

Consultation

RIIO-2 Draft Determinations - Cadent

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

In May 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 have now assessed these plans. This document and others published alongside it, set out our Draft Determinations for company allowances under the RIIO-2 price controls, for consultation. We are seeking responses to the questions posed in these documents by 4 September 2020.

Following consideration of responses, we will make our Final Determinations at the end of the year. This document outlines the scope, purpose, and questions of the consultation and how you can get involved. Once the consultation is closed, we will consider all responses. We want to be transparent in our consultations. We will publish the non-confidential responses we receive alongside a decision on next steps on our website at [Ofgem.gov.uk/consultations](https://www.ofgem.gov.uk/consultations). If you want your response – in whole or in part – to be considered confidential, please tell us in your response and explain why. Please clearly mark the parts of your response that you consider to be confidential, and if possible, put the confidential material in separate appendices to your response.

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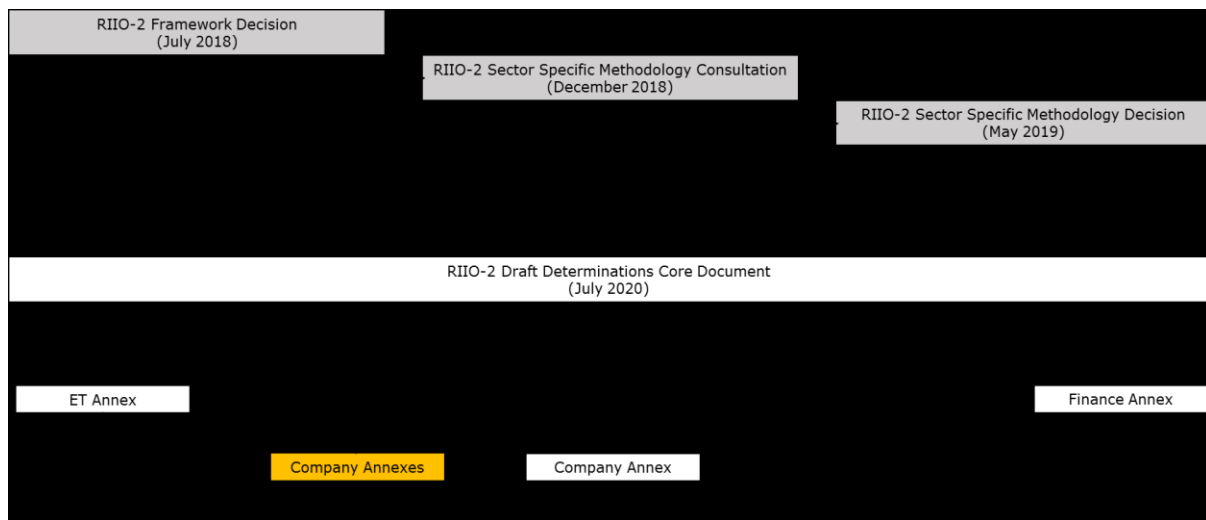
1. Introduction and overall package

Purpose of this document

- 1.1 This document sets out our Draft Determinations and consultation positions for the gas distribution (GD) price control (RIIO-GD2) for the areas that are specific to Cadent. This price control will cover the five-year period from 1 April 2021 to 31 March 2026. All figures are in 2018/19 prices except where otherwise stated.
- 1.2 Setting Allowed Revenue is underpinned by a large set of proposals across output design, cost assessment, and finance. The purpose of this document is to focus on Cadent and:
- support stakeholders in navigating the individual proposals across the suite of RIIO-2 Draft Determinations Documents that make up its overall allowed revenue
 - set out any proposals that are specific to Cadent, including:
 - baseline cost allowances
 - parameters for common outputs
 - bespoke Output Delivery Incentives (ODIs)¹
 - bespoke Price Control Deliverables (PCDs)
 - Consumer Value Propositions (CVPs)
 - Uncertainty Mechanisms (UMs)
 - the level of Network Innovation Allowance (NIA).
- 1.3 We intend this document to be read alongside the RIIO-2 Draft Determinations Core Document (Core Document) and RIIO-2 Draft Determinations - Gas Distribution Sector Annex (GD Annex). Figure 1 sets out where you can find information about other areas of our RIIO-2 Draft Determinations.

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

Figure 1: RIIO-2 Draft Determinations documents map



What makes up Cadent's Draft Determinations (the RIIO-2 building blocks)?

- 1.4 We have structured our price control consultation positions around a series of building blocks. The building blocks reflect how we propose to set companies' Allowed Revenue. Table 1 provides stakeholders with a map to where to find the proposals that make up the Draft Determinations.

Table 1: RIIO-2 Building Blocks

Building Block		Where to find the Draft Determinations	
		Approach/Methodology	Company specific parameters
Base Revenue (BR)	Legacy items from previous controls including RIIO-1 RAV and close-out adjustments	Finance Annex: Chapter 11	GD Annex: Chapter 2
	Common ODIs, PCDs and LOs	Core Document: Chapter 4	GD Annex: Chapter 2
	Bespoke ODIs, PCDs and LOs	Core Document: Chapter 4	Chapter 2
	Baseline Totex Allowance	Core Document: Chapter 5	GD Annex: Chapter 3
	Capitalisation Rate (Fast/Slow Money)	Finance Annex: Chapter 11	Finance Annex: Chapter 11 Table 40
	WACC Allowance	Core Document: Chapter 6 Finance Annex: Chapter 4	Finance Annex: Chapter 4 Table 31
	Depreciation Allowance	Depreciation Annex	Finance Annex: Chapter 10 Table 39
	Tax Allowance	Finance Annex: Chapter 7	Finance Annex: Chapter 7
	Innovation	Core Document: Chapter 8	Chapter 5
	Cyber and Physical security	Core Document: Chapter 7	Cyber resilience – Confidential annexes Physical security – GD Annex: Chapter 2 ²
Adjustments to BR for company performance	Totex Incentive Mechanism (TIM)	Core Document: Chapter 10	Chapter 1
	Network Asset Risk Metric (NARM)	NARM Annex: Appendix 3	NARM Annex Chapter 2
	BPI Reward/Penalty	Core Document: Chapter 10	Chapter 1
	Return Adjustment Mechanism (RAM)	Finance Annex: Chapter 8	Finance Annex: Chapter 8
Rules to adjust BR for other factors	Uncertainty Mechanisms (including Pass-through)	Core Document: Chapter 7	Chapter 3
	Policy Indexation (Real Price Effects, ongoing efficiency)	Core Document: Chapter 5	Core Document: Chapter 5
	Other Indexation (Regulatory asset value, Cost of equity , Cost of debt)	Finance Annex: Chapter 9	Finance Annex: Chapter 9
	Whole System Mechanisms	Core Document: Chapter 8	Core Document: Chapter 8
	Pensions	Finance Annex: Chapter 11	Finance Annex: Chapter 11
	Directly Remunerated Services (DRS)	Finance Annex: Chapter 11	Finance Annex: Chapter 11

² Cadent and SGN only

An overview of Cadent's RIIO-2 price control

1.5 We present a summary of our proposed baseline totex for Cadent in Table 2. This reflects our view of efficient costs including ongoing efficiency over RIIO-GD2. For further details of any values, please refer to Chapter 3.³

Table 2: Cadent's submitted versus proposed baseline totex⁴ (£m, 2018/19)

Network	Cost area	Cadent Submitted totex (£m)	Ofgem Proposed totex (£m)	Difference (%)
EoE	Direct opex	507	398	-21%
	Indirect opex	164	129	-21%
	Capex	297	238	-20%
	Repex	654	517	-21%
	Totex	1,621	1,282	-21%
Lon	Direct opex	438	339	-23%
	Indirect opex	142	109	-23%
	Capex	182	125	-32%
	Repex	806	464	-42%
	Totex	1,569	1,038	-34%
NW	Direct opex	352	290	-18%
	Indirect opex	128	108	-15%
	Capex	194	157	-19%
	Repex	496	414	-17%
	Totex	1,171	969	-17%
WM	Direct opex	269	223	-17%
	Indirect opex	112	96	-14%
	Capex	139	115	-17%
	Repex	436	343	-21%
	Totex	957	778	-19%

1.6 The common outputs that we are proposing for all companies in RIIO-GD2 are set out in Table 3 with further details in the GD Annex. Table 3 also sets out the bespoke outputs that we have proposed to include in our Draft Determinations (further details are contained within Chapter 2).

³ Where the source document is not stated, we are referring to this document (Draft Determinations - Cadent Annex, abbreviated to Cadent Annex).

⁴ Baseline totex refers to total controllable costs (this excludes BPI, RPEs, pass-through costs and includes ongoing efficiency).

Table 3: Summary of proposed common and bespoke outputs applicable to Cadent

Output name	Output type	Further detail
Common outputs across GD Sector		
Meeting the needs of consumers and network users		
Consumer vulnerability minimum standards	LO	Not covered (no change since our SSMD) ⁵
Consumer vulnerability reputational incentive	ODI-R	GD Annex
Consumer vulnerability and carbon monoxide safety use-it-or-lose-it allowance	PCD	GD Annex
Fuel Poor Network Extension Scheme	PCD	GD Annex, this annex Chapter 2
Customer satisfaction survey	ODI-F	GD Annex
Complaints metric	ODI-F	GD Annex
Guaranteed Standards of Performance (GSOPs)	LO	GD Annex
Emergency response time	LO	GD Annex
Unplanned interruptions (except Cadent North London)	ODI-F	GD Annex, this annex Chapter 2
Appointments for restoring supply to appliances	ODI-R	GD Annex
Digitalisation Strategy and Action Plan	LO	Core Document
Data Best Practice	LO	Core Document
Deliver an environmentally sustainable network		
Shrinkage and environmental emissions	ODI-F and ODI-R	GD Annex
Environmental action plan and annual environment report	LO and ODI-R	GD Annex
Business carbon footprint reporting	ODI-R	Core Document
Maintain a safe and resilient network		
Repex - tier 1 mains replacement	PCD	GD Annex, this annex Chapter 2
Repex - tier 1 services	PCD	GD Annex, this annex Chapter 2
Gas holder demolitions	PCD	GD Annex
Network Asset Risk Metric	PCD and ODI-F	GD Annex
Cyber resilience Operational Technology (OT)	PCD	Confidential Annex
Cyber resilience Information Technology (IT)	PCD	Confidential Annex
Capital projects	PCD	GD Annex, this annex Chapter 2

⁵ All references to 'our SSMD' in this GD Annex refer to the RIIO-GD2 Sector Decision Annex to the RIIO-2 Sector Specific Methodology Decision, <https://www.ofgem.gov.uk/publications-and-updates/riio-2-sector-specific-methodology-decision>

Output name	Output type	Further detail
Outputs bespoke to Cadent		
Meeting the needs of consumers and network users		
Multiple Occupancy Building (MOB) interruptions and Non-MOB interruptions	ODI-F x 2	GD Annex (Unplanned interruptions section)
High-rise building plans	ODI-R	Chapter 2
Community fund	ODI-R	Chapter 2

1.7 We set out the UMs that we are proposing for Cadent in Table 4 (further detail is in Chapter 4).

Table 4: Summary of proposed common and bespoke uncertainty mechanisms applicable to Cadent

UM Name	UM type	Included in baseline totex	Further detail
Common UMs across GD Sector			
Pension deficit charge adjustment	Pass-through	No	Not covered (no change since our SSMD)
Third party damage and water ingress	Pass-through	No	GD Annex
Miscellaneous pass-through	Pass-through	No	Not covered (no change since our SSMD)
Gas Transporters share of Xoserve costs	Pass-through	No	Not covered (no change since our SSMD)
Repex – Tier 2A iron mains	Volume driver	Yes (baseline forecast)	GD Annex
Repex – HSE policy changes	Re-opener	No	GD Annex
Repex - Tier 1 iron stubs	Re-opener	No	GD Annex
Diversions	Re-opener	Partial (separate from re-opener)	GD Annex
Multiple occupancy buildings (MOB) safety	Re-opener	No	GD Annex
Heat policy	Re-opener	No	GD Annex
Domestic connections	Volume driver	Yes (baseline forecast)	GD Annex
New large load	Re-opener	No	GD Annex
Smart meter rollout costs	Re-opener	Partial (separate from re-opener)	GD Annex
Specified streetworks	Re-opener	Partial (separate from re-opener)	GD Annex

UM Name	UM type	Included in baseline totex	Further detail
Fuel Poor Network Extension Scheme (FPNES)	Re-opener	Yes (baseline forecast)	GD Annex
Common UMs across all sectors⁶			
Bad Debt	Pass-through	No	Finance Annex ⁷
Business Rates	Pass-through	No	Not covered (no change since our SSMD)
Ofgem Licence Fee	Pass-through	No	Not covered (no change since our SSMD)
Coordinated Adjustment Mechanism	Re-opener	No	Core Document
Cyber Resilience OT*	UIOLI allowance and re-opener	Partial (separate from re-opener)	Core Document
Cyber Resilience IT*	Re-opener	Partial (separate from re-opener)	Core Document
Non-operational IT and Telecoms Capex	Re-opener	Partial (separate from re-opener)	Core Document
Pensions (pension scheme established deficits)	Re-opener	No	Not covered (no change since our SSMD)
Physical Security (PSUP)	Re-opener	Partial (separate from re-opener)	Core Document
Tax Review	Re-opener	No	Finance Annex
Net Zero	Re-opener	No	Core Document
Cost of debt indexation	Indexation	No	Finance Annex
Cost of equity indexation	Indexation	No	Finance Annex
Inflation Indexation of RAV and Allowed Return	Indexation	No	Finance Annex
Real Price Effects	Indexation	No	Core Document
UMs addressed in this document (bespoke to Cadent)			
London medium pressure	Re-opener	No	Chapter 4

1.8 Table 5 sets out our NIA proposals for Cadent (further details can be found in Chapter 5). Our general approach to the NIA is set out in the Core Document.

Table 5: Summary of proposed Network Innovation Allowance applicable to Cadent

Consultation position
£32.5m, conditional on the implementation of an improved reporting framework.

⁶ Any costs not included in baseline totex, but included in allowed revenue are captured in the licence model.

⁷ RIIO-2 Draft Determinations – Regulatory Finance Annex (abbreviated to Finance Annex)

- 1.9 Table 6 summarises our assessment of Cadent across the four stages of the Business Plan Incentive (BPI), and sets out where you can find additional information.

Table 6: Summary of proposed Cadent BPI performance

BPI Stage	Outcome	Further detail
1	Pass	Core Document for approach to assessment and rationale.
2	No reward	Core Document for approach to assessment. Chapter 2 of this document for views on specific proposals.
3	Penalty of £0.1m	Core Document for approach to assessment. Chapter 3 of this document for specific views on Cadent's performance.
4	No reward	Core Document for approach to assessment. Chapter 3 of this document for specific views on Cadent's performance.
Overall	Penalty of £0.1m	Core Document

- 1.10 Table 7 summarises our proposed Totex Incentive Mechanism (TIM) rate for Cadent. We provide further details in the Core Document.

Table 7: Summary of proposed TIM rate for Cadent

Network	TIM rate (%)
East of England	49.6%
London	49.8%
North West	49.5%
West Midlands	49.8%

- 1.11 Table 8 summarises the financing arrangements that we are proposing to apply to Cadent and the GD sector as a whole. Please refer to the Finance Annex for more detail on these areas.

Table 8: Summary of financing arrangements applicable to Cadent

Finance parameter	Cadent rate	Source
Notional gearing	60%	See Table 31 in Finance Annex
Cost of Equity	4.20%	
Expected outperformance	0.25%	
Allowed return on equity	3.95%	
Allowed return on debt	1.74%	
Allowed return on capital	2.63%	

2. Setting outputs

Introduction

2.1 In this chapter we cover two main areas:

- Firstly, we set out the proposed Cadent-specific parameters for common GD sector outputs.
- Secondly, we set out our views on the bespoke outputs that Cadent proposed in its Business Plan.

