Northern Gas Networks

RIIO-GD3

Business Plan 2026 - 2031

we are the network

What can you expect from our plan

Our plan interests many groups, including **customers**, **stakeholders**, **colleagues**, **investors**, and **our regulator**. Although primarily for our regulator, this plan is **written with everyone in mind**. It reflects hundreds of conversations with stakeholders and truly represents the people we serve. The plan starts with an overview, followed by six chapters detailing core areas identified by our regulator, Ofgem, our commitments, and outputs. **More detailed information is in the appendices**. While structured around key themes, our initiatives aim to deliver multiple cross-cutting benefits and value.

Glossary

The glossary for this document can be found on our website here

www.northerngasnetworks.co.uk/wp-content/uploads/2024/12/NGN-RIIO-GD3-Glossary.pdf

Appendicies

All appendicies documents can be found on our documents library here

www.northerngasnetworks.co.uk/document-library

CHAPTER 1

INTRODUCTION

1.1 Welcome to our business plan from Mark Horsley, CEO

Following robust consultation with our customers, stakeholders, Independent Stakeholder Group (ISG) and my Board, it is my pleasure to present our RIIO-GD3 Business Plan for the period 2026-2031.

I have seen considerable changes since I started in the energy sector as a craft apprentice in 1975. Since that time our networks have moved from public to private ownership and huge amounts have been invested in infrastructure. The biggest change of all is climate change, which has emerged as the major threat to our current way of life – and one that needs an integrated, holistic approach for us to mitigate. Having worked for both electricity and now gas networks, I'm very aware that the future demands a whole-system approach.

The RIIO-GD3 price review represents a pivotal moment for our business and for our whole energy system. If we are serious about meeting our net zero targets by 2050, we cannot delay action any longer. Alongside the deployment of renewables to decarbonise our electricity grid, we must continue to invest in the resilience of the UK energy system that is the gas network at the same time as ensuring network costs are shared fairly between current and future customers.

The cost of delivering a safe and reliable service is increasing for gas networks and despite pushing the frontier of cost efficiency since 2005, NGN is not immune to these cost pressures. This challenge is even harder where efficiency is not rewarded, and other networks have not kept pace with our cost-efficiency performance.

We have consulted extensively with our customers to prepare them for the challenges of maintaining industry-leading cost, safety and performance standards, while also transitioning to meet net zero targets. Our customers understand our challenges and highlight affordability as a key concern, while recognising the importance of maintaining the high levels of safety and reliability through RIIO-GD3.

At NGN we can do this by being progressive, agile and setting the tone for how it can be applied across the industry. Over a decade, we have transformed our business into a modern organisation that's almost unrecognisable as a traditional utility. This includes transitioning 90% of our workforce to modern terms and conditions and focusing our supply chain on small, local engineering firms that understand our community and deliver better customer service because of it.

Investing in our region has reaped rewards and in 2023/24 we replaced 32km more mains gas pipe than our target for year 3 of RIIO-GD2. We consistently exceed our emergency response targets, arriving at gas escapes within 1 or 2 hours 99.9% of the time. And we are investing in capital projects and digitalisation to keep our network as safe and reliable as possible.

Our ambition at NGN is based on our track record of delivery, continuing to do more of the same and to bring other networks up to this standard so all customers realise the benefit we have delivered for our region. Efficiency is important to us, but we think of it as a means of delivering better results for the people that rely on us – especially the most vulnerable members of society. Because, ultimately, NGN isn't about processes but people: our customers, colleagues and stakeholders.

I've spent over 30 years of my career working in the North of England. Like everyone at NGN, I understand the region and the communities we serve because I'm just as much a part of it as they are.

A regional approach is vital. The challenges and opportunities of one area don't always apply to others. That's why we're tailoring our RIIO-GD3 plan to the unique circumstances of our region, focusing on safety and reliability as a core part of our plan, and maximising flexibility funding through 'use it or lose it' (UIOLI) allowances to meet the requirements of how we work with the new Regional Energy Strategic Planner (RESP).

As one of the largest employers in the region, we have the power to deliver significant societal and economic benefits by carefully planning our investments in people and infrastructure. Our actions today will lay the foundations for an equitable transition to net zero, for the benefit of everyone in our Northern communities.

Mark Horsley, CEO

1.2 Introduction

We are the gas distributor for the North of England, supplying essential services for 2.9 million homes and businesses.

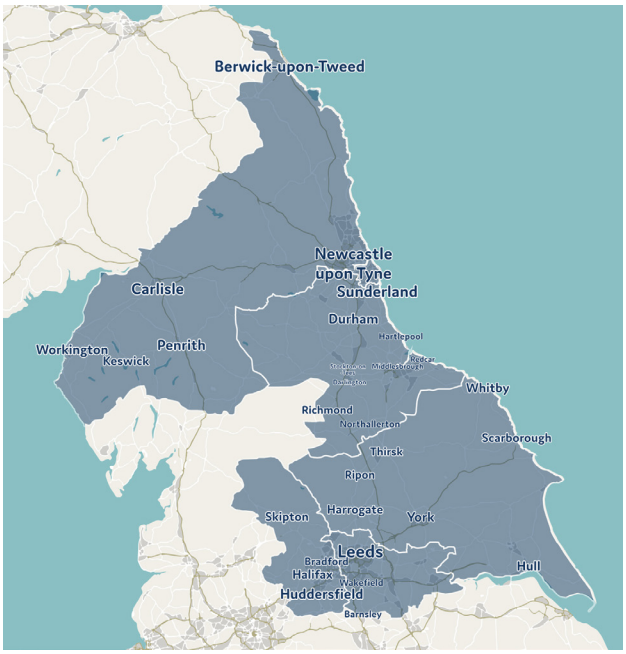


Figure 1.1 NGN region

We exist for Northern communities and our primary focus is to maintain and improve our network to deliver core services to our customers today, while supporting cleaner energy for future generations.

Our vision and purpose form the basis of our RIIO-GD3 Business Plan.

Our vision

A fairer, greener future for the North of England.

Our purpose

We will keep customers safe. Colleagues healthy and inspired. Homes warm, and businesses and industry powered up. We strive to do the right thing – tackling inequality and supporting our most disadvantaged customers. By keeping our network reliable and productive, we will deliver a cleaner energy future and ensure outstanding value for everyone.

Our RIIO-GD3 plan builds on our strong track record of delivering a safe, reliable and efficient service with strong customer satisfaction. It has been shaped by engagement with over 13,000 people across our region and our Independent Stakeholder Group (ISG), who hold us to account for our decisions.

This engagement has reinforced the vision for our organisation, providing clarity of purpose for our people and objectives for the business. From this, we have made six promises to our customers which underpin our business plan and will be our measures of defined success in RIIO-GD3.

In RIIO-GD3 our measures of success are:

- To work collaboratively to develop new ideas, embrace feedback and resolve challenges
- To be transparent about our decisions and accountable for our actions, staying true to our commitments and who we are as a network
- To treat people fairly and equitably to minimise the negative impacts of our actions and make sure no one is left behind on the journey to net zero
- To innovate and enhance sustainability for our communities and the environment
- To harness data and technology to modernise our operations, improve customer experience and measure what works, and understand what does not
- To strive for value in everything we do, maximising efficiency to improve our service while keeping costs as low as possible for our customers.

1.3 A transparent plan developed in partnership with our customers

Our meaningful, proportionate and transparent engagement with customers and stakeholders throughout RIIO-GD1 and RIIO-GD2 has been a cornerstone of our decision-making process. Recognised for our exemplary engagement efforts by receiving the highest rating from the RIIO-GD2 Challenge Group Independent Report, we entered RIIO-GD2 with robust processes firmly embedded within our business. This has allowed us to consistently incorporate customer and stakeholder perspectives, thoroughly considering all feedback sources and adapting our strategies as part of our standard operations. This methodology has established the groundwork for a transparent plan developed in close collaboration with our partners, stakeholders and customers.

1.4 Confidence that we will deliver our promises

We have an exemplary track record in delivering against outputs and within allowances since the launch of the RIIO framework. **Our latest RIIO-GD2 performance report**[1] reaffirms our track record of delivering, notably across safety, customer service and cost efficiency.

Our performance is a result of the commitment of our business and investment by our shareholders to not only maintain but extend the efficiency frontier while maintaining safety and service outputs.

By addressing key strategic areas, we have transformed from a traditional utility into an agile energy company fit for the future and able to adapt to challenges.

1 https://www.northerngasnetworks.co.uk/wp-content/uploads/2024/08/NGN-RIIO-GD2-Strategic-Commentary-2023-2024.pdf

Workforce resilience and flexibility

With significant investment in RIIO-GD1, we introduced modern terms and conditions that reflected a 24/7/365 customer-centric business. Almost 90% of our colleagues are on modern terms and conditions (T&Cs) and the average age of colleagues has reduced from 49 years to 41 years. This has reduced our cost base and improved resource utilisation, meaning that in RIIO-GD3 we are well placed to continue delivering against challenging workloads.

We know that diverse workplaces are more innovative, productive and resilient. During RIIO-GD2, we made improving our diversity and inclusion a priority and have made public commitments. We recognise that we still have further to go but we remain dedicated to making meaningful, lasting change.

Efficient supply chain

We redesigned our supply chain to replace large tier 1 contractors with agile tier 2 and tier 3 providers. This significantly reduced our Repex delivery costs and improved our relationship with our customers, as we are more involved in onsite delivery. Thanks to this, our costs are the lowest in the industry, our safety performance is industry leading and our customer satisfaction remains upper quartile.

Investment in digitalisation

In RIIO-GD1, we invested in SAP S/4HANA information technology (IT) platform, replacing outsourced IT which did not fit our agile approach.

Instead of attempting to design an IT system to fit around our existing business processes, we reinvented and reimagined our business processes to match the IT system. This improved data quality has allowed us to make timely decisions and manage resource to be in the right place at the right time to keep the gas flowing to customers.

We have built a strong and sustainable foundation for data to support the digitalisation of the energy sector. Our comprehensive open data portal offers 17 data sets, and we have undertaken data persona research to understand data-related needs of colleagues and external stakeholders.

Cultural change

We have also embedded a cultural change journey, ensuring we operate as a community where everyone understands the value and impact of our decisions and works together to deliver our strategic outputs.

We are a regulated monopoly business that is an anchor in our region and in society. We welcome experience-sharing visits from other networks and companies to help the industry move forward and provide benefit for consumers nationwide. Our collaborative approach has engendered change and humility as we learn from progressive organisations to deliver further benefits for customers.

The success of our transformation is realised in the form of delivered benefits and has resulted in lower customer bills and will further extend the efficiency frontier while ensuring that we deliver statutory outputs.

Our track record embeds confidence that our RIIO-GD3 plan is based on delivery of actual outcomes, evidence and data, and not anticipated performance, meaning that we not only have consistently delivered what we have stated in previous business plans, but embedded initiatives alongside delivery to ensure we remain industry leading and continue to deliver value for our customers and stakeholders.

1.5 An ambitious plan that makes a difference

Our plan is unashamedly ambitious. We take huge pride in being a frontier performer and commit to continue setting the standards for gas distribution during RIIO-GD3.

We live in uncertain times, and a number of challenges have been factored into our planning for the next price control period.

External economic pressures are impacting across our cost base compared to historic levels. Engineering complexities that we highlighted in our RIIO-GD1 and RIIO-GD2 Business Plans are now apparent as we close out the Health and Safety Executive (HSE) Repex programme and this is leading to increased costs. Added to this, there are a number of uncertainties relating to the journey towards net zero and the decarbonisation of the gas grid, including uncertain and unrealistic central demand forecasts that differ from our own planning assumptions. What is certain, though, is the role of the gas network in providing energy to customers and a need to continue our business-as-usual approach to do this efficiently and effectively in RIIO-GD3.

We are confident that, with a relentless focus on driving up quality and driving down cost, we can maintain our position as a sector-leader and continue to deliver for our customers. We will do this by ensuring every part of our business is:

- **Informed:** By embedding our class-leading stakeholder engagement methodology, which is underpinned by our 12 voluntary commitments and enhanced by progressive additions like our Young Innovators Council (YIC).
- **Supportive:** By ensuring nobody is left behind through a support scheme for customers in vulnerable situations that includes 21 voluntary commitments and a £1m shareholder contribution.
- **Transparent:** By opening our environmental performance to scrutiny and challenge through clear and accountable reporting via channels such as our Total Emissions Reporting policy.
- **Safe:** By continuing to set the bar for 7-day and 28-day repair performance with our ambitious bespoke output.

- **Cost-conscious:** By delivering affordability for our customers through innovation, efficiency and a culture of continuous improvement.
- **Future-proof**: By putting data and digitalisation at the heart of our asset management and operational processes.

Transparency and stakeholder engagement

Stakeholder engagement has been embedded as business-as-usual across our company since the inception of RIIO-GD1. In **Chapter 2**, we outline the industry-leading approach to transparency and stakeholder engagement that has shaped all aspects of our plan. As we navigate the complexities of RIIO-GD3, we will continue to follow best practice and enable our stakeholders to define our priorities and guide our approach.

High quality of service from regulated firms

Throughout RIIO-GD2, we have consistently delivered a high quality, efficient and effective service. In RIIO-GD3, our ambition is to stretch these service levels and enhance our offer to all network users and consumers, including those in vulnerable situations.

Chapter 3 of our plan outlines our ambition to further drive up performance levels, including our sector-leading performance against the core emergency and repair standards. We also commit to providing greater transparency around workforce management. A key part of our ambition is to bring other networks in line with our level of performance, ensuring added value to customers throughout the UK. We will continue to push the frontier on average gas restoration times and Guaranteed Standards of Performance (GSOP).

To embed continuous improvement, we have aligned our customer service strategy to the strategic pillars of customer experience and enhanced voluntary service improvements for disconnections, complaints performance, and mutual cross-sector support framework with regional distribution network operators (DNOs).

Innovation features heavily in our forward plan and we have adapted our RIIO-GD3 strategy to take account of the uncertainty around the future role of gas. We have done this by focusing on customer experience through the energy transition and looking at how we can keep bills affordable through innovative technologies, and processes to reduce the costs associated with running our network.

Infrastructure fit for a low cost transition to net zero

In RIIO-GD3, we have a crucial role to play in enabling the net zero transition for our customers and providing a safe, secure and resilient energy supply. The UK energy system cannot function without the world-class asset that is the gas network. We recognise the uncertain role our network might play in the future, but here and now we need to keep customers warm and provide a safe, secure and resilient supply.

In **Chapter 4**, we outline our approach to ensuring we have an infrastructure which helps to facilitate the net zero energy transition, taking account of the current policy and uncertainty over future pathways. Our focus is on the key role our gas network will play, the impact on customers and our ability to support the transition to low-carbon energy.

We are also aware of our environmental impact and, through our Environmental Action Plan (EAP), identify proactive improvements that we will embed throughout RIIO-GD3 to minimise our impacts on the environment and report our performance, building on learning from RIIO-GD2.

Secure and resilient supplies

We will continue to manage our network to the highest standards of integrity and in **Chapter 5** we outline our strategic approach to delivering the resilience, integrity and service levels that customers expect from us. Our network is now safer and more reliable, and has a lower environmental impact as a result of the significant investment we have made during RIIO-GD2.

We are proud to have driven up the performance of the gas distribution networks in the UK since 2005. The transformation of almost every element of our business since the RIIO-GD1 period means we are better placed than ever to meet the ambitions and expectations of our current and future customers.

System efficiency and long-term value for money

Our focus in RIIO-GD3 is to manage network risk to ensure a safe, reliable and secure supply of gas to customers. In doing this, we will maximise value for the service provided and focus on improving the customer experience, as well as the efficiency, safety, reliability and environmental performance of our network.

The energy and drive to succeed comes from the commitment of colleagues across the business to living the values of the NGN Way and delivering our promises. We will continue to push the boundaries of performance in the energy industry and keep giving our customers a world-class service. To maintain network risk levels, we will be investing a further £1,181m over RIIO-GD3 and spend a further £656m in operating and maintaining our network. This represents a 21% increase across our Totex programme from RIIO-GD2.

2023/24 prices	RIIO-2 average	RIIO-GD3 spend per year (£m)					RIIO-GD3 total	RIIO-GD3 average
		2026/27	2027/28	2028/29	2029/30	2030/31		
Controllable Opex	115.67	133.47	132.59	130.06	130.96	129.27	656.35	131.27
Capex	62.17	76.82	60.12	65.64	61.71	66.50	330.79	66.16
Repex	126.15	145.75	157.13	170.27	182.21	194.66	850.02	170.00
Totex	**303.99**	**356.04**	**349.84**	**365.97**	**374.88**	**390.43**	**1837.16**	**367.43**

Table 1.1 Totex in RIIO-GD3

In this plan, we clearly outline the driving forces behind this increase in expenditure which are attributable to increasing external cost pressures and the complexity of work remaining in the Repex programme. To support our response to these challenges, comprehensive sensitivity analysis and optioneering of investment solutions have been supported by cost-benefit analysis and Network Asset Risk Metric (NARM) to provide a robust and fully justified programme.

Our expenditure plans fully support the delivery of the outcomes, priorities and preferences that have been clearly relayed to us via our enhanced stakeholder engagement programme. We have shaped our mains replacement programme - the largest element of our investment plan - to directly reflect stakeholder preferences for increased safety, reliability and environmental performance.

Financial information

Fair energy bills are a priority for all our customers, and we need to ensure in RIIO-GD3 that customers receive a fair service for the price they pay, especially in the face of future uncertainty.

Our strong financial position and track record of efficiency have allowed us to keep revenues and our part of customer bills broadly flat for 10 years, while continuing to invest significant amounts in the network and continuously improving the level and quality of service we provide.

The financial information underpinning our RIIO-GD3 plan is presented in **Chapter 7**, where we provide regulatory finance analysis based on Sector Specific Methodology Decision (SSMD) assumptions, as required by Ofgem. We also justify our alternative proposals on the cost of capital allowances, accelerated depreciation and other elements of the RIIO-GD3 financial package.

In RIIO-GD2, the average customer bill has been £170 per annum (p.a.) (2023/24 prices). Under the RIIO-GD3 proposed financial package assumptions at SSMD, the all-in average domestic customer bill is forecast to be c.£215 p.a (2023/24 prices). Policy options, such as accelerated depreciation and revised calculation of the cost of debt allowance, have the largest impact on bills in RIIO-GD3, accounting for a £48 annual bill increase (identified as Ofgem's SSMD in Figure 1.2).

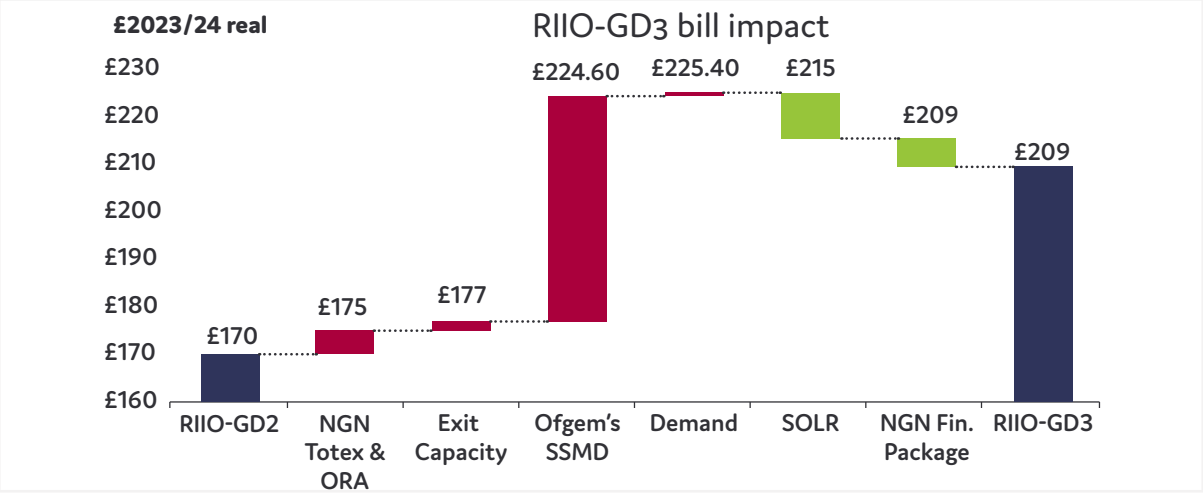


Figure 1.2 Gas distribution network component of domestic customer bills (NGN assumptions)

Despite the increase in expenditure in RIIO-GD3, as outlined in **Chapter 6**, this would only lead to a modest c. [2.8%] increase in the gas distribution network component of customer bills from c. [£170] to c. [£175] if all other financial parameters remained in line with RIIO-GD2. We have proposed an alternative, prudent approach to depreciation profiling for RIIO-GD3, which would reduce bills relative to Ofgem's SSMD assumptions to £209.

Under SSMD working assumptions, we are expected to be debt financeable on both an actual and notional company basis over the RIIO-GD3 period. However, we emphasise that Ofgem's financing duty should not be narrowly interpreted to be only about debt financing. Ofgem's new investability concept should ensure that GDNs are able to retain and, under certain scenarios, attract new equity investment. Ofgem has a critical objective to ensure that the financial package as a whole for the gas distribution companies in RIIO-GD3 is investable both for debt and equity investors.

1.6 A robust, assured plan

We have followed best practice and implemented an assurance strategy that provides confidence in the quality, completeness, and accuracy of our plan. This is based on a three lines of defence assurance process which has included:

- The extensive involvement of our Board via a Board appointed Steering Group, which has included a sufficiently independent non-executive director.
- The use of internal assurance to review and challenge the Business Plan content for accuracy, ambition, efficiency, and customer interest.
- Input from specialist external advisers and formal external assurance by an independent audit firm.

We have also had extensive challenge from our ISG on all aspects of our plan, and what it means for customers.

Our Board has satisfied itself that our plan is high quality, financeable and has been appropriately challenged for accuracy, ambition, efficiency, and customer interest.

However, this assurance should not be interpreted as the Board's acceptance of the RIIO-GD3 SSMD financial framework and the proposed working assumptions any element of the financial package. Our assurance statement is attached as **Appendix A1**.

Sufficiently Independent Directors' Assurance Statement

As an Independent Non-Executive Director of Northern Gas Networks, appointed under Standard Special Licence Condition A42, I have reviewed the content and assurance processes employed, and I am satisfied that Northern Gas Networks RIIO-GD3 plan and the associated costs and financial package have been appropriately challenged for accuracy, ambition, efficiency, and customer interest.

Mr John Burnham

Sufficiently Independent Director

1.7 Business Plan minimum requirements

Outlined below we sign post were information that meets the minimum business plan is located in our submission.

Min Req Reference	Business Plan Area	
1	Load and regional strategies	We do not propose any anticipatory investment for decomissioning, network re-purposing or Carbon Capture and Storage (CCUS) in baseline allowances in RIIO-GD3. Further investigations to evidence the implications for these are included in of Net Zero and Redevelopment use it or lose it allowance included in **Chapter 4 section 4.2** and **4.4** and **Chapter 6 section 6.7.1**. Our Plan is based on the FES 2024 Holistic Pathway, adjusted to meet the characteristics of our network. This is outlined in **Chapter 4 sections 4.2** and **4.4**, in particular Tables 4.1 and 4.5.
2	Secure and resilient supplies	**Chapter 5** and **Appendices (A7 to A11 and A13)** detail our strategic approach to providing secure and resilient supplies. Specific investment is outlined in **Appendix A22 including physical security A22.f** and **non mandatory mains replacement A22.m**.
3	Managing uncertainty	**Chapter 6 section 6.7**, **Appendix A21 Cost Assessment and Benchmarking Approach**, and **A22 Investment Decision Packs Overview**.
4	Quality of service	**Chapter 3**, and **Appendices A3 Stakeholder Engagement Decision Log** and **A4 Vulnerability Strategy**.
5	Environmental Impact	**Chapter 4 section 4.5** and **Appendix A6 Environmental Action Plan**.
6	Stakeholder Engagement	**Chapter 2** and **Appendix A3 Stakeholder Engagement Decision Log**.
7	Innovation Strategy	**Chapter 3 section 3.5** and **Appendix A14 Innovation Strategy**.
8	Workforce and Supply Chain	**Chapter 5 section 5.5** and **Appendix A7 Workforce and Supply Chain Resilience Strategy**.
9	Cost	**Chapter 6**, **Appendix A21 Cost Assessment and Benchmarking Approach** and associated **Investment Decision Packs A22a - A22q**.
10	Cost	**Appendix A15 Business Plan Data Template** and **Appendix A16 Business Plan Data Templates Commentary**.
11	Engineering	**Appendix A22 Investment Decision packs**.

1.8 Statement by the Independent Stakeholder Group Chair

The ISG is a continuation of the Customer Engagement Group (CEG) established in 2018 to scrutinise NGN's RIIO-GD2 Business Plan. The ISG Terms of Reference (available on the **ISG dedicated website**) have changed since then to reflect our enduring monitoring and scrutiny role, and Ofgem's most recent RIIO-GD3 guidance. Membership has been refreshed and is now more diverse and made up of experienced professionals able to challenge the company in all areas of activity. The group also includes two former members of NGN's YIC who, over the past two years, have brought a fresh perspective and challenge from a future customer's perspective.

The ISG has had the opportunity to scrutinise all elements of the business plan since the detailed planning phase started around 12 months ago, commenting on three drafts and the accompanying strategy documents and annexes, plus a sample of Engineering Justification Papers (EJPs). This has involved regular direct dialogue with the business leads to ensure their proposals deliver meaningful outcomes and benefits for customers, and discussions with shareholders and board members to seek assurance that customer interests have been balanced with returns to investors. Our challenges and feedback are all documented, and NGN has addressed our comments and responded positively to requests for additional evidence and benchmarking of its performance where possible. In particular, we welcome NGN's response to our challenges around costs required to deliver the business plan, and the bill implications for current and future customers, given that affordability is a key concern for so many households in NGN's region.

NGN has carried out inclusive and comprehensive stakeholder engagement to shape the plan. Members of the ISG observed most of the engagement sessions to ensure the company focused on the priorities and preferences of its diverse range of stakeholders, and that these are reflected in the business plan.

We reviewed, and are satisfied with, NGN's engagement methodologies and analysis, which have enabled a wide range of NGN's consumers' views, including more marginalised voices, to be heard. We have also encouraged, and have observed, how those insights inform governance arrangements for decision-making processes and the allocation of funding for Vulnerability and Carbon Monoxide Allowance projects.

Our enduring role since RIIO-GD2 has been to ensure a depth of understanding of the business and the needs of its customers on which our views are based.

Despite policy uncertainty about the future of gas and the UK government's net-zero targets, NGN has set out a plan that embraces the energy transition while seeking to keep bills as low as possible. It is working efficiently to deliver high standards of safety and reliability, reduce environmental impact, and provide extra support to customers in vulnerable situations and the diverse communities NGN serves.

The ISG will work with NGN over the coming year to monitor how the company's current commitments are delivered and how it engages stakeholders in preparing for the start of RIIO-GD3 in particular, its proposals around data and digitalisation, innovation, workforce and regional planning.

[redacted]

Jenny Saunders

ISG Chair

CHAPTER 2

TRANSPARENCY AND STAKEHOLDER ENGAGEMENT

Everything we do is about improving value for customers. Engagement is an essential tool in understanding their priorities, needs and expectations. Our stakeholders' meaningful feedback was instrumental in refining our business plan and our outputs and commitments through RIIO-GD3 and beyond.

How we are iterating and improving for RIIO-GD3

Engagement is embedded across NGN. Since 2018 and throughout RIIO-GD2, we have embedded and strengthened our engagement mechanisms and processes, including retaining our Customer Engagement Group (CEG) and strengthening the role it plays outside a focused business planning period. We are proud that our stakeholders have continued to effectively influence and guide the direction of our business throughout RIIO-GD2, evidenced through our voluntary annual stakeholder report. During RIIO-GD2, we enhanced our engagement, speaking to a broader representation of stakeholders. Our improved measurement methods allow us to track and analyse the impact of our engagement, providing a strong base to build on for RIIO-GD3.

Our stakeholder community has played a significant part in our RIIO-GD3 plans, alongside our Independent Stakeholder Group (ISG) who have consistently challenged our thinking and provided oversight. We will keep following best practice for our engagement activities as we navigate the complexities of RIIO-GD3, ensuring our engagement is meaningful, proportionate, iterative, inclusive and honest.

The comprehensive insights obtained from our stakeholder engagement are thoroughly documented within the Appendix A3 Stakeholder Engagement Decision Log and are referenced throughout Chapters 3 to 7. This plan is the result of a tried and tested iterative engagement process generating a 79% acceptability rating from our informed customers and stakeholders.

79% of informed customers and stakeholders find our plan acceptable

80% of informed customers and stakeholders say our plan delivers value for money

13,286 stakeholders engaged through our core business plan engagement

7,940 underreached customers involved in our core engagement

77% of underreached customer groups represented in our engagement

815 local stakeholders engaged through strategic meetings and workshops

92% of stakeholders attending our workshops said we'd been clear about how we were using feedback to change our plan

96% of attendees at our 2024 Stakeholder Conference felt that they had the opportunity to make their points and ask questions about our draft business plan

Figure 2.1 Highlights of our RIIO-GD3 engagement

In this chapter we explore:

- Our approach to engagement in RIIO-GD3
- How we involved stakeholders in our plans for RIIO-GD3
- The ways we are building on successes from RIIO-GD2
- Oversight and accountability measures we have put in place.

2.1 Our RIIO-GD3 engagement plan

The people we serve drive our values, decisions and the improvements we make to our services. For RIIO-GD3, we have evolved our four-stage approach to planning, delivering and responding to engagement, to develop a strategic and proportionate stakeholder engagement programme. This ensures that the processes we have in place are dynamic and flexible, ensuring stakeholder insight iteratively drives business planning and change through RIIO-GD3 and gives us a line of sight to prepare for RIIO-GD4.

As part of our ambition for continuous improvement, we are making **15 voluntary engagement commitments** that we will formally report against in our voluntary Annual Stakeholder Report. These voluntary engagement commitments will enable us to evolve and enhance our programme of engagement in anticipation of stakeholders' changing needs throughout RIIO-GD3.

