulties presented by the lack of comparators and NGGT presented its attempts to secure meaningful benchmarking information to us.

3.101 We would encourage NGGT's continued efforts in this area, in particular to resolve and issues collecting comparable data, as we consider there are work elements undertaken by NGGT, particularly around civils and general construction that should be comparable across industry and for which it should be possible to benchmark costs.

Ongoing Reporting

3.102 Given the lack of historical volume information for RIIO-T1, our assessment has been largely dependent on NGGT providing cost data for its most material areas of

spend. Much of this was subsequent to the main BP submission and some of it was subject to several iterations during our assessment of the BP. We recognise the efforts NGGT has made to provide this information, but in many areas the sample sizes were low, variation in costs significant and the quality of underlying data questionable. NGGT has highlighted some of the difficulties in providing this data in its response, such as the diversity in work mix, local environmental conditions such as corrosion, depth and remoteness, and the age of the asset base creating uncertainty in cost estimation.

3.103 Ofgem recognise the diversity of work mix, specifically that technology types and environmental factors can generate uncertainty in unit costs. This situation is not unique to NGGT and Ofgem do not consider this should present an insurmountable barrier to developing meaningful unit costs.

3.104 Ofgem also recognise the challenges of an aging asset base and again these challenges are not unique to NGGT. Where emerging issues are identified we expect NGGT, as an efficient operator, to fully quantify the problem and make best endeavours to deliver efficient solutions based on the evidence available, prioritising their asset interventions accordingly.

3.105 Our independent consultants Faithful+Gould carried out a review of our asset health unit cost assessment. The review highlighted shortcomings in the data provided by NGGT and supported our proposed cost adjustments.

3.106 NGGT's primary method of justifying asset health unit costs (£616m) was to provide outturn data from historical works. However, our analysis found that, of the £422m spent to date on asset health work in RIIO-1, NGGT was able to capture only 22.4% of these costs (£94m) to justify its RIIO-2 plan.

3.107 NGGT argues that it does not hold this data for two reasons:

- Because it was not a regulatory reporting requirement
- Because significant amounts of asset health works are bundled into more efficient programmes of work which cover multiple assets (eg valves)
- Therefore, NGGT claims it is unable to disentangle the costs for specific assets.

3.108 We consider that NGGT should as an economic and efficient operator have been capturing the vast majority of costs, not for regulatory reporting purposes, but for

its own performance records. We also consider that where NGGT knew it was carrying out a programme of works it should have ensured that appropriate internal reporting was in place to capture the costs of individual items of work.

3.109 We note the positive engagement that we have had with NGGT during our assessment of its BP. Going forward we require NGGT to commit to developing unit costs and we intend to engage constructively in the development of ongoing reporting to ensure meaningful unit costs are captured to monitor NGGT's efficient delivery of its work volumes in the RIIO-T2 BP. We expect this reporting to include well defined intervention types as well as asset data and drivers of cost where appropriate.

St Fergus

3.110 NGGT presented an additional £15.47m programme of work in its response to our Draft Determinations, driven by the condition of the actuating gas ring main at St Fergus. It provided a short engineering justification paper (EJP) which included a high-level options assessment and an updated unit cost paper seeking a significantly increased unit cost allowance. This increased cost was based on the constraints of operating on a COMAH (Control of Major Accident Hazard)[68] site and a preferred option to install a different actuator technology than commonly in use to remove the gas ring main altogether.

3.111 In assessing this proposal we were unable to ascertain with any certainty whether the most efficient option was being pursued, as the EJP presented only a high level options assessment and there was no CBA demonstrating the lifetime benefit of the chosen option against others.

3.112 Furthermore, we were unable to assess whether the costs and volumes presented were efficient. Specifically:

- there was no comparison of the various actuator technology costs to justify the significantly increased unit cost. NGGT requested an allowance for Electro-hydraulic actuators, however we found that the associated sanction paper is for a mix of both Electro-hydraulic and Electric actuators. Based on NGGT's submission Electric actuators are significantly cheaper and therefore we have concern that NGGT's proposed work mix is incorrect

[68] The Control of Major Accident Hazards (COMAH) regulations see -https://www.hse.gov.uk/comah/

- there was no attempt to quantify the uplift required as a result of working in a constrained environment on a COMAH site. There was no attempt to quantify the uplift required as a result of working in a constrained environment on a COMAH site or how the project would be implemented given these constraints
- there were inconsistencies in NGGT's submission insofar as the proposed volume quoted in the EJP did not match the unit cost paper
- the breakdown of proposed volumes of locally actuated, process, and remote isolation valve actuators did not match the expected population for the site.

3.113 In addition to the above, information provided by NGGT on the progress in managing corrosion issues at St Fergus also shows a number of assets that are scheduled to be removed from service in December 2020, yet there is no indication whether these have been excluded from the submitted volume. Additionally, there is nothing in its submission to indicate that opportunities to decommission assets or reconfigure the existing layout to reduce the volume of work required have been considered.

3.114 There are also questions surrounding the future of Plant 2[69] and we would expect NGGT to demonstrate it has considered this in its investment plan. Nothing in its submission indicates that the uncertainty surrounding the future of Plant 2 has been factoring into the proposal and we therefore consider there may be a risk of stranded assets in the near term.

3.115 Based on the limited information provided and the uncertainty around what level of work is required, we were unable to properly assess this proposal and have decided we cannot provide baseline funding for this work. We do, however, agree with the need to efficiently address the defects associated with the actuating gas ring main and the associated risk of failure and have decided that there should be scope within the Asset Health re-opener to address this issue.

3.116 We recognise that remediation of defects on the gas ring main would fall within the scope of the asset health re-opener, however, replacement of the valve actuators to achieve this would not. NGGT has identified the gas ring main as a single point of failure (SPOF) and have indicated it has no means to isolate this asset without a site wide outage. It has therefore identified replacement of the

[69] The area housing two RB211 and one Avon compressor at St Fergus.

actuators to remove the need for the actuating gas ring main altogether, thus eliminating the SPOF and associated defects.

3.117 In view of these specific circumstances we have decided to include the remediation of the defects associated with the gas ring main at St Fergus specifically within the scope of the asset health re-opener subject to:

- NGGT justifying the driver for this investment
- NGGT demonstrating the most economic and efficient option is taken forward
- incurred costs being subject to ex-post efficiency review at the re-opener window
- both outturn and forecast costs being fully and accurately justified, particularly deviations from T2 baseline unit costs, and costs of interventions on specific assets should be clearly identified
- granularity of volume reporting being such that (should it form the final option selected) installed actuator technology across the valve population on site is recorded and reported, as well as any assets removed from service
- to protect consumers, we will assess outputs to be delivered as part of the re-opener process.

3.118 We will work with NGGT following Final Determinations to establish the status of this project and consider the appropriate assessment approach which may align with the GT Project Assessment Process.

3.119 Our decision to include the costs associated with actuator replacement at St Fergus in the Asset Health re-opener results in a decrease in allowances of £0.545m for the 11 actuator replacements allowed in our Draft Determination. These have been removed and will be assessed as part of the Asset Health re-opener submission.

Civils

3.120 NGGT's response disagreed with our proposal to reduce allowances for security & fencing, access and buildings (specifically the interventions associated with security - fences & gates and site access roads & paths) within the civils project theme. NGGT stated the proposed level of funding would lead to increases in security and safety risks.

3.121 Our view is that our Draft Determination position adequately funded NGGT to deliver proactive re-lifing for security & fencing, access and buildings.

3.122 NGGT has not provided evidence to support its claim that asset replacement is the only intervention option available or that our proposed allowances are not sufficient for it to manage its asset base. Therefore, our decision is to allow funding based on a re-lifing approach which allows NGGT to address its worst condition assets and manage the deterioration of its asset base.

3.123 Given NGGT has only provided unit cost information for replacement rather than re-lifing, we adjusted the work volume rather than the unit cost to reflect the costs presented in option 2 of NGGT's CBA.

3.124 Additionally, NGGT has proposed to include these two interventions in the scope of the asset health re-opener. NGGT has requested this as a volume-only re-opener for simplicity, given we did not make any cost adjustments in our Draft Determination.

3.125 We have reviewed the case for including these intervention types within the scope of the asset health re-opener and consider NGGT's proposal has several shortcomings:

- Given NGGT intend to capture site information at a more granular level, a volume only reopener is not justified given the corresponding unit costs will change
- NGGT has claimed an increasingly clear picture of the work required on the network compared to December but has provided no evidence of this in support of its re-opener proposal
- NGGT intend to use the baseline level of funding on preconstruction works stating these can be reasonably estimated but has provided no quantification of these costs to demonstrate current allowance levels are appropriate.

3.126 For these reasons we consider NGGT's proposal to include these interventions in the asset health re-opener to be incomplete. Furthermore, we consider NGGT should have had the information prior to submission of its BP in December 2019 as NGGT should have a good understanding of the condition of its asset base through ongoing inspections and maintenance.

3.127 We do not consider NGGT has demonstrated the needs case for a UM for civils work and we have decided to implement our Draft Determination proposal on the level of baseline allowance within the security & fences, access and buildings sub-theme of £5.33m. We do not consider NGGT has demonstrated the needs case for

a UM for civils work and we have decided to implement our Draft Determination proposal on the level of baseline allowance within the security & fences, access and buildings sub-theme of £5.33m.

Asset health – non-lead assets

Description

3.128 The majority of NGGT's asset health plan is covered by NARM – work that is necessary to maintain the safety and reliability of the network. The remainder is other work such as cab infrastructure and civils investment, which is necessary for the protection of and safe access to operational network assets. The table below details the non-lead assets allowance, details of the PCD are included in Chapter 2.

Final Determination decision

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)
Asset health – non-lead assets	105.58	48.07	48.90

Final Determination rationale and Draft Determination responses

3.129 We received one response, from NGGT, to our proposals relating to asset health – non lead assets. In its BP NGGT submitted a PCD in this area and its response acknowledged our Draft Determination proposal to measure the PCD at an intervention type level rather than a site level was appropriate. We have therefore decided to proceed with our Draft Determination proposal but have updated costs to reflect Final Determination adjustments to unit cost allowances.

Other asset health costs

3.130 NGGT submitted a number of specific Asset Health projects within its BP, which we assessed individually. Our decisions on allowances are set out in table 14 below.

Table 14: Other asset health costs RIIO-GT2 allowances

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)
St. Fergus subsidence[70]	4.00	-	-
Bacton site terminal redevelopment	4.71	6.97	10.82
King's Lynn subsidence	1.05	1.05	1.19
Stopples	10.00	10.00	10.00
GRAID	18.30	10.02	16.38
Decommissioning	99.03	81.80	81.92
Total	**137.09**	**109.84**	**120.31**

Bacton site terminal redevelopment

Description

3.131 The Bacton terminal was constructed in 1970 and brings in flows from a number of North Sea gas fields, as well as hosting interconnectors to the Netherlands and Belgium. Due to the age of the site and its coastal location, NGGT has encountered issues operating the equipment at the site and has undertaken a significant program of asset replacement during the RIIO-T1 price control.

3.132 NGGT has conducted a needs case review at the site which considered the following options:

- Like-for-like asset health: Replacing all equipment on site on a like-for-like basis
- Downsized asset health: Decommission varying numbers of incomers in line with falling gas flows and continue maintenance on a reduced footprint
- New build: A new like-for-like terminal that maintains existing capacity on an unused area of the terminal

3.133 NGGT's preferred option is a new like-for-like terminal on a brownfield site.

[70] St Fergus subsidence costs are covered as part of the St Fergus Compressor Emissions section.

Final Determination decision

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)
Bacton site terminal redevelopment	4.71	6.97	10.82

3.134 For details of the associated PCD, see Chapter 2. For details of the associated UM, see Chapter 4.

Summary of Draft Determination position

3.135 We stated that we did not agree with NGGT's preferred option at the Bacton terminal, and that further work is required before an option is selected. We proposed allowing £6.97m to deliver a finalised option selection and conceptual design studies subject to a PCD, and a UM to provide full project funding during RIIO-GT2 once a final option has been selected.

Final Determination rationale and Draft Determination responses

3.136 NGGT submitted an updated view on development costs, as outlined in the GT PAP section. Additionally, NGGT proposed separate development costs for the separate options for the site redevelopment.