Common Outputs

2.2 We set out our consultation position for the Cadent-specific parameters in the following tables for the common outputs for RIIO-GD2, excluding where we specify parameters in Chapter 2 of the GD Annex.

2.3 We set out more detail on the common outputs in Chapter 2 the GD Annex, including the broader consultation positions and our rationale.

Table 9: Summary – Cadent parameters for common outputs

Output name	Output type	Parameters
Fuel Poor Network Extension Scheme (FPNES)	ODI-R and Volume driver	Target and cap for number of connections.
Unplanned interruptions	ODI-F	Minimum performance level, excessive deterioration level and highest modelled number of major incidents.
NARM	PCD and ODI-F	Baseline Network Risk Output - total that a network company has been funded to deliver through its RIIO-GD2 baseline, excluding Network Risk Outputs associated with other mechanisms or PCDs.
Repex - Tier 1 mains replacement	PCD	Baseline Target Workloads – number of kilometres of Tier 1 mains to be decommissioned. Baseline Cost Allowances – Tier 1 mains replacement.
Repex - Tier 1 services	PCD	Baseline Target Workloads – number of service interventions associated with Tier 1 mains replacement. Baseline Cost Allowance – Tier 1 services.
Capital Projects	PCD	List of projects included and the network where they apply.

Fuel Poor Network Extension Scheme

Table 10: Consultation position – FPNES ODI-R targets and volume driver cap

Network	ODI-R Target	Volume driver cap
	<i>Number of connections – RIIO-GD2 total</i>	<i>Number of connections – RIIO-GD2 maximum</i>
EoE	2,050	7,525
Lon	500	2,500
NW	2,250	11,250
WM	1,450	10,450
Total	6,250	31,725

Unplanned Interruptions

Table 11: Consultation position - ODI-F Minimum performance and Excessive Deterioration levels and highest modelled major incidents

Network	Minimum performance level	Excessive Deterioration level	Highest modelled major incidents
	<i>Hours per year</i>	<i>Hours per year</i>	<i>Number per year</i>
EoE	23	29	4
Lon - MOB ODI	601	801	N/A
Lon - Non-MOB ODI	15	20	1
NW	21	27	1
WM	24	31	1

2.4 The Monte Carlo model used to determine the values is included in the Unplanned Interruptions Model Annex.

NARM PCD and ODI-F

2.5 This table summarises Cadent’s NARM targets. Please refer to the NARM Annex for our consultation position and rationale.

Table 12: Summary - NARM Baseline Network Risk Outputs

Network	Baseline Network Risk Outputs
<i>Unit</i>	<i>Risk pound (£m)⁸</i>
EoE	5.5
Lon	9.1
NW	9.8
WM	4.6

⁸ The unit used to denote Monetised Risk values. £m is used to differentiate from financial monetary values.

Replex - Tier 1 mains replacement

Table 13: Consultation position - Tier 1 mains decommissioned Baseline Target Workloads for Cadent East of England (RIIO-GD2 total)

EoE	2021/22	2022/23	2023/24	2024/25	2025/26	RIIO-GD2 Baseline Target Workload
<i>Workload Activities</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>
Cast Iron and Spun Iron: Low-Pressure and Medium Pressure						
a. <=3"	6.4	6.4	6.4	6.4	6.4	32.1
b. 4"-5"	199.3	199.3	199.3	199.3	199.3	996.4
c. 6"-7"	122.9	122.9	122.9	122.9	122.9	614.5
d. 8"	60.2	60.2	60.2	60.2	60.2	301.1
Ductile Iron: Low-Pressure						
a. <=3"	0.0	0.0	0.0	0.0	0.0	0.0
b. 4"-5"	94.8	94.8	94.8	94.8	94.8	473.8
c. 6"-7"	46.7	46.7	46.7	46.7	46.7	233.3
d. 8"	22.2	22.2	22.2	22.2	22.2	111.0
Total						
Total - all diameters and materials	552.4	552.4	552.4	552.4	552.4	2,762.2

Table 14: Consultation position - Tier 1 mains decommissioned Baseline Target Workloads for Cadent North London (RIIO-GD2 total)

Lon	2021/22	2022/23	2023/24	2024/25	2025/26	RIIO-GD2 Baseline Target Workload
<i>Workload Activities</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>
Cast Iron and Spun Iron: Low-Pressure and Medium Pressure						
a. <=3"	0.2	0.2	0.2	0.2	0.2	1.2
b. 4"-5"	105.8	105.8	105.8	105.8	105.8	529.1
c. 6"-7"	77.2	77.2	77.2	77.2	77.2	386.0
d. 8"	44.1	44.1	44.1	44.1	44.1	220.6
Ductile Iron: Low-Pressure						
a. <=3"	0.0	0.0	0.0	0.0	0.0	0.0
b. 4"-5"	43.8	43.8	43.8	43.8	43.8	219.2
c. 6"-7"	21.0	21.0	21.0	21.0	21.0	105.0
d. 8"	11.0	11.0	11.0	11.0	11.0	54.8
Total						
Total - all diameters and materials	303.2	303.2	303.2	303.2	303.2	1,515.9

Table 15: Consultation position - Tier 1 mains decommissioned Baseline Target Workloads for Cadent North West (RIIO-GD2 total)

NW	2021/22	2022/23	2023/24	2024/25	2025/26	RIIO-GD2 Baseline Target Workload
<i>Workload Activities</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>
Cast Iron and Spun Iron: Low-Pressure and Medium Pressure						
a. <=3"	19.7	19.7	19.7	19.7	19.7	98.3
b. 4"-5"	133.2	133.2	133.2	133.2	133.2	665.8
c. 6"-7"	97.3	97.3	97.3	97.3	97.3	486.3
d. 8"	41.9	41.9	41.9	41.9	41.9	209.3
Ductile Iron: Low-Pressure						
a. <=3"	0.0	0.0	0.0	0.0	0.0	0.0
b. 4"-5"	48.9	48.9	48.9	48.9	48.9	244.5
c. 6"-7"	25.7	25.7	25.7	25.7	25.7	128.5
d. 8"	12.4	12.4	12.4	12.4	12.4	62.0
Total						
Total - all diameters and materials	379.0	379.0	379.0	379.0	379.0	1,894.8

Table 16: Consultation position - Tier 1 mains decommissioned Baseline Target Workloads for Cadent West Midlands (RIIO-GD2 total)

WM	2021/22	2022/23	2023/24	2024/25	2025/26	RIIO-GD2 Baseline Target Workload
<i>Workload Activities</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>
Cast Iron and Spun Iron: Low-Pressure and Medium Pressure						
a. <=3"	4.8	4.8	4.8	4.8	4.8	24.0
b. 4"-5"	95.8	95.8	95.8	95.8	95.8	478.8
c. 6"-7"	73.0	73.0	73.0	73.0	73.0	364.8
d. 8"	50.5	50.5	50.5	50.5	50.5	252.4
Ductile Iron: Low-Pressure						
a. <=3"	0.0	0.0	0.0	0.0	0.0	0.0
b. 4"-5"	37.1	37.1	37.1	37.1	37.1	185.4
c. 6"-7"	17.6	17.6	17.6	17.6	17.6	88.1
d. 8"	13.4	13.4	13.4	13.4	13.4	67.0
Total						
Total - all diameters and materials	292.1	292.1	292.1	292.1	292.1	1,460.5

Table 17: Consultation position - Tier 1 mains Baseline Allowance (RIIO-GD2 total £m, 2018/19)

	2021/22	2022/23	2023/24	2024/25	2025/26	RIIO-GD2 Baseline Allowance
<i>Baseline Cost Allowance</i>	<i>£m</i>	<i>£m</i>	<i>£m</i>	<i>£m</i>	<i>£m</i>	<i>£m</i>
Tier 1 mains baseline allowance						
EoE	64.6	62.0	60.2	58.3	57.7	302.8
Lon	121.7	115.0	110.5	108.2	107.1	562.5
NW	38.6	37.3	36.3	35.6	35.2	182.9
WM	34.2	32.7	31.7	30.9	30.6	160.2
Cadent	259.1	247.0	238.7	233.0	230.7	1,208.4

Repex - Tier 1 services

Table 18: Consultation position - Tier 1 service interventions Baseline Target Workloads for Cadent East of England (RIIO-GD2 total)

EoE	2021/22	2022/23	2023/24	2024/25	2025/26	RIIO-GD2 Baseline Target Workloads
<i>Workload Activities</i>	<i>No.</i>	<i>No.</i>	<i>No.</i>	<i>No.</i>	<i>No.</i>	<i>No.</i>
Tier 1 service interventions						
Relay - domestic	22,917	22,917	22,917	22,917	22,917	114,584
Test and transfer - domestic	25,084	25,084	25,084	25,084	25,084	125,422
Relay - non-domestic	45	45	45	45	45	223
Test and transfer - non-domestic	136	136	136	136	136	680
Totals	48,182	48,182	48,182	48,182	48,182	240,910

Table 19: Consultation position - Tier 1 service interventions Baseline Target Workloads for Cadent North London (RIIO-GD2 total)

Lon	2021/22	2022/23	2023/24	2024/25	2025/26	RIIO-GD2 Baseline Target Workloads
<i>Workload Activities</i>	<i>No.</i>	<i>No.</i>	<i>No.</i>	<i>No.</i>	<i>No.</i>	<i>No.</i>
Tier 1 service interventions						
Relay - domestic	23,656	22,901	21,929	21,713	21,605	111,805
Test and transfer - domestic	7,774	7,518	7,187	7,114	7,077	36,670
Relay - non-domestic	46	45	43	42	42	218
Test and transfer - non-domestic	42	41	39	39	39	199
Totals	31,519	30,504	29,198	28,908	28,763	148,892

Table 20: Consultation position - Tier 1 service interventions Baseline Target Workloads for Cadent North West (RIIO-GD2 total)

NW	2021/22	2022/23	2023/24	2024/25	2025/26	RIIO-GD2 Baseline Target Workloads
<i>Workload Activities</i>	<i>No.</i>	<i>No.</i>	<i>No.</i>	<i>No.</i>	<i>No.</i>	<i>No.</i>
Tier 1 service interventions						
Relay - domestic	25,390	25,390	25,390	25,390	25,390	126,950
Test and transfer - domestic	13,014	13,014	13,014	13,014	13,014	65,072
Relay - non-domestic	49	49	49	49	49	247
Test and transfer - non-domestic	71	71	71	71	71	353
Totals	38,524	38,524	38,524	38,524	38,524	192,622

Table 21: Consultation position - Tier 1 service interventions Baseline Target Workloads for Cadent West Midlands (RIIO-GD2 total)

WM	2021/22	2022/23	2023/24	2024/25	2025/26	RIIO-GD2 Baseline Target Workload
<i>Workload Activities</i>	<i>No.</i>	<i>No.</i>	<i>No.</i>	<i>No.</i>	<i>No.</i>	<i>No.</i>
Tier 1 service interventions						
Relay - domestic	20,612	20,612	20,612	20,612	20,612	103,059
Test and transfer - domestic	10,648	10,648	10,648	10,648	10,648	53,238
Relay - non-domestic	40	40	40	40	40	201
Test and transfer - non-domestic	58	58	58	58	58	289
Totals	31,357	31,357	31,357	31,357	31,357	156,787

Table 22: Consultation position - Tier 1 services Baseline Allowances for Cadent (RIIO-GD2 total, £m 2018/19)

	2021/22	2022/23	2023/24	2024/25	2025/26	RIIO-GD2 Baseline Allowance
<i>Baseline Cost Allowance</i>	<i>£m</i>	<i>£m</i>	<i>£m</i>	<i>£m</i>	<i>£m</i>	<i>£m</i>
Tier 1 services Baseline Allowances						
EoE	29.7	28.8	28.1	27.2	26.9	140.7
Lon	24.1	23.3	22.6	22.1	21.8	113.9
NW	17.9	17.4	16.9	16.6	16.4	85.2
WM	15.3	14.8	14.4	14.1	13.9	72.6
Cadent	87.1	84.3	82.1	79.9	79.1	412.5

Capital Projects PCD

Table 23: Consultation position – Cadent Project list for the Capital projects PCD

Network	Project	Deliverable/output	Proposed costs (£m)
EoE	NTS Capacity Upgrades	As per Engineering Justification Paper (EJP)	4.70
EoE	NTS Metering	As per EJP	7.92
EoE	PRS Capacity Upgrades	As per EJP	2.11
EoE	Reduced Depth of Cover	As per EJP	2.45
EoE	MP/IP Valves	As per EJP	16.69
Lon	NTS Other Metering	As per EJP	2.11
Lon	PRS Capacity Upgrades	As per EJP	2.13
Lon	Reduced Depth of Cover	As per EJP	1.23
Lon	MP/IP Valves	As per EJP	8.23
Lon	Brunel Bridge	As per EJP	0.99
NW	NTS Other Metering	As per EJP	2.80
NW	PRS Capacity Upgrades	As per EJP	12.69
NW	Reduced Depth of Cover	As per EJP	0.77
NW	Holford Salt Cavity	As per EJP	1.93
NW	MP/IP Valves	As per EJP	13.12
NW	Mersey Tunnel	As per EJP	0.75
WM	NTS Other Metering	As per EJP	4.37
WM	PRS Capacity Upgrades	As per EJP	3.18
WM	Reduced Depth of Cover	As per EJP	0.74
WM	MP/IP Valves	As per EJP	5.74
Total			94.65

Bespoke Output Proposals

- 2.6 For RIIO-2, we invited companies to propose additional bespoke outputs as part of their business plans reflecting the needs of and feedback from their stakeholders and consumers.
- 2.7 We requested that companies support bespoke outputs with robust justification to ensure that the potential consumer benefits were reasonable, given the additional cost and/or regulatory complexity introduced into the price controls. In making our draft decisions for RIIO-2 outputs, we have sought to strike a balance between these trade-offs for each bespoke proposal. You can find the background and our assessment approach in our Core Document.
- 2.8 In this section, we provide our views on all of the bespoke outputs that Cadent proposed in its Business Plan, and any that we propose to apply to Cadent.
- 2.9 For full details on the bespoke outputs sought, see Cadent's Business Plan.

Bespoke Output Delivery Incentives

- 2.10 The table below summarises the bespoke ODI proposals that Cadent submitted as part of its Business Plan and outlines our consultation position.

Table 24: Cadent's bespoke ODI proposals

Output name and description	Consultation position
Bespoke outputs we propose to accept	
High-rise building plans: Enhanced engagement with local authorities and building owners to create "building by building" plans for high-rise customers.	Accept: We propose to accept this bespoke output. Our rationale follows this table.
Bespoke outputs we propose to reject	
Providing time-bound appointments: Offer four-hour and two-hour time-bound appointment slots for gas supply restoration and connection to customer appliances and meet this 90% of the time.	Reject: We propose to merge this proposal into a new common ODI-R across all gas distribution networks (GDNs). Due to sufficient commonality with other GDNs' 'purge and relight' bespoke outputs we propose to establish a common ODI-R for appointments. We provide further detail in our GD Annex under 'Appointments for restoring supply to appliances'.