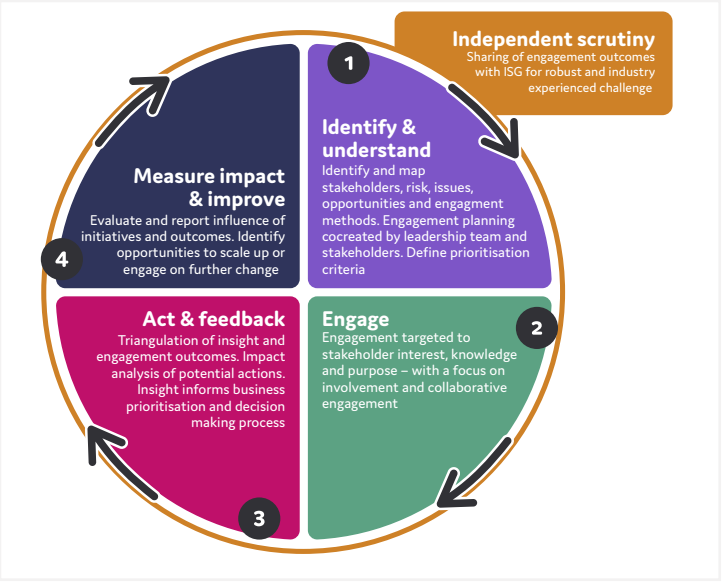


Figure 2.2 Our strategic engagement approach

Principle	Voluntary engagement commitments
Meaningful	**1.** We will undertake a stakeholder mapping refresh annually to ensure we capture changes in our stakeholder population (**stage 1: Identify & understand**) **2.** We will engage with a robust and representative sample of customers and stakeholders annually, to understand their evolving priorities. This will inform our materiality process, ensuring engagement is focused in the right areas at the right times (**stage 1: Identify & understand**) **3.** We will continue to provide additional ways to discuss complex topics and tailor awareness and education approaches, such as establishing a non-domestic customer panel (**stage 2: Engage**)
Honest	**4.** We will maintain our ISG to continue the same high level of oversight and challenge throughout RIIO-GD3 (**Independent scrutiny**) **5.** We will continue our assurance programme and report on independent benchmarking of our engagement practices (**stage 4: Measure & improve**) **6.** We will continue to report annually on our progress against these voluntary engagement commitments and openly report stakeholder-led outcomes (**stage 3: Act & feedback**)
Inclusive	**7.** We will use regular stakeholder satisfaction surveys to identify trends in engagement and remove barriers (**stage 2: Engage**) **8.** We will ensure that our engagement reaches and involves a diverse range of individuals, groups, experts and locations that represent the communities we serve (**stage 2: Engage**) **9.** We will embed our new mapping of underreached customer groups, tracking engagement to measure and improve their inclusion (**stage 1: Identify & understand**)
Iterative	**10.** We will continue to triangulate and act upon a wealth of insight to drive strategy and action (**stage 3: Act & feedback**) **11.** We will continue engagement with our industry-leading Young Innovators Council (YIC) and host the first annual Energy Youth Summit in the North (**stage 2: Engage**) **12.** We will continue to mature the skills, processes and capability of stakeholders and colleagues through training and development, to ensure engagement is two-way and builds iteratively (**stage 4: Measure & improve**)
Proportionate	**13.** We will embed Tractivity, our new best-practice relationship management tool, to efficiently coordinate and record data from our 'one conversation' approach with stakeholders (**stage 4: Measure & improve**) **14.** We will drive industry collaboration to tackle new or complex challenges and develop shared approaches to minimise the risk of stakeholder fatigue (**stage 2: Engage**) **15.** We will focus on areas that matter, such as innovation and net zero, and on the customers that will face the most impact, such as Industrial and non-domestic customers (**stage 1: Identify & understand**)

2.2 How we involved stakeholders in our RIIO-GD3 plans

In early 2023, we used panel and group discussions, one-on-one talks, surveys and workshops to understand what topics customers and stakeholders wanted to discuss and how they wanted to participate. This enabled us to deliver a programme of engagement for our plan that aligned to their preferences and led to us develop an ambitious yet cost-effective package of stakeholder co-created services. Our ISG has offered input, guidance and constructive challenge at every stage of this process.

We combined established engagement methods with innovative approaches such as:

- Designing an advanced method for assessing customer value perceptions, replacing complex willingness-to-pay studies
- Seeking guidance from consumer representatives, such as Citizens Advice, to ensure sensitive capture of affordability (ability-to-pay) information
- Tracking priorities and preferences throughout RIIO-GD2 to measure changes influenced by macroeconomic shifts
- Developing stakeholder personas that make it easier to identify the differing data and information needs of key groups
- Creating partnerships involving underreached groups - such as the Three Hands Outside In project - with charities and lived-experience experts.

Our engagement principles shape our engagement programme. Stakeholder perceptions and satisfaction research led us to add the values of honesty and proportionality to our RIIO-GD2 values of meaningful, inclusive and iterative for RIIO-GD3.

We collaborated with independent specialists to methodically analyse evidence from all our RIIO-GD2 stakeholder interactions at regular intervals. Combined with third-party insights and operational data, our analysis confirmed the needs and wants of our stakeholders and uncovered some gaps in our knowledge. We shared findings across our organisation and with our ISG to identify how to build on our knowledge, address gaps and develop our business plan.

Throughout our engagement, we tested ambition of our thinking against the tension of deliverability and affordability. Even after being informed about the services provided, performance levels and the portion of the gas bill allocated to NGN, 80% of informed customers considered NGN's final plan to be reasonable and offering good value for money.

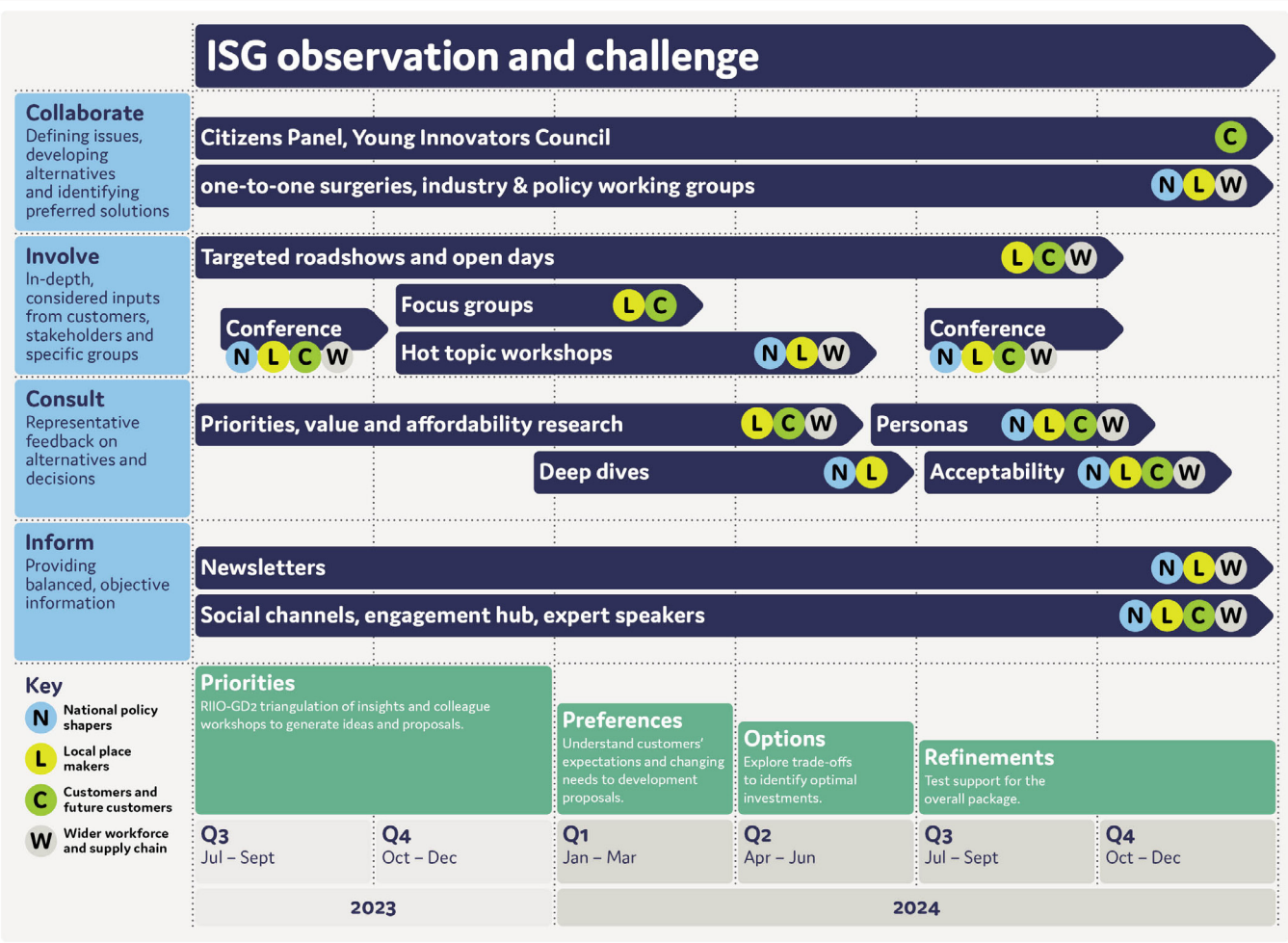


Figure 2.3 Our business plan engagement process

2.3 Building on RIIO-GD2

Meaningful, proportionate and honest engagement with our stakeholders throughout RIIO-GD1 and 2 has been vital to our decision-making, enabled by having the right processes embedded into the business.

We have maintained a heightened level of engagement through RIIO-GD2. We adopted a holistic approach that lets us deliver and evaluate current plans while planning for the future and adapting to shifts in society and evolving stakeholder priorities.

Through RIIO-GD2 we have seen affordability become the priority over safety and reliability for a majority of domestic customers. While cost remains the priority for most, younger consumers place more emphasis on environmental factors, and those who can pay bills without difficulty tend to value reliability and safety over other factors. This has prompted us to double down on pillars that are crucial for enhancing operational efficiencies and maintaining industry-leading reliability and safety standards, while driving forward and leading on sustainability factors. By leveraging collaboration, digitisation, engagement and innovation, we continually enhance our services without burdening customers with additional cost.

In RIIO-GD3, we are refining our engagement approach further, keeping what works and continuing to invest in improving colleague capabilities through training and development. This approach enables us to build on any areas for improvement that we've identified.

2.3.1 Engagement best practice

Transparency and accountability are important to us and our stakeholders. We use external assurance programmes and independent benchmarking to ensure we are doing the right thing for our stakeholders and will enhance this further for RIIO-GD3 (voluntary engagement commitment 5).

Assurance programmes

Our engagement approach is independently assured against the global AA1000 Accountability Principles (updated 2018) and AA1000 Stakeholder Engagement Standard (2015).

We are one of the first companies to attain the new BSI ISO 22458 kitemark for Inclusive Service for Energy Provision. This recognises our inclusive and flexible work supporting vulnerable consumers and will continue to be reappraised and aligned to best practices.

Independent benchmarking

We have drawn insights from industry experts and recent electricity and water sector price controls (RIIO-ED2 and PR24). This has helped us identify and act upon several opportunities and risks, such as greater collaboration between gas distribution networks. We have also anticipated trends that are likely to impact customer service and engagement including automation and digitalisation, uncertainty over the future of gas, political change and an aging population.

Business In the Community's (BITC) Responsible Business Tracker allows us to focus on the quality of our engagement in and out of the sector. It also guides the socially responsible actions we should be taking. Stakeholder and community engagement is consistently our highest scoring area, scoring the maximum 100% compared to the average of 55%. As a result, we've been asked to share guidance on stakeholder mapping and engagement with other BITC members.

Citizens Panel and Young Innovators Council

Our active industry-leading Citizens Panel and YIC are highlights of our engagement programme, helping us to understand the needs of customers, consumers and future customers. These panels have provided valuable input such as:

- Co-designing the rollout of seven key customer initiatives
- Guiding the implementation of both a new financing mechanism (Green Bonds) and our vulnerability and carbon monoxide allowance (VCMA) investment strategy
- Informing the design of the UK's first hydrogen-fuelled demonstration home
- Shaping refinements to six business strategies and influencing two new ones
- Cocreating customer approaches to the Department for Energy Security and Net Zero-led hydrogen village trials
- Shaping the articulation of our vision for the next 10 years.

We have recently refreshed the membership of both panels to more accurately reflect the diversity of our customers, and members of our YIC have graduated to join our ISG and Citizens Panel, ensuring future customer challenge is heard at all levels.

Case Study

OUR CITIZENS PANEL

Click to learn more about our Citizens Panel

In 2020, we were the first energy distribution company to create a Citizens Panel. The 50 demographically representative customers that make up this panel have influenced key aspects of our plan. Meetings have covered topics ranging from the safety and reliability of transporting gas through our pipes to the sustainability commitments we should be making. We have asked the panel about their future role, purpose, structure and membership. They told us that they wanted to deepen their role to critique and influence our plans and that we should extend our model to reflect business customers. In response, we intend to establish a separate business forum for non-domestic customers (supporting voluntary engagement commitments 2, 3, 8 and 15)

Stakeholder map

To reflect the energy system of the future, we updated our stakeholder map with emerging groups like cyber security experts, and community and local energy groups.

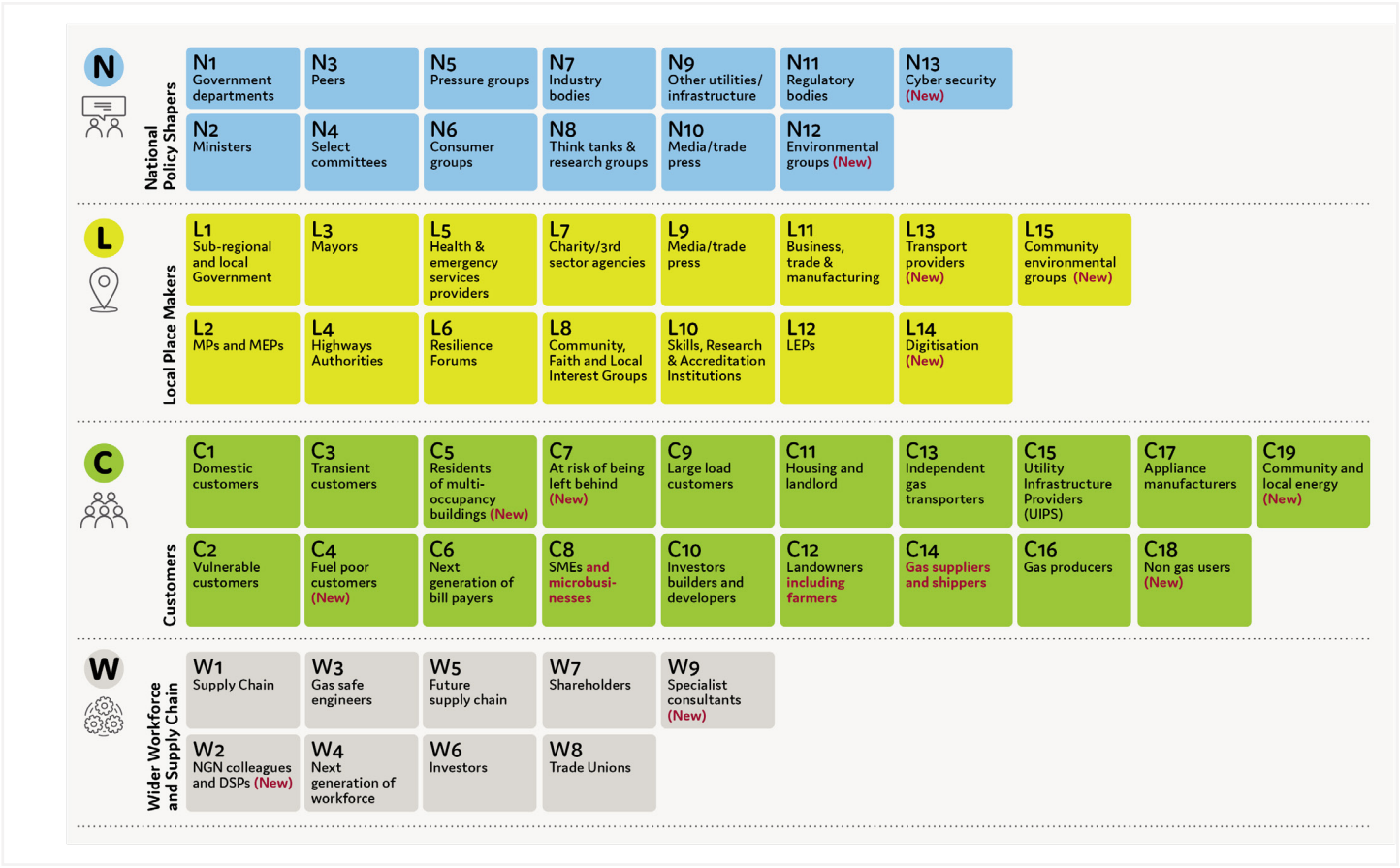


Figure 2.4 Our refreshed stakeholder map

Giving everyone a voice

As part of our strategic approach to improve inclusivity, we pioneered a bespoke map for underreached consumer groups - an industry first - for our RIIO-GD3 planning.

We have broadened our vulnerability segmentation from five to ten categories (with 48 subgroups), covering new areas like rural vulnerability and financial hardship. We were able to categorise and identify underreached customers according to their prevalence and the impact of not engaging.

The map provides unparalleled granularity about underreached groups. It draws on NHS and Healthwatch best practice guidelines, Priority Service Register (PSR) eligibility criteria, the latest census data (2023) on health conditions in our area, and gaps in our historical engagement. It forms the basis for our inclusive engagement and support framework. We use it to:

- Prioritise who to engage with
- Design engagement channels to overcome barriers faced by priority groups
- Monitor participation among priority groups.
- Adapt our engagement plans to ensure all voices are heard
- Disaggregate results by consumer group for a more granular understanding of priorities.

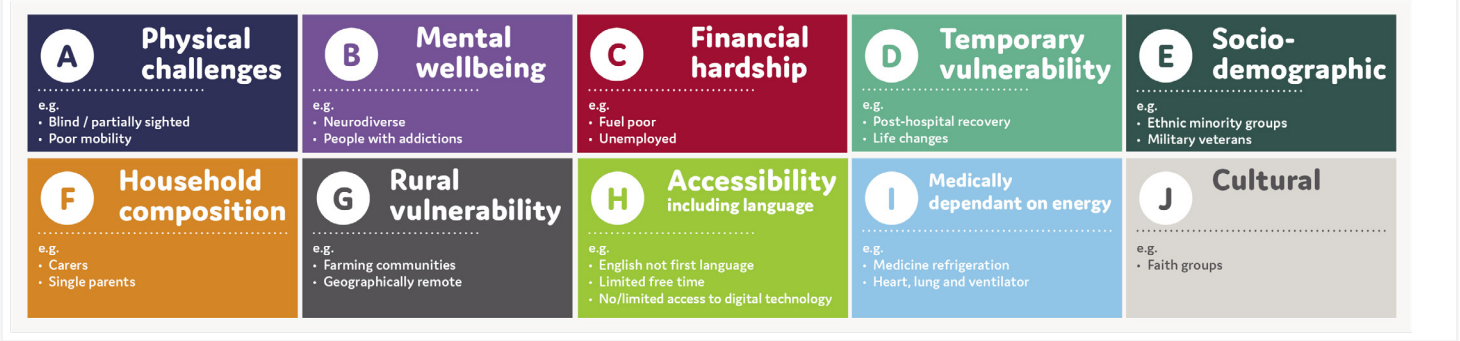


Figure 2.5 Underreached inclusion groups

This insight allows us to adapt our "hard to reach" framework into a comprehensive inclusivity engagement framework and include voices from across our segmentation, through focus group discussions, partner-led conversations in community settings and specialist online panels, such as an ethnic minority panel.

In RIIO-GD3 we will embed our inclusivity framework to ensure engagement reaches and involves a diverse range of individuals, groups and experts (voluntary engagement commitment 8 & 9)

Relationship management

We use an information management system, Tractivity, to monitor engagement. This allows us to update our mapping, manage changes to stakeholders' communication preferences and track stakeholders' participation in our programme and disseminate feedback and insight across different business areas. When preparing our business plan, we consistently reviewed lessons learned and adjusted our strategies to expand our outreach. This approach will continue into RIIO-GD3 (voluntary engagement commitment 1, 2 and 13).

Collaboration

Through our ongoing programme of core engagement mechanisms - panels, community partner boards and working groups - we collaborate with customers, colleagues and stakeholders to involve underreached audiences, be more cost-efficient and enhance value for money. This is something we embraced in RIIO-GD2 and will continue to do more of in RIIO-GD3.

We have been a driving force in industry collaboration, leading the re-establishment of the Gas Distribution Networks (GDN) Stakeholder Engagement Working Group in RIIO-GD2, which will continue through RIIO-GD3.

Driving greater research consistency

A consistent research approach is crucial for comparing data across regions. But this consistency has historically been lacking in strategic research conducted by networks.

In October 2023, we shared our best practice for conducting willingness-to-pay research, playing a fundamental role in shaping the Gabor Grainger methodology that has been widely adopted by the networks.

We proposed a collaboration agreement in early 2024 for standardisation of engagement material across distribution networks. This has allowed each network company to maintain partnerships with their preferred suppliers while establishing a structured framework for uniform materials, analysis and application of insights.

To avoid stakeholder fatigue, the gas networks have also joined together to engage with shared national stakeholders for RIIO-GD3 planning. Feedback areas include network resilience, the role of gas networks in a decarbonised world and delivering value for consumers.

Joined-up regional coordination

Our longstanding participation in vulnerable customer collaboration groups such as Utilities Together (North West) and Infrastructure North (North East and Yorkshire) has allowed us to identify best practices and quickly adopt successful ideas.

We are also active in Northern Powergrid's cross-utility forum. Regional gas, electric, water and telecoms networks share learning in areas of shared challenge such as skills, climate resilience, winter preparedness and decarbonisation.

Our insights triangulation work has helped us identify other opportunities for enhanced collaboration during RIIO-GD3.

In RIIO-3 we will:

- Continue to play an active role in the cross-GDN Stakeholder Engagement Working Group, proactively sharing learning, best practice and identifying ways to collaborate collectively (voluntary engagement commitment 14)
- Play an active role in regional groups and seek further opportunities for regional collaboration (voluntary engagement commitment 14)
- Host an Annual Energy Youth summit in the North, bringing together our well-established YIC and Northern Powergrid's new Future Customer Panel Focus for Future (voluntary engagement commitment 11).

2.4 Effective oversight and accountability

2.4.1 Robust oversight from our ISG

We are the only GDN with an ISG (formerly CEG) that has continued to operate at the same level since its inception during RIIO-GD2 planning. This has provided the group with greater in-depth knowledge of our business and means they are able to hold us to account for promises made in our RIIO-GD2 plan and more robustly challenge our RIIO-GD3 plan.

The ISG's rigorous oversight holds us accountable for our business plan outputs and commitments, and ensures we meet the priorities of our stakeholders and reflect them in ambitious proposals that offer value for money. The ISG is a balanced panel with expertise in areas including:

- Finance and commercial strategy
- Gas distribution and the regulatory framework
- Social inclusion and fuel poverty
- Innovation
- The future of energy, environmental improvement and decarbonisation.

We refreshed our ISG membership for RIIO-GD3 business planning. This included adding two former members of our YIC to give stronger focus to future customers' needs and preferences.

In RIIO-GD3 we will continue to:

1. Give ISG members access to observe all our engagement events and actively seek their feedback
2. Organise an annual stakeholder event to bring our stakeholders together with the ISG to discuss our annual performance
3. Host an independent website for the ISG to communicate its work and observations.
4. Support production of an annual ISG report and effectiveness review
5. Provide senior manager and secretariate to support the ISG and act as a liaison with the business
6. Provide strategic and operational management, site visits and timely information for the ISG at all levels of the business
7. Provide the ISG with resources for independent analysis and reporting
8. Review and refresh ISG membership to align to changing skills and knowledge essential for the next price control (voluntary engagement commitment 4).

Challenging the business plan

The ISG has thoroughly reviewed and critiqued our business plan proposals, presenting 24 formal challenges throughout the iterative engagement process. The challenge log has been meticulously managed, with updates on progress and responses regularly reviewed in collaboration with the ISG. We have diligently incorporated all feedback from the ISG, which has been crucial in enhancing our business plan to deliver greater benefits to customers and society.

Deep dive topic	ISG challenge	Impact for RIIO-GD3
Engagement strategy	Understand what value for money for customers might mean (aside from cost savings or outputs).	Value perceptions research shaped business plan propositions. Deep dives with our customers and future customers informed the purpose principles that will be embedded in RIIO-GD3.
Vulnerability	Demonstrate how the vulnerability strategy is in line with net zero commitments and leads to better customer outcomes.	NGN aligned its vulnerability and net zero strategy alongsideNational Energy Action (NEA) research and tested commitments through engagement. Commitments have been reflected through both strategies and in our education and workforce resilience strategy.
Environment and sustainability	Be clearer in describing the outcomes of any enhanced targets around environment.	Engagement with the YIC informed how we will improve transparency and accessibility in our Annual Environmental Report.
Value and efficiency	Decide how to present costs to customers, given that demand is expected to reduce and costs to increase.	Customer engagement informed understanding and fed into an NGN-led cross-GDN collaboration to develop a template for presenting educational materials for engagement through RIIO-GD3.

Table 2.2 Example of ISG challenges

2.4.2 A well justified decision-making process

Our objective throughout our business planning has been to arrive at a set of investment proposals that are well justified and acceptable to customers and stakeholders.

Our responsibility for efficiency and value for money has led us to ensure our plan is both well evidenced and that the decision-making around it is well justified. As part of this, we consider if:

- We are best placed to deliver the activity and why customers should fund it
- We can deliver the activity cost-efficiently and if the benefits realised outweigh the costs
- We have evidenced that customers, as well as stakeholders, support the proposal
- Customers will be protected from unacceptable risks.

Our engagement strategy and robust analysis and triangulation of insights have given us a deep understanding of customers' and stakeholders' wants and needs to input into this plan.

The insights have been iteratively analysed and triangulated independently to generate a log of key thematic insights from which to inform our thinking which can be found **here**.

These are also evidenced in our Appendix A3 Stakeholder Engagement and Decision Log, which has become one of our key internal decision-making metrics, alongside cost-benefit analysis, social return on investment, direct financial customer benefit and whether we are best placed to, or should, deliver it.

This decision-making process is evident in action throughout our plan, particularly in Chapters 5 and 6 and **Appendix A3 Stakeholder Engagement and Decision Log**.

As part of our holistic process for turning insight into action, we've introduced a Stakeholder Strategic Steering Group (SSSG), a cross-functional group considering our evolving insights and collaborating to identify opportunities, trade-offs, risks and how insights are used to develop services. Throughout the remaining chapters of our business plan, we highlight where engagement has iteratively shaped our propositions (see "What we've heard"). Further detailed insights are contained in **Appendix A3 Stakeholder Engagement and Decision Log**.

Our business plan acceptability testing with informed customers and stakeholders revealed an average acceptance rate of 79% for our RIIO-GD3 Business Plan. Feedback from our engagement programme showed that customers understood both the cost-of-service implications and the potential impact of Ofgem's policy proposals on bills. Even after being informed about the services provided, performance levels and the portion of the gas bill allocated to NGN, 80% still considered NGN's proposed bill profile to be reasonable and offering good value for money. However, just 43% felt that they would find it easy to afford the total bill increases, given the rising costs of other household expenses.

CHAPTER 3

HIGH QUALITY OF SERVICE FROM REGULATED FIRMS

Providing exceptional service to all customers, especially the most vulnerable, is the foundation of everything we do. Our commitment extends to prioritising environmental sustainability, societal well-being and future generations. In this chapter, we outline how we will uphold these commitments in a cost-effective manner throughout RIIO-GD3 and beyond.

How we're providing an exceptional service to our customers

We deliver essential services to our customers daily, prioritising their needs in every decision we make. In collaboration with our customers, we have expanded our outputs in the areas of customer vulnerability and energy system transition, beyond the core outputs specified by Ofgem.

In this chapter, we explore:

- Our customer commitments for RIIO-GD3
- High quality of service
- Secure and resilient supply
- Transition to net zero

The chapter also sets out our approach to innovation as well as our competition landscape.

79% of informed customers and stakeholders have said our high quality of service commitments are acceptable.

We will deliver our ambitious service improvements by continuing to build on the people, processes and technological advancements made throughout RIIO-GD1 and RIIO-GD2. These include:

- Using technology, where appropriate, to streamline internal business processes
- New 24/7 shift pattern for all new operational colleagues, making sure that we can have resources available when we need them most
- A flexible operating model that can respond effectively to peaks and troughs in workload – throughout RIIO-GD2, we maintained all our regulatory operational performance standards (such as delivery of our replacement programme and attendance to one-and two-hour escapes) through the Covid-19 pandemic and extreme weather events
- Embedding of internal stretch targets that underpin our regulatory and voluntary performance, such as our industry-recognised 90 in 60 complaints standard, striving to agree resolution to 90% of complaints within 60 minutes
- Extensive regional and national collaborative partnerships, helping us to deliver over and above for our customers in vulnerable situations (CIVS).

Measured outputs:

Licence Obligations (LO)

Minimum standards. Breaching a minimum standard results in a regulatory enforcement action and financial penalties.

Price Control Deliverables (PCDs)

Inputs, outputs or deliverables which we need to deliver on time, or it will result in financial penalties.

Output Delivery Incentives (ODIs)

Where we are required to improve quality above the minimum standard to improve the customers' experience. These will have incentives/penalties to encourage our delivery of the required improvements. These incentives and penalties can be reputational (ODI-R) or financial (ODI-F).

NGN Bespoke Output

We have proposed a bespoke output where we consider we can enhance our performance and deliver greater value to customers. This output has been informed by our customer research. A summary is provided in this section to highlight the bespoke output, RIIO-GD3 targets, value delivered and the stakeholder evidence that supports this output. For the output we have explicitly referenced the specific stakeholder insight that supports it. A customer value proposition will be submitted to support this output.

In addition to our measured outputs detailed here, we have made voluntary commitments to our customers, including those in vulnerable situations. These have been stakeholder-led and challenged. They will help us deliver above and beyond in RIIO-GD3.

For conciseness, where we have Licence Obligations and common outputs that have remained largely the same from RIIO-GD2, these will be referenced at a high level. Additional detail and narrative will be provided for amended and new common outputs, bespoke outputs and voluntary commitments. We will clearly show how each output and voluntary commitment has been driven by stakeholder insights. The insight number and summary will be referenced – full details for each insight are in the **Appendix A3 Stakeholder Engagement Decision Log**.

Key messages

Continue to deliver at the frontier, driving industry standards up for the lowest cost for our customers.

Continue to be transparent and accountable when reporting across all our output obligations and commitments.

Enhance support for customers in vulnerable situations who need our help the most.