3.137 One stakeholder supported Ofgem providing development funding for the Bacton project.

3.138 We have considered the new information NGGT provided on development costs and have made slight adjustments to these as outlined in the GT PAP section.

3.139 As with other projects, NGGT should keep the options selection process open until the submission of its Final Options Selection Report. We do not consider a separate funding pot should be required for the development of different options for the Bacton terminal redevelopment.

3.140 Following the assessment of this report, development costs will be trued-up, and as such have disallowed this additional request covering multiple options.

King's Lynn subsidence

Description

3.141 NGGT has identified issues with bi-directional flow pipelines at King's Lynn compressor station where subsidence issues are causing stress on the pipework at the site, causing safety, security of supply and environmental risks.

Final Determination decision

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)
King's Lynn subsidence	1.05	1.05	1.19

3.142 For details of the associated PCD, see Chapter 2. For details of the associated UM, see Chapter 4.

Summary of Draft Determination position

3.143 We proposed allowing £1.05m with a PCD for NGGT to carry out further development work at the site, and a UM during RIIO-GT2 to assess the full project costs and set allowances once the option and costs have been fully developed.

Final Determination rationale and Draft Determination responses

3.144 The responses received and our assessment are set out in the GT PAP section.

3.145 We have considered NGGT's updated view on costs and have made slight adjustments to these as outlined in the GT PAP section.

Stopples

Description

3.146 Stopples are used as a means of controlling flows in a pipeline where a valve is not available which allows NGGT to avoid network outages on a section of pipework when used.

Final Determination decision

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)
Stopples	10.00	10.00	10.00

Final Determination rationale and Draft Determination responses

3.147 We received one response from NGGT supporting our Draft Determination position. Therefore, we are adopting our Draft Determination and setting an allowance of £10.00m for Stopples.

Gas Robotic Agile Inspection Device (GRAID)

Final Determination decision

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)
GRAID	18.30	10.02	16.38

Final Determination rationale and Draft Determination responses

3.148 We received one response from NGGT commenting on our methodology and the size of our cost reduction.

3.149 We have changed our Draft Determination position in light of further evidence submitted by NGGT. NGGT explained that future cost savings cannot currently be clearly ascertained and that any savings should be assessed in terms of avoided remedial excavations as part of the re-opener process and not through the GRAID submission. We accept this and have therefore taken out the proposed benefit of eight prevented excavations per year due to the use of GRAID and revised costs. This has increased the GRAID allowance by £6.35m.

3.150 We have decided to set a cost allowance of £16.38m for GRAID, having reduced £1.92m of costs from the GRAID request due to risk costs already being captured within the inspection phase of each type of project size and a minor error in the delivery cost of large projects.

Decommissioning (redundant assets)

Description

3.151 As the requirements on the NTS change due to changing energy supply and demand patterns across Britain, there are assets on the network that are no longer required by NGGT to operate the system, defined as redundant assets.

3.152 NGGT requested £99.03m to decommission 80 redundant assets (or group of assets), five customer sites and four compressor units to ensure compliance with emissions legislation.

Final Determination decision

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)
Redundant assets	81.08	71.29	71.29
Customer connections	1.49	1.37	1.49
Compressor decommissioning	16.46	9.14	9.14
Total	**99.03**	**81.80**	**81.92**

3.153 For details of the associated PCD, see Chapter 2

Final Determination rationale and Draft Determination responses

3.154 We received one response concerning this PCD from NGGT, who disagreed with our position on risk and requested Ofgem detail the scope of equivalent output delivery.

3.155 We are setting a PCD allowance of £81.92m for the scope of work proposed at Draft Determinations.

3.156 We agree with NGGT that risk costs should not have been disallowed from the customer connections allowance as these were not included in NGGT's submission and have increased the allowance by £0.12m.

3.157 We are not making any further allowance adjustments for risk on non-compressor decommissioning projects and disagree with NGGT that the lack of previous

comparable projects increases risk – see below for our Final Determination decision on risk.

3.158 NGGT also requested the option to deliver equivalent outputs if operational requirements determined this was in consumers' interests. We acknowledge that equivalent output delivery may be appropriate - the scope of equivalent output delivery will be detailed in the PCD Reporting Requirements and Methodology Document.

Non-operational Capex

3.159 Non-operational Capex costs comprise the following four activities: Information Technology & Telecoms (IT&T); Small tools, equipment, plant and machinery (STEPM); Property; and Vehicles and transport. Table 15 sets out our Final Determinations decisions for the TO and SO under these activities.

Table 15: Non-operational capex RIIO-GT2 allowances

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)
TO non-operational Capex	135.07	47.50	117.24
TO capitalised Opex adjustment	-	-5.50	0.69
SO non-operational Capex	161.43	26.97	132.78
SO capitalised Opex adjustment	-	-0.57	-
Total	**296.50**	**68.40**	**250.71**

IT and Telecoms

Description

3.160 NGGT requested £90.2m baseline funding for its TO IT Capex projects, and £161.43m for its SO IT capex projects in order to consolidate and modernise its IT systems and capabilities to ensure it is able to maintain and operate a safe and reliable system.

Final Determination decision

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)
TO IT&T Capex	90.20	7.91	74.63
SO IT&T Capex	161.43	26.97	132.78
Total	251.63	34.88	207.41

3.161 For details of the associated UM, see Chapter 4.

Final Determination rationale and Draft Determination responses

3.162 We are setting an allowance of £74.63m for the TO and £132.78m for the SO for IT and Telecoms (IT&T) capex.

3.163 Our IT&T assessment was conducted on a cross-sector basis. In our Draft Determination, we proposed to move a significant proportion of the largest component of Non-Operational Capex – IT&T investments – from baseline funding to a re-opener. This was due to our view of lack of cost certainty reflecting a general level of project immaturity.

3.164 Networks generally disagreed with Ofgem's evaluation of the IT&T elements of their BPs. They expressed concerns about the level of funding that was proposed to be subject to a UM and the risk this created for progressing their investments. They considered that more detail underpinning our proposals should be provided. One respondent was of the view that our assessment set an unreasonable expectation of how far proposed investments have progressed through a network's governance process. Networks also challenged the funding reductions using the assessment methodology employed by our consultants.

3.165 Since our Draft Determination, we have engaged with the Networks on their proposals and level of cost certainty provided within their IT&T investment proposals in order to improve the level of confidence we have in the IT&T projects. As a result, we have decided to allow baseline funding for a number of IT projects which we had proposed in our Draft Determination to be subject to a UM. We have agreed with NGGT which projects should remain subject to a UM. For further information on the Non-operational IT&T Capex re-opener see the Core Document.

3.166 NGGTs SO IT Capex submission contained proposed expenditure to refurbish the GNCC (Gas National Control Centre) interior to deliver fire and security enhancements as well as improve overall ergonomics. NGGT highlighted in its response that we had not funded this at Draft determinations. Upon review it was clear we had omitted to assess this as part of Draft Determinations, we have considered the evidence for this proposed refurbishment. Given that a major re-build of the GNCC exterior was completed in RIIO-T1 we agree with the costs of £2.60m in RIIO-T2 for interior work.

Small tools, equipment, plant and machinery (STEPM)

Final Determination decision

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)
Strategic spares	14.43	12.81	14.03
Non-strategic spares	9.51	9.51	9.51
Total	**23.94**[71]	**22.32**	**23.54**

Final Determination rationale and Draft Determination responses

3.167 We received two responses, from NGGT and an industry body, commenting on a reporting error and the size of our cost reduction.

3.168 We have changed our Draft Determination position in light of further evidence submitted by NGGT which justified that its initial submission was correct for strategic spares (category: other). This has increased the strategic spares allowance by £1.22m from our Draft Determination.

3.169 We disagree with an industry body that expressed concern that the proposed allowance reduction could result in the use of obsolete or incompatible equipment. We consider the allowance appropriate for NGGT to efficiently manage STEPM in RIIO-GT2.

[71] NGGT's BPDT had a submitted value of £24.00, but the cost evidence assessed was £23.94m

3.170 We have decided to set a cost allowance of £23.54m for STEPM, having reduced £0.40m of costs from the strategic spares request due to using NGGT's fully submitted cost breakdown.

Non-operational property

Final Determination decision

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)
Building refurbishment	10.62	9.74	9.90
Electric vehicle-charging infrastructure	1.48	1.48	1.48
Total	**12.10**	**11.22**	**11.38**

Final Determination rationale and Draft Determination responses

3.171 We received two responses, from NGGT and an industry body, commenting on our methodology and the size of our cost reduction.

3.172 We have changed our Draft Determination position in light of further evidence submitted by NGGT which justified that welfare renovations are required at three building sites to meet workforce diversity. This has increased the building refurbishment allowance by £0.16m. NGGT also suggested moving the funding request for the fourth building site from non-operational property into the site's relevant engineering justification paper which we agreed with as it is more appropriate to be assessed there.

3.173 We disagree with an industry body that expressed concern that the proposed allowance reduction could result in the use of obsolete or incompatible equipment. We consider the allowance appropriate for NGGT to efficiently manage its non-operational property in RIIO-GT2.

3.174 We have decided to set a cost allowance of £11.38m for non-operational property, having made £0.14m of workload reductions and disallowed £0.58m of costs from the building refurbishment request.

Vehicle Fleet

Final Determination decision

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)
Internal combustion engine (ICE)	6.52	3.87	5.52
Electric (EV)	2.25	2.17	2.17
Total	**8.77**	**6.04**	**7.69**

Final Determination rationale and Draft Determination responses

3.175 We received two responses, from NGGT and an industry body, commenting on our methodology and the size of our cost reduction.

3.176 We have changed our Draft Determination position in light of further evidence submitted by NGGT stating that our assessment incorrectly assumed that all ICE vehicles currently have EV alternatives, however they are only available for Small Panel Vehicles. We accept NGGT's response and have therefore taken this assumption out and revised costs. This has increased the ICE allowance by £1.65m.

3.177 We have decided to maintain our chosen methodology of using a historical trend model to set costs as we consider that the average RIIO-GT1 costs and volumes are a robust indicator of likely RIIO-GT2 costs and volumes. We have also reviewed NGGT's proposal for twenty-two additional vehicles in RIIO-GT2 however we do not consider that NGGT has justified the needs case.

3.178 We disagree with an industry body that expressed concern that the proposed allowance reduction could result in the use of obsolete or incompatible equipment. We consider the allowance appropriate for NGGT to efficiently manage its vehicle fleet in RIIO-GT2.

3.179 We have decided to set a cost allowance of £7.69m for the vehicle fleet, having reduced £1.08m of costs from the vehicle fleet request due to maintaining our chosen methodology for ICE vehicles, excluding twenty-two additional ICE vehicles in RIIO-GT2 due to a lack of justification, and adjusting the unit cost of an EV to be in line with other networks for the type of vehicle that NGGT has proposed.

Other costs

3.180 NGGT proposed other costs comprised of cyber resilience (cyber OT and cyber IT) and physical security costs. The cyber OT and IT allowances are for both the TO and SO, while physical security costs are only proposed for the TO.

Cyber OT and Cyber IT

3.181 Cyber OT and IT are confidential and not discussed in this document in the interests of national security. A confidential Cyber Resilience Annex containing our Final Determination has been shared with NGGT.

Physical security capex

Description

3.182 NGGT owns assets and sites that are designated as Critical National Infrastructure (CNI). The Secretary of State has initiated the Physical Security Upgrade Programme (PSUP), a BEIS-led national programme to enhance physical security at CNI sites.

3.183 NGGT is required to upgrade a number of new sites identified by BEIS as requiring an enhanced physical security solution in RIIO-GT2. Due to some PSUP assets reaching the end of their asset lives in this period, NGGT proposed a rolling asset replacement programme as well as a major asset health upgrade at two sites.

Final Determination decision

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)
New sites	48.54	26.46	26.46
Asset refresh	23.54	5.02	7.97
Major asset health upgrades	25.69	3.36	3.88
Capitalised Opex adjustment	-	-1.13	0.22
Total	**97.77**	**33.71**	**38.52**

3.184 For details of the associated PCD, see Chapter 2. For details of the associated UM, see Chapter 4.

Final Determination rationale and Draft Determination responses

3.185 We received three consultation responses concerning our cost assessment methodology, the scope of work for major asset health upgrades, and the proposed allowance. In light of these, we are increasing NGGT's allowance by £3.46m and have set a total allowance of £38.52m for PSUP-related work in RIIO-GT2, having made £13.92m of workload reductions and disallowed £45.56m of costs.