Output name and description	Consultation position
Responding to your enquiries: Enhance the capability to provide a rapid response to enquiries. Measure enquiries using a similar metric to complaints.	Reject: There is insufficient evidence of improved level of service beyond business as usual (BAU). Monitoring responses to enquiries is a BAU activity. Cadent may want to retain the proposed monitoring as a separate key performance indicator (KPI) for its stakeholders if this will improve response rates.
Measuring and enhancing accessibility and inclusivity: Establish a robust and transparent measure of accessibility and inclusivity. Publish performance once metric established. Cadent will become BSI 18477 (Inclusive service provision) certified.	Reject: We welcome the proposal to obtain certification but think Cadent is likely to achieve this without an ODI. It is part of its vulnerability strategy and can be funded through the consumer vulnerability and CO (carbon monoxide) safety use-it-or-lose-it allowance. In terms of the separate performance metric, as this is not yet developed, it is not clear that this would be sufficiently stretching to warrant an ODI.
Establishing and raising the bar for all of our customer and stakeholder experiences: Combining different measures of customer experience to establish tangible measures for improvement under key customer service areas, such as connections and plant services. Set a baseline in order to drive improvement. Type of measures to be established (not yet defined).	Reject: There is insufficient information and evidence that the bespoke output is sufficiently stretching to warrant an ODI. There are currently no clear targets or definitions for the components. Cadent may want to develop the proposal during RIIO-GD2 and monitor as a separate KPI for its stakeholders.
Improving our household connection service: Deliver household connections quotes within 15 minutes (90% target) and arrange site visit within three days following quote acceptance (85% target).	Reject: We welcome Cadent's efforts to improve customer service for connections customers. We think a new output is unnecessary as it largely duplicates the customer satisfaction connections survey which will drive (and reward) improvements. Cadent may want to retain the proposed monitoring as a separate KPI for its stakeholders.
Stakeholder measures: Establish a robust stakeholder satisfaction measure in order to understand how satisfied stakeholders are with Cadent's services and to drive improvements.	Reject: There is insufficient detail on specific targets or value to consumers. There is a lack of consumer support evidence for the specific deliverables and the proposal overlaps with the existing customer satisfaction survey output.

Output name and description	Consultation position
MOBs balanced scorecard: Establish a scorecard of customer measures related to improving the experience for customers living in MOBs, including a MOB specific CSAT measure.	Reject: Along with the Customer Engagement Group (CEG), we are supportive of the concept of a scorecard as it builds on the quarterly reports Cadent currently produces. However, there is not enough information, or justification, to implement an output or understand whether the targets are stretching. Production of a scorecard does not constitute a sufficient output in itself. Cadent may want to trial and develop the proposed monitoring as a separate KPI for its stakeholders. This would provide evidence for possible inclusion in future price controls.
Average restoration time for total unplanned interruptions (Unplanned interruptions (targeted likely levels)): Reduce non-MOBs average duration by 10% to under nine hours on average across all four networks. Reduce average duration of MOBs planned interruptions by 34% on average.	Reject: We propose to set interruptions ODIs for Cadent. We set out our consultation position and rationale under the 'Unplanned Interruptions' section within Chapter 2 of the GD Annex.
Private reinstatement timeliness: Complete private reinstatement within an average of three working days following completion of engineering works.	Reject: We welcome efforts to target reinstatement timelines faster than required through our decision to amend GSOP2 as set out in our SSMD. ⁹ However, there is a lack of evidence of customer support to tighten this GSOP standard further. If Cadent wants to retain this activity, it should do so voluntarily and ensure shareholders fund any costs.
Better roadworks information: Provide customers affected by works with tailored information on roadworks through digital and non-digital methods. Application of bronze/silver/gold methodology to determine what level of information is required.	Reject: We commend Cadent for proposing an improved streetworks service for consumers and stakeholders. However, we found insufficient evidence of a measurable and sufficiently stretching target for this output.
Coordinating with others: Coordinate streetworks with other utilities, local authorities and other stakeholders to reduce disruption and work with industry experts to measure coordination and the associated value (eg days of congestion saved).	Reject: We commend Cadent for this proposed output and consider there may be potential merit in this. We propose to work with Cadent and SGN to develop a consistent incentive for their similar proposals. Refer to the section 'Collaborative streetworks' in Chapter 2 of our GD Annex for our approach to Cadent and SGN's similar proposals.

⁹ SSMD GD Annex, Table 3.

Output name and description	Consultation position
Pioneering new funding model trial: A new centralised funding approach for consumer vulnerability, which would see alignment of all schemes and funding across England ensuring that solutions target those most in need. Trial to take place in Staffordshire within the West Midlands network.	Reject: There is insufficient justification of the needs case and a lack of robust methodology. We expect the GDNs to leverage different funding schemes for the delivery of vulnerability services. If the needs case and methodology can be improved, the consumer vulnerability and CO safety use-it-or-lose-it allowance provides the opportunity to fund this type of activity and the consumer vulnerability reputational ODI provides Cadent with the opportunity to highlight its performance.
Targeting customers in fuel poverty: Continue to innovate and use data in developing methods to better target those that should qualify for support. Robust baseline to be established - target 20% improvement.	Reject: The Network Innovation Allowance or consumer vulnerability and CO safety use-it-or-lose-it allowance provide the opportunity to fund this type of activity and the consumer vulnerability reputational ODI provides Cadent with the opportunity to highlight its performance.
Stakeholder engagement incentive (Stakeholder engagement): Demonstrating continual improvement in Cadent's stakeholder engagement approach and delivery of the commitments included in its strategy.	Reject: We encourage Cadent to report directly to its stakeholders on its performance against its stakeholder engagement strategy to inform them of its progress. However, we do not think that Cadent needs an ODI-R to report on this. More detail on our approach to stakeholder engagement is set out in Chapter 4 of our Core Document.
Trust charter: A set of commitments to build trust with Cadent's customers and stakeholders. Independent report published annually to its customers showing progress.	Reject: We encourage Cadent to report directly to its stakeholders on its Trust Charter commitments to inform them of its actions. Cadent has not evidenced that the targets for all aspects of the Trust Charter are sufficiently stretching or that it needs reporting for its Trust Charter to be delivered. However, we think that there is a clear benefit associated with delivery of the community fund, which was included in the Trust Charter. We are proposing to introduce a separate community fund ODI-R for this aspect of the Trust Charter. See the 'Community fund' section below for more detail.

Output name and description	Consultation position
Carbon neutral operations: Net zero carbon emissions (excluding shrinkage) by the end of RIIO-GD2. Initiatives including purchasing renewable energy to meet metered energy needs, delivering a zero emissions first responder service through electric or hydrogen vehicles, introducing electric vehicle charging at sites and purchasing offsets.	Reject: We propose that Cadent reports on its business carbon footprint (BCF) initiatives under the Annual Environmental Report (AER). Therefore, we do not consider it is necessary to set an additional reputational ODI. We have also introduced a common ODI-R for BCF reduction targets. We have proposed that GDNs submit further information for fleet conversion and charging infrastructure, with a view to setting a common PCD if appropriate, as discussed in Chapter 2 of the GD Annex.
Supporting our people to reduce their emissions: including investing in EV charging at office and depot locations, encouraging individuals to participate in a corporate emissions offset scheme and investing in technology, apps, educational material, community initiatives and awareness programmes.	Reject: The output is outside of Cadent's control and employee self-reporting is not a robust measurement. The output also includes proposals to subsidise employee EV and charging infrastructure in private staff residences, which is not appropriate for consumer bill funding.
Tackling theft of gas: Financial incentive sharing 60% of funds recovered with customers, with ambition of £8m funds recovered over the RIIO-GD2 period.	Reject: We propose to incentivise these activities across all GDNs through the TIM. Chapter 4 of our GD Annex sets out details on our proposed new approach for the industry.
Zero avoidable waste to landfill: Target of less than 5% avoidable waste to landfill by 2021. Report on the 5% of unavoidable waste in the Annual Environmental Report. During RIIO-GD2, less than 10% of GDN's backfill will be first use aggregate in the North West and East of England, and 5% in the West Midlands and North London.	Reject: We propose Cadent reports on its resource use and waste initiatives under the AER, therefore we do not consider it is necessary to set an additional reputational ODI in this area.
Connections standardisations: Establish an Entry Gas Customer and Stakeholder Forum to facilitate knowledge sharing and framework changes. Establish an Entry Gas Connection Standards Methodology and voluntary governance arrangements.	Reject: We recognise and encourage Cadent's review of entry connection charging and access arrangements to facilitate new distributed gas connections (including biomethane). However, Cadent has not set out any specific measurable outputs beyond establishing the Forum. Nor has it set out how this would materially benefit gas consumers. Although Cadent is likely to have a significant influence, the outcome is not fully within its control and requires input from the whole industry. There is no indication that establishing the Forum requires an ODI. We believe Cadent should implement its proposal and report on progress in its AER, but we do not consider it warrants an ODI.

Output name and description	Consultation position
Enhanced engagement on whole system thinking: Continuing to raise the bar on engagement and outcomes on whole system thinking, assessed by an independent panel.	Reject: Cadent proposed a financial ODI that would be assessed in the same way as the RIIO-GD1 Stakeholder Engagement Incentive. In our SSMD ¹⁰ we stated that we consider high quality stakeholder engagement should now be part of BAU activity, and we have therefore not included this bespoke output.
Joint planning office, standardising information sought by networks, network capacity information: Establish a pilot joint energy network planning function with at least one Distribution Network Operator. Continue to champion a new process across the energy networks that will standardise and coordinate approaches via the GDN's leadership of the Open Networks Whole System Workstream. Publish data on available or scarce network capacity and continue engaging with stakeholders through RIIO-GD2 to identify and implement further improvements in information provision.	Reject: We recognise and encourage Cadent's proactive work to develop whole system thinking. To facilitate delivery, we propose to include the £0.5m linked to this ODI in the baseline allowance for Cadent. We expect Cadent to share the findings of this work with stakeholders. We do not think, however, that an ODI is appropriate. The potential benefits are too difficult to measure under an ODI without imposing an excessive regulatory burden.

Bespoke ODIs consultation question

Cadent Q1. Do you agree with our proposals on the bespoke ODIs? If not, please outline why.

Our consultation position on bespoke ODIs accepted in our Draft Determinations

High-rise building plans

High-rise building plans	
Purpose	A reputational incentive to accelerate production of management plans for high-rise buildings.
Benefits	Bringing forward benefits of high-rise building plans, ie proactive intervention, faster supply restoration, and more effective safeguarding of vulnerable customers.

Background

2.11 In its Business Plan, Cadent proposed an ODI-R to produce management plans for each high-rise residential building that it supplies.¹¹ Cadent would develop the

¹⁰ SSMD Core Document, paragraph 3.4

¹¹ A high-rise building has at least six floors.

plans in consultation with local authorities and building owners to make proactive interventions and respond more effectively to supply interruptions.

Consultation position

Output parameter	Consultation position
Target	ODI to measure the proportion of high-rise buildings for which Cadent has completed building-specific management plans. Cadent to develop stretching annual targets in consultation with relevant stakeholders.
ODI type	Reputational.
Implementation	Cadent should report on its progress against their annual targets through the Regulatory Reporting Pack (RRP).

Rationale for consultation position

- 2.12 The development of specific high-rise building plans is likely to provide material benefits to consumers living in these properties through shorter supply interruptions and more effective safeguarding of vulnerable customers. Indirect benefits are also likely through the GDN being in a better position to respond to potential reform of the building safety regulatory system following the Hackitt Review. To the extent that proactive interventions are lower cost than reactive ones, there could also be cost reductions for all consumers – MOBs and non-MOBs – supplied by the GDN. Through this ODI, building plans can be in place sooner than they otherwise would have been, consumers will benefit earlier and the aggregate benefit may be larger.
- 2.13 Our Business Plan Guidance (BPG)¹² stated that bespoke outputs should include stretching targets that are well evidenced and deliver clear outcomes. Although Cadent did not provide a target, the proposal adequately meets our other ODI criteria and we believe that a material benefit is possible. We invite Cadent to provide annual targets ahead of the Final Determinations. On the basis that Cadent can provide stretching targets in this area, we propose to implement this ODI-R. We think Cadent should have in place targets for its entire population of high-rise MOBs by the end of RIIO-GD2 (ie provide targets for each of its networks).

¹² Paragraph 2.16

Consultation question

Cadent Q2. What should the annual targets be for Cadent's high-rise building plans ODI-R and how can they be made sufficiently stretching?

Community fund (originally part of Cadent's Trust Charter proposal)

Community fund	
Purpose	Cadent will invest at least 1% of annual profits into a stakeholder-informed community fund.
Benefits	The projects funded will support a variety of activities within the community.

Background

2.14 Cadent committed to investing at least 1% of its profits each year into a community fund, the Cadent Foundation. This fund will support a variety of priority activities within the community, including supporting consumers in vulnerable situations, the local economy and specific local initiatives. The distribution of funds will be informed by Cadent-led stakeholder consultation.

2.15 This commitment was included within its proposed Trust Charter ODI-R.

Consultation position

Output parameter	Consultation position
Target	Cadent will invest at least 1% of annual profits into a community fund.
ODI type	Reputational only.
Implementation	Cadent should report on contributions to the fund through the RRP.

Rationale for consultation position

2.16 We are not proposing to accept Cadent's Trust Charter ODI-R because it has not evidenced that the targets for all aspects of the Trust Charter are sufficiently stretching nor that Cadent needs reporting for it to be delivered. However, we think that there is a clear benefit associated with delivery of the community fund, which was included in the Trust Charter. Therefore, we are proposing to attach an ODI-R to the delivery of this aspect of the Trust Charter.

2.17 Cadent's community fund provides support for its local communities, including consumers in vulnerable situations. This fund is at no direct cost to customers, as Cadent will fund it through profits.

2.18 There is evidence of stakeholder support for Cadent's proposal and it is likely to have clear benefits to its local communities.

Bespoke Price Control Deliverables

2.19 The table below summarises the bespoke PCD proposals that Cadent submitted as part of its Business Plan and outlines our consultation position.

Table 25: Cadent's bespoke PCD proposals

Output name and description	Consultation position
Bespoke outputs we propose to reject	
Consumer vulnerability use-it-or-lose-it allowance (Needs identification): Two million direct conversations with customers over the RIIO-GD2 period to raise Priority Services Register (PSR) awareness. Over 80 strategic, programme and project partnerships to be formed. All front-line staff trained at least annually to ensure Cadent's employees are equipped with the right skills to act on customer vulnerability.	Reject: The consumer vulnerability and CO safety use-it-or-lose-it allowance provides funding for this type of activity and the consumer vulnerability reputational ODI gives Cadent the opportunity to highlight its performance. We took a decision on the size of the allowance in our SSMD, ¹³ and think it is appropriate to maintain an even distribution of funding across the GDNs to prevent a disparity of services available to consumers in vulnerable situations across GB.
Enhanced carbon monoxide awareness: Additional 2.9m alarms to be issued based on evidence from customer engagement, CO hot spot data and previous experience in RIIO-GD1. Form partnerships with all Fire and Rescue, NHS Trusts and Ambulance services in Cadent's footprint. Service, repair or replace 15,000 unsafe appliances (following CO incidents).	Reject: The consumer vulnerability and CO safety use-it-or-lose-it allowance provides funding for this type of activity and the consumer vulnerability reputational ODI gives Cadent the opportunity to highlight its performance. We took a decision on the size of the allowance in our SSMD, ¹⁴ and think it is appropriate to maintain an even distribution of funding across the GDNs to prevent a disparity of services available to consumers in vulnerable situations across GB.
Additional fuel poverty interventions: Offering 5,000 in-house interventions such as boiler installation or improving household insulation to lift customers out of fuel poverty.	Reject: Our SSMD stated that we would not fund the installation of boilers and heating systems and/or energy efficiency measures through the price control. ¹⁵

¹³ SSMD GD Annex, paragraph 3.31

¹⁴ SSMD GD Annex, paragraph 3.31

¹⁵ SSMD GD Annex, Paragraph 2.12

Output name and description	Consultation position
Income and energy efficiency advice: Trained surveyors will visit households and undertake tailored surveys identifying ways a customer could improve their energy efficiency and maximise income. Offer 25,250 customers income and energy advice.	Reject: The consumer vulnerability and CO safety use-it-or-lose-it allowance provides funding for this type of activity and the consumer vulnerability reputational ODI gives Cadent the opportunity to highlight its performance. We took a decision on the size of the allowance in our SSMD, ¹⁶ and think it is appropriate to maintain an even distribution of funding across the GDNs to prevent a disparity of services available to consumers in vulnerable situations across GB.
Personalising welfare facilities: Additional, tailored welfare provisions provided to consumers in Vulnerable Situations (not just those registered on the PSR) in the event of a supply interruption. Provisions include food vouchers, rechargeable showers, electric kettles etc.	Reject: We commend Cadent for proposing additional services for customers in the event of an interruption. However, it is not clear that all of the actions or costs proposed go beyond BAU or the service levels other GDNs are offering without a PCD. We therefore found insufficient evidence to allow this output as proposed. However, if Cadent provides a more detailed breakdown of which costs go beyond BAU we propose to consider again.
Service beyond the meter: Offering consumers in vulnerable situations an appliance repair or replacement (based on customer need) if found to be unsafe on a gas emergency visit, delivering 5,000 interventions over RIIO-GD2.	Reject: In our SSMD, we stated that we would not fund the installation of boilers and heating systems through the price control as there is already national, devolved and local government funding for boiler repairs and replacements. ¹⁷ We think the GDNs should continue to leverage these funds through their partnership networks.
Off-grid communities: Establish a managed process for communities connecting to the network and run pilots to connect communities and measure benefits.	Reject: We found insufficient evidence of the needs case and justification as an innovative proposal. Extensions to the gas network should be paid for via cost reflective charging. Cross-subsiding connections via energy bills is regressive, and the future of heat is uncertain.
Delivering metallic mains replacement - high risk steel replacement and other: Replace 67km per year of the highest risk ≤ 2 " steel pipes and high-risk Tier 2 and 3 iron mains above the defined risk threshold.	Reject: We do not consider that Cadent provided sufficient evidence to support the use of a PCD, given steel mains ≤ 2 " are already included in the NARM, which monitors delivery of asset management repex workloads in RIIO-GD2. Furthermore, we have not included the proposed workload programmes due to concerns over poor value for money for customers and the current uncertainty around the future of the gas network (see Chapter 3 for further details).