Continue to drive customer service standards up and keep our customers at the heart of what we do.

Continue to deliver innovative solutions in our drive to protect customers in vulnerable situations and support the energy system transition to net zero.

Focus on collaboration, acknowledging the complexity of the energy landscape and recognising that customers expect us to work together to simplify their experience.

3.1 Our customer commitments for RIIO-GD3

RIIO-GD3 commitment	How we will deliver	Measure of accountability	Customer support	RIIO-GD3 outcome
Continue to deliver at the frontier, driving industry standards up for the lowest cost for our customers	By continuing to drive efficiency and delivering our outputs at the frontier	Be accountable for delivering our outputs and commitments, and transparent about our performance. We will minimise disruption and deliver value for money	Customers tell us that their top priorities are for us to minimise bills and provide a safe and reliable supply of gas **Insight 8**	High quality service
Enhance support for customers in vulnerable situations, who need our help the most	By addressing stakeholder and customer feedback, and using regulated funding, shareholder funding and routine business activities to provide support as necessary	Report annually on progress against our commitments	Customers tell us that we need to focus support on financial vulnerability, with sustainable projects and partnerships, alongside promoting the Priority Services Register (PSR) and Carbon Monoxide Safety **Insights 7, 15, 16**	High quality service
Continue to drive customer service standards up, achieving above 9.2/10 consistently, and keeping our customers at the heart of what we do	By co-creating and designing services that are right for them, and continuing to measure performance beyond our regulated requirements	Publish all our customer satisfaction and complaints data through our open data portal	Customers have been clear that they want to see continuous improvement, and commitments that go beyond regulatory requirements **Insight 14**	High quality service
Continue to build on our culture of collaboration	By collaborating with groups both regionally and nationally, within and outside our sector, we aim to innovate and simplify processes for our customers	Report on the impact of our collaboration	We have heard that regional collaboration with utility partners is key **Insights 6, 10**	High quality service
Continue to deliver innovative solutions in our drive to protect customers in vulnerable situations and support the energy system transition to net zero	By collaborating with energy networks and stakeholders, fostering cooperation and knowledge sharing	Report and publish annually on progress with our innovation project portfolio	Net zero will become a key priority from 2026 to 2031. We will use innovative approaches and thought leadership to protect and support customers through the energy transition. **Insights: 3, 4, 6, 7, 8, 10, 11, 15**	Infrastructure fit for a low-cost transition to net zero

For further detail on our insights, please see **Appendix A3 Stakeholder Engagement Decision Log**.

3.2 High quality of service

This section sets out our approach to a high quality of service at a reasonable cost in RIIO-GD3. This includes how we will ensure NGN are supporting and protecting consumers in vulnerable situations, providing excellent customer service, and meeting Guaranteed Standards of Performance.

We will continue to deliver the following outputs in RIIO-GD3, as we believe they provide value and serve the intended purpose effectively.

- Vulnerability Minimum Standards (LO) Standard Special Condition D13
- Gas distribution networks (GDNs) to treat domestic customers fairly (LO) 45 Standard Special Condition (SSC) D21
- Customer satisfaction surveys – emergency and repair, planned work, connections (ODI-F)
- Complaints Metric (ODI-F).

To achieve our strategic vision, in RIIO-GD3, we will further introduce the following:

- One bespoke output: 7 and 28 day repair standards
- 21 voluntary vulnerability commitments, of which six are new and 15 are enhanced
- Vulnerability & Carbon Monoxide Allowance of £15.9m
- Two additional common outputs to monitor PSR customer satisfaction and complaints performance
- Three voluntary new customer satisfaction and complaints commitments.

3.2.1 Vulnerability

The NGN region has some of the highest rates of fuel poverty in the UK – 17% in Yorkshire and Humber against a national average of 13.1%,[1] and we must work hard to address this. Citizens Advice reports that energy debt is now the most common type of debt affecting their clients in our region.[2]

Our strategic approach supports an inclusive and equitable energy system, contributing to a fair transition to net zero. It also aligns with the RIIO-GD3 framework's, goal of delivering reliable, resilient and affordable gas distribution services for all customers.

Using feedback from our stakeholders, project partners and Independent Stakeholder Group (ISG), we have updated our Vulnerability Strategy – see **Appendix A4 Vulnerability Strategy** for RIIO-GD3. We outline its key elements here.

Vulnerability and Carbon Monoxide Allowance (VCMA)

We will continue to use the VCMA to provide tailored support to our priority customers, to those in fuel poverty and to customers who need us to support them with services beyond the meter. In forecasting VCMA for RIIO-GD3, we have assessed the activities that NGN is uniquely placed to deliver, and which cannot be delivered by any other agency.

We have also accounted for the flexibility to proactively address and/or respond to emerging need.

To deliver against our targets and commitments as agreed with our customers, we require an allowance of £15.9m in RIIO-GD3. A breakdown by theme can be found on pages 32-33 of **Appendix A4 Vulnerability Strategy**.

Broad theme	Forecast spend	% of overall VCMA
Fuel poverty and energy affordability	£6m	38%
Supporting priority customers	£4.5m	28%
Services beyond the meter	£5.4m	34%
Carbon monoxide awareness	Business as usual	0%
Total	£15.9m	100%

We will also continue the commitment we made in RIIO-GD2 to invest a minimum of 25% in collaborative projects.

Business-as-usual activities

Working with the other GDNs and key stakeholders, we have agreed a definitive list of activities we now consider to be business as usual.

This means that customers across the UK can expect a baseline level of service and support. A full list of these activities and overall costs can be found in BPDT 8.42 and supporting narrative on page 19 of the **Appendix A4 Vulnerability Strategy**

Supporting a just and fair transition to net zero

Working with the other GDNs, key stakeholders and our ISG, we have developed definitions of "those most at risk of being left behind' and "a just transition to net zero".

Supporting this, we have worked with stakeholders to develop six principles that underpin our approach in these areas:

1. Embed support through our business-as-usual operational activities
2. Embed energy efficiency advice and referrals into projects supported by all funding streams
3. Commit non-regulated funding to provide first-time gas central heating and in-house measures as a transition to net zero and where other options are not available in the short to medium term
4. Commit VCMA funding to repair or replace unsafe appliances following NGN intervention.
5. Provide services that encourage customer safety through the energy transition, such as continued carbon monoxide awareness and safety activities
6. Provide partners with access to industry-agreed awareness programmes and training on decarbonisation, so they can develop programmes of energy-specific support for households through the transition.

1. DESNZ, Sub-regional fuel poverty in England, 2024 report (2022 data). https://www.gov.uk/government/statistics/sub-regional-fuel-poverty-2024-2022-data.
2. February 2024 data. https://public.flourish.studio/visualisation/11050218/

The services offered within these principles would be holistic – for example, following repair/replacement of an unsafe appliance we would provide energy efficiency advice, and referrals to any further support that the customer/household needed. Further examples for how each principle will be delivered can be found on page 14 of the **Appendix A4 Vulnerability Strategy**.

Voluntary vulnerability commitments

Throughout RIIO-GD2, we delivered over and above regulatory requirements to provide essential support to our CIVS. For example, we committed £1m+ through the delivery of two NGN shareholder-funded support programmes. This provided further services for CIVS and enabled us to introduce additional Guaranteed Standards of Performance payments throughout the cost-of-living crisis.

To build on our track record, we have developed an ambitious suite of **21 voluntary commitments**. They were developed and led by in-depth customer and stakeholder feedback. Together, they demonstrate the value we will deliver for CIVS during RIIO-GD3.

WHAT WE HEARD...	Enhanced/new	Voluntary commitment
Financial hardship continues to be the dimension of vulnerability that most customers prioritise	Enhanced	**Support 38,000 highest-risk households** with in-depth case work (Tier 1). 25% increase from RIIO-GD2.
	Enhanced	**Support 113,000 households with one-to-one awareness**, signposting and lower-level advice (Tier 2). Higher Tier 2 cost to serve than RIIO-GD2, owing to complexity of need.
	Enhanced	**£1m NGN Customer Support Fund** to enhance delivery of VCMA projects by funding additional measures not eligible under VCMA funding. 20% increase from RIIO-GD2.
	Enhanced – industry-leading	**Support 13,000 households with enhanced GSOP 1 provision** to offer an additional payment to customers with a supply interruption between four and 24 hours. 30% increase from RIIO-GD2.
	Enhanced	**£300k NGN Community Partnering Fund** to develop 50 new grass roots partnerships/projects during RIIO-GD3. 20% increase from RIIO-GD2.
	Enhanced – industry-leading	**Grow 10 NGN Community Partnering Fund projects into VCMA projects**. 25% increase from RIIO-GD2.
The sustainability of social investments must be enhanced through equipping partners and communities to continue projects when initial seed funding stops	New – industry-leading	Create a **collaborative investment strategy with regional distribution network operators (DNOs)** to minimise duplication and maximise impact.
	New – industry-leading	**Extend remit of ISO 22458 Inclusive Energy Service Provision** to include an audit of partner organisations and projects.
	New – industry-leading	**Measure all regulated and shareholder-funded vulnerability projects** against the UK Energy Networks Sector Wide rulebook for social return on investment (SROI). Holistic approach to understanding impact.
	Enhanced	**Include DNOs in the governance process** for key programmes of work, such as Off-Gas Warmth. Inclusive approach to decision-making.
	Enhanced	**Evolve location of the Community Partnering Fund** to target areas where we have gaps in grass roots partnerships.
Expanding the reach of the Priority Services Register is key to effective targeting and take-up of support services among non-financial vulnerabilities	New – industry-leading	Create a **collaborative regional PSR awareness strategy** with respective DNOs to avoid duplication of effort and address gaps in awareness and registrations.
	Enhanced	Refer **50,000 customers onto the PSR** over five years. 14% increase from RIIO-GD2.
NGN should take action to mitigate the increased safety risks of Carbon Monoxide due to the cost-of-living crisis	Enhanced	**100,000 customers** to receive **face-to-face CO awareness sessions** during RIIO-GD3. 10% increase from RIIO-GD2
	Enhanced	Support **3,250 customers** with **CO checks** during RIIO-GD3. 375 customers supported in RIIO-GD2
	Enhanced	Continuously improve CO awareness reach, by **maximising every opportunity for customers to see, hear or read CO safety messages.**

APPENDIX A3 INSIGHT 15

COMMITMENTS TABLE CONTINUED ON THE NEXT PAGE

WHAT WE HEARD...	Enhanced/ new	Voluntary commitment
Bill payers, especially those in vulnerable situations, are supportive of 'services beyond the meter' that can be implemented at minimum cost and those seen as within NGN's core role.	Enhanced	**Appliance repair and replacement** following an NGN supply interruption – support 3,975 **customers** during RIIO-GD3. 550 customers supported in RIIO-GD2.
	Enhanced	**Essential gas appliance servicing** – support **1,500 customers** supported during RIIO-GD3. 550 customers supported in RIIO-GD2.

APPENDIX A3 INSIGHT 16

WHAT WE HEARD...	Enhanced/ new	Voluntary commitment
Both businesses and the public believe that within our current energy system, the risks and benefits of climate change will not be fairly distributed. Those most at risk must be protected from carrying undue costs and burdens they have neither created nor have the means to avoid. Customers in vulnerable circumstances (CIVs), young people, rural customers and small businesses require special consideration.	Enhanced	**30,000 customers** to receive **energy advice** during RIIO-GD3. 12,618 customers supported in RIIO-GD2.
	New - industry best practice	**All VCMA projects to be assessed against our Inclusivity and Vulnerability Impact Assessment tool** to make sure that we recognise any barriers to support, address and mitigate risks, and ultimately deliver projects that are fair for all.
	New	Map all **existing and new customer journeys** to maximise intervention opportunities to **support their journey to net zero**.

APPENDIX A3 INSIGHT 7

* All RIIO-GD2 figures detailed are based on current forecast for outturn at end of RIIO-GD2. Further details can be found on page 27 of **Appendix A4 Vulnerability Strategy**.

3.2.2 Customer satisfaction

Through RIIO-GD1 and RIIO-GD2, we demonstrated an exceptional track record of delivering continued improvements for our customers. In RIIO-GD3, we will maintain exceptional customer service and evaluate satisfaction for at-risk consumers to ensure consistent service quality. To continue this track record, we have updated our **Customer Strategy** in line with customer and stakeholder feedback. The Customer PSR ODI-R Ofgem have introduced will provide stakeholders with standardised information to hold GDNs accountable for delivering similar levels of customer satisfaction for those on the PSR and their general customer base.

Output Common Survey	Type
The PSR Customer Satisfaction ODI-R will have the same annual targets as the CSAT ODI-F.	ODI-R

In addition to the regulated customer satisfaction outputs, we have developed **two voluntary commitments** to demonstrate the value we will deliver for our customers during RIIO-GD3.

WHAT WE HEARD...	Enhanced/new	Voluntary commitment
Customers want to see continuous improvement on satisfaction performance, with inclusive support services that exceed licence obligations. Empathy and tailored communications are increasingly valued by customers.	New	Using baseline results from Ofgem's new disconnections survey, we will continuously improve the service for our customers.

APPENDIX A3 INSIGHT 14

We aim to keep our customer satisfaction score above 9.2/10. This is challenging due to RIIO-GD3 changes in funding for new connections, rising costs for customers, and the introduction of a new disconnections survey. However, we have an exceptional track record for delivering over and above for our customers and will work tirelessly to maintain our customer performance through these changes.

WHAT WE HEARD...

Regional collaboration with utilities partners has identified opportunities and best practices for handling increased exposure to severe weather incidents, especially those which support CIVs.

Enhanced/new	Voluntary commitment
New - industry leading	Mutual Support Framework with regional DNOs to support customers during energy supply incidents

APPENDIX A3 INSIGHT 10

Regional collaboration has been a strength at NGN. In 2013, we established Infrastructure North with Northumbria Water, Yorkshire Water and Northern Powergrid. This partnership has supported customers, such as during Storm Arwen. Customers expect industry cooperation during incidents, and through this NGN-led framework, we can ensure reliable service and support during major events.

3.2.3 Complaints

We have a strong track record of stretching our performance in relation to responding to and resolving complaints. In 2014, we introduced an internal target of agreeing a resolution to 90% of all complaints within 60 minutes to align with our safety targets of attending an uncontrolled gas escape within 60 minutes. We will continue to stretch our performance in RIIO-GD3.

We will also publicly report a breakdown of our PSR-only complaints scores and will provide stakeholders with standardised information to hold us accountable for delivering similar standards for our vulnerable customers.

Output Common Survey	Type
Complaints PSR – same metric used for our customer complaints will be used for this output.	ODI-R

In addition to the regulated complaints outputs and reporting requirements, we have developed **one voluntary commitment.**

WHAT WE HEARD...

Communications are the top driver of complaints. Customers are looking for enhancements to the accessibility and inclusivity of existing channels and the design of new digital methods, which can add value when used appropriately and are designed to be easily accessible.

Enhanced/new	Voluntary commitment
Enhanced	Report the percentage of social media complaints as a percentage of overall complaints.

APPENDIX A3 INSIGHT 14

Social media complaints will be managed in line with our published complaints handling procedure, and like all other communications channels, we will closely monitor the root cause.

Also, to support all improvements that we introduce to enhance the services we provide to customers, we will assess all projects against our new Inclusivity and Vulnerability Impact Assessment. This is to make sure that the enhancements are accessible, inclusive and tailored to meet the specific needs of the customers that they are designed to serve. Linking to our Digitalisation Strategy, our focus will remain on providing a resilient service so customers will always be able to make contact with us through the channel of their choice. For all our customer satisfaction and complaints outputs and commitments, and in line with our commitment to transparency, we will continue to publish data on our open data portal.

3.2.4 Guaranteed standards of service outputs (LO)

Throughout RIIO-GD1 and RIIO-GD2, our performance exceeded the required **Guaranteed Standards of Performance** and consistently exceeded our 90% requirement. In 2023/24, we consistently achieved a rate of 96% or higher by focusing on maintaining high standards and enhancing overall performance. This resulted in the lowest annual compensation payment (£0.35m) in RIIO-GD2, including our enhanced voluntary payments for interruptions of between four hours and 24 hours for all customers. In RIIO-GD3, our ambition is to further improve on our performance and aim for 100%. We will also report in our annual submission if there were any missed payments and the underlying factors that contribute to any occurrence.

A comprehensive list of the 14 standards is available in the **Notice of Rights document, on NGN's website.**

3.3 Secure and resilient supply

Within **Chapter 5**, we outline our framework and strategy to provide a secure and resilient network. Supporting these are a number of outputs that we deliver and are accountable for:

- % of uncontrolled gas escapes attended within one hour (LO)
- % of controlled gas escapes attended within two hours (LO)

We have also set out our additional requirements and proposed target/levels of performance.

- We have enhanced reporting for our emergency response times
- Setting minimum performance levels for average unplanned interruptions targets
- Our mandatory HSE targets to replace our iron mains and service
- Our long-term risk reduction and data requirements

WHAT WE HEARD...

Reliability and safety service improvement are consistently prioritised and have the highest value perceptions across all customers. NGN's focus should be on keeping customers' lives running by providing reliable and uninterrupted supplies and minimising disruption to their daily activities. Current performance is great, and NGN can play a role in driving up industry standards.

APPENDIX A3 INSIGHT 8

3.3.1 Emergency response

We are required to attend 97% of uncontrolled gas escapes within one hour and controlled gas escapes within two hours. Our ambition is to attend **100% of escapes** within one to two hours, and we will thoroughly investigate any escapes where we do not meet this ambition, to gain an insight for improvement .

In RIIO-GD3, we will maintain our focus on these critical gas standards which are upheld as the most important standards to ensure safety for customers and is a key lead measure in the performance of our network. Our Workforce Resilience Strategy is centred on our emergency capabilities and safeguarding life and property.

Indeed, we see the licence obligations at the minimum standard required, and already have a track record of consistently exceeding it. We achieved an average response rate of 99.7% for uncontrolled gas escapes within one hour, and 99.8% for controlled gas escapes within one hour in RIIO-GD2.

We also commit to providing monthly reports to Ofgem to evidence transparency and visibility, but also as the data drives insight, to continually improve performance. We have been publishing the granular data on publicly reported emergency response times since August 2023 on our open data portal, and in RIIO-GD3, we will commit to sharing our monthly reports for our customers.

	Output common
New	Monthly reporting on the one and two hour standards

3.3.2 Unplanned interruptions in non-multiple occupancy buildings (non-MOBS) and multiple occupancy buildings (MOBs)

Keeping unplanned interruption as low as possible for our customers is a priority and we strive to get our customers back on gas as soon as it is safe to do so. Below, we discuss the minimum standard to be set for all GDNs. In RIIO-GD3, we will continue to drive performance and be industry leading with a view to better our performance.

We are regulated to measure our average unplanned interruptions. This measure incentivises us to ensure that our restoration times do not deteriorate, or we will receive a penalty. Ofgem has asked GDNs to propose a common output for non-MOBs and a GDN specific target for average MOBs interruptions. We have presented our proposal below. To note, in addition to this, we have also included detail in **Chapter 4** on decommissioning of MOBs, and there is an associated Engineering Justification Paper (EJP) for risers.

Non-multiple occupancy buildings

	Output common	Type	Minimum Performance Level (MPL)	Excessive Deterioration Level (EDL)
Enhanced	Common unplanned interruptions: average restoration time. Base revenue percentage increase dependent on level of failure. Max 0.25% business plan (bp) Return on Regulated Equity (RoRE).	ODI-F Penalty Only, sliding scale max 0.25% bp RoRE.	10 hrs	17.5 hrs

Average interruption duration across all GDNs in non-MOBs is over nine hours. Currently, NGN's performance surpasses that of other regions, as illustrated in Figure 3.1. NGN's approach will be to continue to consistently prioritise restoring any interruption promptly.

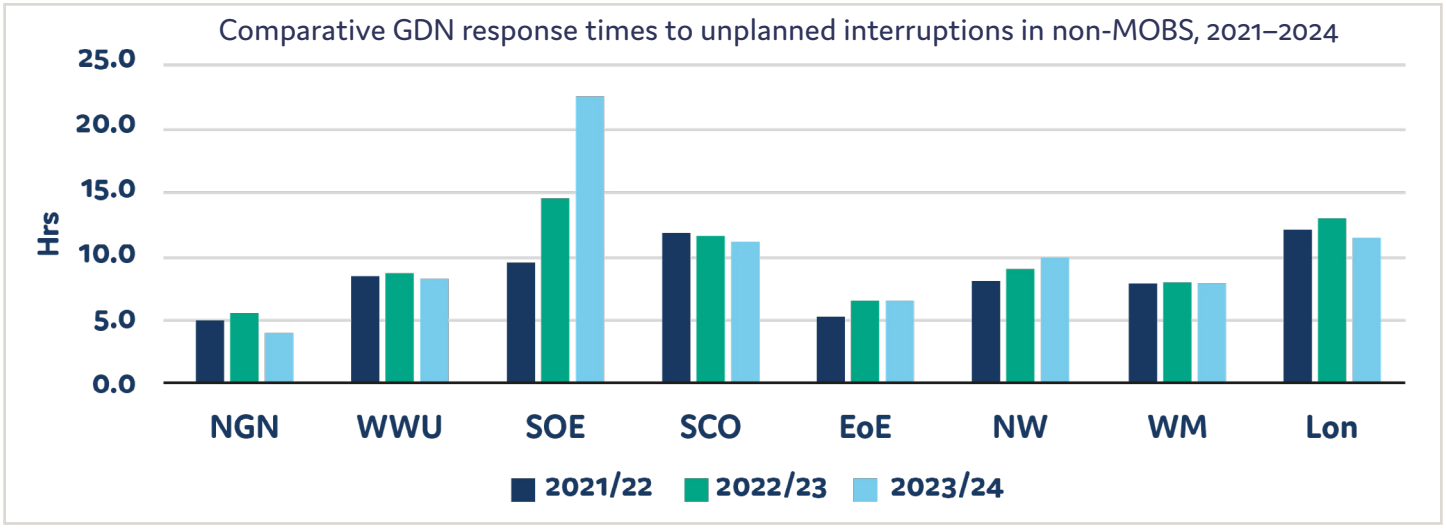


Figure 3.1 Comparative GDN response times to unplanned interruptions in non-MOBS, 2021–2024

We have pledged to maintain a Minimum Performance Level (MPL) of 10 hours in non-MOBs, taking into consideration the recent milder winters and the reduction in unplanned interruptions. We believe the industry is capable of meeting this standard, and we are dedicated to promoting the improvement of industry benchmarks by sharing best practice by conducting a workshop with other GDNs.

Multiple occupancy buildings

Our MOBs unplanned interruption levels are derived from assumptions and data from other networks. We will always endeavour to get the gas back on for our customers as soon as possible.

Output NGN	Type	Minimum Performance Level (MPL)	Excessive Deterioration Level (EDL)
MOB average restoration time	ODI-F Penalty Only, sliding scale max 0.25% bp RoRE.	504 hrs	756 hrs

The MPL for our MOBs unplanned interruptions cannot be established based on the data we hold due to the limited number of incidents in our region. Instead, we have analysed the Regulatory Reporting Process (RRP) performance for London, where a larger dataset provides a more reliable basis for assessment. Their average over the first three years of RIIO-GD2 in London is 513 hours. We consider an MPL of 504 to be a reasonable target and have added an additional 50% for the EDL. We have proposed a project under Use It Or Lose It (UIOLI) to examine the net-zero customer and safety journey for our customers, which will explore the decommissioning of all MOBs within our region.

Mapping our customer journey revealed several factors that could delay supply restoration: obtaining local authority planning permission (26 weeks), erecting scaffolding (12 weeks), weather conditions, building surveys, specialist management, and compliance with the building safety regulator. Any of these could prevent NGN from meeting the target. To minimise risk, we have established and nurtured relationships with local authorities, along with implementing a supplier and procurement strategy designed to lessen the impact on our customers.

We also looked at the impact of the Guaranteed Standards of Performance (GSOP) payment per household and we would, at the level we are proposing, be compensating £1,470 per household before the penalty came into effect.

NGN considers that this is an ambitious minimum standard as we only hold 0.8% of the riser population, and one unplanned interruption would make a material impact to the average.

Case Study

WESSEX COURT, SCARBOROUGH MOB, A SCENARIO THAT PRESENTS A CONSIDERABLE CHALLENGE IN THE EVENT OF AN INCIDENT

In Scarborough, a six-storey former hotel has been converted in to flats. The building is listed, and the pipework currently runs internally. Any work or changes to replace a riser in line with regulations would require planning permission for external pipework and a complex reconfiguration. To do the work, we would be dependent on local authority timescales.

3.3.3 Delivering our iron mains replacement commitments (PCD/ VD) (Common)

Health and Safety Executive (HSE) requirements are the primary driver of the mains replacement programme which will not only guarantee a safer and more reliable network but will also minimise methane emissions. See the HSE policy document "**Iron Mains Risk Reduction**".

The two commitments that deliver this outcome are set out in the table below. All other mains replacement is justified by HSE IMRRP compliance or NARM. We will abandon 2,186.5 km of Tier 1 iron mains and services during RIIO-GD3, in line with our mandated responsibilities.

For additional information on mandated Repex refer to **Section 6.3.4**

Output common	Type	NGN target	NGN expenditure
Tier 1 mains	PCD	2,186.5 km	£450.64m
Tier 1 services	PCD	158,893 services	£93.05m
Tier 2a	VD	10.10km	£11.15m

3.3.4 Data best practice and our Digitalisation Strategy and Action Plan (LO) (Common)

WHAT WE HEARD...

To avoid the risk of exclusion from the conversation, NGN must take early action to help stakeholders overcome barriers to action at a local level, and influence coordination at a regional and national level.

APPENDIX A3 INSIGHT 6

The purpose of the Digitalisation Strategy and Action Plan (DSAP) licence obligation is to ensure GDNs work to make better use of Energy System Data and digital technologies to generate value for customers and stakeholders. This could include delivering a more efficiently planned, maintained and operated energy system, with users having greater information and insight.

We will publish and seek feedback on an updated Digitalisation Strategy at least once every two years and an updated Digitalisation Action Plan at least once every six months. This will meet our licence obligation, to be transparent and support the delivery of a digitalised energy system that maximises the value of data for consumers. We will also ensure that our customers' data is handled with care and comply with data best practice.

3.3.5 Network Asset Risk Metric

Safety and reliability remain overriding priorities in RIIO-GD3 and will account for the largest portion of our forecast expenditure. We will measure the impact of this investment across key service areas, as discussed in **Appendix 18 Network Asset Management Strategy**.

Our Network Asset Risk Metric (NARM) output for RIIO-GD3 is outlined in **Chapter 5.3.1**. In RIIO-GD3, we facilitate a long-term risk benefit of £16.17m as a result of our asset interventions. We will report on progress and any deviations annually.

Summary

The additional requirements outlined in **Section 3.3** aim to improve our performance for our customers.

- The enhanced reporting on emergency response times allows the regulator to intervene early, ensuring that performance standards are upheld.
- Establishing a minimum threshold for average unplanned interruptions helps keep our customer disruptions to a minimum and bring up standards across all networks.
- Our digital strategy will develop smart gas network expanding on metrics available across our physical assets to inform customers and to support improved/ response to unplanned events.
- Continuing with our iron mains replacement and implementing long-term risk reduction strategies will lead to a safer and more resilient network, thereby ensuring that our supply remains as effective and as reliable as possible.

There are secondary benefits to consider. For instance, having a safer and more reliable network ensures that vulnerable customers experience greater reliability. Furthermore, our mains replacement programme will help reduce our carbon emissions and support our transition to net zero.

3.4 Transition to net zero

Our pathway and approach to the transition to net zero are detailed in **Chapter 4**. Here we have outlined the mandated reporting requirements by our regulator and purposed our two new bespoke outputs and one bespoke Price Control Deliverable (PCD) for RIIO-GD3 that will support GDN reduction of carbon emissions.

3.4.1 Our Environmental Action Plan and Annual Environmental Report ODI-R

As detailed in **Chapter 4**, we will implement our ambitious Environmental Action Plan (EAP) in RIIO-GD3. We will report our performance against these commitments in an Annual Environmental Report (AER) throughout RIIO-GD3. Projects relating to reducing our environmental impact, including saving carbon and minimising gas leakage are covered in our **Appendix A6 Environmental Action Plan**.

3.4.2 Proposed new common bespoke outputs to reduce carbon emissions

New 7 and 28 day repair targets

In RIIO-GD3, we are proposing a new ODI-F and ODI-R to the suite of outputs. These bespoke outputs address the network's responsibility to close methane leaks as soon as feasibly possible to support our reduction of carbon emissions.

WHAT WE HEARD...

Informed customers value the People and Planet strategy but want more ambition on emissions targets, financial support, and sharpening of sustainability metrics, governance and assurance. Transparency in reporting is key. Weight of voice from the Citizens Panel, Young Innovators Council (YIC) and ISG insight: stakeholders consider it imperative that we act against climate change by reducing both shrinkage and non-shrinkage emissions when reducing our carbon emissions.

APPENDIX A3 INSIGHT 5

These service levels can only be addressed by the regulator, as performance from all gas distribution networks would need to be evaluated and monitored to drive performance. We believe these targets can be achieved without any additional expenditure above the base Totex.

We have put significant effort into completing repairs over the past few years and have achieved 91% repairs in seven days and 98% in 28 days for 2023/2024. This dedication has led to a strategic shift and a focused approach to ensuring that repairs are finalised promptly, eliminating leaks as soon as feasibly possible. By implementing digitised work management, we have increased productivity by 20.1%, which would equate to c.£4m per year, enabling us to perform as efficiently as we do.

Common targets being proposed

Output bespoke new	Type	Target	Incentive
7 day repair	ODI-F	89%	GDNs would receive the Totex Incentive Mechanism (TIM) share of carbon monetary value for performance above 89% and a penalty if GDNs were to go below 70%
28 day repair	ODI-R	98%	NA

WHAT WE HEARD...

NGN's focus should be on keeping customers' lives running by providing reliable and uninterrupted supplies and minimising disruption to their daily activities. Current performance is great, and NGN can play a role in driving up industry standards. Weight of voice from Citizens Panel: customers believe NGN should use its frontier status to drive up standards by advocating for 7 to 28 day gas escape standards to become a national performance target from 2026 with an ODI-F.

APPENDIX A3 INSIGHT 8

These outputs were proposed in RIIO-GD2 but rejected at final determination.[3] Other GDNs claimed they were delivering at the proposed levels, which was inaccurate as many regions were underdelivering in this area. The acceptability of emissions being released into the atmosphere is decreasing, making it essential for us to complete our repairs as swiftly as possible. There is now an opportunity to bring this in as an incentivised measure. In the absence of target performance levels, monitoring is not conducted. Figure 3.2 illustrates the shortfall and the potential carbon monetary value that could have been realised in the first three years of RIIO-GD2 based on RRP data.