3.186 An Enhanced Engagement group supported our cost assessment and proposed allowance, however an industry body expressed concern that the substantial difference between the requested and proposed allowances could impact on legislative and health and safety compliance if not resolved. Although we accept there is considerable difference between the requested amount and our Final Determinations decision, this is largely due to NGGT resubmitting its technical asset refresh costs[72] and us reducing the scope of the major asset health upgrades.[73]

3.187 We have decided to proceed with our proposal to fund new sites and have set an allowance of £26.46m, which was supported by NGGT.

3.188 For the asset refresh allowance, NGGT responded that we had omitted any allowance for the IT component of the proposal. We agree that this should have been included and have increased the allowance for Final Determinations by £2.01m.

3.189 NGGT stated that we had miscalculated the allowance for project management (PM), risk and general items and preliminaries (GIPs) costs and proposed an alternative methodology. We agree with NGGT's response and have used the alternative methodology to recalculate these costs, resulting in an increase of £0.94m to the asset refresh allowance.

3.190 NGGT noted that although we had provided an allowance for pedestrian gates, we did not provide any allowance for sliding vehicle gates for the major asset health upgrades. Following subsequent engagement with NGGT we accept the justification for this investment and have allowed the requested amount in full.

[72] NGGT's resubmitted asset refresh costs c.£15.5m lower than original Business Plan submission
[73] These costs related to civils investments at the two sites

3.191 As part of its response, NGGT provided an independent advisory report for the proposed rebuild of the gatehouse at one of the major asset health upgrade sites, containing a list of recommendations to meet CPNI[74] guidelines. While the report contains recommendations for improvements at the site, the current site configuration still meets legislative requirements[75] and the report does not support the project needs case for a rebuild as proposed in NGGT's BP. Therefore, we have decided to proceed with our Draft Determination proposal.

3.192 NGGT acknowledged it was unable to provide condition data on the fences at the major asset health upgrade sites and requested that these disallowed costs be considered through a RIIO-GT2 re-opener once condition data has been obtained. We do not consider it appropriate to change the scope of existing re-openers in order to include fencing costs, and due to the shorter price control period maintain our Draft Determination position that a fix-on-fail maintenance approach is currently optimal in the absence of actual condition data. Our view is that NGGT should have carried out any assessments prior to submitting its BP in December 2019.

Physical security Opex

Description

3.193 PSUP opex is required for maintenance and fault repair of PSUP assets, 24/7 monitoring of PSUP sites through an Alarm Receiving Centre (ARC), and management of communication infrastructure between the ARC and PSUP sites.

Final Determination decision

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)
PSUP Opex	34.10	33.70	33.70

Final Determination rationale and Draft Determination responses

3.194 We received one response concerning the PSUP Opex allowance from NGGT, who supported our Draft Determination. Therefore, we have decided to proceed with

[74] Centre for the Protection of National Infrastructure
[75] In accordance with requirements determined by the Department for Business, Energy and Industrial Strategy (BEIS).

our proposal and have set the physical security opex allowance at £33.70m, having made a workload reduction of £0.40m.

Network Operating Costs (Direct opex)

Description

3.195 TO Opex costs are those incurred on an ongoing basis relating to NGGT's field-based workforce delivering its asset steward responsibilities. SO Direct Opex costs are ongoing costs incurred operating the network on a day-to-day basis.

Final Determination decision

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)
TO Direct Opex	199.87	190.41	190.41
SO Direct Opex	155.54	155.54	155.54

Final Determination rationale and Draft Determination responses

3.196 We maintain our Draft Determination position and set the direct opex allowance of £190.41m for the TO and £155.54m for the SO. We received two responses from NGGT and an Enhanced Engagement group. NGGT accepted our proposal for the SO, however it raised issues with the cost assessment methodology for the TO, while the Enhanced Engagement group supported our Draft Determination.

3.197 We consider our chosen cost assessment technique[76] appropriate to set RIIO-GT2 allowances and did not change our methodology in light of NGGT's response. NGGT contended that we did not consider the interaction between cost sub-categories and proposed we recalculated the allowance on an aggregated basis. We accept there are some interdependencies between cost categories, and therefore we did not disaggregate these further than property, faults, and planned inspection and maintenance. We view these cost categories and their cost drivers to be sufficiently distinct and do not consider there to be such a fundamental shift in NGGT's asset management plan that would result in material differences in the cost categories in RIIO-GT2 relative to RIIO-GT1.

[76] Historical trend model

3.198 We are not making any post-modelling adjustments in respect of the RIIO-GT2 cost drivers identified by NGGT. We do not consider that these have been sufficiently demonstrated with robust information and view that there are unique cost drivers in each price control that we expect to be managed within the baseline allowance.

Indirect Opex

Description

3.199 Indirect Opex consists of both Business Support Costs (BSC) and Closely Associated Indirects (CAI) costs. BSCs are incurred supporting network companies' general business activities and CAIs are those that support operational activities.

3.200 Our assessment was undertaken on a Transmission-wide level using a CSV regression model including a GT sector dummy variable for BSC, and a model incorporating Modern Equivalent Asset Value (MEAV) and total Capex for CAI.

Final Determination decision

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)
NGGT TO BSC	163.36	157.81	160.86
NGGT SO BSC	113.96	110.08	112.62
NGGT TO CAI	156.49	69.70	128.16
NGGT SO CAI	48.93	47.91	47.94

Final Determination rationale and Draft Determination responses

3.201 We are setting the TO allowances at £160.86m and £128.16 for BSC and CAI costs respectively. For the SO we are setting the allowances at £112.62m and £47.94m. This is a total increase of £64.08m from our Draft Determination position for NGGT's BSC and CAI allowances.

3.202 We received three NGGT-specific responses concerning our indirect opex assessment. An industry body and an Enhanced Engagement group supported our approach, while NGGT disagreed with our Draft Determination position.

3.203 NGGT responded that the econometric model used was flawed and incorrectly assumed comparability between the gas and electric sectors, with the resultant allowance leaving it unfunded for mandatory activities such as legislative and environmental compliance. NGGT also noted that Ofgem had failed to add in allowances for activities such as cyber, the EAP and EV operation despite agreeing with the need for these activities. Furthermore, NGGT expressed concern costs had been removed twice from both the econometric modelling and the bottom-up project assessment.

3.204 We considered the responses of NGGT and the other TOs and have changed our Draft Determination position in light of these – for the rationale for our Final Determination decision see Chapter 3 in the ET Sector Annex.

3.205 We also considered the qualitative evidence presented by NGGT in support of its unique network characteristics, specifically the evidence relating to the NGGT "Safety Case". This material sought to demonstrate the upward cost pressures that Gas Transmission were subject to as a result of the Gas safety & compliance legislation. NGGT supposition that these factors impacting their staffing levels and administrative burden on project oversight are unique and distinct from its peers in Electricity Transmission. We accept NGGT's justification of these unique cost drivers and informed by our analysis and a range of model results explained in the ET Sector Annex, we have allowed for an uplift of £17.5m in CAI.

3.206 In our Draft determination we applied a capitalised opex adjustment to NGGT's capex costs, reflecting the fact our assessment of BSC and CAI costs was conducted on a gross basis, but allowances set on a net basis. The outcome of this approach also impacts NGGT's submitted capex costs in line with its capitalisation policy. We recognised that our application of this adjustment was flawed at Draft Determinations as it did not account for the removal of capitalised opex costs arising from reductions to NGGT's capex plan itself. We have corrected this for our Final Determination. Our decision is to make a capitalised opex adjustment and increase NGGT's Capex allowances by £4.03m. This is spread across NGGT's capex plan which is shown in the Final Determination decision allowance tables where applicable.

3.207 We have set out in Chapter 8 of the ESO Annex our current position on the ESO's use of shared IT services. We intend to work closely with the ESO and National Grid to ensure that any such investments are "future-proofed" against credible

future scenarios and do not become a barrier to any future IT autonomy for the ESO, and to understand any impact of this on Business Plans.

Quarry and Loss

Description

3.208 Quarry and Loss of Development costs are costs incurred by NGGT (TO) in settling claims from landowners whose property contains NTS assets.

Final Determination decision

Cost category	NGGT proposed baseline (£m)	Draft Determination (£m)	Final Determination (£m)
Loss of crop	3.04	2.76	2.76
Drainage	4.90	4.13	4.13
Loss of development	2.24	-	-
Mineralisation	6.60	-	-
Total	16.78	6.89	6.89

Final Determination rationale and Draft Determination responses

3.209 We are implementing our Draft Determination proposal to set a baseline allowance of £6.89m for Loss of crop and Drainage costs, having made £0.21m of workload reductions and disallowed £0.84m of costs. Loss of development and Mineralisation costs will be treated through a re-opener – see Chapter 4 for details.

3.210 We will reconcile all efficiently incurred Quarry and Loss costs, for all sub-categories, as part of RIIO-2 close out. See Chapter 4 for further details.

Assessment of risk and contingency

3.211 We are implementing our Draft Determination proposal on risk and contingency, and capping percentage allowance for risk at 10% of project costs. We have not included a risk allowance where cost evidence is based on historic data or where contracted information or SME views have informed costs unless these have been satisfactorily quantified.

3.212 Our proposal was supported by an Enhanced Engagement group, a consumer group, and an industry body. NGGT generally supported our Draft Determination proposal but highlighted some concern with areas such as cyber and decommissioning. Our Final Determination decisions in these areas are contained within the specific cost sections.

3.213 In addition to the principles assessing risk set out in our Draft Determination, in its response NGGT asked us to consider adding a further principle: consideration of risk allowance will have regard to project maturity, delivery complexity, the availability of benchmarks, and the prevailing regulatory treatment which affects the attribution of the risk and reward between NGGT and consumers. For example, use-it-or-lose-it allowances and the TIM. We agree with this principle and applied it in respect of our Final Determination decisions on risk. This resulted in a risk allowance being included for the major project at Hatton, which is currently in the conceptual design phase and as such total project risk can be measured against a reasonably accurate total installed cost forecast.

Ongoing efficiency

3.214 At Draft Determinations we applied an ongoing efficiency challenge of 1.00% capex and 1.20% opex to NGGTs costs. Additionally, we set a further 0.2% innovation challenge on the resulting Totex. This resulted in an ongoing efficiency challenge of £91.24m[77] at Draft Determinations.

3.215 In its response to our consultation NGGT said there were further ongoing efficiencies embedded in its opex plan which we had failed to take account of. We had sought clarification on the efficiencies NGGT had embedded in its plan prior to Draft Determinations and had confirmation of the areas in which this was applied. We reviewed the additional evidence for areas where NGGT claimed additional efficiencies were embedded, but found it was not possible to isolate any ongoing efficiencies from the information provided and confirm the values claimed with any level of certainty. Therefore, we have decided not to change the ongoing efficiency costs removed from NGGT's BP prior to the application of our own view of ongoing efficiency.

3.216 At Final Determinations we have decided to apply an ongoing efficiency challenge of 0.95% to capex and 1.05% to opex to NGGTs costs, with the same 0.2%

[77] This was erroneously stated as £50.50m in our Draft Determinations

innovation challenge applied to these adjustments. This results in a reduction of the efficiency challenge based on our DD position of £7.12m, however the increase in totex between Draft and Final Determinations has added another £23.49m to the efficiency challenge, resulting in an overall figure of £107.61m.

3.217 For further information on our Final Determination for ongoing efficiency see Chapter 5 of the Core Document.

4. Adjusting baseline allowances for uncertainty

Introduction

4.1 This chapter sets out our decisions for each Uncertainty Mechanism that will apply to NGGT during the RIIO-GT2 price control period.

Central Data Services Provider costs

Purpose: To ensure that NGGT contributes the Gas Transporter's share of Xoserve costs.

Benefits: Xoserve provides a range of essential services to support the GB gas industry.