¹⁶ SSMD GD Annex, paragraph 3.31¹⁷ SSMD, GD Annex, paragraph 2.12

Output name and description	Consultation position
Regional specific schemes - eg London Medium Pressure Programme: Deliver specific regional strategies to target key infrastructure needs, eg 2.6km per year for London Medium Pressure.	Reject: We found insufficient evidence that Cadent had developed its project plan sufficiently to justify funding this project in the baseline. In particular, uncertainty remains over the timing and costs of the project. However, we propose to implement a re-opener mechanism to enable Cadent to seek funding once it has greater certainty over the costs and timing of each section of its London Medium Pressure project. Details for the UM are provided in Chapter 4.

Bespoke PCDs consultation question

Cadent Q3. Do you agree with our proposals on the bespoke PCDs? If not, please outline why.

Consumer Value Propositions

2.20 The table below summarises the CVP proposals that Cadent submitted under stage 2 of the BPI and outlines our consultation position.

2.21 For full details on the proposed CVPs, see Cadent's Business Plan.

2.22 Where our CVP consultation positions reference associated bespoke ODIs, PCDs or UMs, please see Tables 24, 25 and 61 respectively for more detail.

Table 26: Cadent's CVP proposals

CVP name	Consultation position
CVPs we propose to reject	
CO awareness and safety plan: Educate 200,000 of those most at risk to the dangers of CO, delivering -£0.9m net benefit, increasing to £0.4m in RIIO-GD3.	Reject: We are not proposing to accept the associated PCD proposal (Enhanced carbon monoxide awareness) for the reasons stated in Table 25, so it should not receive a CVP reward.
CO awareness and safety plan - issue 3 million alarms: Issue three million CO alarms over RIIO-GD2, delivering -£5.1m net benefit, increasing to £5.4m in RIIO-GD3.	Reject: We are not proposing to accept the associated PCD proposal (Enhanced carbon monoxide awareness) for the reasons stated in Table 25 so it should not receive a CVP reward.
CO interventions - service, repair and replace: Service, repair or replace 15,000 unsafe appliances for those most vulnerable, delivering £28.5m net benefit.	Reject: We are not proposing to accept the associated PCD proposal (Enhanced carbon monoxide awareness) for the reasons stated in Table 25 so it should not receive a CVP reward.

CVP name	Consultation position
Fuel poverty plan - provide 25,250 customers with advice: Offer income and energy advice to 25k customers, delivering £48.1m net benefit.	Reject: We are not proposing to accept the associated PCD proposal (Income and energy efficiency advice) for the reasons stated in Table 25, so it should not receive a CVP reward.
Fuel poverty plan - 5,000 tailored interventions: Provide at least 5,000 non-connection interventions for those in fuel poverty, delivering £13.2m net benefit	Reject: We are not proposing to accept the associated PCD proposal (Additional fuel poverty interventions) for the reasons stated in Table 25, so it should not receive a CVP reward.
New cross-industry funding arrangement in place: Trial a new approach to fuel poverty funding in England. Cadent did not quantify the benefit of this proposal in monetary terms.	Reject: We are not proposing to accept the associated ODI proposal, (Pioneering new funding model trial) for the reasons stated in Table 24, so it should not receive a CVP reward.
Going beyond the meter - never leaving a customer vulnerable without gas: Repair or replace 15,000 unsafe appliances for those most vulnerable, delivering £15m net benefit.	Reject: We are not proposing to accept the associated PCD proposal (Service beyond the meter) for the reasons stated in Table 25, so it should not receive a CVP reward.
PSR- 2 million conversations to raise awareness of the PSR: Two million conversations to raise awareness of the PSR, delivering £0.6m net benefit.	Reject: We are not funding the associated bespoke PCD proposal (Consumer vulnerability UIOLI allowance (needs identification)) for the reasons stated in Table 25 so it does not warrant a CVP reward. However, we encourage GDNs to continue to promote the PSR. GDNs can fund activity beyond the licence requirements through the consumer vulnerability and CO safety use-it-or-lose-it allowance.
Carbon neutrality - reduce carbon footprint from 64,000 to 0 tonnes: Reduce carbon footprint from 64,000 to zero tonnes by the end of RIIO-GD2, delivering -£36.3m net benefit.	Reject: This proposal does not provide clear evidence of stretch beyond either the expected functions of a GDN or other companies' proposals, given the objective for the UK to achieve net zero by 2050. ¹⁸ The proposal is also reliant on offsetting emissions, which are not to be included in science-based targets for reducing scope 1 and scope 2 BCF in line with the BPG. ¹⁹ The EAP ODI-R for BCF (including funding provided in Cadent's baseline) will support reductions over RIIO-GD2.
Our people's emissions: Reduce Cadent employees' emissions by 5,000 tonnes of CO2e per year, delivering £4.1m net benefit.	Reject: We are not proposing to accept the associated ODI proposals (Supporting our people to reduce their emissions and Carbon neutral operations) for the reasons stated in Table 24, so it should not receive a CVP reward.

¹⁸Net zero in the UK: <https://commonslibrary.parliament.uk/research-briefings/cbp-8590/>

¹⁹ [Business Plan Guidance](#), Appendix 2.

CVP name	Consultation position
Off-grid communities: A trial to connect three communities, with a total of 349 properties, to natural gas over RIIO-GD2, delivering £4.4m net benefit.	Reject: We are not proposing to accept the associated PCD proposal (Off-grid communities) for the reasons stated in Table 25, so it should not receive a CVP reward.
Theft of gas investigations: Incentive to be more proactive in investigating theft of gas. Estimated £290,000 worth of gas (over and above historical performance) will be returned to customers each year, delivering £1.3m net benefit.	Reject: Cadent's proposal relied on a methodology considered by Ofgem in 2014 ²⁰ so we don't consider it innovative. We are however supportive of these activities, so are proposing to share the costs and money recovered from the proactive investigation of gas theft through the TIM (refer to GD Annex Chapter 4).
Community fund: At least 1% of our profits invested each year into the fund, delivering £27.2m net benefit.	Reject: We think this CVP proposal constitutes corporate social responsibility (CSR) activities that are not within Cadent's business footprint. We think CSR should be BAU for GDNs, so this should not receive a CVP reward.
Time bound appointments: Offer four hour and two-hour timeslots for gas supply reconnection at customer appliances with a minimum 90% adherence rate, delivering £109.1m net benefit.	Reject: We do not consider this idea is innovative and therefore, it should not receive a CVP reward. Ofgem considered GSOP appointment standards in its Sector Specific Methodology Consultation (SSMC), ²¹ but companies' customer research indicated a GSOP was not worthwhile at that time. Given three network companies have now submitted similar ideas, we are proposing to apply a common ODI-R for time-bound appointments.
Personalising welfare facilities: Offer personalised welfare provisions for all customers in vulnerable situations, delivering £120.8m net benefit.	Reject: We are supportive of the provision of additional services to consumers in vulnerable situations during supply interruptions. However, we aren't proposing to accept the associated PCD (Personalising welfare activities) for the reasons stated in Table 25, so this should not receive a CVP reward.

²⁰ Decision on incentive arrangements for Gas Distribution Networks on gas theft during conveyance and for unregistered sites: <https://www.ofgem.gov.uk/publications-and-updates/decision-incentive-arrangements-gas-distribution-networks-gas-theft-during-conveyance-and-unregistered-sites>

²¹ See paragraphs 3.133-3.137 of the RIIO-GD2 GD Sector Annex to the RIIO-2 Sector Specific Methodology Consultation (SSMC GD Annex), <https://www.ofgem.gov.uk/publications-and-updates/riio-2-sector-specific-methodology-consultation>.

CVP name	Consultation position
Entry capacity enablement: ²² Reinforcement triggered by customer agreement, delivering £51.9m net benefit.	Reject: We recognise the proactive work Cadent is doing to progress these developments. However, the outcome is not fully within its control and requires input from the rest of the industry. Therefore, we think the CVP benefits can't be attributed solely to Cadent's work. We were unable to separate out costs directly associated with Cadent's proactive work but would welcome further evidence of these costs. If we get this evidence, and it's attached to a clear deliverable, we propose to consider whether to allow these costs.
Delivering efficiency through the plan from our innovation strategy, competition strategy and transformation: Series of deliverables explained within the Innovation, Competition and Costs and Efficiencies chapters, delivering £155m net benefit.	Reject: Efficiency is already rewarded through other mechanisms in the price control, including the BPI Stage 4 and the TIM.
Ongoing stakeholder engagement: Ten core commitments defined within the Stakeholder Engagement Strategy. Cadent did not quantify the benefit of this proposal in monetary terms.	Reject: We are not proposing to accept the associated ODI proposal (Stakeholder engagement incentive (Stakeholder engagement)) for the reasons stated in Table 24, so this should not receive a CVP reward.
Network related whole system thinking: Series of deliverables defined within the Whole System Thinking chapter. Cadent did not quantify the benefit of this proposal in monetary terms.	Reject: The majority of the deliverables relate to Cadent's leadership role in the ENA Open Networks Workstream 4. We do not think this sets it sufficiently above the performance of others to receive a reward.
Establishing and raising the bar: Combining different measures of customer experience to establish new, separate measures for key customer service areas. Cadent did not quantify the benefit of this proposal in monetary terms.	Reject: We are not proposing to accept the associated ODI proposal (Establishing and raising the bar for all of our customer and stakeholder experiences) for the reasons stated in Table 24, so this should not receive a CVP reward.
Enhanced connections service to customers: 15-minute quote generation, and three-day site visit. Cadent did not quantify the benefit of this proposal in monetary terms.	Reject: We are not proposing to accept the associated ODI proposal (Improving our household connection service) for the reasons stated in Table 24, so this does not warrant a CVP reward.

²² This is associated with the Entry capacity enablement - flexible-reinforcement bespoke UM proposal, which we are proposing to merge with our common Heat Policy re-opener (see Table 61).

CVP name	Consultation position
Minimising disruption: Minimising roadworks through coordination with others and better communication. Cadent did not quantify the benefit of this proposal in monetary terms.	Reject: We are not proposing to accept the associated ODI proposals (Coordinating with others and Better roadworks proposals), although we propose to work with Cadent to develop an incentive for collaborative streetworks. As we are not taking forward its proposals, we consider it should not receive a CVP reward. In addition, while there was support for the associated ODIs, there was insufficient evidence of stakeholder support for the CVP.
Creating a thriving environment for our people: Ten commitments defined within its Trust Charter including improved employee management, more women in senior positions, more senior managers from BAME backgrounds and higher levels of capability across the organisation. Cadent did not quantify the benefit of this proposal in monetary terms.	Reject: We think this CVP proposal constitutes a range of best practice, diversity and inclusion and corporate social responsibility (CSR) activities. We think these activities should be BAU for GDNs. We are also not proposing to accept the associated ODI proposal (Trust Charter) for the reasons stated in Table 24.
MOBS - suite of enhancements: Reduced interruptions, ongoing engagement, building response plans and enhanced welfare services. Cadent did not quantify the benefit of this proposal in monetary terms.	Reject: There is not sufficient evidence that this goes beyond BAU. It is not clear that the proposed service levels are stretching compared with other GDNs.
Connections: Providing new connections at the request of customers, with a funding mechanism for additional volumes above and beyond the lowest volumes observed during RIIO-GD1, delivering an indicative benefit of £20.2m. Supporting infrastructure growth.	Reject: We found insufficient evidence that the proposal would improve on Cadent's past service delivery. There is also insufficient evidence that the proposal will deliver additional consumer value as connections are a BAU network company function.
Diversions: Undertaking diversions to support development and maintain network safety that are not paid for by the person requesting the diversion, with an indicative benefit of £12.4m.	Reject: We are not proposing to accept the associated UM proposal (Diversions) for the reasons stated in Table 61, so it should not receive a CVP reward.
Reinforcements: Undertaking general and specific reinforcements, and capacity upgrades to maintain the resilience of the network and deliver capacity, with an indicative benefit of £37.2m.	Reject: We don't think these activities go beyond BAU for a GDN, so should not receive a CVP reward.
Obligations with respect to MOBs UM: The Hackitt review of building regulations could drive new or further work across our MOBs assets in response to policy changes, with an indicative benefit of £9.1m.	Reject: We do not consider the associated UM proposal (Obligations with respect to MOBs) goes beyond what we expect as part of BAU to receive a CVP reward.
Traffic collision protection: Intervention across its governor assets to install traffic collision protection, with an indicative benefit of £9.1m.	Reject: We are not proposing to accept the associated UM proposal (Traffic collision protection) for the reasons stated in Table 61, so it should not receive a CVP reward.

CVP name	Consultation position
Pipes above safety threshold: Replacing high risk pipes above a safety threshold that are not part of the existing repex programme, delivering an indicative benefit of £81.7m.	Reject: We do not think there is sufficient evidence of additional consumer value for activities that are typically undertaken by a network company as BAU. We think that network companies should manage this risk as part of their asset management practices and so it does not warrant a CVP reward.
High pressure valves: Intervening across the HP valve population, with an indicative benefit of £12.9m.	Reject: We are not proposing to accept the associated UM proposal (High pressure valves) for the reasons stated in Table 61, so it does not warrant a CVP reward.
Lowestoft project UM: Interventions to address historical network health issues at Lowestoft Harbour, with an indicative benefit of £14.2m.	Reject: We are not proposing to accept the associated UM proposal (Lowestoft project) for the reasons stated in Table 61, so it should not receive a CVP reward.
Entry charging and access review: ²³ Reviewing charging policy to encourage greater connections of clean gas, with an indicative benefit of £50.3m.	Reject: We recognise the proactive work Cadent is doing to progress these developments. However, the outcome is not fully within its control and requires input from the rest of the industry. Therefore, we think the CVP benefits can't be attributed solely to Cadent's work. We were unable to separate out costs directly associated with Cadent's proactive work but would welcome further evidence of these costs. If we get this evidence, and it's attached to a clear deliverable, we propose to consider whether to allow these costs.

CVPs consultation question

Cadent Q4. Do you agree with our proposals on CVPs? If not, please outline why.