The output offers the opportunity for significant carbon monetary savings of £13.7m across the networks in RIIO-GD3 based on performance in RIIO-GD2. Please refer to **CVP NGN CVP1- Gas escapes within 7 & 28 day repair**[4] – gas escapes within 7 and 28 day repair.

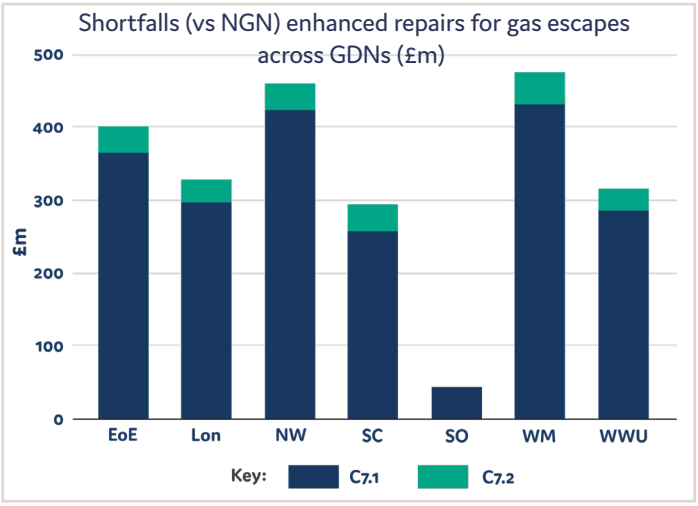


Figure 3.2 Shortfalls (vs NGN) enhanced repairs for gas escapes across GDNs (£m)

A secondary benefit is that increased resources become available for emergency response when repairs are closed, which supports our Workforce Resilience Strategy.

We are advocating for an incentive-based output that evaluates current performance across all GDNs. This is through an asymmetric metric to encourage GDNs to surpass the proposed target. We recommend implementing an incentive linked to carbon savings. For every percentage point above 89% seven day target for repairs, GDNs would receive a share of the carbon monetary value from TIM. Conversely, if a GDN falls below the minimum threshold of 70% of it would incur a penalty equivalent of its TIM share of the carbon monetary value. For detailed calculations regarding incentive value based on an RIIO-GD2 performance, please refer to NGN CVP1 – gas escapes within 7 and 28 day.

3.4.3 Net Zero Research Village (NeRV) research site bespoke PCD

We are proposing the establishment of a research hub dedicated to the decarbonisation of homes, networks and transport at the existing research site, Low Thornley. This hub will be named the Net Zero Research Village (NeRV) Centre. The construction of the NeRV Centre aims to transform the Low Thornley site into a premium research demonstration campus, marking the UK's first integrated facility for whole systems research development and demonstration encompassing gas, electricity, water, communication and digitalisation.

3. Ofgem final determination. https://www.ofgem.gov.uk/decision/riio-2-final-determinations-transmission-and-gas-distribution-network-companies-and-electricity-system-operator
4. https://www.northerngasnetworks.co.uk/wp-content/uploads/2024/12/NGN-CVP1-–-Gas-escapes-within-7-28-day-repair.xlsx

The NeRV Centre will be a key enabler of "whole house" and "whole systems" energy research. The UK needs to decarbonise 28 million homes[5] within the next 25 years to achieve its legally binding net-zero targets. This is particularly challenging because of the UK's aging housing stock, approximately one third of which was built before 1950. It is essential that a "whole house" and "whole systems" approach is used in the decarbonisation of homes, energy networks and transport systems to ensure a just, fair and equitable transition for all.

Further details and costings of this request can be found in the **NeRV Centre Engineering Justification Paper**.

Summary

The transition to net-zero outputs provides our customers with an insight into our ongoing efforts, and the measures we are implementing to reduce our carbon footprint in preparing for the future, and holds us accountable.

- Our new 7 and 28 day repair output aims to efficiently minimise environmental impact across all regions
- The new NeRV centre will be a hub for industries to collaborate and create energy solutions for customers and housing.

Case Study

NET ZERO RESEARCH VILLAGE CENTRE

The overarching benefit of the NeRV Centre project is that it will enable the existing Low Thornley campus to accelerate the decarbonisation of UK homes and buildings. This will be achieved through the provision of individual property and whole energy system insights, which can be used to inform policymakers and decision makers across the local, regional and national spectrum. Energy consumers and households will also be direct beneficiaries of the research and innovation outputs of the NeRV Centre, in the form of improved energy policy, products and real-world insights into the effectiveness of low-carbon technologies. The NeRV Centre is strongly aligned to our RIIO-GD3 Innovation Themes IT2, IT3, IT4 and IT6.

3.5 Innovation

As we transition to net zero, innovation will continue to play a central role in everything we do at NGN, helping us to keep pushing boundaries, exploring and develop new energy sources, and improving how we better support our CIVS. During RIIO-GD3, we will develop new technologies and innovative practices to achieve our business plan outcomes and meet our customer priorities. Building on our achievements in RIIO-GD2, our high-level priorities in RIIO-GD3 are consistent with our Digitalisation, Vulnerability and Whole Systems strategies. Further details of our approach to innovation during RIIO-GD3 can be found **here**.

3.5.1 A drive to business-as-usual innovation

In RIIO-GD3, we will continue to implement business-as-usual innovation. We will build on our previous successes, including the implementation of our SAP S4/HANA business systems solution, which has provided significant efficiencies across the business since its introduction in RIIO-GD1. Our digital strategy will aid the development and use of artificial intelligence (AI) and machine learning, while our customer visualisation model helped to identify areas with the highest need for fuel poverty intervention, for example, and used the data to inform a number of future energy planning projects. This will help us achieve future efficiency by modernising the digital processes, techniques and systems we use to run our network, as well as developing solutions to deliver our whole energy systems plan. This will also increase the information we measure from our physical system, enhancing situational awareness, improving asset health and future investments, and promoting proactive responses to incidents, minimising the impact on our customers.

Case Study ENHANCING MONITORING AND REDUCING COST

Valve Trak hardware is fitted to a valve chamber and transmits an audible alert via a Bluetooth device. The technology enables us to monitor and locate our assets around the clock. The transmitter allows our engineers to pinpoint the exact location of the valve if it needs isolating, for example. This is a significantly more cost-effective approach than trying to locate a valve via traditional methods. This also provides better protection to our customers and colleagues should there be an emergency at a site where the valve has been installed. The project was funded entirely from our Totex allowance at a cost of £602k.

5. National Audit Office, *Decarbonising home heating*, May 2024.

3.5.2 An ambitious Network Innovation Allowance investment

Building on previous successes, such as robotic process technology and our customer visualisation tool, we have identified key focus areas that will govern our approach to innovation and help us to deliver benefits for the company, our customers and the wider sector in RIIO-GD3. We are asking Ofgem for £15.5m (equivalent to RIIO-GD2 in 18/19 nominal prices) of Network Innovation Allowance (NIA) funding to support delivery of our plans. A breakdown of our NIA funding request is provided below:

Topic	Theme	Appendix A3 Insight	Justification	Funding request
Customer vulnerability	**IT1** Short-term solutions to assist vulnerable customers through difficulties that have been exacerbated by cost-of-living/energy crisis	**3, 4, 7, 11, 15**	This will help to support customers who might otherwise make unsafe choices (e.g, turning heating off, which may lead to greater longer-term health issues, or tampering with their heating). In this regard, innovation can make an immediate and significant impact.	£2,320,000
	IT2 Long-term solutions supporting a fair transition and ensuring those at most risk are not left behind	**3, 4, 7, 11, 15**	For example, supporting individuals who are unable to take up new technologies as part of the broader transition. Innovation can help these customers manage the energy transition by offering small-scale, bespoke solutions. It will incorporate research and development to create enduring, collaborative, coordinated and customer-facing solutions that minimise impacts of activity and how we maintain and repair our network.	£1,595,000
Energy systems transition	**IT3** Enabling decarbonisation through whole energy solutions	**7, 8**	This supports the overall accelerated path towards achieving net-zero emissions by 2050. A continuing challenge relates to alternative fuel transport solutions and in particular policy decisions, infrastructure and market forces. We will undertake a collaborative programme of research to support the whole-energy system focus area relating to sustainable transport solutions. We will ensure that the energy systems transition incorporates whole systems that are fit for all. We have identified links between whole systems, decarbonisation and risks for CIVS. We will innovate to ensure that CIVS are positively impacted as we transition to net zero.	£5,380,000
	IT4 Assisting local authorities to establish sustainable communities	**6, 10**		£3,450,000
	IT5 Decommissioning and repurposing of existing gas networks as we move towards future systems	**7, 8, 10**		£1,595,000
Digitalisation	**IT6** Maintain and improve existing digital infrastructure to increase efficiency	**11**	To support continued investigation into a variety of new technologies, as well as the benefits of incorporating AI. Investment during RIIO-GD3 will focus on maintaining and improving the already-established systems, which is required to deliver against the wider business plan.	£1,160,000
			Total:	**£15,500,000**

We welcome Ofgem's decision to retain both the Strategic Innovation Fund (SIF) and Net Zero and Re-opener Development Fund, Use It Or Lose It allowance (UIOLI) for RIIO-GD3. We are requesting £12.5m of UIOLI funding to support our energy system transition ambitions. Further details on the projects and costs can be found in **Chapter 4**. In RIIO-GD2, we benefitted from this to support projects such as the Hydrogen Village Trial and East Coast Hydrogen, to do early feasibility studies. We will continue to deliver benefit to our customers and the UK during RIIO-GD3 to support the transition to net zero.

3.5.3 Greater collaboration and engagement

A culture of innovation permeates our whole business. We intend to take this further in RIIO-GD3. Innovation Hubs, supported and led by voluntary Innovation Champions and Innovation Interest Groups from across NGN, will encourage colleagues to contribute to ongoing innovation and service improvement.

We will also enhance our engagement with other energy networks, stakeholders, innovators and partners. We will do this by developing an Innovation Ecosystem, in partnership with the Energy Innovation Centre (EIC). This will foster a culture of genuine collaboration and continuous improvement, and provide access to a wider range of resources, funding and expertise. In 2024, NGN chaired the Gas Innovation Governance Group for GDNs in the UK, and we will continue to develop and nurture these relationships as we transition into Future Energy Networks (FEN), while developing the new FEN Smarter Networks Portal. It will also enhance our ability to respond to changes to government policy and emerging opportunities.

3.5.4 Measuring the effectiveness of our innovation

In preparation for RIIO-GD3, we have worked with the EIC and other GDNs and DNOs to develop an industry-wide framework to report and compare the outputs and outcomes of innovation. Additionally, where projects prove to be successful and become business as usual, we will report on their ongoing performance against the cost of investment.

As well as this framework, we will continue to report our progress via our Annual Innovation Summary report, Innovation Measurement Framework, project update reports, the Future Energy Networks Smarter Networks Portal and at annual industry conferences.

3.6 Competition

3.6.1 Early and late competition

Following a thorough review of our project portfolio, no project has been identified that would meet the criteria of early or late competition at this point. As referenced in **Sector Specific Methodology Decision (SSMD)**.

CHAPTER 4

INFRASTRUCTURE FIT FOR A LOW-COST TRANSITION TO NET ZERO

In RIIO-GD3, we will continue to provide a safe, secure and resilient gas supply while preparing our networks for the transition to net zero.

How we are supporting the transition to net zero

We play a crucial role in helping our customers, stakeholders, region and nation to transition to net zero. They want us to act now to reduce our environmental impacts. Our Environmental Action Plan (EAP) sets out the initiatives that we will deliver in RIIO-GD3 to continue to decarbonise our network and promote sustainability, taking our performance beyond that achieved in RIIO-GD2. At the end of each year, we will transparently present our performance in our Annual Environmental Report (AER).

We do not expect that significant changes will be required to our network during RIIO-GD3 because of uncertainty around the timings, scale and distribution of the energy transition. This means we will focus on continuing to operate a safe, secure and resilient network, while paving the way for further decarbonisation beyond RIIO-GD3.

In this chapter, we explore:

- Our net zero commitments for RIIO-GD3
- How we planned our future of gas strategy
- Our approach to the future of gas, including whole systems thinking
- How we've calculated our demand and peak day forecasts to ensure network resilience for our customers
- Our ambitious EAP commitments and how we will transparently report our performance.

We clearly show how each of our commitments has been driven by stakeholder insights. The insight number and summary is referenced – full details for each insight are in **Appendix A3 Stakeholder Engagement Decision Log**.

75% of informed customers and stakeholders have said our net zero commitments are acceptable.

Key messages

We will continue to operate a reliable and cost-effective gas network: We will meet current customer needs in a changing world while making our networks ready for an affordable, positive and fair transition to other forms of energy.

Even though the long-term future of methane is uncertain, it is forecast to remain in significant demand in RIIO-GD3: Our demand and peak day forecasts suggest that methane usage will remain consistent throughout RIIO-GD3 and beyond.

We will carry out collaborative projects to facilitate net zero: We will pursue cross-vector collaboration, strengthen our network capabilities and work towards whole-system decarbonisation to enable an affordable transition for our customers.

We are reducing carbon emissions now: We will continue to strategically invest in our network assets during RIIO-GD3 to save **423,000** tCO2e and to reduce gas leakage by a further 24% during RIIO-GD3.

We will be transparent and accountable when we report on our environmental initiatives: Building on previous successes during RIIO-GD2, our RIIO-GD3 EAP takes us further by committing us to reducing our carbon emissions, being more resource and waste efficient, encouraging biodiversity on our land and promoting sustainable procurement practices. Our RIIO-GD3 AER will report on how well we have done this every year and, new for RIIO-GD3, be checked by independent experts prior to publication.

4.1 Our net zero commitments for RIIO-GD3

RIIO-GD3 Commitment	How we will deliver	Measure of accountability	Customer Support	RIIO-GD3 Outcome
We will continue to operate a safe, secure, and resilient network.	Focusing on delivering our key RIIO-GD3 customer service outputs.	We will report our performance in our annual regulatory report.	Customers tell us that their top priorities are for us to minimise bills (1st) and provide a safe and reliable supply of gas (2nd and 3rd). Insights 1 and 8	**Secure and resilient supplies**
We will pursue low-regrets investments collaboratively to enable fair and low-cost energy transition.	Pursuing cross-vector collaboration, conducting projects to strengthen our network capabilities in the transition to net zero, and taking actions aligned with government policy to facilitate whole-systems decarbonisation.	We will report our performance in our annual regulatory report.	Customers believe that the risks and benefits of climate change may not be fairly distributed within our current energy system and there is a need to avoid overburdening those who can least afford to pay. Insights 3, 6, 7 and 17	**Infrastructure fit for a low-cost transition to net zero.**
We will use uncertainty mechanisms and reopeners effectively to explore future net zero opportunities.	Supporting projects such as hydrogen blending and the use of hydrogen for industry will be critical in enabling whole-systems transition to net zero at pace.	We will report our performance in our annual regulatory report.	Amid uncertainty about the future of the gas industry, we will work collaboratively to build public understanding of the safety and cost-benefit case. Insights 3, 6 and 7	**Infrastructure fit for a low-cost transition to net zero.**
We will be transparent and accountable when we report our environmental performance.	We will publish an AER throughout RIIO-GD3.	The carbon emissions reported in our AER will be checked by independent experts at no extra cost to customers.	Stakeholders told us they value transparency and accountability in environmental reporting. Insight 5	**High quality of service from regulated firms.**
We will reduce gas leakage by 24% over RIIO-GD3.	Our investment programme in gas mains replacement and system pressure management.	We will report our performance in our AER	Stakeholders have told us to take value for money actions now to reduce carbon emissions. Insights 1 and 5	**Infrastructure fit for a low-cost transition to net zero.** **Secure and resilient supplies.**

4.2 Managing uncertainty

WHAT WE HEARD...

The likely reduced role of the gas networks in future needs careful planning given low stakeholder awareness and some resistance to moving to low-carbon technologies (LCT). There is a need to avoid overburdening those who can least afford to pay for a reduced gas network, with a potential role for innovation in RIIO-GD3.

APPENDIX A3 - INSIGHT 7

There is uncertainty in the current UK energy landscape including:

- In 2023, the Government revised its gas boiler ban target to phase out 80% by 2035.
- The Future Homes and Building Standard proposes to prohibit fossil fuel heating in new homes built from 2025.
- The Government is due to decide on the role of hydrogen for domestic heat decarbonisation in 2026.

Long-term methane demand is expected to decline. However, over the RIIO-GD3 period demand for methane will remain strong and methane will continue to play a vital role in domestic use, industrial processes and power generation. We do not predict any significant changes to our network during RIIO-GD3 because of current uncertainties regarding how the UK's energy system will transition to achieve net zero.

In RIIO-GD3, therefore, we will focus on preparing for decarbonisation while continuing to serve our customers by operating a safe and resilient network and substantially reducing gas leakage. Indeed, 33% of our proposed RIIO-GD3 expenditure is associated with regulator driven safety compliance requirements.

Our RIIO-GD3 planning is informed by the 2024 **Future Energy Scenarios** (FES24), and our understanding of future customer demand.

A number of FES24 assumptions do not reflect current needs and behaviours of our gas customers. For example, annual heat pump installation is currently under 100k, not 600k as assumed in FES24. As a result, we have made some adjustments to the FES24 assumptions to ensure our planning complies with regulatory, legislative and policy obligations (see **Section 4.4** for full details).

4.2.1 Investments within our future of gas strategy

Most of our investments in RIIO-GD3 are not related to demand, but instead focus on legislative requirements and asset health interventions, which will be the same whatever the future energy pathway.

We have performed sensitivity analyses on FES24 to investigate any material financial impact on our plans with regards to future variability in network connections, disconnections and reinforcement quantities. The maximum annual delta in investments across FES Holistic Transition and our RIIO-GD3 forecasts for connections exit is £0.21m, disconnections is £0.07m, and reinforcement is £0.35m which demonstrate limited materiality. Please refer to Table 4.1 for discussion on the influence of FES24 assumptions on different investment categories.

As detailed in our Business Plan Data Table M8.22 and associated commentary (see **Appendicies A15 and A16**), FES24 Holistic Transition demonstrates an average of 4.8% year on year (YoY) decline in annual gas demand, whereas FES24 Counterfactual shows an average decline of 1% YoY. The stark gas demand decline in the Holistic Transition is driven by a combination of assumptions including high levels of heat pump uptake, improved energy efficiency, as well as enhanced consumer engagement. The Counterfactual pathway, which does not reach Net Zero in 2050, shows a more comparable profile to our RIIO-GD3 forecasts.

Our RIIO-GD3 forecasts, which are based on region specific factors and historic trends, demonstrate continued low growth (<1% YoY) in annual gas demand during RIIO-GD3 as gas prices continue to stabilise which is the primary factor affecting gas usage aside from weather. A secondary factor influencing gas demand forecast is prevailing government policy - for example limited incentives to influence uptake of heat pumps and boiler replacement schemes, as well as the current lack of clarity on the Future Homes and Buildings Standard requirements.

Our forecast peak gas demand remains virtually constant at approximately 480 TWh throughout RIIO-GD3. This is predominantly due to the legislative requirement to plan for the worst-case winter scenario (i.e. 1 in 20) with the existing customer base of 2.6 million. In the event of extreme cold weather, experience tells us that customers will choose to turn on their heating regardless of the gas price and as such our network must be able to meet this worst-case demand. The peak gas demand in the case of Holistic Transition shows an average YoY decline of 4.1%, and the Counterfactual shows an average decline of 0.75% YoY which is comparable to our RIIO-GD3 forecast. Our customer base remains above 2.35 million throughout RIIO-GD3 in all scenarios analysed.

It must be noted that decline in gas demand in RIIO-GD3 does not necessarily equate to a proportionate increase in disconnections, or proportionate decrease in new connections – this is especially true if the demand reduction is driven by factors other than fuel switching such as thermostat reduction or efficiency improvement. Our analyses confirm that in RIIO-GD3, despite the decline in gas demand as assumed by the FES pathways, investments across load related Capex (i.e. connections exit, disconnections and reinforcement) remains essential regardless of the scenario in order to maintain the network resilience.

Investment categories	Materiality of FES24 assumptions on RIIO-GD3 investment
Repex	No materiality: Our safety driven mains replacement programme and associated reduction in methane leakage is independent of future energy pathways.
Capex (non-load related)	No materiality: Most investments in this category relate to asset health.
Capex (load related)	Limited materiality: This category is influenced by changes in Government policy. Due to the current level of heat pump uptake, we do not foresee significant disconnections, but new gas connections are forecast to decrease, unless gas boiler restrictions planned for new homes from 2025 are reversed. Removal of the Domestic Load Connections Allowance (DLCA) could potentially increase the reduction in new gas connections further, due to increased connections cost.
Opex (direct)	No materiality: Maintenance-related investments are vital to ensuring a safe, resilient network.
Opex (indirect)	No materiality: Business support-related expenditure is not significantly impacted by energy future pathways.

Table 4.1 Materiality of FES24 assumptions on RIIO-GD3

Section 4.4 provides full details of our RIIO-GD3 annual and peak gas demand forecasts. We are cognisant of the forthcoming UK Seventh Carbon Budget (2038-2042), and we will review how the targets correspond with our future of gas strategy, and the different potential scenarios for the UK's energy system.

4.3 Our future of gas strategy

WHAT WE HEARD...

A consensus exists around NGN pursuing low-regret innovation and development to support decarbonisation such as biomethane, hydrogen blending and hydrogen for industrial use. Innovation should be weighted towards supporting vulnerable customers, and future customers want to see whole systems leadership.

APPENDIX A3 - INSIGHT 7

Our strategic vision for the future of gas, which is underpinned by stakeholder priorities and insights, is shown in Figure 4-1. In RIIO-GD3, we will continue to deliver a safe, reliable gas network for our customers under 'business-as-usual', while undertaking new and proportionate works which make our network ready for an affordable, positive and fair transition to net zero.

To ensure we continue to offer best-value to customers, we will use low-regrets investments to prepare the network for a range of possible energy futures while also ensuring long-term value for money. We do not expect large-scale decommissioning to take place during RIIO-GD3 and any such activities will be funded via the Heat Policy Reopener.

Meeting legislative and statutory targets under the business-as-usual

Maximising the role of the gas network in net zero transition by making progress with low-regrets options consistent with Government policy

Funding any net zero activities with significant uncertainties, such as industrial use of hydrogen, via Ofgem's Reopeners and Uncertainty Mechanisms

Figure 4.1 Our strategic vision for the future of gas in RIIO-GD3

To achieve our strategic vision, we will:

- pursue **cross-vector collaboration**, putting our customers at the heart of energy transition
- conduct new projects to strengthen our **network capabilities** for a low-cost transition to net zero, enabling us to adapt to policy changes in the future
- align with Government policies to enable **whole-systems decarbonisation.**

4.3.1 Cross-vector collaboration

WHAT WE HEARD...

Net zero will gain prominence as a key priority between 2026 and 2031. Colleagues, stakeholders and customers agree that NGN has a clear role to play in place-based education, which is central to public acceptance, behaviour change and stakeholder advocacy. Information must be clear, consistent, engaging and positively framed.

APPENDIX A3 - INSIGHT 3

To achieve the 2050 net zero target, we will continue to work with different organisations, and support local, regional and national decarbonisation strategies, including the forthcoming Regional Energy Strategic Planning (RESP). Collaboration will be critical for every aspect of energy transition.

We will pursue innovative, whole-system research projects, in collaboration with our stakeholders, to better understand consumer journeys. The objective is to identify optimal decarbonisation technologies for different types of domestic and non-domestic customers, so that we can drive net zero in the most equitable way possible and at the lowest cost.

In RIIO-GD3, we will continue educating our customers, especially those in vulnerable situations, and future bill payers so that they can make informed decisions on energy transition (**see Section 3.2**).

We will also contribute to building a resilient, net zero-ready workforce through our Green Academy programme, which seeks to provide training on hydrogen conversion to our apprentices and colleagues (see **Appendix A7 Workforce and Supply Chain Resilience Strategy**).

We will support engagement and coordination in local, regional and national decarbonisation. Our RESP coordination and engagement team will engage with local authorities, electricity, gas and water networks, and the National Energy System Operator (NESO) to bring together the outputs of Distribution Future Energy Scenarios (DFES), Local Area Energy Plans (LAEPs), the Centralised Strategic Network Plan (CSNP), and the Strategic Spatial Energy Plan (SSEP). Implementation of RESP recommendations will be funded via the Net Zero Reopener.

Project	When	Funding source	What we will do
Consumer journey research	2026–2031	NIA	With support from Insights 3 and 17 and new for RIIO-GD3, we will work with local authorities, academia and stakeholders like Northern Powergrid to research cost-effective transitions to net zero for domestic and non-domestic customers. This includes adoption of low carbon solutions such as heat pumps and energy storages. We will evaluate consumer journeys under different energy scenarios to facilitate people-centric energy planning.
RESP coordination and engagement	2026–2031	UIOLI	The establishment of the RESP function by NESO is crucial for developing a set of holistically aligned regional plans that will contribute to the UK's first ever SSEP. The RESP function will require substantial support across its three primary business areas: 1) energy system planning, 2) market facilitation, and 3) real-time operation. As indicated by Insight 6, we will assist the RESP function at both strategic and operational levels as RESP integrates local energy plans from across our network.

Table 4.2 Cross-vector collaboration projects planned for RIIO-GD3

4.3.2 Network capabilities

WHAT WE HEARD...

Many of the local authorities (LAs) that have declared climate emergencies do not have detailed plans of how their decarbonisation targets will be achieved. NGN must take early action to help stakeholders overcome barriers to action at a local level and influence coordination at a regional and national level, or risk being excluded from the conversation.

APPENDIX A3 - INSIGHT 6

As methane demand is expected to decline in the long term, we will need to make significant changes to our network and the way we operate it. In RIIO-GD3, we will seek to understand the impact on our network under different energy scenarios to strengthen our network's capabilities to support a flexible energy transition.

Whatever policies emerge, we intend to invest in new, low-regrets projects which can support repurposing to low-carbon gas as well as network decommissioning.

Investing in low-regrets options now will help distribute the costs of decarbonisation fairly among current and future customers while we transition to net zero.

In addition to the bespoke projects proposed in Table 4.3, many of our business-as-usual network investments will bring about secondary energy transition benefits. For example, we propose to enhance real-time network monitoring to support continued safe operation of our network (**see A22.0 Investment Decision Pack - Pressure Management**). This project will also enhance our network's capability to respond to changes in methane demand as the energy system transitions to low carbon alternatives.

Project	When	Funding source	What we will do
Network sectorisation	2026–2031	UIOLI	Supported by Insights 7 and 17, and new for RIIO-GD3, we will create a strategy to ready our network for hydrogen conversion via safe isolation and disconnection (i.e. network sectorisation). This investigative, preparatory project will assess our network's operational readiness for hydrogen repurposing and validate decarbonisation data from industrial and power customers. Informed by the insights from the project, we envisage using the findings to trigger an Ofgem reopener for implementing safe and efficient hydrogen sectorisation in our network.
Understanding disconnection and decommissioning	2026–2031	UIOLI	Using Insights 7 and 17, we will research future disconnection and decommissioning needs in our network across various building stocks (e.g. multiple occupancy buildings), and create a strategy based on our findings. In RIIO-GD3, we will also monitor interruption performance and conduct asset resilience surveys to further inform our decommissioning strategy. This will help us determine the minimum viable network structure needed for a resilient energy system and plan subsequent removal of obsolete equipment. We envisage using the project findings to trigger an Ofgem reopener for a 'Net zero trial', which would include testing low-carbon energy solutions like fully electric community as methane supply is phased out.

Table 4.3 New network capabilities projects planned for RIIO-GD3

4.3.3 Whole-systems decarbonisation

WHAT WE HEARD...

A consensus exists around NGN pursuing low-regrets innovation and development to support decarbonisation such as biomethane, hydrogen blending and hydrogen for industrial use. Innovation should be weighted towards supporting vulnerable customers, and future customers want to see whole-systems leadership.

APPENDIX A3 - INSIGHT 7

WHAT WE HEARD...

An innovation culture is key to achieving our net zero ambitions. The move away from the Energy Networks Association (ENA) is an opportunity for NGN to take a leadership role among other GDNs.

APPENDIX A3 - INSIGHT 4

All realistic future energy pathways support the role of gas in whole-systems decarbonisation. We will support projects like hydrogen blending and use of hydrogen for decarbonisation of heavy industry and power sectors, to enable efficient whole-systems transition to net zero. Biomethane is a decarbonisation solution available now, but continued barriers to entry and operation exist. In RIIO-GD3, we remain committed to supporting innovation projects that aim to reduce biomethane connection and operational costs through Future Energy Network's Green Gas Taskforce, and business-as-usual process evolution (see **Section 3.5.2** of our RIIO-GD3 Innovation Strategy for further details).

Project	When	Funding source	What we will do
Hydrogen blending	2026–2031	UIOLI and Uncertainty Mechanisms (NZARD or NZASP).	Hydrogen blending can play a critical role in kickstarting the UK hydrogen economy. Supported by Insights 7 and 17 and new for RIIO-GD3, we will advance investigative, preliminary design related projects to support hydrogen blending into gas networks which will be funded via UIOLI. The findings will be used to trigger a later UM for actual execution of hydrogen blending in our network.
Industrial and commercial hydrogen use	2026–2031	UIOLI and Hydrogen Transport Business Model (HTBM) or Uncertainty Mechanisms (UMs).	Supported by Insights 7 and 17 and new for RIIO-GD3, we will support hard-to-decarbonise power, industrial and commercial sectors to reach net zero via fuel switching to low-carbon hydrogen. We are supportive of our flagship **East Coast Hydrogen** project, which will play a vital role in fulfilling the ambition to decarbonise power sector by 2030. We propose to fund investigative design studies via the UIOLI with any activities relating to delivering hydrogen repurposing funded via the UMs or HTBM in RIIO-GD3. See Section 3.5.2.1 of our RIIO-GD3 Innovation Strategy for further details.

Table 4.4 Whole-systems decarbonisation projects planned for RIIO-GD3

4.4 Our annual demand and peak day forecasts

WHAT WE HEARD...

NGN's focus should be on serving our customers by providing reliable and uninterrupted supplies and minimising disruption to their daily activities. Current performance is sector-leading and NGN will continue to play a role in driving up industry standards.