UM parameter	Final Determination	Draft Determination
UM type	Pass-through	NA
Pass-through details	These costs only relate to NGGT's share of costs for Central Data Service Provider (CDSP), with the exception of Gemini costs.	NA
Additional requirements	Report costs through RRP	NA
Applied to	NGGT only	NA
Licence condition	SpC 6.3: System Operator pass-through items	NA

4.2 Not consulted on at Draft Determinations. Decision made in SSMD.

Independent systems

Purpose: To pass-through costs associated with the supply of gas to independent undertakings that are not connected to the national gas network and supplied by liquefied natural gas (LNG) or liquefied petroleum gas (LPG).

Benefits: To ensure that NGGT does not incur costs that are outside of its direct control and for which it has not received any baseline allowance.

UM parameter	Final Determination	Draft Determination
UM type	Pass-through	NA
Pass-through arrangements	Costs associated with supply of gas to independent undertakings not connected to the NTS and supplied by LNG or LPG	NA
Additional requirements	Report costs through RRP	NA
Applied to	NGGT only	NA
Licence condition	SpC 6.2: Gas conveyed to independent systems	NA

4.3 Not consulted on at Draft Determinations. Decision made in SSMD.

Policing costs associated with the Counter Terrorism Act 2008

Purpose: To enable NGGT to recover costs related to policing at gas facilities under the Counter Terrorism Act 2008.

Benefits: To ensure that NGGT does not incur costs that are outside of its direct control and for which it has not received any baseline allowance.

UM parameter	Final Determination	Draft Determination
UM type	Pass-through	NA
Pass-through details	All costs related to policing at gas facilities in accordance with the Counter Terrorism Act 2008	NA
Additional requirements	Report costs through RRP	NA
Applied to	NGGT only	NA
Licence condition	SpC 6.1: Transportation owner pass-through items	NA

4.4 Not consulted on at Draft Determinations. Decision made in SSMD.

Incremental capacity re-opener

Purpose: To allow an adjustment to NGGT's allowed expenditure in the event of a request for the release of Firm Entry/Exit Capacity which constitutes Incremental Obligated Entry/Exit Capacity and which cannot be satisfied through the use of Entry/Exit Capacity substitution.

Benefits: To allow a case-by-case assessment of need and cost to ensure good value for consumers.

UM parameter	Decision	Draft Determination[78]
UM type	Re-opener with Evaluative PCD	Re-opener with outputs
Re-opener window	No specific window for submissions	Same as FD
Re-opener materiality threshold	No materiality threshold for triggering the re-opener	Same as FD
Authority triggered re-opener?	None	Same as FD
Additional requirements	Needs case submissions to be made at least 12 months following a notification to Ofgem of Incremental Obligated Capacity. Introduction of an earlier needs case submission. Updated needs case to be submitted with the re-opener application.	Same as FD Project Submission and Needs Case Submission proposed as a joint submission.
Applied to	NGGT only	Same as FD
Licence condition	SpC 3.11: Funded Incremental Obligated Capacity Re-opener and Price Control Deliverable	N/A

Final Determination rationale and Draft Determination responses

4.5 We received two consultation responses, from NGGT and a consumer group, with responses focusing on the design of the incremental capacity re-opener process, the timings and the associated stages.

4.6 We have decided to implement our Draft Determination proposal to introduce a re-opener for funding NGGT to release Incremental Obligated Entry/Exit Capacity, which was supported by stakeholders.

4.7 We are making the outputs in this re-opener PCDs. This was not set out in our Draft Determination. We acknowledge the feedback subsequently shared by NGGT, with concerns around PCDs adding another layer on top of existing mechanisms with a risk of reduced allowance. However, we consider PCDs to be the appropriate mechanism within our RIIO2 framework to ensure allowances for outputs can be recovered where appropriate and to protect consumers in the event of under or non-delivery of outputs.

[78] RIIO-2 Draft Determinations - NGGT Annex paragraphs 4.5 to 4.7

4.8 We have decided to implement our Draft Determination position on the introduction of a pre-application notification process. However, this process will now sit outside of the re-opener and will form part of a notification to the Authority for capacity requests and substitution, which will streamline the re-opener process. We have adopted our Draft Determination proposal to introduce a Notice to Release Incremental Obligated Capacity, however this will also be moved outside of the re-opener process, alongside the notification to the authority for capacity requests and substitution.

4.9 In light of further consideration of timings around the Planning & Advanced Reservation of Capacity Agreement (PARCA) and concerns about timing raised by NGGT, we have decided to separate the application process into two stages - first a needs case submission and second the main funding application. The main funding application will have to detail any changes to the earlier needs case submission. This two-stage structure is intended to allow the needs case to be assessed before any planning and procurement activities have been finalised.

4.10 We have decided to make a change to our Draft Determination proposal on introducing an exceptional events mechanism to allow for this mechanism to also be triggered by Ofgem and ensure this mechanism is symmetrical. We consider there to be consumer benefit to this change because it will ensure that Ofgem can trigger adjustments to allowances, where there is benefit to consumers.

4.11 We have adopted our Draft Determination proposal not to include a materiality threshold for triggering the re-opener or a specific window for making submissions, which was supported by NGGT.

4.12 We consider the application of competition to be important, as outlined in Chapter 9 of the Core Document. In accordance with the information set out in that chapter, relevant submissions under the incremental capacity re-opener will be considered for the application of late competition models.

4.13 In order to further incentivise the timely delivery of large transmission projects and minimise consumer detriment in the event of these being delivered late, we will consider submissions for the application of Large Project Delivery mechanism(s) as outlined in Chapter 2 of the Electricity Transmission Annex.

Quarry and Loss

Purpose: To adjust NGGT's allowances for Quarry and Loss claims if they incur material costs during RIIO-GT2.

Benefits: To ensure NGGT is only funded for costs it has actually incurred.

UM parameter	Final Determination	Draft Determination[79]
UM type	Re-opener	Same as FD
Re-opener window	Year 2 of RIIO-GT2 True-up at Closeout.	Same as FD
Re-opener materiality threshold	0.5% of ex-ante Base Revenue	1 % of ex-ante Base Revenue
Authority triggered re-opener?	Yes	Same as FD
Additional requirements	Annual RRP reporting	Same as FD
Applied to	NGGT only	Same as FD
Licence condition	3.15 Arrangement for the recovery of uncertain costs	NA
Scope of UM	All quarry and loss categories	Loss of land and development, sterilised minerals, landfill and tipping, and power generation costs only
Licence condition	SpC 3.15: Recovery of Uncertain Costs	N/A

Final Determination rationale and Draft Determination responses

4.14 We received three responses from NGGT, an Enhanced Engagement group and an industry body. The responses focused on the materiality threshold, the scope of the re-opener and reconciling efficiently incurred costs for which NGGT has not received baseline funding.

4.15 We are implementing our Draft Determination proposal to retain a Quarry and Loss re-opener, which was supported by all stakeholders who responded.

4.16 NGGT proposed that loss of crop and drainage costs are also included within the scope of the re-opener where it has incurred costs in excess of its baseline

[79] RIIO-2 Draft Determinations - NGGT Annex paragraphs 4.12 to 4.17

allowance. We accept this is appropriate and have expanded the scope of the re-opener to cover all Quarry and Loss categories.

4.17 We will true-up efficiently incurred costs as part of RIIO-GT2 close out for all Quarry and Loss categories, as proposed by NGGT in its response. We consider that NGGT should not benefit or be penalised through the TIM in regard to Quarry and Loss costs, as any over or under-performance is not likely to be due to efficiency/inefficiency, but rather due to the nature of how the costs arise.

4.18 We have set a materiality threshold of 0.5% of ex-ante Base Revenue, in line with the common re-opener parameters. This is a change from our Draft Determination proposal to set a materiality threshold of 1% of ex-ante Base Revenue. See Chapter 7 in the Core Document for further details. However, we agree with an Enhanced Engagement group that no materiality threshold should apply to the ex post true-up as these costs are largely out of NGGT's direct control.

Pipeline Diversions

Purpose: To adjust NGGT's allowance for uncertain costs incurred diverting pipelines during RIIO-GT2

Benefits: To ensure consumer money is not spent on projects with uncertain costs and/or scope of work, and that NGGT is only funded for costs it actually incurs.

UM parameter	Final Determination	Draft Determination[80]
Re-opener window	NGGT can trigger in any year of RIIO-GT2 True-up at RIIO-2 close out	Year 2 of RIIO-GT2
Re-opener materiality threshold	0.5% of ex-ante Base Revenue	1 % of ex-ante Base Revenue
Authority triggered re-opener?	No	Same as FD
Reporting / submission requirements	Annual RRP reporting	Same as FD
Applied to	NGGT only	Same as FD
Licence condition	SpC 3.15 Arrangements for the recovery of uncertain costs	NA
Scope of UM	Costs arising from obligations / liabilities NGGT has inherited from the British Gas Council	Same as FD
Licence condition	SpC 3.15: Recovery of Uncertain Costs	N/A

[80] RIIO-2 Draft Determinations - NGGT Annex paragraphs 4.8 to 4.11

Final Determination rationale and Draft Determination responses

4.19 We received two consultation responses from NGGT and an Enhanced Engagement group, both of whom supported the provision of a re-opener for Pipeline diversion costs.

4.20 We are implementing the proposal set out in Draft Determination to include a Pipeline diversions re-opener for costs arising from obligations / liabilities NGGT has inherited from the British Gas Council.

4.21 We have decided to depart from our Draft Determination proposal of a re-opener window in Year 2 and NGGT can make applications in re-opener windows in any year of RIIO-GT2. We recognise that these costs could arise at any time and this change provides increased flexibility for NGGT. We note that this re-opener was not triggered in RIIO-GT1 and we are confident that with a materiality threshold in place this change will not result in any significant additional regulatory burden.

4.22 We have set a materiality threshold of 0.5% of ex-ante Base Revenue, in line with the common re-opener parameters. This is a change from our Draft Determination proposal to set a materiality threshold of 1% of ex-ante Base Revenue. See Chapter 7 in the Core Document for further details.

4.23 We are also including provision for a true-up of efficiently incurred costs as part of RIIO-GT2 close out for Pipeline diversion costs, as proposed by NGGT. We acknowledge that these costs are third-party driven and NGGT should be efficiently funded to divert pipelines where the needs case and liability has been determined.

Bacton terminal site redevelopment

Purpose: To adjust NGGT's allowance for uncertain costs for addressing asset health issues at the Bacton terminal during RIIO-GT2.

Benefits: To protect consumers from over or under-funding as the project develops in terms of options selection and cost estimation, and to reduce the risk of asset stranding due to changes in the gas market and operation of the NTS.

UM parameter	Final Determination	Draft Determination[81]
UM type	Re-opener	Same as FD
Re-opener window	Sep 2023	Aug 2022
Re-opener materiality threshold	None	Same as FD
Authority triggered re-opener?	No	Same as FD
Additional requirements	Submission of Final Options Selection Report	Same as FD
Applied to	NGGT	Same as FD
Licence condition	SpC 3.11: Bacton terminal site redevelopment Re-opener and PCD	N/A

Final Determination rationale and Draft Determination responses

4.24 See Chapter 3 for our Final Determinations decision rationale.

King's Lynn Subsidence - UM

Purpose: To adjust NGGT's allowance for uncertain costs for addressing subsidence issues at King's Lynn compressor station during RIIO-GT2.

Benefits: To protect consumers from over or under-funding as the project develops in terms of options selection and cost estimation, and to reduce the risk of asset stranding due to changes in the gas market and operation of the NTS.

UM parameter	Final Determination	Draft Determination[82]
UM type	Re-opener	Same as FD
Re-opener window	March 2022	April 2022
Re-opener materiality threshold	None	Same as FD
Authority triggered re-opener?	No	Same as FD
Additional requirements	Submission of Final Options Selection Report	Same as FD
Applied to	NGGT	Same as FD
Licence condition	SpC 3.12: King's Lynn subsidence Re-opener and PCD	N/A

[81] RIIO-2 Draft Determinations - NGGT Annex paragraphs 4.18 to 4.22
[82] RIIO-2 Draft Determinations - NGGT Annex paragraphs 4.23 to 4.27

Final Determination rationale and Draft Determination responses

4.25 See Chapter 3 for our Final Determinations decision rationale.

Asset health UM

Purpose: To adjust NGGT revenues due to uncertainty in the costs associated with above ground Plant & Equipment and Cab Infrastructure assets and the remediation of defects on the actuating gas ring main at St Fergus during RIIO-GT2.