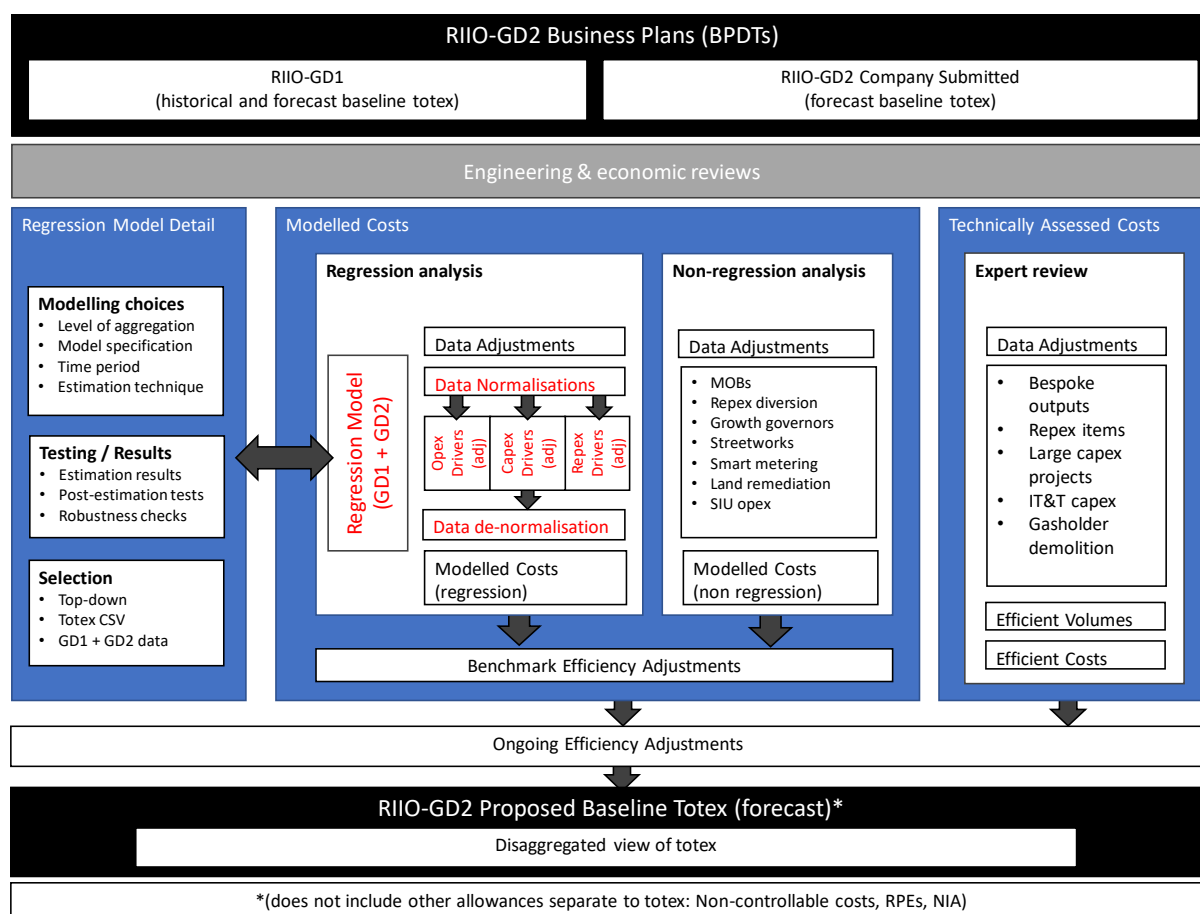
²³ This is associated with the Entry Charging and access review bespoke UM proposal, which we are proposing to merge with our common Heat Policy re-opener (see Table 61).

3. Cost of service - setting baseline allowances

Introduction

- 3.1 In this chapter we detail the steps taken to reach our proposed decision on Cadent's submitted baseline totex allowances across its four networks.
- 3.2 We have used three approaches in determining totex allowances: totex regression modelling, non-regression modelling and technical assessment. We present the results from each of these approaches next, together with a breakdown of any pre-modelling adjustments prior to our assessment, and the final steps taken to arrive at our proposed baseline totex allowance.
- 3.3 An overview of our process and common terms used in this chapter is provided below.

Figure 2: Modelling Overview



3.4 We intend this chapter to be read alongside other parts of our Draft Determinations that set out our industrywide approach. We provide further detail in the following documents:

- on our totex regression and modelled cost approach in our Step-By-Step Guide to Cost Assessment (SBSG Annex).
- on our assessment of regional and company-specific factors in the Regional and Company Specific Factors Annex.
- on our engineering assessment in our QEM/ARV Engineering Review Annex (Engineering Annex).

Baseline allowances

3.5 Baseline totex referenced in this chapter comprises forecast controllable costs.²⁴ This includes direct and indirect opex, capex and repex and is inclusive of our proposed ongoing efficiency. Non-controllable costs, pass-through costs and real price effects (RPEs), while included in overall allowed revenue recoverable by GDNs, are not included in baseline totex and are treated separately.²⁵

3.6 Table 27 compares Cadent's submitted baseline totex for each of its networks with our proposed view of baseline totex.²⁶

Table 27: RIIO-GD2 submitted totex versus Ofgem proposed totex (£m, 2018/19)

Network	Submitted totex (£m)	Proposed totex (£m)	Difference (£m)	Difference (%)
EoE	1,621	1,286	-335	-20.7%
Lon	1,569	1,040	-529	-33.7%
NW	1,171	972	-199	-17.0%
WM	957	780	-177	-18.5%
Cadent Total	5,318	4,078	-1,240	-23.3%

3.7 A breakdown of proposed totex at the activity level is provided in Appendix 2 for each network company. Our proposed methodology for disaggregating allowances is discussed in the GD Annex and the SBSG Annex.

²⁴ Baseline totex, totex and forecast controllable costs will be used interchangeably.

²⁵ Any costs not included in baseline totex, but included in allowed revenue, are captured in the licence model.

²⁶ Both company submitted baseline totex and our proposed baseline totex include the same items for easy comparison.

Summary of our assessment

3.8 Prior to modelling Cadent's forecast totex, we separated out costs associated with activities considered more suited to technical assessment. For the remaining modelled totex, we also distinguished between costs subject to regression analysis and non-regression analysis. Table 28 details our breakdown of submitted totex for each of Cadent's networks.

Table 28: Cadent totex assessment approach (£m, 2018/19)

Network	Submitted totex	Modelled Costs		Technically assessed costs
		Regression	Non Regression	
EoE	1,621	1,413	122	87
Lon	1,569	1,174	259	136
NW	1,171	1,013	81	76
WM	957	851	60	45
Cadent Total	5,318	4,451	522	344
% of submitted costs	100%	84%	10%	6%

3.9 Adjustments to submitted costs under each of our assessment approaches are summarised in Table 29. Modelled costs are subject to pre-modelling and benchmarking efficiency adjustments. Technically assessed costs are subject to technical assessment adjustments only. All costs are subject to ongoing efficiency adjustments.

Table 29: Step by step breakdown of adjustments (£m, 2018/19)

Network	Modelled cost		Technically assessed adjustments	Ongoing efficiency adjustments	Total adjustments
	Pre modelling adjustments	Benchmark efficiency adjustments			
EoE	-44	-195	-45	-51	-335
Lon	-175	-210	-104	-40	-529
NW	-44	-78	-39	-38	-199
WM	-61	-59	-27	-30	-177
Cadent Total	-325	-543	-214	-158	-1,239

Further details on our proposed adjustments**Proposed pre-modelling adjustments**

3.10 For costs subject to totex modelling (regression), we propose a number of pre-modelling adjustments to volumes and removed any costs made subject to an uncertainty mechanism. Table 30 summarises the adjustments across each Cadent network.

Table 30: Proposed pre-modelling adjustments, Cadent (£m, 2018/19)

Network	Volume-related adjustments	UM related adjustments	Total pre-model adjustments
EoE	-9	-35	-44
Lon	-155	-20	-175
NW	-20	-24	-44
WM	-44	-17	-61
Cadent	-228	-96	-324

3.11 For Cadent, we propose to remove £228m (net) of volume-related adjustments, which includes:

- approximately £339m of reductions for repex activities where we considered the needs case was not justified (see repex section)
- upward adjustments of £110m to connections and mains reinforcement, to put Cadent's baseline forecast costs and volumes on the same basis as the other GDNs, prior to regression modelling.

3.12 We also removed £96m of costs, including costs associated with IT and Telecoms capex, to potential re-openers and other uncertainty mechanisms.

Proposed benchmark efficiency adjustments

3.13 Overall, Cadent's four networks received the highest negative catch-up adjustments of all GDNs. This was a result of their relative efficiency scores, which were all at the lower end of the scale and resulted in the highest "catch up" efficiency adjustment.

Proposed technically assessed cost adjustments

3.14 For technically assessed costs, we have made the following adjustments, listed in the table below. Our proposed view of bespoke proposals is presented in Chapter 2. Further details on other items is provided later in this chapter.

Table 31: Technically assessed costs adjustments, Cadent (£m, 2018/19)

Network	Bespoke outputs	Capex projects	IT and Telecoms capex	Resilience	Total adjustments
EoE	-31	-4	-1	-9	-45
Lon	-97	-1	-1	-5	-104
NW	-27	-5	-1	-6	-39
WM	-20	-2	-1	-4	-27
Cadent Total	-174	-12	-3	-25	-214

Regression Analysis

Introduction

3.15 In this section, we describe our proposed adjustments to the drivers that define the totex Composite Scale Variable (CSV) used in our regression model. Changes to drivers complement the pre-model adjustments made to submitted totex costs, noted above. Adjustments were made following engineering and cost assessment reviews of Cadent's Business Plan.

3.16 Details are provided for each of our cost categories, opex, repex and capex, listing out any changes to drivers used in the regression model. For reference, values provided by Cadent are referred to as submitted, and values used in our regression model as modelled.

Opex proposals

3.17 The components of the totex CSV that relate to opex are Modern Equivalent Asset Value (MEAV), maintenance MEAV, emergency CSV and total external condition reports.

3.18 In our totex regression modelling we propose not to make any adjustments to Cadent's opex-related cost drivers.

Table 32: Cadent's opex cost drivers

Driver	Driver Value	
Network	Submitted	Modelled
MEAV (£m, 2018/19)		
EoE	80,215	80,215
Lon	43,378	43,378
NW	51,901	51,901
WM	39,864	39,864
Cadent	215,358	215,358
Maintenance MEAV (£m, 2018/19)		
EoE	34,882	34,882
Lon	16,179	16,179
NW	20,213	20,213
WM	15,789	15,789
Cadent	87,063	87,063
Emergency CSV (No., 80% customers number, 20% total external condition reports)		
EoE	6,973,329	6,973,329
Lon	4,229,333	4,229,333
NW	5,053,482	5,053,482
WM	3,503,196	3,503,196
Cadent	19,759,340	19,759,340
Total External Condition Reports (No.)		
EoE	100,664	100,664
Lon	80,813	80,813
NW	100,320	100,320
WM	56,618	56,618
Cadent	338,395	338,395

Repex proposals

3.19 For repex regression modelling, we use workloads to define the totex CSV together with synthetic costs.²⁷ The resultant synthetic cost driver is the sum of the products of workload volumes and synthetic unit cost for each activity.

3.20 Where we have disallowed workloads, we have also removed any corresponding costs from submitted totex. In the following section, we present the adjustments we made to repex workloads (the repex component of the cost driver).

²⁷ Synthetic unit cost is common across all networks

Tier 1 mains and steel mains <=2"

Table 33: Tier 1 mains and steel <=2" mains commissioned workloads (RIIO-GD2 total)

Network	Driver Value		Summary of proposed workload adjustments
	Submitted	Modelled	
Tier 1 (km)			
EoE	2,808.7	2,765.0	We have disallowed all workloads associated with dynamic growth in Tier 1 (see the GD Annex).
Lon	1,569.2	1,538.2	
NW	1,928.6	1,881.0	
WM	1,480.0	1,451.2	
Cadent	7,786.5	7,635.4	
Steel <=2" (km)			
EoE	40.7	40.7	We allowed Cadent's submitted steel mains <=2" workloads in full for all its networks.
Lon	24.5	24.5	
NW	52.0	52.0	
WM	35.9	35.9	
Cadent	153.1	153.1	

Tier 2A mains

Table 34: Tier 2A mains commissioned workloads (RIIO-GD2 total)

Network	Driber Value		Summary of proposed workload adjustments
	Submitted	Modelled	
Tier 2A (km)			We have included Cadent's submitted Tier 2A workloads in full as part of our baseline modelling. ²⁸
EoE	10.5	10.5	
Lon	22.0	22.0	
NW	2.5	2.5	
WM	2.2	2.2	
Cadent	37.1	37.1	

Tier 2B and Tier 3 mains

Table 35: Tier 2B and Tier 3 mains commissioned workloads (RIIO-GD2 total)

Network	Driver Value		Summary of proposed workload adjustments
	Submitted ¹	Modelled	
Tier 2B (km)			

²⁸ See GD Annex for further discussion of the Tier 2A volume driver.

Network	Driver Value		Summary of proposed workload adjustments
	Submitted ¹	Modelled	
EoE	38.3	38.3	We have not allowed Cadent’s submitted Tier 2B workloads for its NW network, as the CBA supporting this investment did not pay back before 2037.
Lon	2.0	2.0	
NW	5.7	0.0	
WM	6.8	6.8	
Cadent	52.8	47.1	
Tier 3 (km)			We are partially allowing workloads for the submitted Tier 3 investments for Cadent’s EoE, Lon and WM networks. For NW, we only allowed submitted workloads related to reinforcement for insertion work.
EoE	35.9	30.2	
Lon	35.2	14.3	
NW	16.6	6.9	
WM	14.1	10.2	
Cadent	101.9	61.6	
¹ Cadent’s Tier 3 submitted workloads include reclassification of reinforcement for insertion from capex to repex.			

Further details on our proposed position

3.21 Cadent proposed a Pipelines Above Safety Threshold (PAST) methodology in its Business Plan, which mechanistically applied a safety threshold to determine its workloads for asset management repex activities. This is similar to how the current Tier 2A threshold works under the Iron Mains Risk Reduction Programme (IMRRP).

- Based on the application of this risk threshold, Cadent presented its asset management repex workloads split into safety-driven (ie above the risk threshold) and Cost Benefit Analysis (CBA)-driven workloads (ie not above the risk threshold).
- We are concerned that Cadent's PAST proposal is inconsistent with the existing structure of the IMRRP and does not sufficiently acknowledge the differences in failure modes and risk remediation methods available between different materials.
- Hence, we have not included Cadent's proposed bespoke PAST volume driver (see Chapter 4) and have rejected some of the workloads that were justified by this methodology, as discussed below.

3.22 We allowed Cadent's submitted Tier 2B workloads for the EoE, Lon and WM networks in full, as we consider the engineering needs case to have been justified and the investment is supported on a CBA basis. We have not allowed Cadent's submitted Tier 2B workloads for its NW network, as the supporting CBA does not payback by 2037. We are concerned that this investment does not offer value for customers, given the uncertainty around the future of the gas network.

3.23 We are partially allowing workloads for the submitted Tier 3 investments for the East of England, London and West Midlands networks:

- For each network, Cadent divided its proposed investments into CBA-driven and safety-driven, submitting separate CBAs for each.
- For EoE, Lon and WM, we included the CBA-driven workloads for Tier 3, as they met the payback criteria and the needs case was considered justified following our engineering review.
- We have not included any CBA-driven Tier 3 workloads for NW: these did not pay back before 2037 and hence, we do not consider the proposed programme of work was economically justified.