APPENDIX A3 - INSIGHT 8

4.4.1 Our annual gas demand forecast

As required by Ofgem, our RIIO-GD3 capacity planning is based on the FES24 Holistic Transition pathway. As shown in Table 4.5, this scenario includes a number of core assumptions, some of which do not reflect the current needs and behaviours of our gas customers. Where this is apparent, and in accordance with the RIIO-GD3 Business Plan Guidance, we have adjusted the pathway assumptions in our RIIO-GD3 planning to ensure we continue to be able to resiliently meet our customers' energy demands. Table 4.5 identifies where our planning has deviated away from the assumptions of the FES 2024 Holistic Pathway and the rationale for this.

Assumptions	Deviation	Rationale
Net zero is achieved through a mix of electrification and hydrogen.	No deviation in the long-term.	In the near term, large-scale electrification and fuel switching to hydrogen is not expected, as reflected by current uptake data and lack of legislation in place to support this.
Energy demand reduction is driven by efficiency improvement (such as 0.5 °C thermostat reduction for residential sector) and electrification.	Deviation in the short-term. Currently electrification uptake is not as anticipated. Thermostat reduction is subject to external factors such as affordability, weather and the fabric improvement of homes.	The most influential external factors are gas prices and the weather. The latter, in the event of cold weather doesn't guarantee 0.5 °C reduction in thermostat setting. Gas networks plan for a 1-in-20 cold weather event.
600,000 heat pumps will be installed per year by 2028. In 2023, the heat pump uptake was around 100,000 per year.	Assumed to be 100k per year during RIIO-GD3 based on recent trends, with equal representation in our region as elsewhere in UK. Source: EHPA (Reference: The European Heat Pump Association) **ehpa.org/market-data)**	Current uptake is lower than government ambition, and we see this continuing unless there are significant changes in incentives, and policy.
Four in five homes will not be using natural gas boiler as primary heat source by 2045. In 2023, only one in five homes were not reliant on gas boilers.	No deviation in RIIO-GD3.	2045 is a long-term target, and out of the scope of RIIO-GD3.

Assumptions	Deviation	Rationale
Gas grid connection for new homes will end in 2025.	This has not been factored into our demand forecasts due to uncertainty.	This has not been put into legislation yet as the Future Home and Building Standard is currently just a proposal.
Annual industrial hydrogen demand will be over 10 TWh by 2030.	No deviation in RIIO-GD3.	This is outside the scope of existing methane planning. However, we are supportive of industrial use of hydrogen and seek to implement our East Cost Hydrogen.

Table 4.5 Key assumptions of the FES24 Holistic Pathway and deviations from these used in our RIIO-GD3 capacity planning

Our annual forecasts look at how historic weather-corrected demand is influenced by other factors (such as the economy and energy-efficiency initiatives) and how they might change in the future.

Our annual demand forecasts for RIIO-GD3 are provided at a Local Distribution Level (LDZ) to meet Uniform Network Code (UNC) requirements. Any differences from the Holistic Pathway are due to us using regional information instead of UK-wide figures. We source our regional data from Xoserve, the Office of National Statistics (ONS) and the Office for Budget Responsibility (OBS).

After weather, the biggest factor in determining annual gas demand is price. Gas prices increased in 2018 and remained high until December 2023. Through 2024 prices reduced and stabilised because of the mild winter and security of supply. We expect annual gas demand to recover during RIIO-GD3 and then to start to decrease with the uptake of alternative technologies.

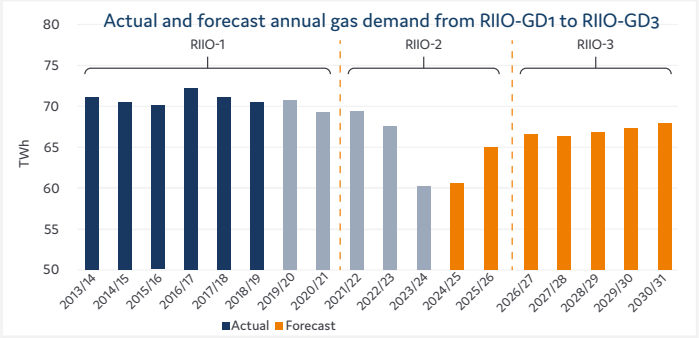


Figure 4.2 Actual and forecast annual gas demand from RIIO-GD1 to RIIO-GD3

4.4.2 Our peak gas demand forecast

Peak day demand is an important factor in driving investment in our network. To ensure resilience, we are required to maintain and operate our network in line with our 1-in-20 year peak day demand forecasts, so that our system can continue to supply gas during very severe cold spells. This is calculated at a LDL using an established industry methodology. This determines the relationship between peak demand and the weather, to ensure that the network remains resilient.

Annual gas demand generally decreased across RIIO-GD1 as a result of a series of mild winters. In contrast, the actual 1-in-20 year measure of peak demand increased during this period, associated with an acute severe cold weather spell during 2017/18 when customers prioritised heating their homes. This demonstrates that the link between annual demand and peak demand is not straightforward. Energy networks must continue to plan to ensure they are resilient and can enable customers to heat their homes and businesses even in the coldest of conditions.

In contrast to the Holistic Transition FES24, our peak day demand forecasts show a slight increase of 0.08% into RIIO-GD3, because our numbers of gas connections are still increasing. This approach ensures our licence obligations to meet 1-in-20 year peak demand are met. After RIIO-GD3, the peak may reduce due to the uptake of alternative technologies.

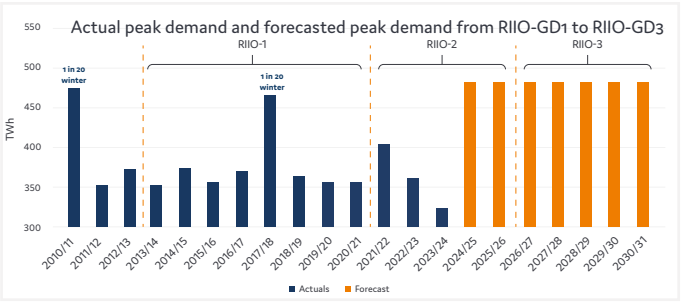


Figure 4.3 Actual peak demand and forecasted peak demand from RIIO-GD1 to RIIO-GD3

4.5 Our Environmental Action Plan

4.5.1 Our People and Planet Strategy

Our **People and Planet Strategy** was launched in 2022 and reflects our stakeholders' evolving priorities and perceptions about sustainability and the environment. It aims to reduce or eliminate the long-term impact of our business activities on people, communities and the planet, and to build a capable and resilient workforce to deliver a fair and equitable energy transition. Its medium-term (to 2030) goals for our planet and our people align with the UN Sustainable Development Goals and have been used to shape our RIIO-GD3 EAP and Workforce and Supply Chain Strategy (**see Section 5.5**), respectively.

4.5.2 Our Environmental Action Plan and Annual Environmental Report (AER)

WHAT WE HEARD...

Informed customers value the People and Planet Strategy but want more ambition on emissions targets, financial support, and sharpening of sustainability metrics, governance & assurance. Transparency in reporting is key.

APPENDIX A3 - INSIGHT 5

WHAT WE HEARD...

The cost-of-living crisis is both a challenge and an opportunity to drive engagement on sustainability, especially with consumers and businesses who are lacking empowerment. Stakeholders say go 'next level' on supply chain sustainability.

APPENDIX A3 - INSIGHT 4

Our RIIO-GD2 EAP established stretching environmental performance targets against which we are delivering (see our **2023/24 AER**). For RIIO-GD3 we have developed an ambitious RIIO-GD3 EAP to further reduce our environmental impact. Our RIIO-GD3 EAP targets are based on our already established medium-term commitments to our planet contained in our People and Planet Strategy. They have been robustly shaped, challenged and approved by many different groups of stakeholders, including our ISG, to ensure they will drive performance beyond our already stretching RIIO-GD2 EAP commitments.

Our RIIO-GD3 EAP promises to deliver wide-ranging environmental benefits including:

- **Net zero ambition:** Our stakeholders have told us to be bold and ambitious with our carbon reduction targets and focus on reducing our total emissions, not just easy to achieve elements. Responding to this challenge and new for RIIO-GD3, we are now targeting a 45% reduction in our total Scope 1 and 2 greenhouse gas emissions (GHG) between 2018 and 2031, with our network reaching net zero by 2050.
- **Carbon savings now:** We will save 423,000 tCO_2e during RIIO-GD3 via our gas leakage reduction programme, network infrastructure upgrades, property energy-efficiency improvements and vehicle fleet transformation (including deploying 100 additional electric vehicles). Methane emissions contribute approximately 13% of total UK annual GHG emissions and comprise our primary (>90%) source of emissions. We will reduce our gas (methane) leakage by 24% between 2026 and 2031 to match our industry leading RIIO-GD2 performance as we complete our iron mains replacement programme commitments by the 2032 deadline. To further our leakage reduction performance we have included a **RIIO-GD3 UIOLI project for smart leakage repair**. Building on a successful RIIO-GD2 innovation trial we will further assess the application of down-pipe robotic leakage identification and repair technologies as we recognise the potential environmental and efficiency savings.
- **Enabling biomethane:** We will continue to enable connections of low-carbon gas to our network including voluntarily enhanced customer service performance standards for connection enquiries and studies.
- **Less waste and more recycling:** We will go further during RIIO-GD3 by diverting 100% (c. one million tonnes) of our total waste from landfill and reducing our quantity of office and depot waste by 50%.
- **Promoting the Circular Economy**: Aggregates are our greatest resource use by quantity. We will use more recycled (secondary) aggregates during RIIO-GD3, achieving 99% use in our reinstatement works. This will save over 600,000 tonnes of primary (virgin) materials and promote the Circular Economy in our region.
- **Managing our land to benefit the environment:** New for RIIO-GD3 we will strategically plant approximately 20,000 saplings to create two miles of new hedgerow on our land to encourage biodiversity, whilst continuing to proactively manage our former gasworks land to ensure it isn't harming the environment.
- **Sustainable procurement:** Going beyond our RIIO-GD2 target, 100% of our key suppliers will comply with our Supplier Code of Conduct by 2031, in addition to the suppliers providing at least 85% of our total annual expenditure. This means that during RIIO-GD3 we will purchase approximately £1bn of essential goods and services from suppliers that mirror our sustainability principles.

Figure 4.4 demonstrates the key benefits of our EAP for RIIO-GD3. Our EAP is provided as **A6 Environmental Action Plan**.

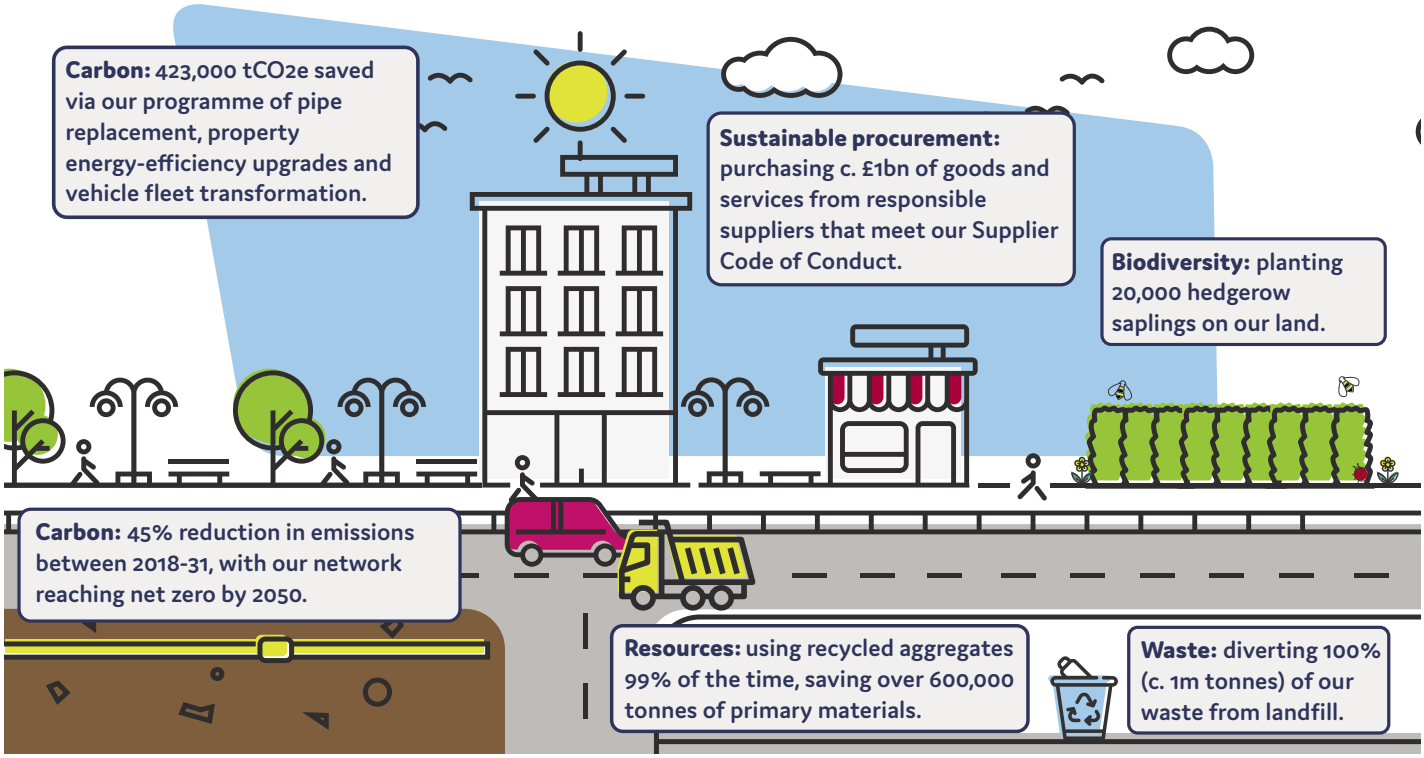


Figure 4.4 Summary of the benefits delivered by our RIIO-GD3 Environmental Action Plan

We will publish an AER every year throughout RIIO-GD3 to report our performance against our EAP commitments. At the request of stakeholders (Insight 5) to drive transparency and accountability, new for RIIO-GD3 our AERs will provide further assurance by including an independent check of our Scope 1 and 2 greenhouse gas emissions, at no cost to the bill payer.

To enable the transition to measurement and reporting of observed gas leakage we have included in our RIIO-GD3 baseline allowances for the utilisation of leakage detection technology, focussing on vehicle mounted equipment. The scope, timescales, costs and cost-benefit analysis for this are provided in Section 3.3.4 of our EAP. As described in our EAP, we will continue to support the development and roll out of the Digital Platform for Leakage Analytics (DPLA) and have identified the associated potential costs in the Uncertainty Mechanisms. This modal shift will bring with it a range of potential risks and opportunities of diverging significance as discussed in **Appendix A6 Environmental Action Plan**.

CHAPTER 5

SECURE AND RESILIENT SUPPLIES

During RIIO-GD3 we will plan for the future and invest now to provide our customers with the secure and resilient service they expect and deserve.

Building on a culture of resilience

The service we provide consumers and businesses in the north of England is essential. It is one of the primary building blocks of our regional economy. It is also part of a broader energy system that must maintain resilience in the face of profound levels of change and increasing uncertainty.

Resilience has become integral to our business-as-usual activities over many years and is a principal driver of our customer promises. Our RIIO-GD3 business plan ensures the continued resilience of the network by considering both our load and non-load related expenditure. Chapter 1 highlights how, through careful design, our business has developed since RIIO-GD1 to create the highly resilient organisation we are today. We future-proofed our organisation throughout RIIO-GD1 and RIIO-GD2, and we will continue to do so as we move into RIIO-GD3.

We have adopted the British Standard for organisational resilience: 'The ability of an organisation to anticipate, prepare for, and respond and adapt to incremental change and sudden disruptions in order to survive and prosper'. We believe this thinking will bring benefits for our customers.

The gas sector is facing increased risk and uncertainty during the next price control period. Challenges include changing customer expectations, net zero commitments, skills retention, advances in disruptive technologies and an evolving regulatory landscape.

Our Resilience Framework helps us to identify key hazards facing our business and find ways to respond. Our individual resilience strategies set out the commitments we are making to meet these challenges, driving sustained improvements in our resilience position.

In this chapter, we explore:

- Our approach to resilience, based on past success, careful planning and customer insights
- Our resilience commitments for RIIO-GD3
- Our Resilience Framework and our five underlying non-load related resilience strategies which allow us to effectively manage the impact of asset age and condition, extreme weather events, workforce and supply chain challenges, cyber and physical security, and IT and telecoms performance.

We clearly show how each of our commitments has been driven by stakeholder insights. The insight number and summary is referenced – full details for each insight are in **Appendix A3 Stakeholder Engagement and Decision Log.**

86% of informed customers and stakeholders have said our commitments to ensure secure and resilient supplies are acceptable.

5.1 Our resilience commitments for RIIO-GD3

RIIO-GD3 commitment	How we will deliver	Measure of accountability	Customer support	RIIO-GD3 outcome
We will continue to prioritise the resilience of our network.	By formalising what we already do into our Resilience Framework, we will identify risks in a timely manner and address them.	We will meet or exceed our target of 97% gas escapes attended within 1 and 2 hours.	Customers want a reliable and uninterrupted supply of gas. **Insight 8**	**Secure and resilient supplies. High quality of service from regulated firms.**
We will reduce gas leakage by 24% over RIIO-GD3.	By replacing iron mains and managing system pressures to keep them as low as possible.	Our leakage performance against our targets will show a 24% reduction over the course of RIIO-GD3.	Informed customers want more ambitious emissions targets. **Insight 5**	**Secure and resilient supplies. Infrastructure fit for a low-cost transition to net zero.**
We will invest further in our control centre systems to improve situation awareness and response.	By investing in our network infrastructure and business application systems, to enhance agility, functionality and responsiveness.	We will continue to provide 24/7, 365 days a year capability to manage our gas system and ensure supply to our customers.	Customers want a reliable and uninterrupted supply of gas. **Insight 8**	**Secure and resilient supplies.**
We will explore new ways to collaborate to maintain and enhance both our own resilience and that of the wider industry.	By actively working with partners and stakeholders.	We will report annually on our actions and progress on climate resilience.	Customers note that regional collaboration has identified improvement opportunities for handling increased exposure to severe weather incidents. **Insight 10**	**Secure and resilient supplies.**
We will future-proof our workforce and supply chains to ensure we continue to have the resources available to deliver our core functions.	By focusing on skills retention and attracting new talent.	The new workforce resilience and diversity metrics that we will develop collaboratively in RIIO-GD3 will evidence continuous improvement.	The future workforce is looking for organisations with an inclusive culture, diversity and green skills opportunities. **Insight 12**	**Secure and resilient supplies.**
We will develop new metrics to measure diversity within our business and report our performance.	By collaborating with our Colleague Communities, experts and stakeholders.			**Secure and resilient supplies.**
We will continue to deliver technology services in a safe and resilient manner.	By focusing on monitoring the threat and ensuring new technology is introduced securely.	No reportable cyber security incidents that lead to disrupted supply.	Cyber resilience is a specialist topic and customers seek reassurance that we are prioritising it. **Insight 13**	**Secure and resilient supplies.**

5.2 Our approach to resilience and security of supply

5.2.1 Resilience is a part of who we are

We lead the industry in maintaining a secure and resilient network because of our commitment to embedding resilience into our business-as-usual activity over the last decade. This is demonstrated through outputs such as our 1 and 2 hour emergency escape response standards and our target for restoring service following unplanned interruptions at both multiple occupancy buildings (MOB) and non-MOB, as shown in Figure 5.1.

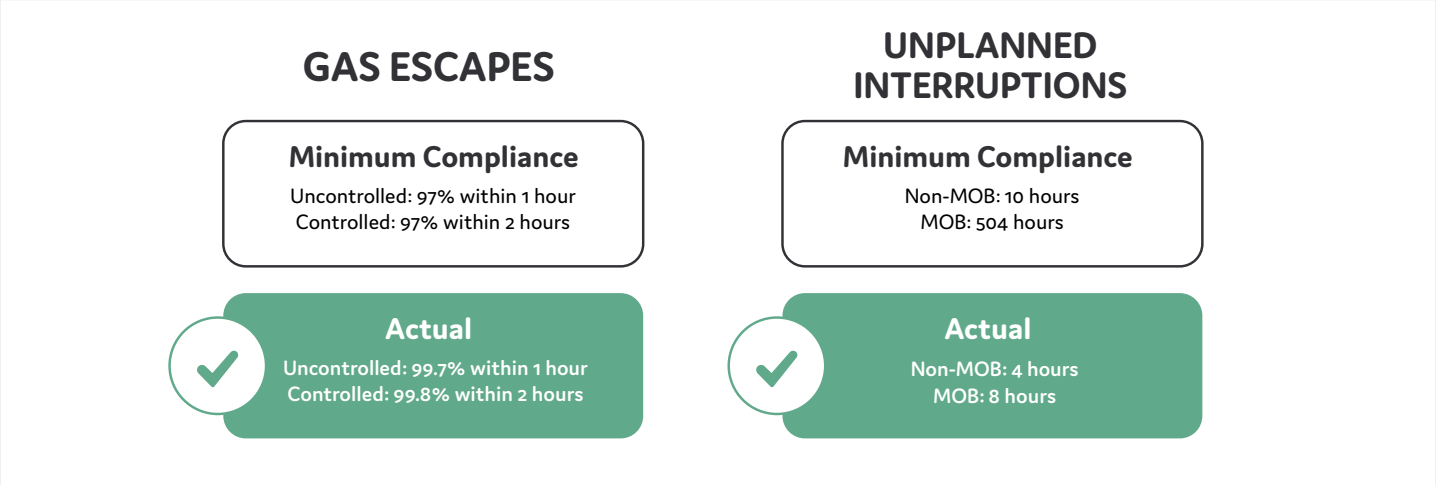


Figure 5.1 Our resilience performance over 2023/24 (source: **2023/24 Regulatory Reporting**)

Our system design criteria and sustained long-term investment has enabled us to deliver what our customers need. We ensure resilience by:

- Having an appropriately sized, flexible and multi-skilled workforce and supply chain
- Managing our network asset health, by understanding our highest-risk assets and carefully targeting investment
- Designing and operating our system to ensure we can supply the peak customer gas demand that is likely to occur once every 20 years
- Continually refining and improving our demand forecasting and capacity planning process to secure supply and storage for gas for the highest demand day we are likely to see
- Carefully striking the balance between cost-efficiency and delivering exceptional customer service
- Responding rapidly and flexibly to hazards (see our industry-leading restoration times in **Section 3.4.2**, for example)
- Building 'the NGN Way' into our culture
- Ensuring the security of our assets from both physical and cyber threats.

5.2.2 Areas of focus for resilience investment in RIIO-GD3

Since RIIO-GD2, uncertainty is our new normal. Events such as Brexit, Covid-19, the cost-of-living crisis, Russia's invasion of Ukraine and a general increase in conflict globally have shown that resilience needs to remain at the heart of what we do. We need heightened resilience measures so we can maintain the high quality service that we provide today. We need to invest in the right places, at the right times, taking into consideration all hazards facing our business, including low-probability, high-impact events.

RIIO-GD3 presents new challenges and growing uncertainty in a changing world. During RIIO-GD3, we will continue business-as-usual while planning for and responding to uncertainty.

Some of the challenges we will face over RIIO-GD3 will be dealt with as part of our business-as-usual activities. Others may be exacerbated by the energy and net zero transitions, or wider geopolitical events. Some are long-term challenges beyond RIIO-GD3 but will need addressing now if we are to overcome them and reduce the risk for future customers.

A balancing act

WHAT WE HEARD...

NGN's focus should be on supporting customers by providing reliable and uninterrupted supplies and minimising disruption to their daily activities. Current performance is great and NGN can play a role in driving up industry standards.

APPENDIX A3 - INSIGHT 8

We are proud to be the frontier company within the UK gas distribution industry but this brings its own challenges. Due to the substantial advancements in efficient resilience that we have already made, there are fewer potential further gains available to us and the benefits of further investment must be carefully considered to ensure they present value for money to customers. Our colleagues and Direct Service Provider (DSP) partners are highly desirable to our competitors, thanks to our continued investment in them and the valuable experience that they gain from working at a frontier company. This means we need to work hard to retain them as we recognise the value they bring to our organisation. **Section 6** provides further discussion of how we are responding to these challenges to deliver system efficiency and long-term value for money.

There is likely to be great value for customers if we work collaboratively to improve performance standards across the industry and face up to industry-wide challenges together. That's why we have hard-wired collaboration and partnership into our RIIO-GD3 commitments.

Our customers are satisfied with our performance levels and want us to continue to deliver our services safely and reliably. Our RIIO-GD3 plan focuses on investment in areas that will mitigate the most prominent risks we will face in the next five years, such as ensuring we have the workforce that will take us through the upcoming energy transition.

Resilience is embedded in our culture but must be actively maintained. Our Resilience Framework and its underlying strategies enable us to identify investments for RIIO-GD3 that will mitigate risks. This helps us to weather uncertainty and keep providing the high quality service our customers expect.

5.2.3 Our Resilience Framework

Our Resilience Framework, summarised in Figure 5-2, embeds what we have naturally done for many years. It informs future system architecture and the capability to meet whatever challenges we might face throughout RIIO-GD3 and beyond. The framework will support good investment decisions, enabling us to remain agile while progressing towards net zero at pace. It also allows us to map out risks facing our business and address them in the most appropriate way.

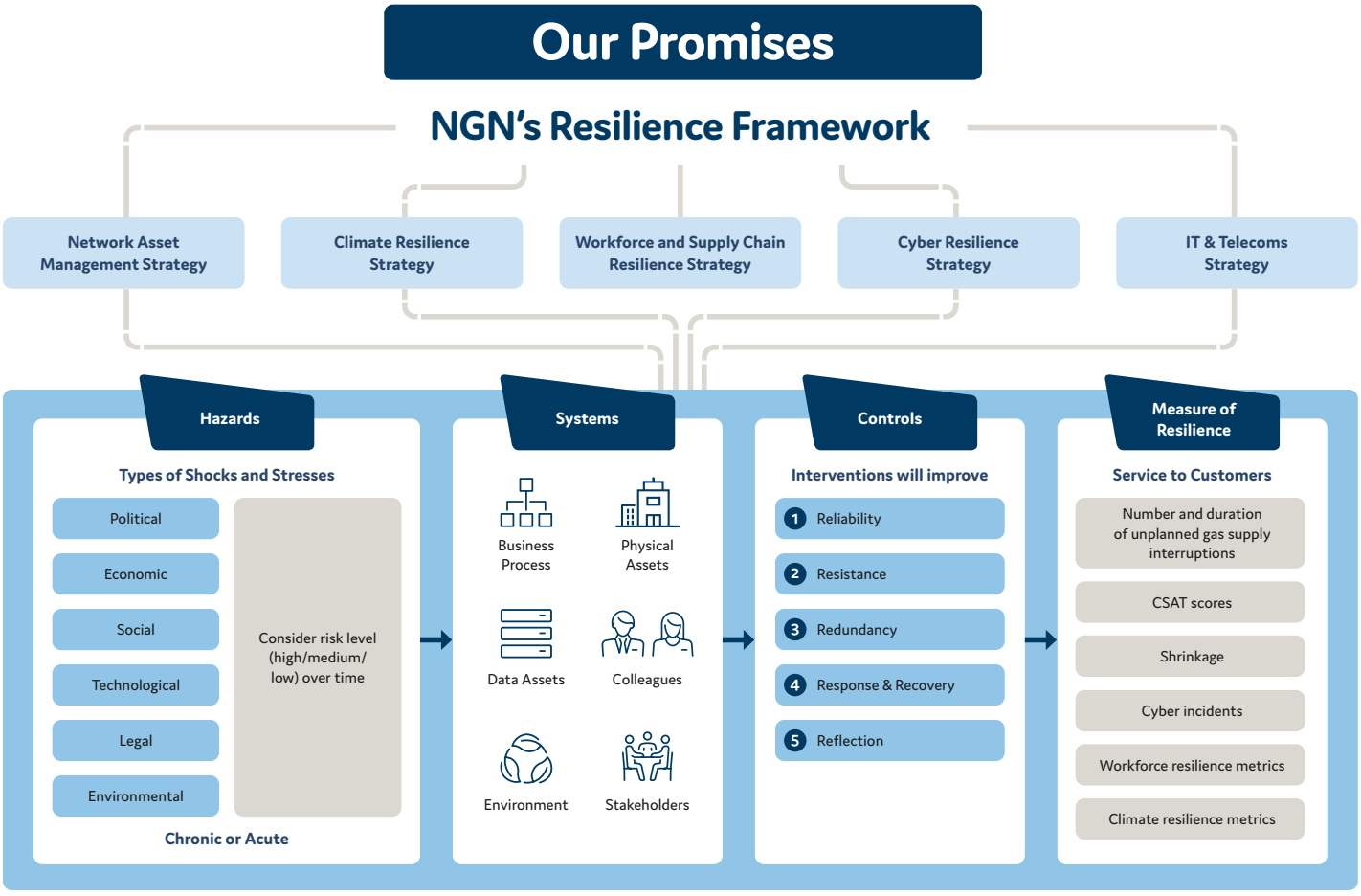


Figure 5.2 Overview of our Resilience Framework

As summarised in Figure 5-3, we have identified the principal risks facing us in RIIO-GD3 and the mitigations we have put in place in maintain, or enhance, our current levels of resilience.

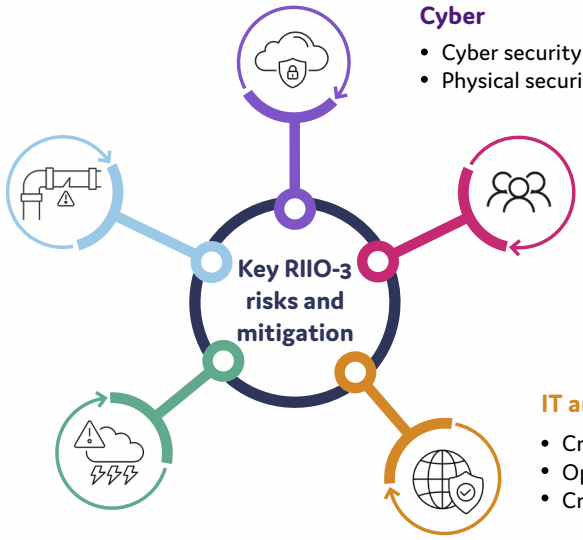
Key RIIO-GD3 risks and mitigations to ensure resilience

Network Asset Management

- Asset condition deterioration
- Obsolescence
- Physical network security
- Health, safety and environmental compliance

Climate

- Extreme cold spells
- Flood risk
- River erosion
- Wildfires
- Ground movement
- Interconnectivity with telecoms and electricity networks



Cyber

- Cyber security threats and incidents
- Physical security

Workforce and supply chain

- Potential future skills shortage
- Staff retention
- Price shocks
- Long-term supply chain resilience

IT and Telecoms

- Critical systems and disaster recovery
- Operational data
- Critical asset and work management process

Figure 5.3 Key RIIO-GD3 risks and mitigations to ensure resilience

5.3 Network asset management

WHAT WE HEARD...