Benefits: To ensure consumers' money is not spent on projects with uncertain costs and/or scope of work.

UM parameter	Final Determination	Draft Determination[83]
UM type	Re-opener	Same as FD
Re-opener window	Year 3 of RIIO-2	Same as FD
Re-opener materiality threshold	0.5% of ex-ante Base Revenues	1% of ex-ante Base Revenues
Authority triggered re-opener?	Yes	Same as FD
Applied to	NGGT only	Same as FD
Licence condition	SpC 3.14: Asset health Re-opener	N/A

Description

4.26 NGGT's asset health plan comprises seven unique themes. For two of these project themes, we were unable to reach a view of efficient costs based on the information provided to us by NGGT. We have provided some baseline funding to enable NGGT to progress with its asset health plan, with the final allowance to be determined once more cost information is available.

Final Determination rationale and Draft Determination responses

4.27 NGGT agreed with our proposal for an Asset Health re-opener, and the development of cost reporting. It further proposed a flexible re-opener window in years 2, 3 or 4 to agree suitable evidence requirements and allow setting of ex-ante allowances at the earliest opportunity.

[83] RIIO-2 Draft Determinations - NGGT Annex paragraphs 4.28 to 4.33

4.28 We have decided to implement our Draft Determination proposal to have a year 3 re-opener. This re-opener will fund year 4 and 5 investments and adjust year 1-3 based on an ex post assessment. Given we have funded NGGT's request for P&E and cabs for 3 years we consider we have provided sufficient ex-ante funding to allow NGGT to undertake the work required and therefore there is no need for a year 2 window. We also consider that, accompanied by robust data gathering, there should be sufficient data at the re-opener point in year 3 to set ex-ante allowances for the remainder of the price control, therefore there is no requirement for a year 4 window. We consider the level of funding, and the time for NGGT to develop robust data makes year 3 the most appropriate window for this re-opener, and provides certainty over timing which will facilitate resource planning for both Ofgem and NGGT in RIIO-GT2. Additionally, we can direct a change to the dates of the re-opener window or trigger re-opener ourselves if needed.

4.29 In its response to our proposals, NGGT requested some interventions within the Civils project theme be included within the scope of Asset Health re-opener, but we did not accept this proposal. We have, however, decided to widen the scope of the Asset Health re-opener to include work to address the condition of the gas ring main at St. Fergus. Our rationale for both these decisions is covered in Chapter 3 under Asset Health.

4.30 We note NGGT provided a detailed annex in its response outlining proposals as to how the re-opener should operate in practice and we will continue to engage with NGGT to develop re-opener guidance.

4.31 We have set a materiality threshold of 0.5% of ex-ante Base Revenue, in line with the common re-opener parameters. This is a change from our Draft Determination proposal to set a materiality threshold of 1% of ex ante Base Revenue. See Chapter 7 in the Core Document for further details.

4.32 We have decided to implement our Draft Determination proposal to include an Authority triggered re-opener to allow Ofgem to decrease allowances if necessary. This is because of the uncertainty associated with the anticipated costs and workloads during the Price Control Period, which is discussed further in the asset health sections of Chapter 3.

Compressor Emissions - UM

Purpose: To adjust NGGT revenues due to uncertainty in the costs associated with delivering compressor emissions compliance during RIIO-GT2.

Benefits: To protect consumers from over or under-funding as the project develops in terms of options selection and cost estimation, and to reduce the risk of asset stranding due to changes in the gas market and operation of the NTS.

UM parameter	Final Determination	Draft Determination[84]
UM type	Re-opener	Same as FD
Re-opener window	Wormington: Nov 2024 King's Lynn: April 2025 St Fergus: June 2025 Peterborough & Huntingdon: June 2025	Wormington: Jan 2024 King's Lynn: Aug 2024 St Fergus: Nov 2025 Peterborough & Huntingdon: Sep 2026
Re-opener materiality threshold	None	Same as FD
Authority triggered re-opener?	No	No
Additional requirements	Submission of Final Options Selection Report	Same as FD
Applied to	NGGT	Same as FD
Licence condition	SpC 3.11: Compressor emissions Re-opener and PCD	N/A

Final Determination rationale and Draft Determination responses

4.33 See Chapter 3 for our Final Determinations decision rationale.

GT opex escalator

Purpose: To adjust NGGT's CAI opex allowance following changes to its capex allowance through uncertainty mechanisms.

Benefits: To ensure NGGT has efficient CAI allowance to deliver its capex programme during RIIO-2.

[84] RIIO-2 Draft Determinations - NGGT Annex paragraphs 3.34 to 3.38

UM parameter	Final Determination	Draft Determination
UM type	Indexation	Same as FD
Indexation parameters	0.734% uplift to CAI allowance for each 1% uplift to capex allowance through the following re-openers: Incremental capacity PSUP Non-op capex IT Net Zero re-opener Bacton terminal site redevelopment Compressor emissions King's Lynn subsidence Asset health	0.754% uplift to CAI for each 1% uplift to capex. Applicable re-openers same as FD.
Applied to	NGGT	Same as FD
Licence condition	Yes. This applies to Special Conditions 3.4, 3.6, 3.7, 3.10, 3.12, 3.13 and 3.14. Opex Escalator is defined in SpC 1.1	N/A

Final Determination rationale and Draft Determination responses

4.34 See Chapter 4 in the ET Sector Annex for our consideration of Draft Determination responses and our Final Determination rationale.

5. Innovation

Description

5.1 This chapter sets out our Final Determination on NGGT's Network Innovation Allowance (NIA) for the RIIO-GT2 price control period. Chapter 8 of the Core Document also details our Final Determination on the RIIO-2 NIA framework and the Strategic Innovation Fund.

Network Innovation Allowance

Purpose: To fund innovation relating to support for consumers in vulnerable situations and/or to the energy system transition.

Benefits: To enable companies to take forward innovation projects that have the potential to address consumer vulnerability and/or deliver longer–term financial and environmental benefits for consumers, which they would not otherwise undertake within the price control.

Final Determination decision

Network Innovation Allowance	NGGT proposed NIA (£m)	Draft Determination (£m)	Final Determination (£m)
Level of NIA funding	£30.9m Draft Determination response proposal: £70m	£20m, conditional on an improved industry-led reporting framework.	£25m. We retain the option to direct additional NIA funding for hydrogen innovation during RIIO-2.

Final Determination rationale and Draft Determination responses

5.2 We have decided that all network companies and the ESO will be able to access NIA funding during RIIO-2, as they have satisfactorily evidenced that an improved industry-led reporting framework will be in place for the start of RIIO-2 (see Chapter 8 of the Core Document).

5.3 We have decided to allow NGGT £25m NIA funding, which is a change from our Draft Determination position. The change is because of an error we made

benchmarking NGGT's request against the level of NIA funding it received in RIIO-1.

5.4 NGGT noted that we had inaccurately estimated its RIIO-1 NIA budget. We agree with NGGT and note the benchmarking error we made in the Draft Determination. As a result of fluctuations in NGGT's base revenue over RIIO-1, NGGT RIIO-1 NIA funding averaged around £5m/year, rather than £4m/year, which was the figure which underpinned our proposal to award NGGT £20m NIA funding. Accordingly, we have decided to revise our benchmark.

5.5 Beyond consideration of that error, we have considered the three responses which directly addressed NGGT's NIA. Citizens Advice was supportive of our assessment and the level of the NIA funding we proposed to award NGGT, whereas Energy UK cautioned whether the NIA funding we proposed to award NGGT would be sufficient to support decarbonisation pathways to net zero.

5.6 We did not, however, receive any evidence to counter our assessment of NGGT's inadequate plans to do innovation within BAU activities. Consistent with our position in the Draft Determination, we continue to believe that NGGT does not satisfactorily evidence satisfaction of this criterion, which was detailed in our SSMD,[85] and is unable to justify an increase of NIA funding relative to RIIO-1.

5.7 Within its Draft Determination response, NGGT requested an additional £40m in NIA funding for hydrogen activities beyond what it had requested in its BP. We have decided not to provide additional NIA as there is uncertainty about both the need and the cost for this hydrogen innovation expenditure, and activities may be duplicative.

5.8 We recognise that a need for additional hydrogen innovation projects could arise during RIIO-2. We will therefore consider allowing NGGT and GDNs additional NIA funding for hydrogen innovation, should the NIA funding prove insufficient (see Chapter 8 of Core Document).

[85] SSMD Core Document, paragraph 10.62

6. Business Plan Incentive (BPI) and Totex Incentive Mechanism (TIM)

6.1 This chapter sets out our Final Determination for NGGT on the Totex Incentive Mechanism, and the Business Plan Incentive (BPI) and the rationale underpinning it. It also sets out key responses from the Draft Determinations consultation and our views where appropriate. Further details of our decisions for BPI at a cross-sectoral level and the rationale underpinning the decision can be found in Chapter 10 of the Core Document.

Table 16: Summary of decisions for NGGT's BPI

BPI stage	Final Determination
Stage 1 - Minimum requirements	Fail. -£8.75m penalty
Stage 2 – CVP reward	Not eligible due to Stage 1 failure[86]
Stage 3 – Low cost confidence penalty	-£12.95m
Stage 4 – High cost confidence reward	Not eligible due to Stage 1 failure[87]
Total	**-£21.70m**

Totex Incentive Mechanism

6.2 The Totex Incentive Mechanism (TIM) is designed to encourage network companies to improve efficiency in delivery and ensures that the benefits of these efficiencies are shared with consumers. It also provides some protection to companies from overspends as the costs of overspends are also shared with consumers.

Final Determination decision

Table 17: RIIO-2 TIM incentive rate for NGGT

Licensee	Draft Determination	Final Determination
GT - NGGT	36.65%	39%

[86] £0.67m before eligibility exclusion
[87] £6.6m before eligibility exclusion

6.3 In response to our Draft Determination, NGGT raised concerns about the way in which the TIM rate was calculated. These concerns relate to our assessments of high and lower confidence in cost forecasts. We address these as part of our discussion on BPI Stages 3 and 4 below. NGGT raised some other concerns about the interactions between cost confidence assessments and the BPI framework, including a point about possible systematic bias against transmission companies. We address these points in our Core Document.

Stage 1 – Minimum requirements

Final Determination decision

6.4 Our decision is that NGGT has not met the Business Plan minimum requirements set out in our SSMD and has therefore failed Stage 1 of the BPI.

6.5 In our Draft Determination, we put forward four cost areas where we had provisionally decided that NGGT's BP did not meet the minimum requirements - Asset Health volumes, Compressor Decommissioning, Hatton and Blackrod.

6.6 Following our Draft Determination, we have reconsidered our position on two of the four areas to take account of feedback received from NGGT. We no longer consider that NGGT has failed to meet the minimum requirements in relation to Hatton and Blackrod. However, we maintain our position that NGGT has failed to meet the minimum requirements in relation to Asset Health volumes and Compressor Decommissioning.

6.7 We set out our decisions and rationale on each of these cost areas in further detail below.

Asset Health Volumes

Final Determination decision

6.8 Our decision is that NGGT has not met the minimum requirements in relation to Asset health volumes as set out in 3.21 of the Business Plan Guidance.[88]

[88] https://www.ofgem.gov.uk/system/files/docs/2019/10/riio-2_business_plans_guidance_october_2019.pdf

6.9 Paragraph 3.21 of the Business Plan Guidance set out (amongst other matters) the following key minimum requirements:

- act as a robust decision support tool, open to scrutiny and challenge in conjunction with other appropriate means of justification for investment decisions
- be transparent about which risks, costs and benefits have neither been considered nor monetised as part of the analysis
- be transparent about assumptions, inputs and rationale for decisions, calculations and results.

Our Draft Determination view

6.10 In our Draft Determination our provisional view on Asset Health volumes was that NGGT's submission did not provide the necessary transparency around the methodology used to generate work volumes, and therefore the submission did not meet the Stage 1 BPI requirements.