3.24 Under the IMRRP, GDNs must monitor the condition of Tier 3 mains and can remediate or decommission if justified by a CBA agreed with Ofgem. The Tier 3 submissions Cadent has classified as safety-driven for EoE, Lon, NW and WM all have payback periods beyond 2060 (and mostly beyond 2070). We are concerned that these investments do not offer value for money for customers. Therefore, we have not included these workloads at Draft Determinations. We plan to work with Cadent to understand further detail of the risk presented by these mains ahead of Final Determinations.

3.25 We have removed all of the workloads associated with the London Medium Pressure project from the Tier 3 baseline for the Lon network, as these are now included in a re-opener.²⁹

3.26 We reclassified Cadent's reinforcement for insertion workloads as repex, rather than capex, to align with the other GDNs' reporting. A total of 48.4km across Cadent's networks has been reallocated to Tier 3 commissioned repex and this is included in the submitted figures presented in Table 35.

Steel mains >2"

Table 36: Steel mains >2" mains commissioned workloads (RIIO-GD2 total)

Network	Driver Value		Summary of proposed workload adjustments
	Submitted	Modelled	
Steel mains >2" (km)			We have not allowed for any submitted workloads associated with replacing steel mains >2".
EoE	116.7	0.0	
Lon	171.9	0.0	

²⁹ See Chapter 4 for further discussion of our proposed re-opener for the London Medium Pressure project.

Network	Driver Value		Summary of proposed workload adjustments
	Submitted	Modelled	
NW	45.3	0.0	
WM	76.0	0.0	
Cadent	409.8	0.0	

Further details on our proposed position

- 3.27 We have not allowed for any submitted workloads associated with replacing steel mains >2". The CBA's submitted as safety-driven, under Cadent's PAST methodology, did not payback before 2037. We are concerned that this investment does not offer value for customers, given the uncertainty around the future of the gas network and other potential options for mitigating risk from these assets.
- 3.28 We have also disallowed Cadent's submitted CBA-driven workloads. We did not think Cadent gave sufficient consideration to the option of deferring investments in its CBAs. Nor did Cadent present detailed sensitivity analyses of assumptions under-pinning the needs case. Additionally, Cadent provided insufficient clarity on how different elements of the proposed workloads contribute to the aggregate-level benefits presented in the CBAs.

Iron mains >30m and Other Policy and Condition mains

Table 37: Iron mains >30m and Other Policy and Condition mains commissioned workloads (RIIO-GD2 total)

Network	Driver Value		Summary of proposed workload adjustments
	Submitted	Modelled	
Iron mains >30m (km)			We have allowed all submitted workloads for iron mains >30m and other policy and condition mains.
EoE	10.7	10.7	
Lon	3.5	3.5	
NW	9.3	9.3	
WM	11.8	11.8	
Cadent	35.3	35.3	
Other Policy & Condition mains (km)			
EoE	0.9	0.9	
Lon	0.0	0.0	
NW	5.9	5.9	
WM	0.0	0.0	
Cadent	6.8	6.8	

Services associated with mains replacement**Table 38: Services associated with mains replacement commissioned workloads* (RIIO-GD2 total)**

Network company/ network	Driver Value		Summary of proposed workload adjustments
	Submitted	Modelled	
Tier 1 (No.)			Where we have disallowed mains replacement workloads (discussed above), we have made corresponding downward adjustments submitted to service interventions. We made all adjustments on a pro rata basis. We have also made specific adjustments to services workloads for Tier 1 mains and steel mains <=2" in London.
EoE	244,721	240,910	
Lon	210,457	148,892	
NW	197,502	192,622	
WM	159,900	156,787	
Cadent	812,580	739,211	
Tier 2A (No.)			
EoE	109	109	
Lon	281	281	
NW	34	34	
WM	32	32	
Cadent	456	456	
Tier 2B (No.)			
EoE	182	182	
Lon	0	0	
NW	11	0	
WM	56	56	
Cadent	249	238	
Tier 3 (No.)			
EoE	20	9	
Lon	2	0	
NW	2	0	
WM	0	0	
Cadent	23	10	
Iron Mains >30m (No.)			
EoE	888	888	
Lon	248	248	
NW	564	564	
WM	1,058	1,058	
Cadent	2,758	2,758	
Steel Mains > 2" (No.)			
EoE	4,257	0	
Lon	13,973	0	
NW	3,960	0	
WM	6,826	0	
Cadent	29,017	0	

Network company/ network	Driver Value		Summary of proposed workload adjustments
	Submitted	Modelled	
Other Policy & Condition mains (No.)			
EoE	113	113	
Lon	0	0	
NW	574	574	
WM	0	0	
Cadent	687	687	
* Includes relays, and test and transfer for both domestic and non-domestic properties.			

Further details on our proposed position

3.29 We have made corresponding pro rata adjustments to services associated with mains where we have not allowed funding for submitted mains workloads. These adjustments are based on submitted services:mains ratios for each network and submitted proportions between intervention types³⁰ and domestic/non-domestic.

3.30 For Cadent's Lon network, we made a downward adjustment to service workloads associated with Tier 1 and steel mains $\leq 2"$, based on historical services run rates.³¹ We made the adjustment following an engineering review, which found the submitted increase in service intervention workloads³² was not justified. The adjustment resulted in us not including 41,187 service interventions associated with Tier 1 mains, 389 associated with steel mains $\leq 2"$ and 28 associated with Tier 1 diversions.

Services not associated with mains replacement

Table 39: Services not associated with mains replacement workloads commissioned workloads (RIIO-GD2 total)

Network	Driver Value		Summary of proposed workload adjustments
	Submitted	Modelled	
Non-Domestic: Relay (No.)			We made a downwards adjustment to other non-metallic relayed services workloads for all of Cadent's networks.
EoE	1,508	1,419	
Lon	1,155	1,118	
NW	1,178	1,121	
WM	548	509	
Cadent	4,388	4,166	
Domestic: Relay after escape (No.)			

³⁰ Service relay, and service test and transfer.

³¹ Number of service interventions per kilometre of mains replacement for each category.

³² Explained as an increase in the service intervention ratio per kilometre of mains replacement.

Network	Driver Value		Summary of proposed workload adjustments
	Submitted	Modelled	
EoE	16,263	16,263	We have allowed in full the submitted workloads for domestic service relays after escape.
Lon	18,839	18,839	
NW	21,331	21,331	
WM	10,728	10,728	
Cadent	67,162	67,162	
Domestic: Relay other* (No.)			We made a downward adjustment to other non-metallic relayed services workloads for all of Cadent's networks.
EoE	21,948	19,387	
Lon	16,717	15,663	
NW	24,277	22,020	
WM	13,997	12,091	
Cadent	76,939	69,162	
* Includes Domestic Relay: Bulk Services, Relay: Service Alts, Meter Relocations, Relay: Smart Metering, Relay: Smart Metering (Workload at Cost of Shipper), Relay: Other (Metallic), Relay: Other (Non-Metallic)			

Further details on our proposed position

3.31 Cadent submitted workloads are disproportionately high compared with other networks and we think that this was not sufficiently justified. We made a reduction of 8,000 relays across all of Cadent's networks, resulting in an 18% reduction on non-metallic relay services for each network. We based this on an engineering review of the expected level of non-metallic service relays.

Capex proposals

3.32 Reinforcement and Connections workloads are the two capex components of the totex CSV used in our regression modelling for RIIO-GD2. As shown in Table 40, we have included Cadent's proposed Reinforcement workloads in full, as these are broadly in line with RIIO-GD1.

Table 40: Reinforcement workloads (RIIO-GD2 total)

Network	Driver Value		Summary of proposed workload adjustments
	Submitted	Modelled	
General (km)			We have allowed in full the submitted workloads for reinforcement.
EoE	1.4	1.4	
Lon	0.1	0.1	
NW	0.4	0.4	
WM	0.1	0.1	
Cadent	2.0	2.0	

Network	Driver Value		Summary of proposed workload adjustments
	Submitted	Modelled	
Specific (km)			
EoE	16.3	16.3	
Lon	3.0	3.0	
NW	3.0	3.0	
WM	0.9	0.9	
Cadent	23.1	23.1	
* Includes mains only. We have assessed growth governors separately, similar to RIIIO-GD1.			

3.33 As shown in Tables 41 and 42, we have included Cadent's proposed Connections workloads in full. As discussed in the GD Annex and Chapter 2 of this document, we propose to include common domestic and FPNES connections volume drivers to handle any material variations in outturn workload volumes.

Table 41: Connections - mains workloads (RIIO-GD2 total)

Network	Driver Value		Summary of proposed workload adjustments
	Submitted	Modelled	
Domestic: all types (km)			We have allowed in full the submitted workloads for connections - mains.
EoE	18.0	18.0	
Lon	6.2	6.2	
NW	4.4	4.4	
WM	6.1	6.1	
Cadent	34.7	34.7	
Non-domestic: all types (km)			
EoE	0.5	0.5	
Lon	0.5	0.5	
NW	0.2	0.2	
WM	1.3	1.3	
Cadent	2.6	2.6	
FPNES (km)			
EoE	0.0	0.0	
Lon	0.0	0.0	
NW	0.0	0.0	
WM	0.0	0.0	
Cadent	0.0	0.0	

Table 42: Connections - services workloads (RIIO-GD2 total)

Network	Driver Value		Summary of proposed workload adjustments
	Submitted	Modelled	
Domestic: all types (No.)			
EoE	29,490	29,490	We have allowed in full the submitted workloads for connections - services.
Lon	11,606	11,606	
NW	11,644	11,644	
WM	11,065	11,065	
Cadent	63,805	63,805	
Non-domestic: all types (No.)			
EoE	901	901	We have allowed in full the submitted workloads for connections - services.
Lon	849	849	
NW	567	567	
WM	478	478	
Cadent	2,795	2,795	
FPNES (No.)			
EoE	2,050	2,050	We have allowed in full the submitted workloads for connections - services.
Lon	500	500	
NW	2,250	2,250	
WM	1,450	1,450	
Cadent	6,250	6,250	

Non-regression Analysis

- 3.34 This section presents an overview of the non-regression analysis we undertook for Cadent, including adjustments that we made to costs and workloads. The analysis covered the following categories: Multiple Occupancy Buildings (MOBs), diversions, growth governors, streetworks, smart metering and land remediation.
- 3.35 For each category, we present a summary of submitted and modelled costs and workload volumes. Modelled costs from our non-regression analysis are added to modelled costs from our regression analysis, which are then subject to our benchmark efficiency challenge.
- 3.36 For some non-regression models, the costs assessed fall into more than one of the opex/capex/repex cost categories (ie MOBs, streetworks). We present each non-regression model in turn, rather than seeking to categorise costs into opex/capex/repex. Where we present modelled costs in the tables below, these are pre-application of benchmarking and ongoing efficiency adjustments.

Multi Occupancy Buildings (MOBs)

Table 43: MOBs interventions proposed gross costs and workloads (RIIO-GD2 total)

Network	Costs (gross)		Workloads	
	Submitted (input)	Modelled (output)	Submitted (input)	Modelled (output)
	£m	£m	No.	No.
MOBs repex				
EoE	14.3	14.3	1,144	1,144
Lon	67.2	67.2	4,893	4,893
NW	18.5	18.5	1,544	1,544
WM	17.8	17.8	1,428	1,428
Cadent	117.9	117.9	9,009	9,009
MOBs maintenance*				
EoE	16.2	13.8	n/a	n/a
Lon	59.3	26.3	n/a	n/a
NW	13.7	11.7	n/a	n/a
WM	7.9	12.1	n/a	n/a
Cadent	97.0	64.0	n/a	n/a
MOBs connections				
EoE	0.0	0.0	0.0	0.0
Lon	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0
WM	0.0	0.0	0.0	0.0
Cadent	0.0	0.0	0.0	0.0
* MOBs maintenance costs only capture repex maintenance costs. Maintenance costs for services associated with MOBs are not included.				

Further details on our proposed position

3.37 We made an adjustment to MOBs maintenance costs for all of Cadent's networks. Cadent submitted significant increases for RIIO-GD2, 182-437% across its four networks over average annual MOBs maintenance costs compared to historical RIIO-GD1 years.³³ Based on the information provided in the EJP, we do not think this increase has been justified and have concerns about Cadent's ability to resource the submitted maintenance programmes, particularly in the London network. We adjusted Cadent's submitted MOBs maintenance costs based on the historical ratio between MOBs maintenance costs and MOBs repex workloads.

³³ Historical RIIO-GD1 refers to 2013/14 - 2018/19 period

3.38 We allowed submitted MOB's repex costs and workloads in full for all of Cadent's networks.

Diversions

Table 44: Diversions mains commissioned and associated services proposed costs and workloads (RIIO-GD2 total)

Network	Costs		Workloads	
	Submitted	Modelled	Submitted	Modelled
Diversions				
	£m	£m	km	km
EoE	18.8	18.8	19.8	19.8
Lon	30.5	30.5	13.9	13.9
NW	19.6	19.6	28.9	28.9
WM	13.8	13.8	15.7	15.7
Cadent	82.7	82.7	78.3	78.3
Services Diversions				
	£m	£m	No.	No.
EoE	0.2	0.2	305	305
Lon	0.1	0.1	145	145
NW	0.4	0.4	705	705
WM	0.1	0.1	230	230
Cadent	0.8	0.8	1,385	1,385

Further details on our proposed position

3.39 We propose to allow in full Cadent's submitted diversions costs and workloads for all its networks.

Growth governors

3.40 Cadent did not propose any costs for growth governors in RIIO-GD2.

Streetworks

Table 45: Streetworks costs (RIIO-GD2 total)

Network	Costs	
	Submitted	Modelled (output)
	£m	£m
EoE	61.7	45.3
Lon	91.9	71.5
NW	23.0	18.9
WM	15.7	9.6
Cadent	192.3	145.3
Workload/volume data not used for cost assessment.		

Further details on our proposed position

3.41 We updated Cadent's submitted costs to include the productivity and administration costs³⁴ that Cadent had not included in its original business plan submission. We included these additional costs in the model to ensure consistency with other GDNs.

3.42 We disallowed costs for fines and penalties, and reduced Cadent's costs in line with their average costs in years 2016/17 to 2019/20.

Smart metering

Table 46: Smart metering costs and workloads (RIIO-GD2 total)

Network	Costs		Workloads	
	Submitted	Modelled	Submitted	Modelled
	£m	£m	No.	No.
EoE	10.0	7.9	45,772	38,143
Lon	8.8	7.0	31,556	26,297
NW	5.2	3.9	33,664	28,053
WM	3.8	2.8	25,171	20,976
Cadent	27.8	21.7	136,163	113,469

³⁴ Streetworks productivity and admin costs were submitted to Ofgem following a supplementary question.

Further details on our proposed position

3.43 We adjusted Cadent's forecast of smart metering costs by £6.1m, reflecting our reduction to the forecast number of smart meter interventions in the RIIO-GD2 period. Our forecast of workloads assumes a 2.5% smart meter intervention rate.

Land remediation

Table 47: Land remediation costs and workloads (RIIO-GD2 total)

Network	Costs		Workloads	
	Submitted	Modelled	Submitted	Modelled
	£m	£m	No of sites	No of sites
EoE	1.1	1.1	60	60
Lon	1.1	1.1	54	54
NW	1.1	1.1	72	72
WM	1.1	1.1	43	43
Cadent	4.3	4.3	229	229

3.44 We made no adjustments to Cadent's forecast land remediation expenditure.

Technically assessed costs

3.45 This section contains an overview of the technical analysis undertaken for Cadent, including our adjustments to submitted costs. For each category, we present a summary of submitted and proposed costs (excluding ongoing efficiency). Our engineering review paper sets out how we assessed costs, including expert review of potential capex and repex investments.

Bespoke outputs

3.46 Table 48 summarises our decision on Cadent's bespoke outputs. Further detail and full list of our decisions for all bespoke outputs is provided in Chapter 2. Of the submitted bespoke outputs, we have accepted £11.5m of expenditure associated with high-rise building plans (opex).