Keeping bills as low as possible continues to be domestic and SME customers' top priority; however, stakeholders are supportive of investment to respond to significant challenges of climate resilience and decarbonisation.

Balancing the trade-off between investing now to future-proof and minimising expenditure to prioritise essentials poses a challenge. How can we ensure intergenerational fairness amid these competing priorities?

APPENDIX A3 - INSIGHT 1

Our Network Asset Management Strategy has two aims: maintaining resilience to provide a safe and reliable service to our customers as we transition towards net zero and remaining agile so we can respond to continuing industry uncertainty. We achieve these aims by prioritising targeted investment that balances the interests of consumers, investors and the environment.

We provide an overview of our strategy below. For more detail, see **Appendix A18 Network Asset Management Strategy.**

5.3.1 Continuation of the iron mains replacement programme

As described in **Section 3.3.3**, our Iron Mains Risk Reduction programme commenced in 2002 and is making our network safer, with greater durability and reliability, by reducing the risk of gas escapes. This work will continue throughout RIIO-GD3, with an expected completion date of March 2032. Indeed, 33% of our proposed RIIO-GD3 expenditure is associated with this important, regulator driven safety compliance requirement.

5.3.2 Taking a risk-based approach to asset investment

Our investment decision-making process is built on the pillars of customer priorities and benefits, risk analysis and delivering efficiencies. We will continue using the Network Asset Risk Metric (NARM) methodology to target investment and monitor our performance in RIIO-GD3. We will carefully balance changing asset risk profiles against the customer benefit of investing in them. Our Network Assessment Management Strategy sets out ways in which the NARM process is being used and the ways it is being improved to further enhance its value.

Our strategy, along with our investment planning and asset management policies, enables us to explore a vast array of options that satisfy our strategic objectives. By considering different intervention options, we can identify the investments that will bring the greatest benefit.

Our baseline view of asset health at the beginning of RIIO-GD3 is set out in Table 5.1. Our investments are supported by our Investment Decision Packs (as provided in **Appendix A22**), which cover the key areas listed in this table.

Investment area	Starting risk position (RIIO-GD3)	Ending risk position (RIIO-GD3) without intervention (WO/I)	Ending risk position (RIIO-GD3) with intervention (W/I)	Risk delta
Operational technology (OT) and pressure reduction systems (PRS)	£70.07m	£83.08m	£73.01m	WO/I: £13.01m W/I: £2.94m
Governors	£21.97m	£25.34m	£24.00m	WO/I: £3.37m W/I: £2.03m
Gas mains replacement	£188.82m	£214.02m	£149.58m	WO/I: £25.20m W/I: (£39.24m)
Pressure management	£88.81m	£90.98m	£81.07m	WO/I: £2.17m W/I: (£7.74m)
Overcrossings	£9.30m	£9.72m	£9.05m	WO/I: £0.42m W/I: (£0.25m)
Local Transmission System (LTS) pipelines	£12.41m	£13.70m	£6.99m	WO/I: £1.29m W/I: (£5.42m)
Reinforcement	£197.48m	£229.52m	£228.99m	WO/I: £32.04m W/I: £31.51m

Table 5.1 Asset health during RIIO-GD3

5.3.3 Investing in network asset management in RIIO-GD3

During RIIO-GD3, we will continue to use our strategic approach to asset management, which is informed by stakeholder priorities, to derive the maximum value from our assets whilst ensuring they remain secure and resilient. The key investments we plan to make in RIIO-GD3, some of which are summarised in Table 5.2, will generate the greatest benefit for our customers through careful balancing of the cost versus the benefits of risk reduction, environmental impact, security and maintaining the resilience of the network.

Asset related risk	RIIO-GD3 resilience investment proposal	Resilience control category
Asset deterioration resulting in gas leaks	Iron mains replacement programme and capital investment programme	Reliability
Asset condition deterioration resulting in reduced reliability	Capital investment programme	Reliability
Obsolescence requiring investment to upgrade asset capability	Capital investment programme	Reliability
Physical network security threats	Capital investment programme and cyber resilience programme	Resistance
Health, safety and environmental compliance requirements	Capital investment programme	Resistance

Table 5.2 RIIO-GD3 principal network asset management risk and resilience investments

5.4 Climate resilience

WHAT WE HEARD...

Stakeholders, customers and colleagues are supportive of NGN's Climate Resilience Strategy.

Regional collaboration with utilities partners has identified opportunities and areas of best practice for handling increased exposure to severe weather incidents, especially those which support customers in vulnerable situations.

APPENDIX A3 - INSIGHTS 9 & 10

Our customers consistently say a reliable gas supply is one of their top two priorities for us (Insight 8). With climate change causing more extreme weather, resilient infrastructure and operations are vital for continuity of service.

Being predominantly underground and operating as a sealed and pressurised system, UK gas network infrastructure has proven in the long-term to reliably deliver energy to customers in a dynamic climate, with a lower current and future climate risk profile to that of electricity infrastructure. During RIIO-GD1 and RIIO-GD2, we have proactively managed our assets to ensure their long-term integrity, relentlessly focused on efficiently completing essential works to ensure we can respond when workload is high and continuously improved our extreme weather readiness operational management procedures. This strategy has enabled us to consistently outperform our customer service targets (for gas emergency response and unplanned supply interruption duration), whatever the weather, even when extreme events have occurred.

We have developed a Climate Resilience Strategy for RIIO-GD3 which builds on our past performance, aligns with our wider Resilience Framework and ensures we are preparing for the climate of the future. See the full strategy in **Appendix A8 Climate Resilience Strategy** and a summary below.

5.4.1 Climate resilience collaboration

Climate resilience is most efficient and effective with collaboration. During RIIO-GD3, we will work with partners and stakeholders to:

- Prepare and respond to extreme weather (such as flooding, storm events and prolonged hot or cold spells) so that customers, particularly customers in vulnerable situations, get the service they need
- Identify and analyse future climate risks to energy infrastructure, especially as they become more interconnected with other utilities networks such as electricity
- Develop new climate resilience metrics and indicators, and stress testing methodologies
- Understand blockers to climate resilience investment.

5.4.2 Climate resilience investments

We have been analysing and reporting the climate risks to our assets and business operations for many years. These risks will change over time due to society's response to the net zero challenge. Understanding these dynamics provides the building blocks for our climate resilience investments.

Customers have told us that they consider us to be a resilient business (Insight 8). They also say that they prefer us to adopt a cautious approach to climate resilience investments (Insight 1). This means we must balance future climate resilience investments with minimising costs to customers now.

Climate-related risk	RIIO-GD3 resilience investment proposal	Resilience control category
CR1: Extreme cold spells	Opex: Continual refinement of severe weather management procedures	All
CR2: Flood damage to above ground assets	Capex: Proactively raising sensitive equipment at critical sites (LTS and PRS sites) in flood zones	Resistance
CR3: Flood damage to pipes crossing over watercourses	Capex: Overcrossing inspection and remedial programme	Reliability
CR4: Damage to underground pipes from river erosion and land slippage	Capex: Pipeline inspection and remedial/diversion programme	Reliability
CR5: Above ground asset damage from wildfire	Opex: Vegetation management at gas infrastructure sites and pipeline easements	Reliability
CR6: Underground pipe damage by ground movement	Repex: Iron mains replacement programme	Reliability
CR7: Cascading risks due to interconnectivities between energy and telecommunications networks, e.g. storm-related power cuts	Capex: Enhanced provision of backup electrical power (generators and battery systems) at critical sites	Redundancy
All	Mutual assistance agreements with DNOs in our region	Response and recovery

Table 5.3 RIIO-GD3 principal climate risks and resilience investments. See **Section 6.4** for Capex investment details.

5.5 Workforce and supply chain resilience

WHAT WE HEARD...

Stakeholders say go 'next level' on supply chain sustainability.

APPENDIX A3 - INSIGHT 4

WHAT WE HEARD...

The future workforce is looking for organisations with a positive reputation, inclusive culture, diversity and green skills development opportunities.

Informed customers, future customers and national, local and industry stakeholders have consistently told us that they would like to see NGN make broad-reaching workforce training commitments.

APPENDIX A3 - INSIGHT 12

Our Workforce and Supply Chain Resilience Strategy (Appendix A7) is designed to ensure that we continue to retain a resilient workforce and supply chain capable of anticipating and continuously adapting to the many challenges facing the industry while delivering a high quality and reliable service to our customers. Our strategy takes a clear-eyed view of the challenges and gives us a route to overcome them.

5.5.1 Maintaining our high level of workforce resilience.

Our approach has always been to harness a skilled and diverse workforce to consistently deliver high quality and efficient services to our customers, both now and in the future (Insight 8). We have made significant progress throughout RIIO-GD1 and RIIO-GD2 around transforming our existing workforce to increase flexibility and enable optimum operational availability to ensure workload demands and customer needs can be met (this is outlined in **Section 1.4**).

Our RIIO-GD3 strategy recognises the success we have shaped across RIIO-GD1 and RIIO-GD2 and outlines our approach for RIIO-GD3 across six focus areas for our workforce, as outlined in Table 5.4. Each of the actions in Table 5.4 are essential to enable us to deliver the aims of our wider RIIO-GD3 business plan.

Strategy focus area	Workforce resilience commitments and approach for RIIO-GD3
Equality, diversity and inclusion (EDI)	Building on our strong foundations from RIIO-GD1 and RIIO-GD2, we recognise industry challenges like lack of diversity and potential skill shortages, as well as internal issues around colleague awareness and data availability. We are committed to ambitious goals, including 40% female representation at senior level, creating bespoke EDI metrics, and improving our Business in the Community (BITC) Responsible Business score. We will also provide additional resources to achieve these targets. Partnering with BITC and benchmarking against other sectors, we aim for best practice.
Workforce satisfaction, retention, motivation and productivity	Our mature benefit and reward provision has been shaped by our colleagues across RIIO-GD1 and RIIO-GD2 with the overarching strategy of supporting recruitment and retention, and demonstrating longer-term commitment between our business and our colleagues. The average tenure of an NGN colleague is 11 years, demonstrating that colleagues choose to stay with us for long periods of their career. We will continue to adapt and evolve our benefits offering in line with colleague feedback and societal expectations.
Attracting new talent and skills to the energy sector to enable the low-carbon energy system of the future **Upskilling and multi-skilling of our workforce**	We employ over 1,600 colleagues in our region, making a significant contribution to the local economy. We strive to be an employer of choice and receive high responses to job advertisements. While we foresee no skill shortages during RIIO-GD3, we recognise future resourcing challenges beyond RIIO-GD3 due to the gas sector's uncertainty. Our plan includes reskilling our team and attracting diverse talent by: • Developing our apprenticeship programme (60 new RIIO-GD3 apprenticeships) and launching a graduate programme • Encouraging young people to pursue STEM subjects through our engagement programme • Launching the NGN Green Academy. We understand the link between an inclusive culture and attracting and retaining talent into our business.
Ensuring the health, safety and wellbeing of our workforce	Our strategy outlines our plans to prioritise and enhance our approach to physical and mental wellbeing. Building on the progress made during RIIO-GD2, we aim to achieve the Better Health at Work Awards Ambassador Status in RIIO-GD3. This framework will support the implementation of evidence-based workplace initiatives that benefit our colleagues and customers. The health, safety and wellbeing of our colleagues are essential due to their critical roles within our communities.

Table 5.4 RIIO-GD3 workforce resilience commitments

Through delivery of our strategy, we will continue to build and maintain a team of empowered, motivated and resilient colleagues committed to delivering our promises through the challenging landscape that lies ahead.

84% of operational colleagues are now on modernised terms and conditions, enabling greater flexibility in our operational workforce. From the focused activity during RIIO-GD1 and 2, we have maintained the lower colleague average age of 41, demonstrating our commitment to longer-term skills retention in our workforce.

Although our workforce is highly resilient, we support the resilience re-opener mechanism for its protection against current industry uncertainty. We will work with the gas networks to develop common metrics for workforce resilience during RIIO-GD3, ensuring resilience, accountability and deliverability of commitments. Our continued data digitisation plans, as detailed in **Section 6.9**, will include systems to support this effort.

5.5.2 Maintaining our high standards of supply chain resilience

Throughout RIIO-GD2, external shocks like the Covid-19 pandemic, the Suez Canal blockage, and geopolitical tensions have impacted global trade. Combined with uncertainty over the future of gas, these challenges highlight the importance of supply chain resilience for our services.

Our strategy focuses on eight key areas to maintain a resilient supply chain:

- **Diversified** supplier networks across regions, industries, and sizes to ensure access to essential goods and services. The DSP model supports local businesses with special commercial arrangements, enabling efficient and cost-effective mains replacement work
- **Resilience** is built into our inventory management systems to mitigate against long-lead times and shortages
- **Data and digitisation** initiatives to enhance supply chain efficiency
- **Collaboration** with suppliers, Government bodies and the energy industry to address future challenges
- **Reflecting** on experiences helps to identify and mitigate emerging risks
- Strengthening **transportation and logistics** when necessary
- Maintaining **competitive tension** by informing suppliers of upcoming procurement and competitively sourcing contracts over £20,000
- **Sustainability** is integral to our strategy, including our Supplier Code of Conduct and compliance targets, with plans to strengthen supplier sustainability governance in RIIO-GD3.

5.5.3 Workforce and supply chain priorities for RIIO-GD3

We plan to enhance our resilience in this area by ensuring that we remain an employer of choice, to continue to encourage new talent into the business. Our ongoing supply chain resilience is contingent on an approach to real price effects (RPE) indexation that sufficiently captures exogenous changes in input prices. We therefore plan to work with Ofgem to ensure the RPE methodology sufficiently captures those risks. We talk about this further within **Section 6.6.1**.

Strategy focus area	RIIO-GD3 resilience investment proposal	Resilience action category
Potential future skills shortage	• EDI initiatives, apprenticeship scheme, STEMazing participation, new NGN Green Academy. • Our conditions of contract with our DSP community, including our innovative retention scheme. • New workforce resilience and diversity metrics and reporting.	Reliability
Staff retention	• Prioritising staff wellbeing and training opportunities to strive for Ambassador Status in the Better Health at Work Awards in RIIO-GD3.	Reliability
Protection against price shocks	• Ensuring RPEs are reflective of the current challenges facing the industry.	Resistance
Long-term supply chain resilience	• Enhanced targets - 100% of our key contractors and a minimum of 85% of our supply chain by value will be compliant with our Supplier Code of Conduct by end RIIO-GD3. • Enhanced governance and assurance of supplier sustainability performance. • Enhanced material stock management, including for critical maintenance stock.	Reliability

Table 5.5 RIIO-GD3 workforce resilience commitments

5.6 Cyber resilience

WHAT WE HEARD...

Cyber is a specialist topic that customers and stakeholders feel unable to influence, but they seek reassurance that 1) NGN is prioritising investment to safeguard the network against perceived threats, 2) that cyber vigilance is a consideration across all customer touch points and 3) that there is a comprehensive awareness and education programme for NGN colleagues.

APPENDIX A3 - INSIGHT 13

Cyber risks are constantly evolving. They pose a threat to every business and are a concern to our stakeholders (Insight 13). To combat them at NGN, we focus on information technology (IT), operational technology (OT) and physical security and resilience.

There are five key drivers which feed into our Cyber Security and Technical Resilience Improvement Plan:

- We contribute to the UK's critical national infrastructure and over 2.9 million homes and businesses rely on our services
- As an operator of essential service (OES) under the Network and Information Systems (NIS) Regulations 2018, we must demonstrate the steps we are taking towards mitigating the effects of a disruptive cyber resilience event
- Cyber threats targeted towards the energy sector are evolving, with increasing levels of sophistication
- We need to remain vigilant in the face of emerging technology introducing new threat vectors, such as the increased use of artificial intelligence
- We must address the interdependent nature of physical security and cyber security that operators rely on to protect industrial control systems and gas infrastructure sites.

5.6.1 Future-proofing our cyber resilience approach

In 2024, we updated our Cyber Resilience Strategy to reflect our progress and futureproof our approach, including shaping our future programme of work. Key updates included the following:

- Moving oversight of all (IT, OT and physical) security pillars to a single directorate to ensure security is managed holistically and aligned to one common aim and set of objectives
- Shifting our focus towards the requirements of the Cyber Assessment Framework (CAF) enhanced profile and the programme of work needed to enhance cyber resilience, particularly following the inclusion of physical security requirements
- Building our digital services securely and with the future in mind, to recognise the role of technology and data in delivering a more efficient gas network and enabling cross-sector data sharing and collaboration.

5.6.2 Driving cyber resilience in RIIO-GD3

Our Cyber Security and Technical Resilience Strategy sets out a clear aim and ambitious objectives. It builds on our established Cyber Security and Technical Resilience Management System. It will see us implement a programme of change that embeds improvements into business-as-usual activity while maintaining established governance and assurance processes.

Our RIIO-GD3 projects will focus on delivering the following outcomes, in alignment with our strategy:

1. Enhancing our ability to manage and maintain our critical industrial assets by virtualising industrial technology. This helps us increase visibility and transparency, gaining greater security control and additional safety, resilience and reliability benefits.
2. Improving our monitoring and incident response by implementing holistic identity and access management controls throughout our operations, including physical access. This will improve both our ability to prevent incidents occurring in the first place and the speed with which we can resolve incidents that do occur
3. Improving our monitoring capability by extending onto operational assets. This includes a large programme of physical security improvements, to establish closed-circuit television (CCTV) and physical intrusion detection systems on critical operational sites. By monitoring additional data sources, we improve our ability to detect incidents, support timely resolution and limit their overall impact. Note that civils-based physical security investments for our critical sites, such as the installation / upgrade of fencing and other security measures, are also included in our capital investment programme as summarised in **Section 6.4.8**, with further detail provided in the Offtakes and PRS Civils Investment Decision Pack
4. Continuing to develop, test and assure our cyber resilience capability by running simulation events at our cyber physical twin test facility. By emulating highly disruptive incidents, we can demonstrate the real-world effects of a sophisticated attack on the UK gas sector. This will supplement our focus on assurance, demonstrate the effectiveness of our controls, improve staff awareness and help us develop specialist security skills in-house.

Some of the key investments we plan to make in RIIO-GD3 include further enhancements to our security monitoring capabilities, alongside virtualisation of our industrial control assets in the field and streamlining access governance processes.

Full details can be found in our NIS-R Cyber Resilience Business Plan (CRBP) and **Appendices A10 and A11.**

5.7 IT and telecoms resilience

WHAT WE HEARD...

NGN's focus should be on keeping customers satisfied by providing reliable and uninterrupted supplies and minimising disruption to their daily activities. Current performance is strong and NGN can play a role in driving up industry standards.

APPENDIX A3 - INSIGHT 8

Our IT and telecoms systems are central to everything we do, and we are incredibly proud of our service standards. Together, they enable us to communicate with our customers (Insight 14), enhance resilience, meet our regulatory obligations and deliver the commitments we make elsewhere in our business plan.

By using cloud technology and moving our system design, build and support function in-house, we have developed a highly resilient information technology architecture. This is enhanced by a culture of continuous learning that embeds high quality service provision at the heart of our IT and telecoms operations.

5.7.1 Enhancing IT and telecoms resilience in RIIO-GD3

We have developed our **Appendix A13 IT & Telecoms Strategy** to further enhance our systems. This strategy is based on the following principles:

- Design for resilient and secure communications, with high availability infrastructure (Insight 8)
- Apply a standard, simple and well-understood data model to enable efficient and effective business operations (Insight 1)
- Deliver world-leading technology that keeps us at the frontier of efficiency, safety, resilience and integrity.
- Keep our support and knowledge in-house (Insight 12)
- Never lose sight of the fact that it is our colleagues and stakeholders who will make this technology work.

In RIIO-GD3, we are planning a comprehensive range of targeted investments that will further enhance the capabilities and resilience of our IT and telecoms systems. Examples of proposed investments are provided in Table 5.6. Full details of our investments and the rationale supporting them are provided in our **Appendix A13 IT & Telecoms Strategy**.

IT and telecoms related risk	RIIO-GD3 resilience investment proposal	Resilience action category
Availability of critical systems and disaster recovery	Cloud infrastructure	Reliability
Availability of operational data to enable key business processes	Digitised field works	Reliability
Availability of critical asset and work management processes	SAP S/4HANA enterprise resource planning software development	Reliability
Cyber network security	Cyber resilience programme	Resistance

Table 5.6 RIIO-GD3 key IT and telecoms risks and resilience investments

CHAPTER 6

SYSTEM EFFICIENCY AND LONG-TERM VALUE FOR MONEY

In RIIO-GD3, we will invest £1.837bn to operate and maintain our network to deliver a safe and reliable service for our customers. This represents a 21% increase across our Totex programme from RIIO-GD2, and it is essential to ensure we can maintain the standards that our customers have told us they expect.

This chapter outlines our expenditure plans for the five-year RIIO-GD3 period (2026–2031) as well as our views and evidence in relation to "Frontier Shift" – the term used to describe how costs will be updated over time to reflect expected productivity improvements, and changes in input prices which affect our costs.

In the face of increasing external cost pressures, we present a plan that we are confident will see NGN continue to set the efficiency benchmark in RIIO-GD3, extending our track record as the leading gas distribution network. Our ambitious approach focuses on pushing ourselves to improve efficiency and add value wherever possible. This is against a backdrop of increased regulatory obligations, changing market conditions, and the growing complexity of operational challenges – all of which are driving up costs across our sector. We break down these cost pressures in this chapter, outline our proposed mitigations and provide additional detail in Appendix A21 Cost Assessment Benchmarking Approach.

77% of informed customers and stakeholders have said our plans for system efficiency and long-term value for money are acceptable.

In this chapter, we explore:

- A breakdown of our expected total expenditure (Totex), weaving together replacement expenditure (Repex), operational expenditure (Opex) and capital expenditure (Capex)
- Our continued support for the need for real price effect (RPE) adjustments in RIIO-GD3 and a summary of potential improvements to be made to RPE methodology
- Our Data and Digitalisation action plan and details of the work required in RIIO-GD3 to support our commitments to continue leading the way in open and shared data.

We have a very clear plan for harnessing data and digitalisation to create a secure, smart gas network. Figure 6.1 shows the elements of our Data and Digitalisation action plan and their relationship to other aspect of our plan, as well as the multiple benefits this will deliver. We have a holistic approach to data and digitalisation which is fully integrated with other key business strategies. **Section 6.9** describes our comprehensive approach.

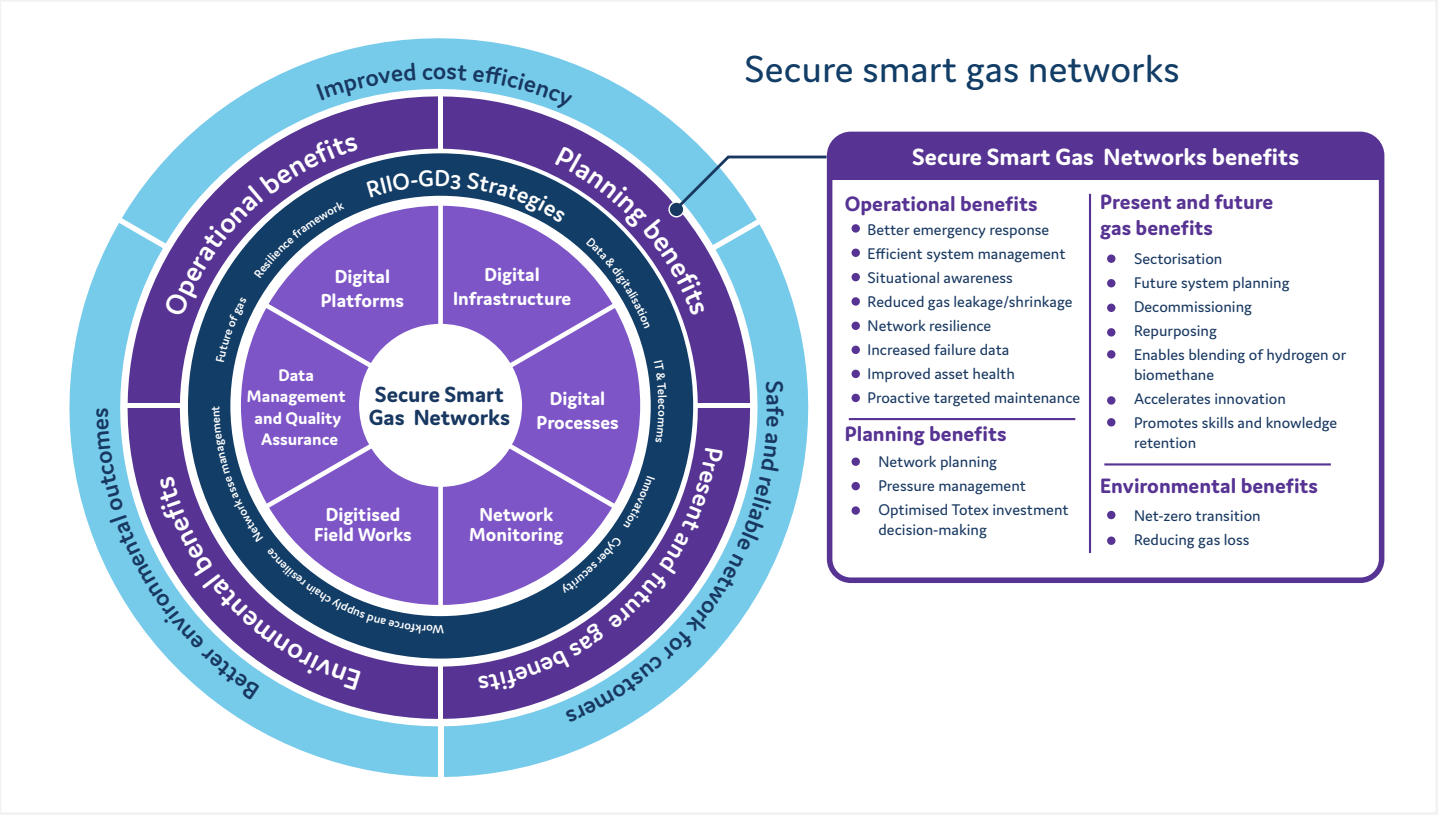


Figure 6.1 Secure smart gas networks

6.1 Total expenditure – overview and key drivers

Our total expenditure for RIIO-GD3 is outlined in Table 6.1. RIIO-GD3 will see us invest, on average, £367.43m in each year of the price control. This investment will meet statutory compliance, manage network risk and deliver the service standards identified via our extensive stakeholder engagement. This annual spend is based on previously delivered costs over RIIO-GD1 and RIIO-GD2, periods during which NGN has set and maintained the efficiency benchmark across gas distribution networks. Total expenditure in RIIO-GD3 is £1.837bn.

2023/24 prices	RIIO-GD2 average	RIIO-GD3 spend per year (£m)					RIIO-GD3 total	RIIO-GD3 average
		2026/27	2027/28	2028/29	2029/30	2030/31		
Controllable Opex	115.66	133.45	132.60	130.07	130.97	129.28	656.37	131.27
Capex	62.18	76.81	60.12	65.63	61.71	66.50	330.77	66.15
Repex	126.15	145.76	157.13	170.27	182.21	194.66	850.03	170.01
Totex	**303.98**	**356.02**	**349.85**	**365.97**	**374.88**	**390.44**	**1,837.16**	**367.43**

Table 6.1 Totex in RIIO-GD3 **Note:** Figures match BPDT S1.00 may not sum in table due to rounding.

Note: For further detail on how National Insurance has been treated please refer to A21 Cost Assessment and Benchmarking Approach (section 7)

Table 6.1 outlines expenditure for our three main cost areas – Capital Expenditure (Capex), Mains Replacement Expenditure (Repex) and controllable Operational Expenditure (Opex). In total, our expenditure is set to increase by 21% relative to RIIO-GD2. The most notable cost increase is observed in Repex as we enter the final years of the mandated Iron Mains Risk Reduction Programme (IMRRP). Repex has delivered significant safety and environmental benefits to consumers since it commenced in 2002, and it is fundamental that networks are adequately funded to complete the remaining years of this programme.

Networks have followed a risk-based approach in delivering this programme through RIIO-GD1 and RIIO-GD2 and, as the number of pipes requiring replacement reduces, there is an inevitable cost pressure placed on delivering the remaining work at maximum efficiency. NGN have successfully managed delivery of the Repex programme at the efficiency frontier since 2005, and our Direct Service Provider (DSP) model puts us in an enviable position to manage the impact of these cost pressures as we close out the programme. However, NGN is not immune to the cost pressures associated with the nature and increased complexity of the remaining work and the wider pressures in the market for contract labour. Our

Capex and Opex expenditure will also increase in RIIO-GD3, driven largely by mandatory compliance requirements with the medium combustion plant directive and additional Opex cost impacts driven by Health and Safety Executive (HSE) fatigue and Streetworks legislation.

Despite these pressures, in this chapter, we outline a forward-looking, progressive and balanced expenditure programme that will minimise network risk, ensure security of supply and deliver high levels of network reliability, resulting in an outstanding service to our customers. We have ensured that each element of this plan presents value for money for customers – with the value of those improvements in service and network performance outweighing the cost of delivery by a ratio of 2:1 over a short period of time. We are confident that our proposals represent a fair outcome for customers consistent with our view of future energy pathways, and that they will enable us to continue to play a key role in the regional economy as the UK transitions to net zero by 2050.

6.2 Robust and efficient costs

6.2.1 Cost expenditure process

Our costs are based on highly effective and well-understood processes that have enabled us to deliver maximum value to customers since 2005. NGN has an in-depth knowledge of:

- Detailed historic costs
- Historic performance relating to our assets
- Data-driven cost models
- Aggressive industry-leading commercial models
- Our comprehensive forward work plan for mandatory and non-mandatory workload with a well-justified cost-benefit analysis (CBA).

Our historical performance proves that both Ofgem and our stakeholders can be confident that we will deliver what we say we will.

6.2.2 Maintaining cost efficiency

To ensure we maintain an efficient view on cost, we have strenuously challenged ourselves throughout the business planning process, and we will remain at the frontier because of this. We have expanded on this approach in **Appendix A21 Cost Assessment Benchmarking Approach**. In addition to this rigorous challenge process, we propose an ongoing efficiency target of 0.5% to be applied year on year. **Please see section 6.6.2**.