6.11 Our Draft Determination position was that:

- There is little information on how the intervention volumes have been calculated. The lack of information made available in the EJPs on how the intervention volume had been calculated would have been justifiable if the NARM tools were the source of the intervention volumes as this is a method that Ofgem have previously approved. However, NGGT justified the volumes using bespoke "bottom-up" methods but provided no description of what these were or how they were calculated. This approach was replicated across every intervention volume calculation in the BP and background inspection data, assumptions and method had to be requested via SQs for all asset health spend in the BP (Circa £600m). In total 40+ new methods with a value of £500m were subsequently provided. The lack of justification methods provided in the EJP meant that the spend requested was not open to scrutiny which is the primary purpose of providing EJPs and a BP
- No inspection data, calculation methods or assumptions used to generate the intervention volumes for asset health work were provided in the December draft of the Business Plan
- The time taken to receive data through SQs has created a significant issue for Ofgem and the quality of evidence provided within the papers is not in line with what would be expected given the levels of spend requested. We

considered the extent of this failure to be serious and this was replicated across all asset health papers.

Final Determination rationale and Draft Determination responses

6.12 We have decided to implement our Draft Determination position that NGGT's BP does not provide sufficient information in its asset health volumes submission to meet the minimum requirements.

6.13 In our SSMC[89] and SSMD,[90] we set out a toolkit assessment approach to our cost and volume assessment. We outline below the types of specific information that a licensee would reasonably be expected to provide in order to ensure BP forecasts were open to scrutiny and challenge in accordance with paragraph 3.21 of the Business Plan Guidance:

- Historical trends - we need RIIO-T1 costs and volumes to be provided at an appropriate level of granularity. This item was part of the BPDT template that NGGT was required to fill in
  - NGGT did not comply with the BPDT requirement to provide RIIO-T1 cost and volume data for asset health, nor did they provide information that might have been an acceptable substitute for the missing information.
- Benchmarking - Where NGGT relied on benchmarking, we would have expected NGGT to submit supporting information on how costs and volumes compare to other companies
  - NGGT did not explicitly rely on benchmarking, but we recognise that NGGT did make some efforts to do so. Therefore, we have decided not to consider the failure to provide benchmarking information as a failure against minimum requirements.
- Bottom-up justification - Where NGGT had built up its cost and volume forecasts using bottom-up methods, we would expect NGGT to provide supporting information that demonstrated how costs and volumes were built up, including input data, assumptions, calculations, engineering judgement and decisions taken. Examples include condition information, tendered workloads and costs
  - NGGT did not provide this as part of its BP. We received this only after requesting this information.

[89] https://www.ofgem.gov.uk/system/files/docs/2018/12/riio-gt2_sector_annex_0.pdf Paragraph 6.19
[90] https://www.ofgem.gov.uk/system/files/docs/2018/12/riio-gt2_sector_annex_0.pdf Paragraph 5.15

- NARM monetised risk - Ofgem specifically recognised this may not be suitable as a primary tool to justify cost and volumes and specifically set out in SSMD (at para 6.28) that "We accept that monetised risk may not necessarily be the suitable primary basis for justifying all the investment choices. We expect it to be part of a toolbox approach to justifying and assessing network companies' proposed investments and preferences for chosen strategies. The toolbox approach should also include engineering judgement and CBA in accordance with the relevant sectoral guidance note on engineering justification and investment decision pack guidance*".*
    - NGGT provided this as the primary tool to justify its volumes based on consumers desired outcome to maintain monetised risk and did not include sufficient engineering evidence to support its volumes.

6.14 NGGT's view set out in response to Draft Determinations is that "Contrary to Ofgem's assessment, our Business Plan did provide sufficient information on how intervention volumes were calculated for the CBAs to act as a robust decision support tool. Ofgem's assessment that this Minimum Requirement is not met is therefore not correct. We completed all the minimum requirements including EJPs, CBAs and the BPDTs with the necessary assurance."

6.15 NGGT has asserted that it did provide sufficient justification for the bottom-up build of its plan alongside the NARM justification it provided. NGGT specifically highlights an example for its Valves EJP which states "98% of our Valves programme is based upon interventions to address known defects (29%) and high confidence work volumes based on historical trends (69%)".

6.16 We have assessed the EJPs and NGGT did not provide any further detail beyond the statement above in its EJP, so the above was the full extent of the justification provided in the December BP. The EJPs produced by NGGT assert how volumes of work have been generated (ie based upon known defects, inspections etc) but do not provide any evidence or detail to show how volumes of work have been generated. NGGT did not provide any justification to demonstrate how known defects were used to determine proposed volumes.

6.17 Our view is this information does not meet the minimum requirements as it is not open to scrutiny and challenge, nor is it transparent about assumptions, inputs and rationale for decisions, calculations and results. NGGT should have been transparent in terms of the data, assumptions, calculations and results as required by minimum requirements set out in the BPG.

6.18 We note that the Independent Challenge Group supported our view on the lack of information to justify NGGT's Asset Health expenditure. The report from the Challenge Group said that NGGT's Asset Health plan "shows significant increases in pipeline, compressor train and plant and equipment expenditure. We have concerns about the justification for this expenditure and whether it is efficient. We think that this cost forecast may be higher than necessary." The report raised a number of specific and material concerns about missing information relating to the EJPs and CBAs supporting NGGT's asset health expenditure, before concluding that the Group "would like to see evidence that engineering justifications are based on specific projects and use evidence of historic actual asset condition to corroborate asset health models". We took into account the views of the Independent Challenge Group and sought to plug these critical gaps through our SQ process.

6.19 We requested the missing information from NGGT through our SQ process in order to further assess the BP (i.e. beyond stage 1). We received justification of volumes showing how volumes had been built up using condition data, assumptions, decisions and calculations used. As set out above, NGGT should have provided this information in its December BP as part of the minimum requirements.

6.20 Once we received this additional information, our substantive asset health volumes assessment (at both Draft and Final Determinations) required and used this information.

6.21 Our assessment of the BPI stage 1 is based on the information provided by companies in the December BP submission only, in line with our SSMD. We have decided to implement our proposed position at Draft Determinations that the original plan was missing information to a sufficient extent to justify our decision to fail NGGT on the minimum requirements.

Impact of missing information

6.22 NGGT's BP requested an increased annual spend for asset health work from £69m/yr in RIIO1 to £123m/yr in RIIO2, a 78% increase. Asset health costs represent approximately 24% of NGGT's RIIO-2 plan.

6.23 Given that we could not scrutinise or challenge the volume of workload on asset health in NGGT's December BP, we requested the missing information from NGGT via our SQ process. Overall, we raised over 400 SQs; 100 of these were

engineering questions which focus on the justification of NGGT's proposed interventions.

6.24 We received all of the information necessary to carry out our assessment only in March 2020, half-way through our 7-month assessment window. This significantly delayed our ability to assess NGGT's BP and form a consultation position. We also received significant additional information as part of NGGT's DD consultation response, which should have been provided as part of its BP submission in December 2019.

6.25 With the missing information provided via SQs, we were able to scrutinise and challenge the plan in order to form a view of proposed allowances across the control. However, as part of our assessment, we also found that two of the seven asset health themes had both cost and volume uncertainty and we have decided to re-assess these costs as part of the asset health re-opener. We have allowed 3 years of funding so NGGT can carry out work required, which we will review ex post. This also allows NGGT to build up outturn data which we will assess as part of the re-opener to set allowances for years 4 and 5.

6.26 In our view, the information that was not, but ought to have been, provided in the BP submission in December 2019 impacted a material portion of NGGT's BP, and the failure to provide it significantly delayed our assessment.

GDN and TO BPI Assessment

6.27 Following our Draft Determinations, as part of bilateral discussions, NGGT has argued that it provided similar levels of information to that provided by the GDNs on certain cost areas (i.e. valves) and therefore should not fail Stage 1.

6.28 We have reviewed our treatment of NGGT's business plan in light of this feedback, and we are confident that NGGT has been treated fairly. Any comparisons between GT and GD need to take account of sectoral differences in information provided in the BP and availability of assessment approaches, such as benchmarking across difference companies in the sector.

Ofgem guidance and provision of feedback

6.29 NGGT has stated that "Even if Ofgem's view were correct that the BP did not provide sufficient information on how intervention volumes were calculated for the CBAs to act as a robust decision support tool, this was a result of Ofgem's failure to set sufficiently clear guidance in the Business Plan Data Templates. Ofgem

assessed two draft plans, and the BPDTs continued to evolve but at no point was it indicated that further, separate evidence was required to meet the Minimum Requirement, nor did the Ofgem engagement result in more specific requirements embedded in the EJP."

6.30 Ofgem does not accept that it failed clearly to set out guidance in the Business Plan Data Templates, draft plans or the Business Plan Guidance for NGGT to justify its investments. It is the responsibility of the individual network company to ensure that its BP meets all the minimum requirements we set out in guidance. The draft plans were submissions for the Challenge Group. Within the Challenge Group letters for the two draft BPs, it was made clear that the level of evidence NGGT had provided was not satisfactory in justifying the level of expenditure proposed in its BPs.

SQ process

6.31 NGGT also responded with the following criticism of our Stage 1 assessment: "Ofgem's comments on the amount of data received from NGGT through SQs post the December BP are not relevant to an assessment at Stage 1. The SQ process is not within scope of the BPI Stage 1. This assessment is based on the information provided in the December submission and not a penalty applied on any aspects of the subsequent process."

6.32 NGGT has misunderstood this - our assessment at stage 1 is based on the information received in December alone. However, we have made reference to subsequent information provided to us in the SQ process to demonstrate the extent of the lack of sufficient information received in the December BP which has led to a failure to meet minimum requirements.

6.33 Our decision is that NGGT's Asset Health submission does not meet the minimum requirements of our Business Plan Guidance, and as such fails Stage 1 of the BPI.

Compressor Decommissioning

Final Determination decision

6.34 Our decision is that NGGT has not met the minimum requirements for Compressor Decommissioning as set out in paragraphs 3.14 and 3.21 of the Business Plan Guidance.

6.35 Paragraph 3.14 of the Business Plan Guidance required (amongst other matters) that the following key minimum requirements be met:

- evidence of the efficiency of their costs, for example as compared to historical benchmarks and/or benchmarking with national and international comparators
- details of assumptions and justification for projected changes in the efficient levels of unit costs over time (ie ongoing efficiencies) caused by improvements in project delivery, technological innovation, procurement efficiencies, etc.

6.36 An extract of the relevant part of paragraph 3.21 of the Business Plan Guidance is set out in the asset health volumes section above.

Our Draft Determination view

6.37 In our Draft Determination our proposed view on Compressor Decommissioning was that NGGT's submission gave no supporting information to justify the funding request.

Final Determination rationale and Draft Determination responses

6.38 NGGT did not challenge that this information was missing from the December BP and we maintain our view that the funding request did not provide any supporting information to substantiate compressor decommissioning costs.

6.39 NGGT did not state the source of the unit costs applied nor did NGGT provide this information to us. As the information was missing from the December BP, our view is that this is a stage 1 issue and NGGT has failed to meet the requirements of paragraph 3.14 and 3.21 of the Business Plan Guidance.

6.40 In its response, NGGT expressed the view that the efficiencies in the compressor decommissioning cost study were unproven and, whilst efficiencies from the cost study had not been utilised, potential efficiencies were reflected in an overall efficiency adjustment made to the BP submission and therefore this should be a Stage 3 issue rather than Stage 1. We disagree that NGGT's overall efficiency adjustment is relevant to this requirement as it deals with ongoing efficiencies rather than efficiencies relating to scale and scope of decommissioning work. We have therefore adopted our Draft Determination position that the missing information is a BPI Stage 1 instead of BPI Stage 3 issue, because it is clearly part of the minimum requirements.

6.41 Our Final Determination is that NGGT's Compressor Decommissioning submission does not meet the requirements of our Business Plan Guidance, and as such fails Stage 1 of the BPI.

Hatton

6.42 In Chapter 3 above we have set out our decision on Hatton. Our decision is to remove Hatton as a minimum requirements failure under BPI Stage 1.

6.43 In our Draft Determination, our proposed view on Hatton was that NGGT provided no supporting information along with the RIIO-T2 submission, and therefore the submission did not meet the Stage 1 BPI requirements.

6.44 This lack of supporting information meant Ofgem was unable to review NGGT's £75m request and, as such, the submission failed to meet the requirements of the Business Plan Guidance.