Table 48: Proposed assessment of Cadent's submitted bespoke outputs (£m, 2018/19)

Network	Submitted	Proposed (excludes OE)	Adjustments	Adjustment (%)
EoE	31.5	0.7	-30.8	-98%
Lon	106.1	9.3	-96.8	-91%
NW	27.0	0.5	-26.5	-98%
WM	20.9	1.0	-19.9	-95%
Cadent	185.5	11.5	-174.0	-94%

Repex proposals

3.47 We did not assess any of Cadent's submitted repex costs under this category.

Capex proposals

LTS (Local Transmission System), storage and entry

Table 49: Technical assessment of LTS, storage and entry projects

RIIO-GD2	Investment name	Costs		
Network		Submitted	Proposed ¹	Confidence
		£m	£m	
EoE	NTS Capacity Upgrades	6.53	4.70	High
EoE	NTS Metering	9.17	7.92	High
EoE	PRS Capacity Upgrades	2.93	2.11	High
EoE	Reduced Depth of Cover	2.45	2.45	Low
Lon	NTS Other Metering	2.45	2.11	High
Lon	PRS Capacity Upgrades	2.96	2.13	High
Lon	Reduced Depth of Cover	1.23	1.23	Low
NW	NTS Other Metering	3.24	2.80	High
NW	PRS Capacity Upgrades	17.60	12.69	High
NW	Reduced Depth of Cover	0.77	0.77	Low
NW	Holford Salt Cavity	1.93	1.93	Low
WM	NTS Other Metering	5.07	4.37	High
WM	PRS Capacity Upgrades	4.41	3.18	High
WM	Reduced Depth of Cover	0.74	0.74	Low
Total		61.47	49.13	

¹ Proposed costs do not include ongoing efficiency

Further details on our proposed position

- 3.48 We have applied £9.61m of cost reductions to the Capacity Upgrades (>7bar reinforcements (Above Ground Infrastructure) - Base case) investment. We consider the risk, uncertainty and contingency costs to be excessive and duplicative. We also consider the contractor costs, and direct and indirect company costs to be excessive relative to other investment proposals.
- 3.49 We have applied £2.72m of cost reductions to the Offtakes & PRS Metering Systems investment that was requested. We propose reductions to all cost inputs, except contingency costs, which we considered to be in line with other investment proposals.

Other capex**Table 50: Technical assessment of other capex projects**

Network	Investment name	Costs		
		Submitted £m	Proposed ¹ £m	Confidence
EoE	MP/IP Valves	16.69	16.69	Lower
Lon	MP/IP Valves	8.23	8.23	Lower
Lon	Brunel Bridge	0.99	0.99	Lower
NW	MP/IP Valves	13.12	13.12	Lower
NW	Mersey Tunnel	0.75	0.75	Lower
WM	MP/IP Valves	5.74	5.74	Lower
Total		45.51	45.51	

1 Proposed costs do not include ongoing efficiency

Further details on our proposed position

- 3.50 We consider the needs cases for the proposed Other Capex investments presented in Table 50 to be justified. However, limited information was available to us to enable a detailed bottom-up assessment of costs. Given the lack of independent verifiable costs, each of these investments has been classified as lower-confidence. We also propose to fund these investments through the Capital Projects PCD, discussed further in Chapter 2.

Table 51: Disallowed projects

Network	Investment name	Costs		
		Submitted	Proposed	Confidence
		£m	£m	
Lon	London Medium Pressure	18.62	0	N/A

3.51 We have not included Cadent's London Medium Pressure project in Cadent London's capex baseline because we propose to treat it as a re-opener.

IT and Telecoms

Table 52: Allowed IT and Telecoms projects

RIIO-GD2	Costs	
Network company/Network	Submitted	Proposed ¹
	£m	£m
EoE	3.6	2.7
Lon	2.1	1.5
NW	2.4	1.8
WM	1.8	1.3
Cadent	9.9	7.4

1 Proposed costs do not include ongoing efficiency

Further details on our proposed position

3.52 We assessed the IT and Telecoms and systems operation costs (excluding cyber) as part of a separate review by our consultant Atkins. See our GD Annex and IT and Telecoms Assessment Annex for our assessment approach.

3.53 Cadent submitted around £102.9m of costs for IT and Telecoms projects. Atkins' review highlighted that only one IS project (INVP 5402 Core Asset and Plant Management Strategy) is at a sufficient stage of maturity to enable us to propose ex ante funding. We consider Atkins' review appropriate and thus propose an ex ante allowance for this project, to which we propose to apply a £2.5m reduction based on expert review. We labelled these costs as high-confidence under the BPI. We have proposed a re-opener to allow funding for the other submitted projects as their needs cases become clear. Details of the proposed uncertainty mechanism can be found in the Core Document.

PSUP (Physical Security Upgrade Programme)**Table 53: PSUP opex costs**

RIIO-GD2	Costs¹	
Network company/Network	Submitted	Proposed
	£m	£m
EoE	0.4	0.4
Lon	0.3	0.3
NW	0.5	0.5
WM	<0.1	<0.1
Cadent	1.3	1.3

¹ Opex costs are from the Maintenance activity only.

3.54 We removed £1.3m of PSUP costs from Cadent's maintenance activity for technical assessment. We have not made any adjustments to Cadent's submitted costs.

Table 54: PSUP capex costs

RIIO-GD2	Costs	
Network company/Network	Submitted	Proposed
	£m	£m
EoE	0.0	0.0
Lon	4.0	4.0
NW	0.0	0.0
WM	0.0	0.0
Cadent	4.0	4.0

3.55 We have accepted Cadent's justification for this investment, since this category of security upgrade is mandatory and the security specifications are agreed with BEIS.

3.56 Cadent's submitted costs are based on competitively-tendered estimates for similar works in RIIO-1, adjusted to account for the additional design requirements of Category 4 CNI (Critical National Infrastructure³⁵) sites. We think Cadent's submitted costs are reasonable and therefore propose to allow them in full.

³⁵ <https://www.cpni.gov.uk/critical-national-infrastructure-0>

Non totex cost items

Non-controllable opex

3.57 We propose to make some minor adjustments to submitted non-controllable opex. We adjusted shrinkage costs based on updated cost of gas forecasts³⁶, and adjusted the established pension deficit recovery plan payments based on the 2017 reasonableness review. Table 55 summarises our allowances for Cadent's non-controllable opex.

Table 55: RIIO-GD2 non-controllable opex (£m, 2018/19)

	Cadent	EoE	Lon	NW	WM
Total non-controllable opex	1,700.3	528.3	378.0	474.8	319.2
Shrinkage	92.2	32.3	16.2	23.0	20.7
Ofgem Licence	40.6	14.9	8.4	10.0	7.3
Network Rates	874.2	298.7	215.0	205.0	155.6
Established Pension Deficit Recovery Plan Payment	91.4	32.9	19.4	22.6	16.5
NTS Pension Recharge	0.0	0.0	0.0	0.0	0.0
Bad Debt	0.0	0.0	0.0	0.0	0.0
NTS Exit Costs	509.3	117.8	96.5	192.3	102.7
Xoserve	57.0	21.1	11.8	13.9	10.2
Other	35.6	10.7	10.7	8.0	6.2

³⁶ Based on BEIS 2019 Gas Price Assumptions.

4. Adjusting baseline allowances to allow for uncertainty

Introduction

4.1 In this chapter we cover two main areas:

- Firstly, we set out the Cadent-specific parameters for common GD sector UMs.
- Secondly, we set out our views on the bespoke outputs that Cadent proposed in its Business Plan.

Common UMs

4.2 We set out our consultation position for the Cadent-specific parameters in the following tables.

4.3 We set out more detail on the common UMs in the GD Annex, including the broader consultation position and rationale.

Repex - Tier 2A iron mains volume driver

Table 56: Consultation position - Tier 2A iron mains decommissioned Baseline Target Workloads for Cadent East of England (RIIO-GD2 total)

EoE	2021/22	2022/23	2023/24	2024/25	2025/26	RIIO-GD2 Baseline Workloads
<i>Workload Activities</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>
Tier 2A mains decommissioned						
9" in diameter	0.0	0.0	0.0	0.0	0.0	0.0
10"-12" in diameter	0.8	1.4	2.3	2.5	2.6	9.4
>12"-17" in diameter	0.1	0.1	0.2	0.3	0.3	1.0
Totals	0.8	1.6	2.5	2.7	2.8	10.4

Table 57: Consultation position - Tier 2A iron mains decommissioned Baseline Target Workloads for Cadent London (RIIO-GD2 total)

Lon	2021/22	2022/23	2023/24	2024/25	2025/26	RIIO-GD2 Baseline Workloads
<i>Workload Activities</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>
Tier 2A mains decommissioned						
9" in diameter	0.0	0.0	0.0	0.0	0.0	0.0
10"-12" in diameter	1.3	2.3	3.8	4.1	4.2	15.6
>12"-17" in diameter	0.5	0.9	1.5	1.6	1.7	6.3
Totals	1.8	3.3	5.3	5.7	5.9	21.9

Table 58: Consultation position - Tier 2A iron mains decommissioned Baseline Target Workloads for Cadent North West (RIIO-GD2 total)

NW	2021/22	2022/23	2023/24	2024/25	2025/26	RIIO-GD2 Baseline Workloads
<i>Workload Activities</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>
Tier 2A mains decommissioned						
9" in diameter	0.0	0.0	0.1	0.1	0.1	0.2
10"-12" in diameter	0.2	0.3	0.5	0.5	0.6	2.0
>12"-17" in diameter	0.0	0.0	0.0	0.1	0.1	0.2
Totals	0.2	0.4	0.6	0.6	0.7	2.5

Table 59: Consultation position - Tier 2A iron mains decommissioned Baseline Target Workloads for Cadent West Midlands (RIIO-GD2 total)

WM	2021/22	2022/23	2023/24	2024/25	2025/26	RIIO-GD2 Baseline Workloads
<i>Workload Activities</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>	<i>km</i>
Tier 2A mains decommissioned						
9" diameter	0.0	0.0	0.0	0.0	0.0	0.0
10"-12" diameter	0.2	0.3	0.5	0.5	0.5	2.0
>12"-17" diameter	0.0	0.0	0.0	0.1	0.1	0.2
Total	0.2	0.3	0.5	0.6	0.6	2.2

Table 60: Consultation position - Tier 2A iron mains and services Baseline Cost Allowances (RIIO-GD2 total, £m 2018/19)

	2021/22	2022/23	2023/24	2024/25	2025/26	RIIO-GD2 Baseline Cost Allowances
<i>Baseline Cost Allowances</i>	<i>£m</i>	<i>£m</i>	<i>£m</i>	<i>£m</i>	<i>£m</i>	<i>£m</i>
Tier 2A mains and services Baseline Cost Allowances						
EoE	0.4	0.5	0.6	0.6	0.6	2.7
Lon	1.3	1.7	2.0	2.0	2.0	9.0
NW	0.1	0.2	0.2	0.2	0.2	0.8
WM	0.1	0.2	0.2	0.2	0.2	0.9
Cadent	2.0	2.6	3.0	2.9	2.9	13.4

Bespoke UM Proposals

4.4 We invited companies to propose bespoke UMs with suitable justification in our SSMD. We have considered the extent the supporting information justifies the key criteria outlined in the BPG:

- materiality and likelihood of the uncertainty
- how the risk is apportioned between consumers and the network company
- the operation of the mechanism
- how any drawbacks may be mitigated to deliver value for money and efficient delivery.

4.5 We also considered whether the uncertainty was regionally specific, or industry wide, to assess whether a common re-opener could be more appropriate. You can find the background and our assessment approach in our Core Document.

4.6 The table below summarises the bespoke UM proposals that Cadent submitted and outlines our consultation position. For full details on the bespoke proposals, refer to Cadent's Business Plan.

Table 61: Cadent's bespoke UM proposals

UM name	Consultation position
Bespoke uncertainty mechanisms we propose to accept	
Obligations with respect to MOBs: Mechanism to fund any changes in requirements to Cadent's work required for high-rise MOBs in response to external reviews or legislation.	Accept: We propose to set this proposal as a common UM. We found sufficient justification and consider that the uncertainty is applicable to all GDNs. See Chapter 4 of the GD Annex for our proposed common re-opener.
Bespoke uncertainty mechanisms we propose to reject	
HyNet North West Hydrogen scale demonstration project - Strategic Innovation Project: Continue to develop and be prepared to deliver and manage the HyNet North West hydrogen transportation network on direction from Government and Ofgem.	Reject: We do not propose to include standalone UMs for strategic large-scale hydrogen projects. We propose to respond to large-scale hydrogen projects using the net zero and innovation investment mechanisms set out in Chapter 8 of the Core Document. Also see Chapters 2 and 4 of our GD Annex for our approach to decarbonisation of heat proposals.
Hydrogen blending rollout - Strategic innovation project: Design an effective, efficient and safe rollout of a hydrogen blending operating and billing regime and support Government plans for large-scale trials of hydrogen conversion.	Reject: As for the HyNet North West Hydrogen scale demonstration project - Strategic Innovation Project proposal.
Entry capacity enablement - flexible-reinforcement: Lead an industry review of distributed entry gas commercial arrangements and create and utilise a flexible funding regime for entry gas reinforcements, supported by an uncertainty mechanism.	Reject: We propose to merge this proposal with an existing common UM. We agree that the outcome of this review is uncertain and may result in increased costs for gas networks. We have therefore made specific provision for this in our Heat Policy re-opener. We provide further details in Chapter 4 of the GD Annex.
Entry charging and access review: Mechanism to fund works to enable new connections of entry gas to Cadent's network. Cadent has proposed a review of the entry charging and access regime, with a view to socialise costs for green gas connections to enable this.	Reject: We propose to merge this proposal with an existing common UM. We agree that the outcome of this review is uncertain and may result in increased costs for gas networks. We have therefore made specific provision for this in our Heat Policy re-opener. We provide further details in Chapter 4 of the GD Annex.
Timely reinforcement: Enable third parties to underwrite appropriately sized and early reinforcements, without creating an asset stranding risk for existing gas consumers. Dependent on new commercial arrangements on user commitment being approved.	Reject: Insufficient needs case. We think there may be merit to expedite reinforcement work while managing asset stranding risk. However, we found insufficient justification to establish a bespoke UM or an ODI.

UM name	Consultation position
Specified streetworks (lane rentals): Expected changes in legislation on lane rentals and permits, but it is uncertain where and how these changes might apply.	Reject: We propose to merge this proposal into a new common UM to address the uncertainty for future costs associated with new permit and lane rental schemes not yet in operation (see Chapter 3 of our GD Annex for totex and Chapter 4 of our GD Annex for the mechanism).
Reinforcements: Mechanism to fund general and specific reinforcement, and capacity upgrades work to maintain the flow of gas across Cadent's networks. This mechanism is proposed above a minimum funding request included in Cadent's baseline allowance.	Reject: We think there is an insufficient needs case for a new UM. We provide a baseline allowance through our modelled capex for all GDNs. We consider a volume driver would weaken the incentive for GDNs to adopt non-build capacity solutions.
Smart meter roll-out costs: pass-through mechanism for system integration to interact with the Data Communication Company (DCC).	Reject: We did not find clear evidence that GDNs would be mandated to be DCC Users during RIIO-GD2 and consider that Cadent needs to weigh costs and benefits for any membership decisions. We consider there is insufficient justification of the needs case for a re-opener.
Pipes above safety threshold (PAST): Volume driver to fund the replacement of additional pipes beyond those covered by the Tier 2A iron mains mechanism, which meet a specific risk criterion.	Reject: We do not think that Cadent presented robust evidence to support application of a mechanistic process for determining when interventions are required for management of repex assets. We also think the NARM mechanism provides companies with sufficient flexibility to manage risk on their networks within RIIO-GD2 and therefore an additional mechanism is not needed.
Connections: Mechanism to fund costs associated with new connections for new housing, existing housing and non-domestic connections. This mechanism is proposed above a minimum funding request included in our baseline allowance.	Reject: We propose to merge this UM into a new common UM. We consider that there is sufficient evidence the network company cannot manage the uncertainty within its baseline allowance. However, we consider the need for risk mitigation applies to all GDNs and we propose a common volume driver. Chapter 4 of our GD Annex details our proposed Domestic Connections volume driver.
Diversions: Mechanism to fund non-chargeable diversions that will be required in RIIO-GD2 which are currently unknown. This includes costs incurred through land easements and diversion work such as 'lift and shifts'.	Reject: We propose to merge this UM into a new common UM. We consider that there is sufficient evidence the network company cannot manage the uncertainty within its baseline allowance. However, we consider the need for risk mitigation applies to all GDNs and we propose a common re-opener <7 bar diversions. Chapter 4 of our GD Annex details our proposed Diversions re-opener.