The regulatory framework plays a critical role in ensuring that the competitive forces of the market operate effectively and drive the ambition for ongoing efficiency. Without a level playing field for all parties when operating in a regulated sector, there is a significant risk of unintended outcomes that have a detrimental impact on value for customers. For example, our colleagues and DSP partners are highly desirable to our competitors thanks to our continued investment in them and the valuable experience that they gain from operating consistently at the efficiency frontier. Regulatory allowances that permit companies in the sector to "outbid" the frontier company for resources creates a perverse environment whereby costs spiral upwards, ultimately at the expense of productivity and long-term customer value.

6.2.3 Customer-led priorities

Active and continuous engagement with our customers and stakeholders have guided our objectives in planning our investment for RIIO-GD3. A comprehensive examination of how we have gathered and integrated stakeholder insights is detailed in **Chapter 2: Transparency and stakeholder engagement**.

In relation to costs and efficiency, we have been rigorously challenged by our Independent Stakeholder Group (ISG), and our planning has been informed by independent value-perception research conducted across a diverse range of customers. We have tested the acceptability of our plan with customers and clearly articulated the bill impact associated with the increase in our Totex programme. As a result of customer feedback and stakeholder engagement, we have developed our investment plan for RIIO-GD3 that keeps bills low without compromising on the level of service and safety we need to provide.

6.3 Replacement expenditure summary (Repex)

Repex is predominantly HSE driven programme[1] of pipe replacement which aims to replace existing metallic infrastructure with a safer polyethylene (PE) alternative. The assets we replace include:

- Distribution mains pipeline systems, including pipelines that cross roads, waterways and railways
- Services which deliver gas to properties
- Riser and lateral pipelines which deliver gas to consumers within multiple occupancy buildings (MOBs).

Investment in these assets is either defined as mandatory under HSE legislation, prioritised on a risk basis, or it is non-mandatory but justified on risk, with a clear CBA supporting investment.

6.3.1 Our RIIO-GD3 expenditure

Table 6.2 summarises our RIIO-GD3 Repex investment and compares the average planned expenditure to the five-year average we have seen in RIIO-GD2 to date. Figure 6.3 shows the key movements that drive the increase. Overall, we will increase expenditure from £126.15m on average to £170.01m per annum.

2023/24 prices	RIIO-GD2 Average	RIIO-GD3 Investment (£m)					RIIO-GD3 Total	RIIO-GD3 Average
		2026/27	2027/28	2028/29	2029/30	2030/31		
Tier 1 mains and services < 2" steel	85.92	99.36	107.87	117.55	127.35	136.15	588.27	**117.65**
Tier 2a mains and services	1.25	2.08	2.16	2.26	2.35	2.44	11.30	**2.26**
Tier 2b mains and services	10.03	10.53	11.37	12.32	13.30	14.15	61.67	**12.33**
Tier 3 mains and services	6.91	9.63	10.15	10.75	11.37	11.90	53.80	**10.76**
> 2" Steel mains and services	5.62	7.76	8.24	8.78	9.34	9.83	43.96	**8.79**
Zero Scoring mains & other mains	3.60	4.27	4.45	4.65	4.85	5.05	23.27	**4.65**
Iron stubs	2.26	1.64	1.64	1.64	-	-	4.91	**0.98**
Diversions mains and services	3.40	1.90	2.36	3.05	3.99	5.16	16.47	**3.29**
Other services	6.87	7.11	7.41	7.79	8.17	8.50	38.98	**7.80**
Risers	0.29	1.48	1.48	1.48	1.48	1.48	7.40	**1.48**
Total	**126.15**	**145.76**	**157.13**	**170.27**	**182.21**	**194.66**	**850.03**	**170.01**

2023/24 prices	RIIO-GD2 Average	Workload decommissioned (km)					RIIO-GD3 Total	RIIO-GD3 Average
		2026/27	2027/28	2028/29	2029/30	2030/31		
Tier 1 Mains and services < 2" steel	477.83	482.00	482.00	482.00	482.00	482.00	2,410.00	**482.00**
Tier 2a Mains and services	1.64	2.02	2.02	2.02	2.02	2.02	10.10	**2.02**
Tier 2b Mains and services	20.40	21.80	21.80	21.80	21.80	21.80	109.00	**21.80**
Tier 3 Mains and services	5.62	5.82	5.82	5.82	5.82	5.82	29.10	**5.82**

2023/24 prices	RIIO-GD2 Average	Unit cost (£/mtr)					RIIO-GD3 Total	RIIO-GD3 Average
		2026/27	2027/28	2028/29	2029/30	2030/31		
Tier 1 Mains and services < 2" steel	179.82	206.13	223.80	243.87	264.22	282.46	244.10	**244.10**
Tier 2a Mains and services	759.43	1,029.86	1,070.73	1,117.86	1,165.81	1,207.89	1,118.43	**1,118.43**
Tier 2b Mains and services	491.77	483.18	521.35	565.25	609.87	649.19	565.77	**565.77**
Tier 3 Mains and services	1,229.68	1,654.14	1,743.97	1,847.50	1,952.83	2,045.22	1,848.73	**1,848.73**

Table 6.2 Repex in RIIO-GD3 **Note:** Figures match BPDT C6.00 / S1.01 may not sum in table due to rounding.

Figure 6.2 shows the increase in costs from RIIO-GD2 to RIIO-GD3 and the cost drivers associated with this. **Appendix A21 Cost Assessment and Benchmarking Approach** describes each cost driver in more detail.

1 IMRRP Enforcement Policy **https://www.hse.gov.uk/gas/supply/mainsreplacement/index.htm**

6.3.2 Our replacement strategy

- **Balancing risk and Totex efficiency:** replace high-risk mandatory pipes early while developing cost-efficient projects
- **Cost-benefit methodology:** use CBA to prioritise mains replacement for optimal investment
- **Economies of scale:** plan projects to capitalise on economies of scale and mitigate cost pressures
- **Risk threshold for Tier 2 pipes:** continue to implement the risk threshold for Tier 2 iron pipes approved by the HSE
- **HSE IMRRP Review**: We have developed our business plan consistently with the proposed changes being made by the HSE IMRRP review. Where we have confidence in our costs and certainty over investment need, we have included costs in our baseline Repex allowances, however, to manage uncertainty we have deferred any further material changes to the HSE Reopener so that a further robust challenge on costs and certainty can be undertaken. We have outlined this is section 6.7, table 6.23. We will continue to work with the HSE, Ofgem, GDN's and other relevant stakeholders as this review unfolds.
- **Targeted replacement for Tier 2 and Tier 3 pipes:** replace below-threshold pipes that provide overall net benefits after a CBA
- **Monitoring and maintenance for large-diameter Iron mains:** monitor, maintain and remediate large-diameter iron mains where accepted by the HSE
- **Balanced workload volumes:** Maintain a workload volume of 30 km p.a. for Tiers 2 and 3 since RIIO-GD1 to keep risk levels acceptable, and gradually replace aging assets with safe PE mains
- **Risk quantification:** Use the Network Asset Risk Metric (NARM) to demonstrate the removal of network risk and ensure a safe, reliable service for customers.

We will continue with our proven strategy for managing non-mandatory volumes, which entails reviewing options to increase Tier 3 investment and reducing that in >2" steel slightly to target relatively riskier and escape-prone Tier 3 pipes based on network data. To maintain our risk-balanced programme on non-mandatory Repex, we require more funding than in RIIO-GD2 due to the cost pressures affecting all Repex. Despite this, and thanks to our efficient delivery model, our entire £198.92m non-mandatory programme has a Net Present Value (NPV) of £165.71m by 2050 and pays back within 10 years, demonstrating value for money.

The analysis of our RIIO-GD2 investment to date shows that we have been able to maintain non-mandatory pipe leakage rates (a small downward trend is visible) (refer to Figure 6.4, Section 6.3.5). Evidence supplied by DNV shows that replacement of Tier 2 and Tier 3 iron mains and steel services, in addition to completion of the Iron Mains Risk Reduction Programme (IMRRP) in its current form, has the greatest reduction in gas in buildings (GIBs), with Tier 3 cast and spun iron being the key types to target, subject to CBA. Furthermore, analysis suggests that if no further replacement is undertaken for non-mandatory mains, it is predicted that GIBs will surpass the 2000–2009 rates significantly (anywhere between doubling to increasing six-fold) by 2055.

6.3.3 Our efficiency and delivery record

In RIIO-GD1 and RIIO-GD2, we consistently delivered a balanced and proactive Repex programme. We have been successful in striking a balance between maximising the outputs derived from this investment and keeping costs low within each period, whilst ensuring that this is not at the expense of imposing increased costs in future periods. We have ensured that we have not avoided any of the challenging and difficult work and are confident that there has been an appropriate and justified balance across all the key drivers of mains replacement workloads. This has included a balance across, for example, pipe diameter bands, geographies and engineering complexity.

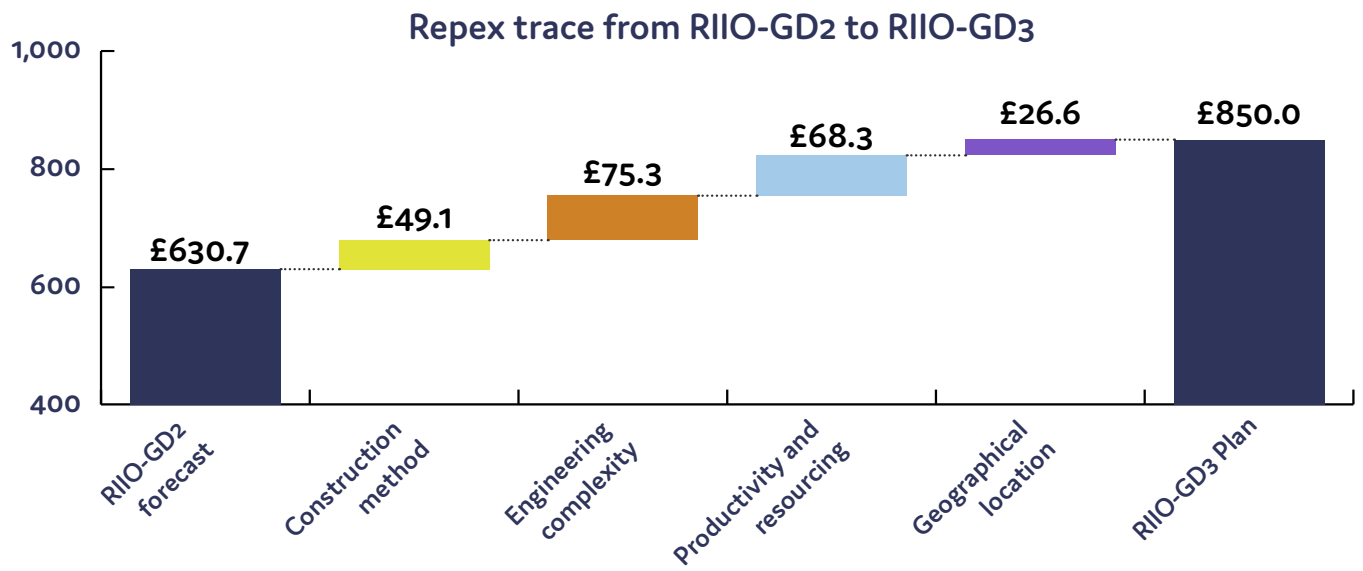
Throughout RIIO-GD1 and RIIO-GD2, we have proactively communicated our approach to the remaining programme and articulated the premiums associated with full completion. NGN offered a front-end-loaded programme in 2010/11 as part of RIIO-GD1 planning in a bid to reduce the cost impact at the end of the programme, but this was not supported at that time. As a result of this, there is a higher economic burden in the remaining stages of the Repex programme. We delivered more Repex up front, at an efficient cost (see **Figure 6.2** and **Appendix A21 Cost Assessment Benchmarking Approach** for an explanation of the cost drivers).

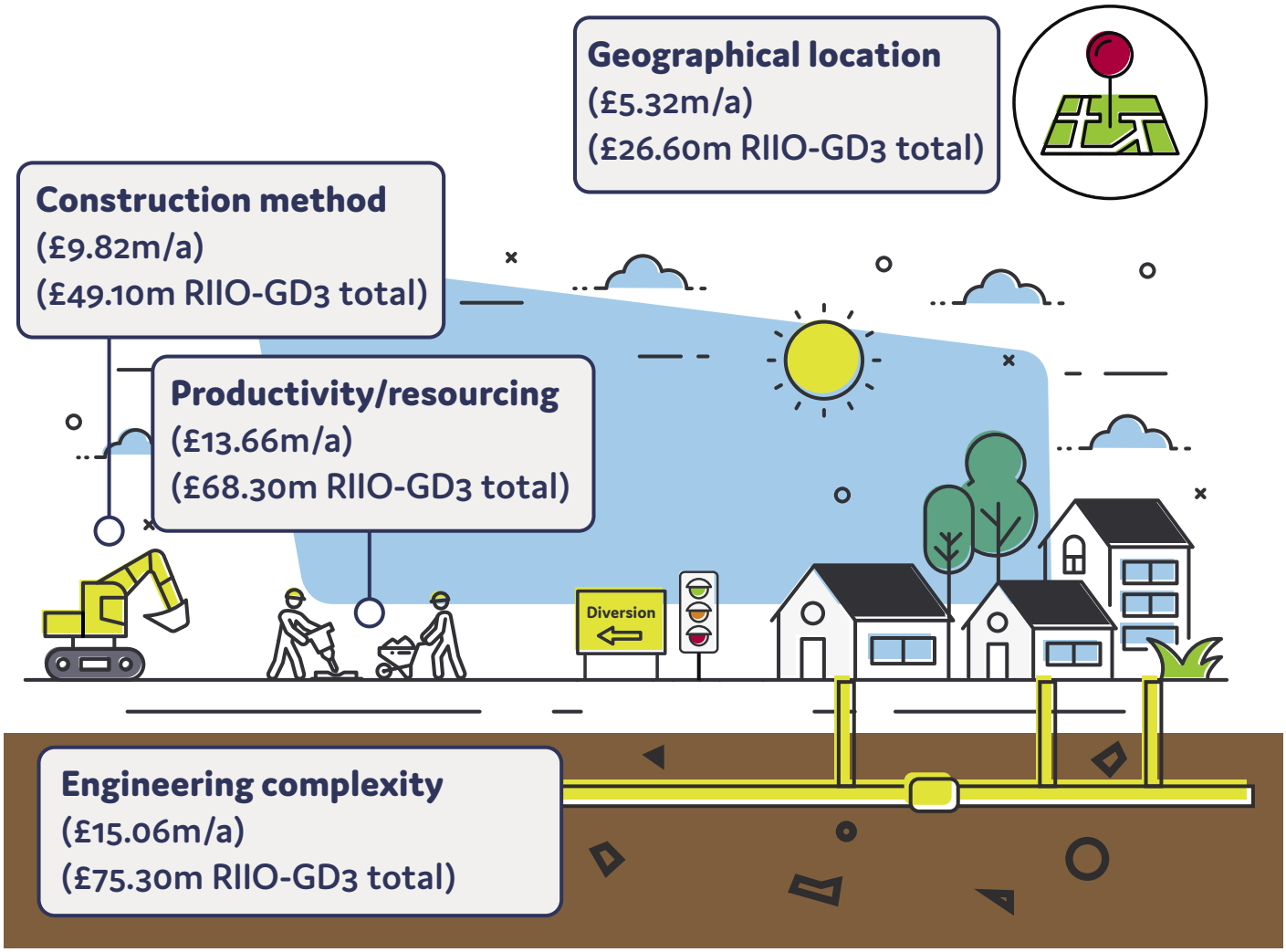
We have ensured that higher-risk assets have been addressed first, while also aiming to mitigate against a situation where works on less expensive diameter bands were completed upfront, leaving the costlier ones to a later date. For example, 73% of NGN's work from the start of RIIO-GD1 to year 2 of RIIO-GD2 was on pipes larger than 75 mm, a higher proportion compared to the industry average (excluding NGN) of 53%.

This innovative approach to delivering a large proportion of more expensive projects in earlier periods has allowed us to mitigate a significant element of the inevitable cost increases associated with the completion of the full replacement programme in 2032.

Our approach to labour procurement has also given us an advantage in maintaining continuity and efficiency in deployment. Having work done by local DSPs avoids the cost increases that can occur with frequent changes in service providers. Our DSPs have retention contracts that provide them with an incentive to stay until project completion, and this is a key component of **Appendix A7 Workforce and Supply Chain Resilience Strategy**.

Why our Repex costs a





re going up in RIIO-GD3

Engineering complexity – £75.3m RIIO-GD3 total

£36.7m
Physical engineering complexity

£16.3m
Diameter mix

£22.3m
Increased ductile iron

Physical engineering complexity

Back garden mains and limited access
Gas main located in private land with other services at the rear of the property, restricted access, and associated costs with removal of fences. There are also occasions where the location and depth of the gas main prevents the use of standard construction techniques.

Fragmented works
Stranded metallic mandated pipes, typically of shorter length, resulting in a greater amount of remobilisation and demobilisation on shorter projects impacting overall efficiency.

Part complete works
These are works which are left part complete due to Local Authority request to leave site prior to completion.

Narrow/limited access
Narrow backstreets/roads/tracks. Difficult to operate traditional machinery and often leads to significant manual element to project completion.

Long-sided services
Where one gas main feeds both sides of a street. Typically, there is one gas main either side of a street feeding properties.

Terraced properties
A high concentration of services which restricts the ability to replace the main via the insertion construction method.

Arterial routes
Gas mains located within this road type present various complexities including larger volumes of traffic, council restrictions, increased reinstatement costs.

Flats
This property type requires above-ground pipework for service renewal and additional ancillary works.

Diameter mix

The mix of diameter being commissioned in the Network is increasing on higher diameter bands i.e. increase from 32% to 60% of work in 125mm to 180mm pipe which represents an **84% increase** in work volume in this diameter and attracts increased materials and delivery costs.

Higher diameter work is typically more fragmented due to the majority of the Network being 4" Mains. This results in significant mobilisation and demobilisation to deliver the quantity of work required, resulting in inefficiency and increased costs.

Increased ductile iron

Ductile Iron volumes in RIIO-3 are increasing by **11%** in RIIO-3 with 36% of Tier 1 works being Ductile Iron. This work is typically more expensive to complete due to more complex and time-consuming techniques required to replace the pipe which leads to increased cost of delivery and reduced productivity across the wider programme of works.

The Repex programme and associated guidance historically risk scored Ductile Iron lower than other materials which resulted in a higher volume of non-Ductile Iron pipe being decommissioned until GD2 when the risk coefficient was updated to normalise most materials as far as risk.

Figure 6.2 Repex cost drivers

Case Study

TACKLING HIGH-COST WORK DURING THE PANDEMIC

We have already tackled some of the most difficult and expensive pipe replacement in our network. For example, during Covid-19 restrictions, we took the opportunity to focus our efforts on city centre interventions. Our work in Leeds city centre has given us a clear insight into cost increases for this type of work. Under pandemic conditions, not all street work requirements applied, but we still saw increases of over £35 per meter (20%) compared to less urban areas.

6.3.4 Tier 1 and associated <2" steel and Tier 2a

Table 6.3 sets out our investment for mandatory mains in Tier 1, steel mains <2" in diameter and mandatory Tier 2a mains (as per the HSE policy[2]).

With the end of the IMRRP in sight, we will optimise our mandatory programme, considering factors such as delivery efficiency, the impact of pipe failures (e.g. forecasted leaks) and stakeholder impact. We also account for the overall feasibility of completing the programme by 2032, including other physical constraints that limit our maximum annual workload in any given area (as described in Section 6.3.1. and Figure 6.2).

Taking these factors into account, the unit cost for Tier 1 and <2" steel mains and services will increase by 36% and the unit cost for Tier 2a mains and services by 47% relative to RIIO-GD2. Despite this, and thanks to our industry-leading efficiency starting point, our overall mandatory programme has a NPV of £221.58m at 2050 and pays back within 18 years, demonstrating that it is still value for money for customers. Our CBA is based on average risk removed, and our in-year delivery benefits will be greater due to targeting the riskiest and most escape-prone pipes, and available and efficient bundling of projects where possible from the remaining work.

2023/24 Prices	RIIO-GD2 average	Spend per year (£m)					RIIO-GD3 total	RIIO-GD3 average
		2026/27	2027/28	2028/29	2029/30	2030/31		
Tier 1 mains and services and <2"steel cost (£m)	85.92	99.36	107.87	117.55	127.35	136.15	588.27	117.65
Tier 2a mains and services cost (£m)	1.25	2.08	2.16	2.26	2.35	2.44	11.30	2.26
Tier 1 mains and services and <2"steel workload (km)	477.83	482.00	482.00	482.00	482.00	482.00	2410.00	482.00
Tier 2a mains and services workload (km)	1.64	2.02	2.02	2.02	2.02	2.02	10.10	2.02

Table 6.3 Tier 1, <2" steel and Tier 2a investment **Note**: Figures match BPDT C6.00 / CV6.01 / CV6.02

We have a comprehensive programme of investment to reduce risk on Tier 2a pipes programmed to the end of RIIO-GD2. As pipe risk scores are dynamic, we expect additional Tier 2a pipes to be identified in RIIO-GD3 as pipes exceed the Tier 2a threshold. The HSE policy[2] requires these newly identified pipes be replaced within a defined timeframe following their discovery. It is important to note that these volumes do not account for any changes to the Tier 2a risk threshold associated with the ongoing review by the HSE to the IMRRP policy.[3] Please refer to **A22.I Investment Decision Pack -Mandatory Repex**

6.3.5 Tier 2b and Tier 3

Table 6.4 compares our investment for non-mandatory Tier 2b and Tier 3 mains in RIIO-GD3 against our forecast and actual costs for RIIO-GD2.

2 IMRRP Enforcement Policy: https://www.hse.gov.uk/gas/supply/mainsreplacement/index.htm
3 Review of the IMRRP https://www.hse.gov.uk/Research/rrhtm/rr1216.htm

2023/24 prices	RIIO-GD2 average	Spend per year (£m)					RIIO-GD3 Total	RIIO-GD3 average
		2026/27	2027/28	2028/29	2029/30	2030/31		
Tier 2b mains and services cost (£m)	10.03	10.53	11.37	12.32	13.30	14.15	61.67	12.33
Tier 3 mains and services cost (£m)	6.91	9.63	10.15	10.75	11.37	11.90	53.80	10.76
Tier 2b mains and services workload (km)	20.40	21.80	21.80	21.80	21.80	21.80	109.00	21.80
Tier 3 mains and services workload (km)	5.62	5.82	5.82	5.82	5.82	5.82	29.10	5.82

Table 6.4 Tier 2b and Tier 3 investment **Note**: Figures match BPDT C6.00 / CV6.03 / CV6.04

The main drivers of the Tier 2b and Tier 3 workload are safety and reliability, as per the mandatory programme, and some work on these aging assets is still necessary to keep overall network risk and service levels at acceptable levels. Failure of these pipes can lead to significant loss of supply events, GIBs and explosions, as well as significant leakage emissions due to their higher diameter and their position as trunk mains on our network. We ensure value for money for our customers through CBA and a proportion of Tier 2b and Tier 3 work will be integrated into Tier 1 projects to enhance overall efficiency.

We've carried out a CBA to ensure we deliver the most effective programme with a payback of three years (2050 NPV £93.58m) and 12 years (2050 NPV £37.85m) for Tier 2b and Tier 3 respectively. Due to our efficient delivery model and accounting for the cost pressures we will face in RIIO-GD3, the high NPV associated with non-mandated Repex means that we could justify even more work than we have in our plan. However, as Figure 6.3 demonstrates, our balanced programme broadly maintains risk at acceptable levels, with a slight increase for Tier 2b and Tier 3 vs RIIO-GD2 to reverse the upward trend in leaks we are observing on these mains. Our track record demonstrates we can efficiently deliver this alongside our mandated programme.

During RIIO-GD2, we have abandoned an average of 20.4 km of Tier 2b mains and 5.6 km of Tier 3 mains per year. The workload for both tiers has been driven by the forecasted failure rates of these assets and their impact on our customers. For RIIO-GD3:

- We will slightly increase Tier 2b replacement at 21.80 km per year compared with RIIO-GD2 to counter the increasing leak trend observed in Figure 6.3. The unit cost will increase by 15% on average in RIIO-GD3 due to engineering complexities of the remaining programme.
- We will slightly increase the Tier 3 replacement workload to 5.82 km per year in RIIO-GD3. This is because failure rates for Tier 3 pipes have risen during RIIO-GD2 as well.

Figure 6.3 shows leakage rates for Tier 2, Tier 3 and >2" steel over the RIIO-GD2 period and that the investment ensures we maintain leakage rates across these non-mandatory pressure tiers. This in turn should reduce the average leaks on the network each year as the length of mains reduces. Please refer to **A22.m Investment Decision Pack - Non-Mandatory Repex** which includes full options analysis with engineering justification paper (EJP), CBA and NPV.

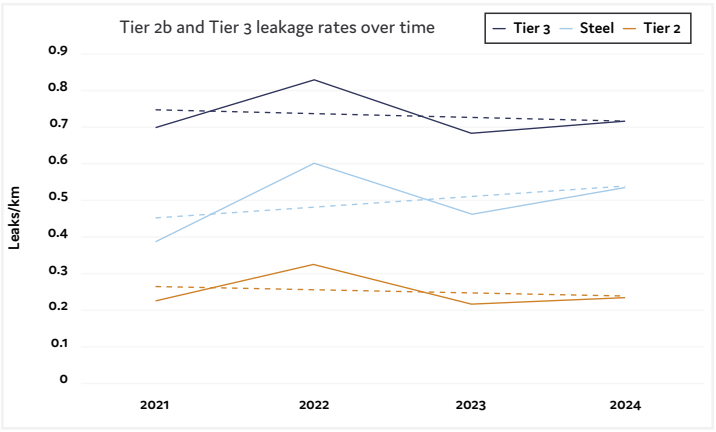


Figure 6.3 Tier 2b and Tier 3 leakage rates over time

6.3.6 >2" steel

Table 6.5 compares our investment to replace steel mains greater than 2 inches in diameter in RIIO-GD3 against our forecast and actual costs for RIIO-GD2.

2023/24 prices	RIIO-GD2 average	Spend per year (£m)					RIIO-GD3 total	RIIO-GD3 average
		2026/27	2027/28	2028/29	2029/30	2030/31		
>2" steel mains and services cost (£m)	5.62	7.76	8.24	8.78	9.34	9.83	43.96	8.79
>2" steel mains and services workload (km)	30.17	27.88	27.88	27.88	27.88	27.88	139.40	27.88

Table 6.5 >2" steel investment **Note**: Figures match BPDT C6.00 / CV6.05

The main driver of replacement is to provide value for money for our customers, which we assess through a CBA.

In 2018, NGN and other gas networks engaged AESL Consulting and Newcastle University to evaluate the performance of steel mains across the UK. This assessment revealed that steel mains are deteriorating at an accelerating rate. This finding was further confirmed by a DNV analysis commissioned by gas distribution networks, which concluded in April 2024.

> *For steel mains, total Gas in Buildings (GiBs) are predicted to increase by 108% from current levels (10-year average) by 2055...The analysis demonstrates that stopping all proactive replacement is not a viable option as the level of GiBs in distribution mains would gradually return to and surpass the level seen at the start of the IMRRP.*[4]

We've carried out CBA to ensure we deliver the most effective programme with a payback of eight years (2050 NPV £42.31m) for >2" steel. Due to our efficient delivery model and accounting for the cost pressures we will face in RIIO-GD3, the high NPV associated with non-mandated Repex means that we could justify even more work. However, as Figure 6.3 demonstrates, our current balanced programme broadly maintains risk at acceptable levels. Our track record shows we can efficiently deliver this alongside our mandated programme.

In response, and based on our CBA, we will maintain the abandonment of steel mains greater than 2 inches. We will decommission an average of 30.17 km/yr of >2" steel mains in RIIO-GD2, and we expect to decommission 27.88 km/yr in RIIO-GD3. This will lead to a decrease in >2" steel replacement in RIIO-GD3 of 11.45 km as we are focusing efforts on Tier 2b and Tier 3 where leaks per km are higher and trending upwards. We still need this base level of steel replacement to keep risks at acceptable levels and to gradually replace the remaining aging >2" steel population over time.

Please refer to **A22.m Investment Decision Pack - Non-Mandatory Repex** which includes full options analysis with EJP, CBA and NPV.

6.3.7 Zero-scoring mains and other mains

We will replace a small number of iron mains that have a zero score on the Mains Risk Prioritisation System (MRPS). There will be no associated services workload for these zero-scoring mains. The replacement of these pipes is driven by two main factors:

- **Security of supply issues:** approximately 60% of the replacement work is motivated by concerns over supply security. We have identified several aging, single-leg, medium-pressure mains with security of supply issues. We will replace a proportion of these pipes during RIIO-GD3 based on their risk profile.
- **Efficiency and value for money:** the remaining 40% of the replacement work is driven by efficiency considerations and delivering the best value to our customers. This includes integrating zero-scoring mains into mandatory replacement projects to improve overall efficiency, anticipating that these pipes may score higher in the future. Additionally, some replacements are determined through CBA considering the poor condition of the pipes and their impact on customers.

The "other mains" category includes pipes made from materials such as asbestos and polyethylene (PE). We are required by the HSE to remove any asbestos mains due to health risks associated with this material. PE mains are decommissioned if they present an increased risk of failure or if it is advantageous to include them in a comprehensive replacement scheme.

Table 6.6 compares our investment in zero-scoring mains and other mains in RIIO-GD3 against our forecast and actual costs for RIIO-GD2. During RIIO-GD2, the workload for replacing these mains, averages 8.31 km per year. This workload will increase slightly to 10.20 km per year in RIIO-GD3.

2023/24 prices	RIIO-GD2 average	Spend per year (£m)					RIIO-GD3 total	RIIO-GD3 average
		2026/27	2027/28	2028/29	2029/30	2030/31		
Mains and services cost (£m)	3.60	4.27	4.45	4.65	4.85	5.05	23.27	4.65
Mains and services workload (km)	8.31	10.20	10.20	10.20	10.20	10.20	51.00	10.20

Table 6.6 Zero scoring mains and other services investment **Note**: Figures match BPDT C6.00 / CV6.05

We've carried out a CBA to ensure we deliver the most effective programme with a payback of two years (2050 NPV £33.40m) for zero-scoring mains. Due to our efficient delivery model and accounting for the cost pressures we will face in RIIO-GD3, the high NPV associated with non-mandated Repex means that we could justify even more work. However, as Figure 6.3 demonstrates, our current balanced programme broadly maintains risk at acceptable levels. Our track record shows we can efficiently deliver this alongside our mandated programme. We have not undertaken CBAs for asbestos and PE mains due to their low materiality and as PE for PE replacement has a negligible risk benefit.