6.45 NGGT responded with the view that Ofgem had received sufficient information on the Hatton project during the 2019 Needs Case review to undertake an initial assessment of the cost submission in the December BP submission.

6.46 NGGT also highlighted that, as the outcome of the 2019 Needs Case review, the preferred solution for the site had changed and so machinery tenders had to be re-run; therefore, the cost submission for the RIIO-T2 BP was out of date.

6.47 We have considered NGGT's response and, whilst we are of the view that the lack of information provided in the December submission would mean the requirements of the BPG are technically not met, we accept that there was limited value in NGGT providing this information when the equipment tenders for the site had to be re-run requiring a resubmission. Our view is that there was no material impact from NGGT not providing this information.

6.48 We have therefore decided to change our Draft Determination position and we no longer view the submission in relation to the Hatton investment as a failure under Stage 1 of the BPI.

Blackrod

6.49 In Chapter 3 above we have set out our decision on Blackrod. Our decision is to remove Blackrod as a minimum requirements failure under BPI Stage 1.

6.50 In our Draft Determination, we expressed the view that NGGT had failed sufficiently to quantify the probability of failure for the Blackrod project, and this would usually be demonstrated via a Quantitative Risk Assessment (QRA).

6.51 This lack of QRA meant we were unable properly to assess the risk of failure for this project, and also meant the level of risk put forward by NGGT could not be considered to be credible.

6.52 In its Draft Determination response, NGGT gave the view that, as submission of a QRA was not a minimum requirement under the Business Plan Guidance, this should not be a Stage 1 failure item.

6.53 Having reviewed NGGT's original submission, we have reached the view that NGGT's assumptions on risk of failure can be inferred from the information provided in the December BP supporting information. The issue lies with the quality of assumptions rather than lack of information.

6.54 We have therefore decided to change our Draft Determination position and we no longer view the submission in relation to the Blackrod investment as a failure under Stage 1 of the BPI. Instead, we consider this to be a Stage 3 issue discussed later in this chapter.

Stage 2 – Consumer Value Propositions

6.55 NGGT has failed Stage 1 minimum requirements and is therefore not eligible to receive rewards under Stage 2 of the BPI.

6.56 For details of our Final Determination on NGGT's CVP proposals see Appendix 1.

Stage 3

Final Determination decision

6.57 We have decided that NGGT will incur a £13.3m penalty following our BPI Stage 3 assessment.

6.58 Table 18 below sets out our decisions on Stage 3 penalties for poorly justified lower confidence costs removed by Ofgem from NGGT's business plan.

Table 18: Final Determination on Stage 3

Cost category	Poorly justified lower confidence costs subject to penalty (£m)	BPI penalty (£m)
Network capability	8.85	-0.89
Asset Health - Valves	8.07	-0.81
Asset Health - Compressor	7.00	-0.70
Asset Health - Pipelines	7.42	-0.74
Asset Health - Civils	38.93	-3.88
Asset Health Electrical	4.41	-0.44
Asset Health – Project GRAID	N/A	N/A
Decommissioning	17.11	-1.71
Small Tools, Equipment, Plant and Machinery	0.46	-0.05
Physical security asset refresh and major asset health projects	37.44	-3.74

Final Determination rationale and Draft Determination responses

Costs excluded from our confidence assessment

6.59 Further to responses received to DDs, we have decided at FDs to exclude some costs from our confidence assessment and therefore they were also excluded from the BPI stage 3 and 4 assessment and the calculation of the TIM.

6.60 In DDs we proposed to exclude pension costs from our confidence assessment as they had not been assessed. We did not receive any responses in relation to this proposal and therefore we have decided to implement this approach for Final Determinations.

6.61 We also proposed to exclude Cyber OT and IT costs from our confidence assessment at SSMD due to the low level of cost maturity. We received only one response, from NGGT, which agreed with our approach. Therefore, we have decided to implement this position for Final Determinations.

Costs subject to UM

6.62 In our Draft Determinations, where we proposed to move costs from baseline to UM, we considered these lower confidence costs. We proposed not to penalise the removed costs under Stage 3 because the costs will be re-assessed as part of a

re-opener;[91] therefore, we were not explicitly rejecting these costs. The only respondent NGGT agreed with our approach. Therefore, our Final Determination is to implement this position.

6.63 Additionally, we proposed baseline allowances for asset health and compressor emissions subject to an ex post assessment as part of a re-opener. This was because we recognised the need for NGGT to start delivering work or further develop projects. We proposed these baseline allowances as lower confidence given the associated uncertainty.

6.64 NGGT argued that these baseline allowances should be considered as high confidence because they will be assessed as part of a re-opener.

6.65 We do not agree that costs assessed as part of a re-opener would necessarily be high confidence. Additionally, our confidence assessment is based on the information currently available. NGGT has not challenged our view that these costs are currently lower confidence and therefore we maintain our view for Final Determinations.

Cost categories subject to BPI Stage 3

6.66 The table below sets out our Final Determination rationale for each cost category where we received Draft Determination responses. Where we have not received a response, the rationale is as set out in Draft Determinations.

Table 19: Final Determination rationale for BPI Stage 3

Cost category	Final Determination rationale and Draft Determination responses
Physical security asset refresh	We have decided to implement our DD position on physical security asset refresh and consider removed costs to be poorly justified lower confidence costs, and they are subject to a Stage 3 penalty. NGGT responded that they are the first network to propose PSUP asset health plans and as this is a first of a kind activity it should not be penalised. Whilst we acknowledge this is a new area of investment, it cannot be assumed that the costs to replace technical assets would be the same as the cost of the original installation of these assets and their associated infrastructure at new sites. NGGT did not provide any tenders or evidence to support the assertion that costs would be the same and therefore we adopt our DD proposal to treat this cost as lower confidence.

[91] Examples include: Asset health re-opener and Compressors emissions re-opener.

Cost category	Final Determination rationale and Draft Determination responses
	NGGT also stated that it should not incur a penalty as it offered a voluntary reduction of £15.5m from its initial proposed costs. However, that subsequent reduction in its resubmission only affirms Ofgem's assessment that the costs submitted in its business plan were poorly justified and, indeed, too high. The cost resubmission was made only after the costs were challenged by Ofgem through Supplementary Questions on the basis that NGGT's original submission was unsubstantiated. Following the SQ process, NGGT resubmitted the costs based on the alternative methodology suggested by Ofgem and which we used to form our view of costs. NGGT was therefore not able to demonstrate that the costs ought not to have been removed from its Business Plan; to the contrary, it agreed with us that a revised methodology ought to be used to substantiate the cost allowance and, when it did so, the consequence was to identify a lower figure. That resubmission therefore does not change our view that there needed to be a reduction from the originally submitted costs, which were poorly justified low-confidence costs; and, therefore, NGGT is subject to a Stage 3 penalty in respect of those removed costs. We disagree with NGGT that the costs should be high confidence because they were attached to a PCD. PCDs ensure that allowances are returned to consumers in the event that specific outputs are not delivered and does not protect against the cost of delivery. This is a separate consideration to our assessment of high and lower confidence costs and whether the proposals in the BP were poorly justified.
Blackrod	We have decided to implement our DD position to reject the Blackrod proposal and apply a Stage 3 penalty. We disagree with NGGT that the proposal was well-evidenced and justified. The needs case is based on an unjustified assertion that network reinforcement is required even though the pipeline risk is lower than the European Gas Pipeline Data Group. NGGT has provided further information and further engagement has been undertaken; however, NGGT has not demonstrated that the risk on this pipeline is any higher than the risk on the rest of the network, nor provided any evidence of poor condition or unreliability for this pipeline. We also consider that some of the assumptions NGGT has used in proposing this investment are poorly justified. NGGT assumes consequence of failure will be at a maximum level until 2072, which has not considered that supply impacts only occur above 85% of peak demand and forecast decline in use of gas on the NTS means peak demand is expected to slip below 85% of current levels by 2034. Therefore, we have rejected the proposed project and consider these costs to be lower confidence and poorly justified, and they incur a Stage 3 penalty.
Recompression	We have changed our DD position in light of NGGT's response. NGGT provided further justification for the needs case and the cost for this

Cost category	Final Determination rationale and Draft Determination responses
	project. We accept this and now consider these to be high confidence.
Pipelines	**ILI and CP digs** We have changed our DD position of assessing these costs as lower confidence and poorly justified which led to Stage 3 penalty at DD. Our decision is that ILI and CP digs remain lower confidence costs but are well justified. NGGT provided further evidence for ILI and CP defect digs in response to our draft determinations and we have allowed these volumes in full on that basis. We consider these costs to be lower confidence as Atkins has concerns about NGGT's ability to deliver catch-up interventions. Given that we have now allowed these volumes in full, there is no associated penalty at FD. **CP remote monitoring** We have decided to implement our DD position that CP remote monitoring is lower confidence and poorly justified. NGGT provided further information to justify its costs for CP remote monitoring and suggested these should be classed as high confidence as they are based on specific OEM data and historic outturn data. We have accepted this information and updated the unit cost allowance. However, concerns remain around cost certainty given the scope of work remains unclear, a final supplier has not been selected and we found issues with the allocation of costs in the historical data. We have therefore decided that these costs are still lower confidence and remain poorly justified. The costs subject to stage 3 penalties have reduced as we have increased the unit cost allowance. **CIPs capital refurbishment** We have decided to change our DD position. While NGGT did not challenge our view of confidence for CIPS for capital refurbishment, they submitted additional evidence in response to DDs to support the proposed volume. We have decided to consider these costs lower confidence and well justified and there is no associated penalty at FD.
Compressors	**Compressor theme** In its response, NGGT stated that the entire compressor theme (covering four sub-themes) should not be subject to a penalty as we have made decisions based on running hours and decommissioning expectations that change the output and resilience being delivered for consumers. We reviewed our assessment and found that, where we had taken this assessment approach, we had considered these costs to be high confidence at DD. There no penalty was proposed for these costs as part of Stage 3 at DD. We maintain our position for FD. **Compressor breakdown budget** We have decided to implement our DD position that the compressor breakdown budget is lower confidence and poorly justified. NGGT provided further clarification about the assumptions underlying the volumes. We have decided to accept NGGT's proposed costs and volumes and therefore there are no costs subject to a penalty at Stage 3. However, these costs remain lower

Cost category	Final Determination rationale and Draft Determination responses
	confidence and poorly justified because it was inappropriate to use a cost and volumes approach to justify these costs. **Gas skid installations** NGGT did not challenge our view at DDs on the gas skid installations and we have decided to implement our DD position that these costs are lower confidence and poorly justified because NGGT presented conflicting information. **Mopico compressors** We have decided to implement our DD position that the Mopico compressor work is lower confidence and poorly justified. NGGT's proposal to replace these compressor motors was not justified and in its response to our draft determinations submitted a revised proposal to refurbish these motors at a lower cost. We consider the original submission should have been the refurbishment option and therefore the cost difference is lower confidence and poorly justified and therefore subject to stage 3 penalty. **Single supplier compressor costs** We have decided to implement our DD position that the other compressor costs are lower confidence and poorly justified. NGGT considered our classification of costs that had not been competitively tendered as lower confidence and poorly justified as inappropriate. It explained that it must contract with the OEM for some work. Where NGGT presented only supplier estimates, or no further supporting data, we considered these costs remained lower confidence and poorly justified. In our FDs, however, we have accepted that certain interventions must be contracted with the OEM and have allowed these costs in full; therefore, there is no associated stage 3 penalty.
Valves	**Vent and sealant line refurbishment** We have changed our DD position of assessing these costs as lower confidence and poorly justified. Our decision is that vent and sealant line refurbishment is high confidence. NGGT presented evidence to demonstrate that there was no overlap between the vent and sealant line refurbishment and replacement volumes. We accepted this evidence and have therefore decided that that these costs are high confidence and we have removed the associated penalty. **Valve replacement** We have decided to implement our DD position that valve replacement is lower confidence and poorly justified. In its response to our cost assessment for valves, NGGT stated that it was to be expected that there would be a range of costs for this UID due to the numerous cost drivers for this work, and that it was unable to isolate more data points because its efficient approach in RIIO-T1 was to bundle works, which precluded it being able to isolate valve costs in support of its submission.