UM name	Consultation position
Lowestoft project: A re-opener to fund specific work at Lowestoft harbour tunnel, to introduce a permanent solution in response to the previous collapse of an intermediate pressure pipeline at the harbour quay.	Reject: Following an engineering review of the supporting information, we did not consider that Cadent had fully justified the needs case for the project. In particular, we have concerns over some of the assumptions, including rising gas demand.
Traffic collision protection: A volume driver to fund additional requirements that may be introduced to protect our governor assets from vehicle collisions	Reject: We found insufficient justification of the materiality and likelihood of the uncertainty. We consider Cadent can manage these requirements within its totex baseline.
High pressure valves: A volume driver to fund work to maintain the condition and operability of valves on our high pressure network.	Reject: We found insufficient justification of the materiality of the uncertainty and of stakeholder support. We consider that we provide a sufficient baseline allowance through our modelled opex for non-routine inspection and maintenance.

Bespoke UMs consultation question

Cadent Q5. Do you agree with our proposals on the bespoke UMs? If not, please outline why.

Our consultation position on bespoke UMs included in our Draft Determinations

London medium pressure

London Medium Pressure re-opener	
Purpose	Allows for Cadent to recover efficient costs of delivering specific sections of the London Medium Pressure project during RIIO-GD2.
Benefits	Ensures that individual sections are well justified, have a developed project plan and accurate cost forecast.

Background

- 4.7 The London Medium Pressure project involves replacing large diameter, medium pressure iron mains in central London. Cadent requested £79.8m of baseline funding in RIIO-GD2 to continue the project, which began in RIIO-GD1 and is expected to continue until 2031.
- 4.8 In RIIO-GD1, we allowed £93m of baseline funding for the project. However, Cadent agreed to return £53.9m as it was unable to complete the work it forecast in its RIIO-GD1 Business Plan.

Consultation position

Output parameter	Consultation position
Re-opener scope	Cadent should submit costs for one or more of the 12 sections identified. ³⁷ Submissions may cover historical and/or forecast costs, providing they fall within RIIO-GD2.
Re-opener Window (year)	Cadent should have two opportunities to trigger the re-opener: <ul style="list-style-type: none"> • 25 January 2022 - 31 January 2022 • 25 January 2024 - 31 January 2024
Accountability mechanism	Where we provide funding through the re-opener, we will track progress through the RIIO-GD2 Regulatory Reporting Packs (RRPs).

Rationale for consultation position

- 4.9 We think a bespoke re-opener is the most appropriate way to fund this project, reflecting the scope, timing and cost uncertainty we saw in RIIO-GD1. We are using the common design parameters for re-openers as specified in Chapter 7 of the Core Document. We are proposing two windows where Cadent can submit detailed information on individual section(s) of the overall programme.
- 4.10 Cadent's Business Plan identified 12 sections for the London Medium Pressure Project.³⁸ When seeking to trigger the re-opener, Cadent should provide robust evidence of the following for each section:
- A well justified needs case, including supporting cost-benefit analysis.
 - A comprehensive project plan and timeline for completion, including evidence of the agreements in place with relevant local authorities.
 - Well justified costs, including evidence of market testing and of full consideration of innovative techniques to lower costs.
- 4.11 Cadent may claim efficient costs already incurred and/or forecast costs, providing they fall within RIIO-GD2.

³⁷ Sections as in the Engineering Justification Paper (EJP) submitted in support of its RIIO-GD2 Business Plan.

³⁸ In its supporting EJP

5. Innovation

5.1 Our SSMD and the Core Document identify the criteria that we have used to assess Network Innovation Allowance (NIA) funding requests.³⁹ The Core Document also details our proposals for the RIIO-2 NIA Framework and the Strategic Innovation Fund.

Network Innovation Allowance

5.2 We set out below our draft determination on Cadent's RIIO-2 NIA funding.

Consultation position

Network Innovation Allowance	Company proposal	Consultation position
Level of NIA funding	£40m	<ul style="list-style-type: none"> £32.5m Removed £7.5m of proposed NIA to repair and replace mains as we consider this to be BAU. Conditional on an improved industry-led reporting framework.

Rationale for consultation position

5.3 Cadent's Business Plan contained a range of NIA-related proposals. It focused on the energy system transition and addressing consumer vulnerability, with initiatives corresponding to four innovation themes:⁴⁰

- Improving customer experience (especially vulnerable customers), including improving services in multiple-occupancy buildings, innovating to identify who will qualify for 'fuel poverty' and how to support those customers.
- Whole systems proposals, including using data and analytics to understand the impact of decarbonised gases on the system and developing new frameworks for hydrogen blending and conversion.
- Carbon neutral operations, including solutions to reduce leakage from assets and the carbon footprint of operations.
- Protecting supply and safety and reducing disruption, including using digital technology to enhance asset data capture and robotics and automation to reduce the need for manual work and disruption in the field.

³⁹ SSMD Core Document, paragraph 10.62; Core Document, Chapter 8.

⁴⁰ Cadent also identified plans for BAU innovation within all four themes, and proposed to focus on a fifth innovation theme, influencing behaviours and enhanced engagement, solely within BAU activities.

- 5.4 We have one concern with the scope of Cadent's funding request. In response to a supplementary question, Cadent identified a proposed £7.5m RIIO-2 NIA project to repair and replace its mains to transport hydrogen. Such innovation aims to develop, for example, pipe liner technology and pipe joining techniques to repair or replace assets in hard to reach or complex areas. We acknowledge that this activity is linked to the energy system transition and to assessing the feasibility of the hydrogen transformation. However, as the repair and replacement of assets is a funded BAU activity for which companies are incentivised through the TIM to develop (and rollout) new techniques, we consider that this should be completed without additional innovation funding in RIIO-GD2. Consequently, we consider this component of Cadent's NIA funding request is not justified and propose to remove it.
- 5.5 Apart from that, Cadent's funding request focuses on initiatives that appear either high risk, or would not deliver benefits during the price control period. Based on this, we have reasonable confidence that projects that will be taken forward will require the NIA in order to progress. Over RIIO-2, it is for Cadent to determine which projects it will undertake and, for each, it will need to demonstrate why the project cannot be funded through baseline totex, why it needs to be funded via the NIA, and how it supports the energy system transition or addresses consumer vulnerability. This will be part of the RIIO-2 NIA governance arrangements.
- 5.6 Our assessment of Cadent's Business Plan against the criteria from our SSMD and the Core Document in the table below.

Table 62: Assessment of Cadent's Business Plan against NIA criteria

SSMD/Core NIA criteria	Ofgem view
Undertaking other innovation as BAU	Satisfactorily meets the criterion including: an efficiency improvement target which will require Cadent to innovate continuously. Additionally, there was evidence that Cadent would not rely solely on ring-fenced innovation funding to fund innovation, eg one innovation theme (influencing behaviours and enhanced engagement) will be taken forward without the use of NIA funding, together with evidence of funding innovation within BAU activities for the other themes).
Application of best practices	Satisfactorily meets the criterion including: evidence of best practice methodologies for innovation projects and a continuous improvement cycle to develop an innovative culture within the organisation.
Processes in place to rollout proven innovation and the evidence that this is already happening	Satisfactorily meets the criterion including: evidence and examples of key learnings from RIIO-GD1 rolled out innovations.
Processes in place to monitor, report and track innovation spending and the evidence that this is already happening	Does not satisfactorily meet the criterion: consistent with our assessment of NIA requests, we do not consider that Cadent has demonstrated that it has tried and tested processes in place to monitor, report and track innovation spending and benefits.

5.7 In RIIO-GD1, Cadent received 0.7% base revenue as NIA funding, equivalent to around £10m per year. After the deduction of £7.5m requested to develop pipe liner technology and pipe joining techniques, we propose to provide Cadent with £32.5m NIA funding for RIIO-GD2.

5.8 As detailed in the Core Document, we propose that all NIA funding is conditional on the implementation by the start of RIIO-GD2 of an improved, industry-led reporting framework. If this condition is not satisfied, our proposal is that we will not award NIA funding for RIIO-GD2.

Innovation consultation question

Cadent Q6. Do you agree with the level of proposed NIA funding for Cadent? If not, please outline why.

Appendix 1 Consultation questions

Bespoke ODIs consultation question

Cadent Q1. Do you agree with our proposals on the bespoke ODIs? If not, please outline why.

Cadent Q2. What should the annual targets be for Cadent's high-rise building plans ODI-R and how can they be made sufficiently stretching?

Bespoke PCDs consultation question

Cadent Q3. Do you agree with our proposals on the bespoke PCDs? If not, please outline why.

CVPs consultation question

Cadent Q4. Do you agree with our proposals on CVPs? If not, please outline why.

Bespoke UMs consultation question

Cadent Q5. Do you agree with our proposals on the bespoke UMs? If not, please outline why.

Innovation consultation question

Cadent Q6. Do you agree with the level of proposed NIA funding for Cadent? If not, please outline why.

Appendix 2 Proposed baseline totex allowances in detail

Table 63: RIIO-GD2 proposed baseline totex allowance, Cadent EoE (£m, 2018/19)

Cost activity	2022	2023	2024	2025	2026	RIIO-GD2 Total
Work Management	22.2	21.4	21.2	19.9	20.0	104.7
Emergency	12.1	11.5	11.2	10.4	10.1	55.3
Repair	14.5	13.8	13.1	12.6	12.0	66.0
Maintenance	31.5	30.4	33.2	29.3	31.4	155.7
Other Direct Activities	3.3	3.4	3.3	3.3	3.2	16.5
Total Direct Opex	83.6	80.5	82.0	75.4	76.6	398.1
Business Support	23.1	22.6	22.3	22.1	21.5	111.7
Training and Apprentices	4.4	3.9	4.2	3.8	4.0	20.4
Total Indirect Opex	27.5	26.5	26.5	25.9	25.6	132.1
LTS and Storage	11.8	15.0	11.9	11.4	8.1	58.0
Connections	10.0	9.9	9.9	9.8	9.7	49.3
Mains Reinforcement	5.0	5.2	5.5	6.0	6.2	28.0
Governors	1.4	1.3	1.3	1.1	1.1	6.2
Transport and Plant	4.0	4.2	3.4	4.5	1.1	17.1
Other Capex	14.3	16.1	20.7	16.3	13.3	80.7
Total Capex	46.5	51.7	52.6	49.0	39.5	239.3
Total Repex	109.1	105.8	103.3	99.9	98.8	516.9
Totex	266.6	264.6	264.5	250.2	240.4	1,286.3

Table 64: RIIO-GD2 proposed totex allowance, Cadent Lon (£m, 2018/19)

Cost activity	2022	2023	2024	2025	2026	RIIO-GD2 Total
Work Management	16.8	15.7	15.2	15.1	14.8	77.6
Emergency	11.1	10.7	10.4	9.7	9.4	51.3
Repair	17.4	16.2	15.4	14.7	13.9	77.6
Maintenance	25.4	24.1	24.1	22.4	21.8	117.8
Other Direct Activities	3.1	3.1	3.0	2.9	2.9	15.0
Total Direct Opex	73.7	69.8	68.1	64.9	62.7	339.2
Business Support	19.4	19.1	18.9	18.9	18.4	94.7
Training and Apprentices	3.5	3.2	3.4	3.0	3.3	16.4
Total Indirect Opex	22.9	22.3	22.3	21.9	21.7	111.1
LTS and Storage	3.6	4.6	4.1	3.9	3.7	19.8
Connections	6.6	6.5	6.4	6.4	6.3	32.2
Mains Reinforcement	1.6	1.8	1.8	1.8	1.8	8.8
Governors	0.5	0.3	0.4	0.3	0.3	1.7
Transport and Plant	2.4	4.4	3.0	3.2	0.8	13.7
Other Capex	9.4	10.8	13.3	8.7	7.1	49.4
Total Capex	24.0	28.3	29.0	24.2	19.9	125.5
Total Repex	98.6	94.9	92.2	89.8	88.7	464.2
Totex	219.3	215.3	211.6	200.8	193.1	1,040.1

Table 65: RIIO-GD2 proposed baseline totex allowance, Cadent NW (£m, 2018/19)

Cost activity	2022	2023	2024	2025	2026	RIIO-GD2 Total
Work Management	16.3	15.9	15.3	14.4	14.2	76.0
Emergency	9.2	9.0	8.6	8.0	7.7	42.5
Repair	13.9	13.2	12.5	11.9	11.3	62.9
Maintenance	19.7	18.6	18.0	15.4	16.2	87.9
Other Direct Activities	4.2	4.0	4.0	4.0	4.0	20.2
Total Direct Opex	63.3	60.7	58.4	53.6	53.5	289.5
Business Support	19.2	18.8	18.6	18.5	18.0	93.1
Training and Apprentices	3.6	3.1	3.6	3.2	3.7	17.2
Total Indirect Opex	22.8	21.9	22.2	21.7	21.7	110.3
LTS and Storage	7.7	13.2	9.7	7.6	3.1	41.2
Connections	5.6	5.5	5.5	5.4	5.3	27.4
Mains Reinforcement	1.6	1.6	3.4	2.5	2.6	11.7
Governors	0.9	0.9	0.9	0.8	0.8	4.3
Transport and Plant	4.2	3.4	2.3	2.4	1.4	13.6
Other Capex	10.6	11.7	14.8	11.6	10.6	59.4
Total Capex	30.6	36.2	36.6	30.4	23.8	157.5
Total Repex	87.2	84.4	82.4	80.6	79.7	414.4
Totex	203.9	203.3	199.6	186.3	178.6	971.7

Table 66: RIIO-GD2 proposed baseline totex allowance, Cadent WM (£m, 2018/19)

Cost activity	2022	2023	2024	2025	2026	RIIO-GD2 Total
Work Management	13.9	13.8	13.4	13.1	12.6	66.8
Emergency	7.4	7.1	6.8	6.2	6.0	33.5
Repair	9.8	9.5	9.1	8.8	8.4	45.6
Maintenance	13.1	13.4	12.1	11.4	10.9	61.0
Other Direct Activities	3.3	3.4	3.3	3.3	3.2	16.5
Total Direct Opex	47.6	47.1	44.7	42.7	41.1	223.3
Business Support	16.7	16.3	16.2	16.2	15.8	81.2
Training and Apprentices	3.4	3.1	3.4	3.1	3.3	16.3
Total Indirect Opex	20.1	19.5	19.6	19.2	19.1	97.6
LTS and Storage	5.8	4.1	5.5	4.9	4.0	24.1
Connections	5.2	5.1	5.1	5.0	4.9	25.3
Mains Reinforcement	1.2	2.2	4.0	2.8	2.8	13.0
Governors	0.6	0.4	0.5	0.4	0.4	2.4
Transport and Plant	3.4	2.7	1.2	1.5	1.3	10.1
Other Capex	5.7	8.6	11.3	7.8	7.5	41.0
Total Capex	21.8	23.2	27.6	22.4	20.9	115.9
Total Repex	71.3	69.7	68.4	67.2	66.4	343.0
Totex	160.9	159.5	160.3	151.6	147.5	779.8