Cost category	Final Determination rationale and Draft Determination responses
	We recognise that NGGT bundled work in order to drive efficiency; however, it should have been able to identify and collect outturn data for specific assets as part of project delivery. We also recognise there will be some variability in any unit cost; however, in our Business Plan Guidance we asked companies to identify cost drivers. We consider NGGT should have highlighted the reasons for the variability and suggested means to deal with this in its submission, but it failed to do so. In terms of the limited data set that was submitted, NGGT has now highlighted that the bundled work is more efficient, yet it has submitted its justification based on the unbundled work, which NGGT states is less efficient. Whilst NGGT did not highlight this specifically in its cost justification or estimate the extent of this efficiency. Instead it has presented the raw data as cost justification. For these reasons we have decided that these costs remain lower confidence and poorly justified.
Civils	**Security and Fencing, Access and Buildings** We have decided to implement our DD position that site access roads and fencing is lower confidence and poorly justified. We have decided to maintain our proposed allowance for these costs and reject NGGT's proposal to move elements of the civils project theme to a UM. NGGT did not provide any evidence to demonstrate why these costs should not be considered lower confidence and poorly justified. Therefore, we have decided to implement our DD position that NGGT proposed unnecessary investment for fences and gates and provided poor quality data for refurbishment of roads and paths. **Pipe supports, pits & ducting and Treatment, Drainage, Tanks & Bunds** We have decided to implement our DD position that these costs remain lower confidence and poorly justified. NGGT did not provide additional evidence to challenge our view; therefore, we have decided to implement our DD position and they remain subject to stage 3 due to over-scoping of work for pipe supports and uncertainty around number of assets on each site.
Electricals	**Site lighting external column replacement** We have decided to implement our DD position that site lighting external column replacement is lower confidence and poorly justified. NGGT has not challenged our volume assessment for lighting columns, but has challenged our view of confidence and justification on the basis that we have changed the asset management approach by opting to move the lighting investment to a fix on fail approach, focusing on refurbishment and repairs rather than replacement. We consider that NGGT provided poor justification for its proposed replacement approach and risk-based strategy and did not adequately consider refurbishment. Therefore, we consider these cost to be lower confidence and poorly justified.

Cost category	Final Determination rationale and Draft Determination responses
Project GRAID	We have changed our DD position in light of NGGT's response. We have updated the assessment of these costs and now consider these costs to be well justified.
Compressor decommissioning	We have decided to implement our DD position on compressor decommissioning. We consider these costs lower confidence, as the basis of the submission was a single quotation from 2015. This is not sufficient for Ofgem to have high confidence as that is not a tendered price that has been quoted for the specific work proposed and is out of date. We also consider these costs to be poorly justified as NGGT failed to include any efficiencies from that quotation. We disagree with NGGT that its proposal of attaching a PCD should mean that the costs are high confidence. PCDs ensure that allowances are returned to consumers in the event that specific outputs are not delivered; however, this is a separate consideration from our assessment of high and lower confidence costs and whether the proposals submitted by NGGT in the BP were sufficiently justified.
Non-operational property	We have decided to implement our DD position on non-operational property that these are poorly justified lower confidence costs but we have revised the amount of the penalty that was proposed in DDs in light of a change to the allowed costs. NGGT resubmitted an updated cost forecast as part of its response to DDs which was lower than its BP forecast, which Ofgem accepts and used to form our decision on allowed costs. We have recalculated the Stage 3 penalty to reflect our updated allowance.
Small tools, equipment, plant & machinery (STEPM)	We have decided to change our DD position on STEPM. NGGT explained why we had misunderstood the basis on which it determined STEPM costs, which we accept. Therefore, our decision is to consider these as high confidence costs and not subject these costs to a BPI penalty.
All other cost categories	We did not receive any direct responses in any other cost categories and have decided to implement our DD proposals.

Stage 4

6.67 NGGT has failed Stage 1 minimum requirements and is therefore not eligible to receive rewards under Stage 4 of the BPI. However, we present the analysis below which was carried out in the interests of ensuring NGGT has the fullest possible feedback on the hypothetical assumption that NGGT was eligible.

Table 20: Final Determination rationale for stage 4

Cost category	Final Determination rationale and Draft Determination responses
Physical security opex	NGGT responded that this area should receive a Stage 4 reward as actual submitted costs were lower than Ofgem's modelled view of

Cost category	Final Determination rationale and Draft Determination responses
	unit costs and the reason costs were reduced were to changes to the CNI list. We accept this reasoning, and, if NGGT were eligible, it would have received a reward. However, NGGT is not eligible to receive Stage 4 rewards due to Stage 1 failure.
Al other cost categories	We did not receive any direct responses in any other cost categories and have decided to adopt our DD proposal

Appendix 1 - CVP Final Determination details

A1.1 NGGT has failed Stage 1 minimum requirements and is therefore not eligible to receive rewards under Stage 2 of the BPI. However, we present the analysis below which was carried out in the interests of ensuring NGGT has the fullest possible feedback on the hypothetical assumption that NGGT was eligible.

Table 21: NGGT's CVP proposals Final Determination

CVP name and description	Draft Determination summary	Consultation response summary	Final Determination
Resilience solution at Blackrod: Investing in a new pipeline at Blackrod to connect the Blackrod network offtake, and a new Above Ground Installation multijunction, to increase security of supply.	**Reject:** Project CVP was based on was rejected.	NGGT disagree with Ofgem's decision to reject the Blackrod project and noted Ofgem did not provide further information on the CVP proposal in its own right.	**Reject:** No change to our DD position as the project was rejected following engineering assessment. However, we acknowledge NGGT's actions in taking a whole system approach to network investments.
Security innovation application: Rolling out an open-source SCADA innovation initiative on compressor sites, offsetting the full replacement of control systems from RIIO-GT2 to RIIO-GT3.	**Reject:** Activity does not go beyond BAU and similar activities have been undertaken in RIIO-GT1 without any additional reward.	NGGT acknowledge the interaction between NIA funding and the proposed CVP	**Reject:** No further information provided in DD response; therefore, no change to our DD position.
BCF reduction – construction: Achieving carbon neutral construction by 2026.	**Reject:** We consider reducing BCF should be a BAU ambition for all TOs.	NGGT disagreed with our proposal to reject this CVP, stating that while BCF reduction should be a BAU ambition the ambition to be carbon neutral goes beyond this. NGGT note that other network companies have had funding approved to offset emissions, while NGGT has requested no additional funding.	**Reject:** We acknowledge NGGT's ambition in aiming to achieve carbon neutral construction by 2026; however, we do not consider a CVP to be an appropriate mechanism to fund such activities as other networks are undertaking similar activities in RIIO-2 without additional reward.

CVP name and description	Draft Determination summary	Consultation response summary	Final Determination
Natural environment improvements: Enhancing the value of the natural assets on non-operational land by 10% over the course of RIIO-2.	**Accept:** Accepted the proposal and said we would engage with NGGT to establish a methodology for valuing natural capital enhancement.	NGET supported our decision to provisionally accept this CVP, and that Ofgem should amend its BPI stage 1 decisions so that NGGT is eligible for a CVP reward.	**Accept**[92]**:** We recognise the value in NGGT's proposal and accept the methodology NGGT used to calculate the CVP reward value. Due to failing BPI stage 1 NGGT is not eligible to receive any reward through CVPs. We are confident that this output will still be delivered as NGGT is also incentivised in this area through the environmental incentive ODI-F, and therefore consumers will not incur detriment from our decision to exclude NGGT from CVP rewards.
Community initiatives: Committing 0.3% of major project spend to consumer-led community improvements.	**Accept:** We accepted the CVP for £0.6m however NGGT failed the minimum requirements and therefore is not eligible for a reward under stage 2 of the BPI.	NGGT supported our decision to provisionally accept this CVP, and that Ofgem should amend its BPI stage 1 decisions so that NGGT is eligible for a CVP reward.	**Reject:** This is a change to our DD position. Following consultation responses and further discussions with networks we do not consider it appropriate to accept this CVP. We recognise the value in NGGT's proposal; however, we consider this activity to constitute Corporate Social Responsibility (CSR). We consider activities to be CSR if they sit outside the scope of what would usually be considered as within a network company's business footprint, and if they fit the general CSR definition of companies integrating social and environmental concerns in to their business operations on a voluntary basis. We believe that

[92] NGGT is not eligible to received rewards under BPI Stage 2 due to BPI Stage 1 failure.

CVP name and description	Draft Determination summary	Consultation response summary	Final Determination
			community initiatives fit within this definition
Methane emissions reduction: Increasing focus on reducing all methane emissions. In particular, monitoring leaks on the network and working on ways to reduce them.	**Reject:** Does not go beyond BAU.	NGGT stated that this was not submitted as a formal CVP, rather an order of magnitude estimate. NGGT note that this was rejected on basis it did not go beyond BAU, and confirm it is a key activity it will be undertaking in RIIO-GT2.	**Reject:** No further information provided in DD response; therefore, no change to our DD position
Whole system strategy: Taking a leading role in the decarbonisation of heat for gas transmission, collaborating across industry on a hydrogen workplan and innovative solutions.	**Reject:** Unable to quantify the consumer value due to the lack of detail around the activities being proposed.	NGGT stated that this was not submitted as a formal CVP, rather an order of magnitude estimate. NGGT welcome Ofgem recognition of ambition to take a leading role in the decarbonisation of heat.	**Reject:** No further information provided in DD response; therefore, no change to our DD position
Facilitate connection of smaller gas suppliers: Committing to implement improvements from Customer Low Cost Connections (CLoCC) project into BAU, enabling small and medium connections for less than £1m and in less than 12 months, facilitating connection of smaller gas suppliers to the network.	**Reject:** We expect innovation funded through the NIC in RIIO-GT1 to be rolled out as BAU in RIIO-GT2	NGGT stated that this was not submitted as a formal CVP, rather an order of magnitude estimate. NGGT state commitment to implement the proposed improvements.	**Reject:** No further information provided in DD response; therefore, no change to our DD position

Appendix 2 - NGGT Environmental ODI-F annual reward and penalty thresholds

A2.1 Table 22 below details the annual reward and penalty thresholds applicable to NGGT for the environmental incentive ODI-F.

Table 22: NGGT Annual reward and penalty thresholds.

Percentage change compared to baseline	Year	Penalty thresholds %	EAP commitment %	Reward thresholds %
a) Reduction in fleet emissions in % Baseline: estimated emissions of fleet in 2021[93] (TCO2e)	2021/22	-8.0	2	12.0
	2022/23	-6.0	4	14.0
	2023/24	-3.0	6	16.0
	2024/25	8.0	16	25.0
	2025/26	21.0	28	35.0
b) reduction in Business mileage emissions in % Baseline: 2019/20 emissions	2021/22	1	2	3
	2022/23	3	4	5
	2023/24	5	6	7
	2024/25	6	8	10
	2025/26	8	10	12
c) Office and operational waste recycling in %	2021/22	44	48	52
	2022/23	46	50	54

[93] NGGT Fleet emissions are forecast to rise in the next year due to expansion in their fleet, for example ICE vans. Thus we did not think the 2019/20 baseline is appropriate to use.

Percentage change compared to baseline	Year	Penalty thresholds %	EAP commitment %	Reward thresholds %
Baseline: 2019/20 emissions	2023/24	49	53	57
	2024/25	53	57	61
	2025/26	55	60	65
d) Office waste by weight: reduction in % Baseline: 2019/20 waste in tonnes	2021/22	1	2	3
	2022/23	3	4	5
	2023/24	5	6	7
	2024/25	6	8	10
	2025/26	15	20	25
e) Office water use Baseline: 2019/20 water in litres	2021/22	1	2	3
	2022/23	3	4	5
	2023/24	5	6	7
	2024/25	6	8	10
	2025/26	15	20	25
e) Environmental value of non-operational land: increase in % Baseline:	2021/22	0.6	1.0	1.4
	2022/23	1.35	2.25	3.15
	2023/24	1.35	2.25	3.15
	2024/25	1.35	2.25	3.15
	2025/26	1.35	2.25	3.15

Percentage change compared to baseline	Year	Penalty thresholds %	EAP commitment %	Reward thresholds %
2019/20 natural capital valuation				
Biodiversity Net Gain (BNG) on projects affecting the local environment	All years in RIIO-T2	Penalty if a project achieves 5% or less BNG	10	Reward if a project achieves 15% or more BNG