4 A22.m DNV Report: Deterioration prediction and replacement scenario analysis for GD3 mains and services for further detail please refer to Exec summary contained within **Appendix A21 Cost Assessment And Benchmarking Approach**

6.3.8 Stubs

Legacy iron pipe stubs up to 8" in diameter within 30 meters of properties must be replaced by 2032, per HSE policy[5]. Using geographic information system (GIS) tools, we have located these stubs.

Table 6.7 compares our investment in stub replacement in RIIO-GD3 with our forecast and actual costs for RIIO-GD2. The annual expenditure for RIIO-GD3 will decrease to £1.64m from £2.26m in RIIO-GD2. We'll replace these stubs at a structured rate to complete the programme by mid RIIO-GD3, balancing cost and risk.

Operationally, we have already resourced to deliver this stubs programme at a relatively constant rate to ensure that it is sustainable and deliverable. Significant acceleration of the programme would leave us constrained in a number of geographical locations due to the large impact this work has on the local population in terms of road and lane closures. Additional skilled resource would also be required to deliver this work. Conversely, significant deceleration of the programme would reduce efficiencies gained and potentially hamper resourcing as we attempt to find contractors willing to take on a relatively low workload over a longer period.

2023/24 prices	RIIO-GD2 average	Spend per year (£m)					RIIO-GD3 total	RIIO-GD3 average
		2026/27	2027/28	2028/29	2029/30	2030/31		
Iron stubs cost (£m)	2.26	1.64	1.64	1.64	0.00	0.00	4.91	0.98
Iron stubs workload (km)	0.22	0.67	0.67	0.67	0.00	0.00	2.01	0.40

Table 6.7 Iron stubs investment **Note**: Figures match BPDT C6.00 / CV6.11

We have found throughout RIIO-GD2 that the actual number of stubs that need action to be replaced or made compliant is not as high as originally estimated. Many stub investigations (trial holes) have resulted in no further action being taken as a stub was not located.

For RIIO-GD2, we used a DNV risk assessment accepted by HSE, allowing us to avoid replacing stubs if they met certain length and diameter criteria. We also worked with Steve Vick International to develop the E-SEAL system, which remotely and permanently isolates Tier 1 stubs without removing the parent main. This innovation reduces excavation size, minimises disruption and lowers costs.

6.3.9 Diversions

Table 6.8 compares our investment in diversions in RIIO-GD3 against our forecast and actual costs for RIIO-GD2. During RIIO-GD2, we will abandon approximately 12.06 km of mains annually due to diversions. This figure is projected to increase slightly in RIIO-GD3 to 13.29 km per year. Despite this increase in abandoned mains, diversion costs will remain stable at around £3.29m per year. Diversions are typically prompted by third-party requests to relocate our mains or by external factors such as landslips or riverbank erosion. The costs associated with diversions due to land slip are more expensive than those associated with third-party requests. For additional information relating to the climate resilience of our assets. please refer to **Appendix A8 Climate Resilience Strategy**.

2023/24 prices	RIIO-GD2 average	Spend per year (£m)					RIIO-GD3 total	RIIO-GD3 average
		2026/27	2027/28	2028/29	2029/30	2030/31		
Diversions mains and services cost (£m)	3.40	1.90	2.36	3.05	3.99	5.16	16.47	3.29
Diversions mains and services workload (km)	12.06	13.29	13.29	13.29	13.29	13.29	66.45	13.29

Table 6.8 Diversions investment **Note**: Figures match BPDT C6.00 / CV6.06

6.3.10 Other services

Table 6.9 compares our investment in other services in RIIO-GD3 against our forecast and actual costs for RIIO-GD2.

2023/24 prices	RIIO-GD2 average	Spend per year (£m)					RIIO-GD3 total	RIIO-GD3 average
		2026/27	2027/28	2028/29	2029/30	2030/31		
Other services cost (£m)	6.87	7.11	7.41	7.79	8.17	8.50	38.98	7.80
Other services workload (number)	5,818	5,649	5,530	5,415	5,304	5,196	27,094	5,419

Table 6.9 Other services investment **Note**: Figures match BPDT C6.00 / CV6.08

Other services, whether metallic or non-metallic, are not replaced as part of the mains replacement programme. They are typically replaced following a reported escape, as part of a service alteration, or during other meter-related work.

5 IMRRP Enforcement Policy: HSE Website https://www.hse.gov.uk/gas/supply/mainsreplacement/index.htm

The re-lay work conducted after an escape is closely tied to our repair activities. The workload will decrease in line with the reduction in escapes due to the mains replacement programme, but costs will increase due to the factors referenced around engineering complexity and labour pressures. Service alterations and other related work will continue at the same rates observed during RIIO-GD2.

Overall, the annual costs will increase from £6.87m average in RIIO-GD2 to £7.80m.

6.3.11 Risers

Table 6.10 compares our investment in other services in RIIO-GD3 against our forecast and actual costs for RIIO-GD2. The workload for managing multi-occupancy buildings (MOBs) is forecast using a bespoke risk model and survey data. Unit costs are estimated based on historical expenditures from RIIO-GD2.

2023/24 prices	RIIO-GD2 average	Spend per year (£m)					RIIO-GD3 total	RIIO-GD3 average
		2026/27	2027/28	2028/29	2029/30	2030/31		
Risers services cost (£m)	0.29	1.48	1.48	1.48	1.48	1.48	7.40	1.48
Risers services workload (number)	23	12	11	12	11	11	57	11

Table 6.10 Risers investment **Note**: Figures match BPDT C6.00 / CV6.09

We will deliver a higher workload in RIIO-GD3, and our costs will increase from £0.29m per year in RIIO-GD2 to £1.48m per year in RIIO-GD3. NGN will look to replace 57 risers across 15 MOBs.

The primary driver for this investment is the need to address asset health, safety, and legislative concerns. We have also made provision within our "use it or lose it" (UIOLI) allowance to proactively investigate the removal of risers from MOBs Refer to **table 6.23** and **A22.p Investment Decision Pack - Risers**

6.4 Capital investment summary (Capex)

We invest in our asset base each year to ensure we can continue to provide transportation, emergency and connection services to our customers. Capital expenditure can vary materially year on year depending on the types of assets invested in and the type of interventions applied.

6.4.1 Our RIIO-GD3 expenditure

Table 6.11 summarises our RIIO-GD3 Capex investments and compares the average planned expenditure to the 5-year average we have seen in RIIO-GD2 to date. Overall, we expect to increase expenditure from £62.18m on average to £66.15m per annum. This is a 6% increase from RIIO-GD2, with the most significant increase due to mandatory upgrades on LTS storage and entry (Offtakes preheating and civils). Figure 6.4 illustrates these key cost drivers in changes between RIIO-GD2 and RIIO-GD3.

2023/24 prices	RIIO-GD2 average	Capex					RIIO-GD3 total	RIIO-GD3 average
		Spend per year (£m)						
		2026/27	2027/28	2028/29	2029/30	2030/31		
Local Transmission Systems (LTS) storage and entry	17.99	40.51	21.96	28.04	25.91	24.73	141.15	**28.23**
Governors	4.69	4.39	4.21	4.39	4.21	4.39	21.59	**4.32**
Reinforcement	5.54	5.48	5.38	5.38	5.38	5.38	26.98	**5.40**
Connections	7.39	0.99	0.99	0.99	0.99	0.99	4.93	**0.99**
Other Capex	26.56	25.45	27.58	26.84	25.22	31.01	136.11	**27.22**
Total Capex	**62.18**	**76.81**	**60.12**	**65.63**	**61.71**	**66.50**	**330.77**	**66.15**

Table 6.11 Capex in RIIO-GD3 **Note**: Figures match BPDT C5.00 may not sum in table due to rounding

Figure 6.4 shows the key changes in Capex between RIIO-GD2 and RIIO-GD3. The following sections 6.4.4 to 6.4.8 describe this investment and reasons for the change.

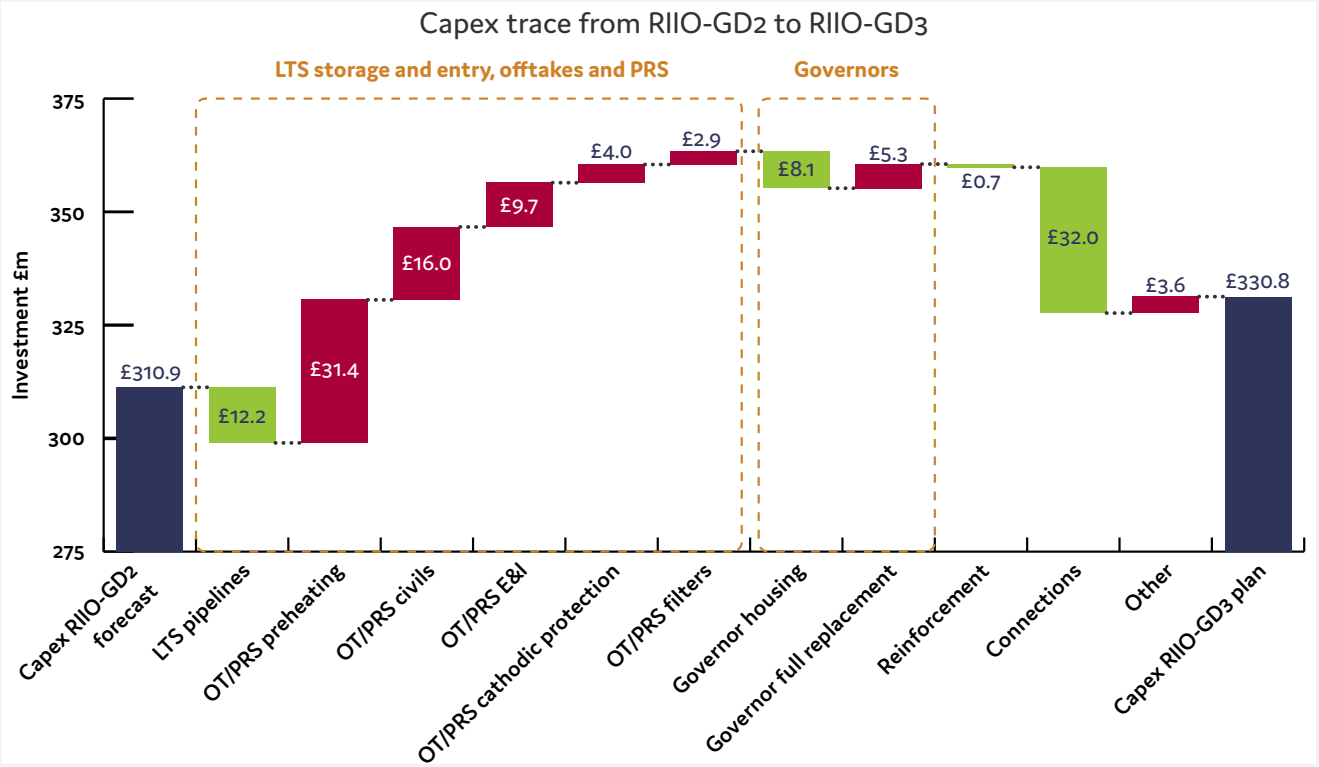


Figure 6.4 Capex trace from RIIO-GD2 to RIIO-GD3

6.4.2 Our capital investment strategy

We outline our strategic approach for managing our network in **Chapter 5**. Capital investment is critical to security of supply and ensuring that our network functions efficiently and effectively. Our approach focuses on compliance with legislative requirements, policy advice from the HSE and monitoring asset risk to ensure assets are replaced or refurbished before failure. As described in **Appendix A18 Network Asset Management Strategy**, this programme is informed by robust asset data and complemented by a data-led maintenance regime. We are proactive with Capex investment to mitigate risk before it materialises and leads to potentially significant impacts on service and health and safety.

We will use NARM to monitor and report on our asset risk to ensure that we can maintain provision of a safe and resilient network. Overall, our capital investment plans reduce our asset risk – as measured by NARM – by the end of RIIO-GD3. Over time, assets deteriorate and the associated risk increases. Our plans will more than offset this increase and help us maintain the excellent network reliability our customers are benefiting from today.

We have undertaken options assessment and analysis using CBA and NPV to define our capital programme, all fully described in the associated investment decision packs references throughout this section.

6.4.3 Our efficiency and delivery record

We employ best practice asset management in delivering our Capex programme, striving to effectively mitigate asset risk consistent with NARM objectives. We maintain an agile approach to our delivery programme to effectively manage network risk. For further detail please refer to **Appendix A21 Cost Assessment and Benchmarking Approach**.

We also effectively manage our supply chain by optimising procurement processes and have benefited from long-term contracts with suppliers and contractors which allow work to progress with known cost profiles that are more resilient to external shocks. Consistency of costs has also enabled the implementation of new design and delivery frameworks through RIIO-GD2. These have helped us to manage delays to long lead items and a shortage of experienced contractor resource. For further detail please refer to **Appendix A7 Workforce and Supply Chain Resilience Strategy**.

6.4.4 Local Transmission System (LTS) storage and entry, offtakes and PRS

Our network includes c.1,200 km of high-pressure LTS pipelines with associated storage and entry assets. These assets are some of the most critical in our system and would have the biggest impact on downstream customers if they were to fail. We regularly inspect, maintain and repair them to protect against corrosion and environmental risks and, as a result, we have experienced very few performance issues.

In RIIO-GD3, we will invest £141.15m in the LTS, including storage and entry, summarised in Table 6.12. The key investment drivers include asset health deterioration due to aging LTS infrastructure, and sub-assets such as cathodic protection, valves and PIG traps equipment, and the need to maintain compliance with industry legislation and standards.

2023/24 prices	RIIO-GD2 average	LTS , storage and entry					RIIO-GD3 total	RIIO-GD3 average
		Spend per year (£m)						
		2026/27	2027/28	2028/29	2029/30	2030/31		
Total Load – LTS, storage and entry	0.90	1.46	-	1.46	-	1.86	4.77	**0.95**
Total Non-Load – LTS, storage and entry	17.10	39.05	21.96	26.59	25.91	22.88	136.39	**27.28**
Total – LTS, storage and entry	**17.99**	**40.51**	**21.96**	**28.04**	**25.91**	**24.73**	**141.15**	**28.23**

Table 6.12 LTS storage and entry investment **Note**: Figures match BPDT CV5.01 may not sum in table due to rounding

Critical assets in our LTS pipeline and Offtakes serve thousands of customers. Through proactive maintenance, monitoring, protection, refurbishments and part replacements, we have extended these assets beyond their design life across several price controls. We now need to move from a refurbishment led programme of works to a more replacement focussed programme in RIIO-GD3 as asset deterioration continues and assets approach end of life. Our RIIO-GD3 plan tackles concerns around obsolescence of existing equipment and increasing compliance risks (such as the requirement to meet low NOx requirements as required by the Medium Combustion Plant Directive (MCPD)[6]. More detail is provided within IDPs **A22.f to A22.g**

Our RIIO-GD3 programme focuses on a strict inspection regime to monitor asset health and perform targeted repairs and upgrades based on inspection results. Detailed RIIO-GD3 investments are summarised in Table 6.13. Not all investments pay back within 16 years with NARM-based CBA due to compliance-driven work or non-health-related activities (e.g. civils). Nonetheless, our Capex programme has a NPV of £437.0m by 2050, proving its value for customers.

IDP Ref.	Asset Class	Key Driver	Net Cost (£m)	2050 NPV (£m)	CBA Payback	Justification
A22.j	LTS Pipelines	Resilience	5.63	16.33	4 Years	Pipeline protection (CP / Valves / Erosion)
N/A	LTS Diversions - Other	3rd Party	2.50	N/A	N/A	3rd Party HP diversion work
A22.n	LTS Diversions - River Allen	Resilience	7.70	86.73	3 Years	Pipeline protection from riverbed exposure
A22.b	OT/PRS - Filters	NARM	3.83	14.99	6 Years	Downstream asset protection
A22.c	OT/PRS - Pressure Control & Capacity	NARM / Capacity	23.28	10.52	15 Years	Pressure management, security of supply and management of capacity constraints
A22.d	OT/PRS - Preheating	NARM / Legislative Compliance	45.82	19.00	14 Years	Proactive asset management strategy and Low Nox emission regulations (MCPD)
A22.e	OT/PRS - Odorant and Metering	NARM	12.49	62.18	6 Years	Ultra sonic metering and improved odorant injection functionality
A22.f	OT/PRS - Civils (inc Security and Site CP)	Resilience	28.37	N/A	N/A	Colleague & Public Health, Safety and Welfare, Asset protection
A22.g	OT/PRS - E&I	Resilience / Obsolescence	16.98	10.96	12 Years	Replace obsolete equipment meeting industry standards and introducing new technology
		TOTAL	141.15			

Note : A22.f includes £5.50m investment on security fence replacement / refurbishment, for BPDT purpose this is included in C5.06

Table 6.13 LTS, storage and entry, Offtakes and PRS investment

6 Medium Combustion Plant Directive https://consult.environment-agency.gov.uk/psc/mcp-and-sg-regulations/#:~:text=The%20MCPD%20sets%20out%20rules,otherwise%20captured%20by%20the%20MCPD

6.4.5 Governors

Table 6.14 compares our investment in RIIO-GD3 against our actual and forecast investment in RIIO-GD2.

Governors represent our largest Capex asset group, with over 5,600 assets, including District Governors, I&C Governors and Service Governors. These costs cover the refurbishment or replacement of existing assets due to condition or land issues but do not cover increases to capacity in relation to reinforcement or a new connection.

2023/24 prices	RIIO-GD2 average	Governors					RIIO-GD3 total	RIIO-GD3 average
		Spend per year (£m)						
		2026/27	2027/28	2028/29	2029/30	2030/31		
Total – District Governors	4.45	4.12	3.94	4.12	3.94	4.12	20.23	**4.05**
Total – District Governor (units)	159	104	103	104	103	104	518	**104**
Total – Service Governors	0.24	0.27	0.27	0.27	0.27	0.27	1.36	**0.27**
Total – Service Governors (units)	74	85	85	85	85	85	425	**85**
Total – Governors	4.69	4.39	4.21	4.39	4.21	4.39	21.59	**4.32**
Total – Governors (units)	233	189	188	189	188	189	943	**189**

Table 6.14 Governor investment **Note**: Figures match BPDT CV5.04 may not sum in table due to rounding

Over 95% of this expenditure will be focused on District Governors, which are critical for reducing pressure and balancing supply across the network. These assets reduce pressures to supply the medium or low-pressure networks. They balance pressures to ensure enough capacity to meet a 1:20 demand, whilst keeping pressures as low as possible to reduce leakage. District Governors can supply anywhere between tens of customers to tens of thousands of customers. They represent a significant loss of supply risk within our network should they fail.

Our investment will maintain a workload like that in RIIO-GD2. There will be a broadly similar workload mix as RIIO-GD2 to keep this group of assets running at stable and acceptable level of risk. The expanded site upgrade programme driven by the HSE intervention programme accounts for some of the increased expenditure on this asset class, but this elevated level of expenditure is already being incurred in the final years of RIIO-GD2. We will focus on sites that have not been updated in RIIO-GD2 and on those that have compliance issues, which include civils works, access/egress and roofing requirements. Overall, our Governors, CBA pays back in two years (2050 NPV £21.63m), demonstrating that our programme is value for money for customers. Please refer to **A22.h Investment Decision Pack - Governors** which includes full options analysis with EJP, CBA and NPV.

6.4.6 Reinforcement

Table 6.15 compares our investment in RIIO-GD3 against our actual and forecast investment in RIIO-GD2.

Reinforcement involves increasing the capacity of our existing pipeline system to meet the requirements of the Gas Act and Gas Transporter licence, ensuring reliable supply even during a 1 in 20 winter severity event. Reinforcement efforts are categorised into two groups:

- **General reinforcement** addresses pressure constraints on the network identified through our validation process and annual Demand Refresh. It is guided by software models that project general demand growth in specific areas.
- **Specific reinforcement** is required to maintain system pressures when new connections are added to the network or when existing connections experience increased loads. It is driven by third-party requests and is subject to the Economic Test, which may result in partial or full funding by the requesting party.

2023/24 prices	RIIO-GD2 average	Reinforcement					RIIO-GD3 total	RIIO-GD3 average
		Spend per year (£m)						
		2026/27	2027/28	2028/29	2029/30	2030/31		
Total – Reinforcement	5.54	5.48	5.38	5.38	5.38	5.38	26.98	**5.40**
Total – Reinforcement (km)	12.10	11.11	11.11	11.11	11.11	11.11	55.53	**11.11**
Total – Reinforcement (DG)	9	13	12	12	12	12	61	**12**

Table 6.15 Reinforcement investment **Note**: Figures match BPDT CV5.02 may not sum in table due to rounding

In RIIO-GD3, we will slightly decrease our reinforcement expenditure to an average of £5.40m per year, compared to an average of £5.54m per year in RIIO-GD2.

Without investment in reinforcement of the network, the Repex programme would require 26 km more of open cut construction as opposed to the insertion replacement method. This results in a net saving of £4.74m across Totex. The remainder of this work programme is customer and capacity driven. Please refer to **A22.i Investment Decision Pack - Reinforcements - Governors & Mains** which includes full options analysis with EJP, CBA and NPV.

6.4.7 Connections

Table 6.16 compares our investment in RIIO-GD3 against our actual and forecast investment in RIIO-GD2.

The actual workload for domestic and non-domestic connections will be c.50% lower than our allowed workload in RIIO-GD2. The decline in connections, which began during the Covid-19 pandemic, has not returned to the pre-pandemic levels seen in the latter years of RIIO-GD1. Factors such as the cost-of-living crisis, high energy prices and current economic conditions have further contributed to this reduction. Government policy[7] tabled to take effect in 2025/26 could halt new domestic connections by prohibiting the installation of new gas boilers in new properties. Despite these challenges, NGN will continue to add over 3,000 connections per year on average throughout RIIO-GD2. However, this number is projected to drop to approximately 1,500 connections per year in RIIO-GD3.

2023/24 prices	RIIO-GD2 average	Connections					RIIO-GD3 total	RIIO-GD3 average
		Spend per year (£m)						
		2026/27	2027/28	2028/29	2029/30	2030/31		
Mains	1.41	0.20	0.20	0.20	0.20	0.20	0.99	**0.20**
Services	5.97	0.79	0.79	0.79	0.79	0.79	3.95	**0.79**
District Governors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total – connections	**7.39**	**0.99**	**0.99**	**0.99**	**0.99**	**0.99**	**4.93**	**0.99**

Table 6.16 Connections investment **Note**: Figures match BPDT CV5.05 may not sum in table due to rounding

The anticipated reduction in connection volumes, the removal of the Domestic Load Connection Allowance (DLCA), and the removal of the Domestic Connections Volume Driver (DCVD) has changed our pricing methodology for RIIO-GD3. Fixed overheads associated with our connections function, necessary for meeting our obligations, will not be significantly reduced by the lower volume of connections compared to RIIO-GD2, and we will still need to maintain a team to handle design and quotation activities, that may not progress to acceptance and delivery. A high proportion of the fixed overhead will now be borne by the customer with c. £5m being retained by NGN.

6.4.8 Other Capex

Table 6.17 compares our investment in RIIO-GD3 against our actual and forecast investment in RIIO-GD2.

Other Capex includes investment in network and non-network-related assets not covered by the previous **sections 6.4.4-6.4.7**.

2023/24 prices	RIIO-GD2 average	Other Capex					RIIO-GD3 total	RIIO-GD3 average
		Spend per year (£m)						
		2026/27	2027/28	2028/29	2029/30	2030/31		
Security	0.79	0.94	1.27	1.04	1.27	0.94	5.46	**1.09**
PSUP	0.11	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Pipelines (Incl overcrossings, sleeves, CP, valves)	3.04	3.59	2.91	3.28	3.28	2.98	16.04	**3.21**
Electrical and mechanical instrumentation	1.77	1.96	1.96	1.96	1.96	1.96	9.79	**1.96**
Other network	**5.71**	**6.48**	**6.14**	**6.28**	**6.51**	**5.88**	**31.29**	**6.26**
IT and telecoms	11.43	11.02	13.18	13.12	12.09	13.54	62.96	**12.59**
Plant, tools and equipment	1.40	1.23	1.07	1.64	0.69	0.69	5.31	**1.06**
Vehicles	5.02	4.77	5.26	3.86	3.99	8.97	26.85	**5.37**
Property and workspace	2.96	1.94	1.94	1.94	1.94	1.94	9.71	**1.94**
Other – including compensation	0.04	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Other non-network	**20.85**	**18.97**	**21.45**	**20.55**	**18.71**	**25.14**	**104.82**	**20.96**
Total – Other	**26.56**	**25.45**	**27.58**	**26.84**	**25.22**	**31.01**	**136.11**	**27.22**

Table 6.17 Other Capex investment **Note**: Figures match BPDT C5.06 may not sum in table due to rounding

7 Future Homes Standard **https://www.gov.uk/government/consultations/the-future-homes-standard-changes-to-part-l-and-part-f-of-the-building-regulations-for-new-dwellings**

We will allocate £31.29m to **other network Capex** during RIIO-GD3, reflecting a 10% increase from our RIIO-GD2 expenditure. Physical security costs will see a modest rise of £0.3m per annum due to findings from our civils survey of above-ground assets, which indicated that several sections of fencing require either complete replacement or refurbishment to maintain site security. Having experienced several security breaches in RIIO-GD2, we are committed to minimising such incidents throughout RIIO-GD3.

Investment in pipe overcrossings inspections, enabling and remediation is set to increase to ensure ongoing asset integrity and climate resilience. Our focus will be on the highest-risk overcrossings (scores 4 and 5) and mandatory Tier 1 overcrossings, as well as approximately 20% of condition 3 sites based on risk assessment. We have identified 57 sites needing intervention and aim to maintain the number of security upgrades (60) from RIIO-GD2. A failing overcrossing poses significant risks, including potential explosions, supply disruptions and methane leaks into the atmosphere. Additionally, there is a security risk if members of the public access the site and fall from the pipework – a scenario that occurred in RIIO-GD1 on another network. Overcrossing work prioritisation is based on risk assessments and visual surveys conducted during routine maintenance.

We will invest an additional 11% in electrical and instrumentation. This investment focuses on pressure validation, profiling and data logging. Enhancements to our dataloggers' functionality will be implemented to meet operational targets related to leakage detection/reduction and to predict broader network issues promptly. The LoRaWAN network investment from RIIO-GD2 will support some of these enhancements.

Other **non-network Capex** includes investment in assets not directly associated with network infrastructure, such as IT systems and vehicles. For RIIO-GD3, we will invest £104.82m in non-network-related assets, representing a slight increase of approximately 1% compared to RIIO-GD2.

We summarise below the main changes in RIIO-GD3 relative to the previous period:

IT and Telecoms: in RIIO-GD2, we invested in IT and telecoms systems for a resilient, flexible, cloud-based environment supported by our in-house 3iG team. This ensures 99.85% system availability, cost-efficient operations and internal knowledge retention. Our RIIO-GD3 IT and Telecoms Strategy is detailed in **Appendix A13**. For RIIO-GD3, we plan an annual Capex investment of £12.59m, similar to RIIO-GD2 (+10%). This investment follows the principles in our IT and Telecoms Strategy and Digitalisation Strategy and Action Plan (Appendix A12) and includes these key initiatives:

- **Software (£16.8m)**: our operations use various software systems as highlighted in **A12 Digitalisation Strategy & Action Plan**, including S/4HANA (asset management, finance, HR, emergency processes, connections, maintenance), SCADA, analytics software, and MS Dynamic Customer Engagement. In RIIO-GD3, we aim to maintain these systems at supplier support levels, reduce operational costs, enhance security and introduce new features for improved safety, customer service and efficiency. This investment will include:
  - Colleague services features to support performance management, occupational health and recruitment
  - Project planning and delivery to support greater operational efficiency
  - Asset management and asset data management to support greater operational efficiency
  - Investments in Geospatial, Enterprise Resource Planning (ERP) and data capture systems to be a foundation for the delivery of **A12 Digitalisation Strategy & Action Plan**, and to support greater operational efficiency.
- **Devices and hardware (£12.8m)**: we plan a three-year refresh cycle for mobile phones, laptops and field devices to maintain support, reduce costs and ensure high availability. We will invest in our cloud infrastructure to keep systems secure and supported, leveraging new technologies for IT resilience and cost reduction. By following our 2024 cloud strategy, which saved £0.5m compared to 2023, we aim to drive further efficiency during RIIO-GD3.
- **Network (£1.8m)**: our operations are supported by resilient and high-speed data links, mobile and wireless communications to our operational colleagues and a resilient call centre solution. In RIIO-GD2, we invested in this area by establishing a Software Defined Wide Area Network (SD WAN) and the use of roaming 4G SIMs for our field tablets, used by our engineers. In RIIO-GD3, we will invest further in SD WAN technology to improve our resilience, replace legacy and end-of-life technology and to ensure our operational support costs remain low.

Plant tools and equipment: annual expenditure will decrease to £1.1m (-24%) during RIIO-GD3. RIIO-GD2 spending was higher due to team expansion, purchases of welfare cabins and wheeled plant instead of hiring, and replacing outdated equipment. In RIIO-GD3, we will invest in over 150 new items (including 27 excavators and 125 trailers) to maintain our operational efficiency.

Vehicles: expenditure will increase from £5.02m per annum in RIIO-GD2 to £5.37m in RIIO-GD3 (+7%). We will replace 557 vehicles during RIIO-GD3 according to our fleet replacement policy, targeting six years of operation or 100,000 miles, to maximise efficiency and reduce costs. Due to the limited availability of zero-emission large vans, we will purchase 303 new diesel vans. For smaller vehicles, we aim to buy 100 electric vans out of 230 new purchases (43%) to reduce carbon emissions. We will buy 21 cars/4x4s (10 hybrids), one vacuum excavation vehicle, and trial two hydrogen fuel cell vans. Vehicle price increases above inflation and the cost of transitioning to zero-emission alternatives are significant factors between RIIO-GD2 and RIIO-GD3.

Property: during RIIO-GD2, we invested significantly in our property portfolio, including refurbishing, relocating and acquiring Thorpe Head Office in Leeds (2023). These investments result in a £1.80m annual saving (-34%) during RIIO-GD3. To meet RIIO-GD3 Environmental Action Plan (EAP) commitments to reduce our carbon footprint, we are enhancing building energy efficiency with low-energy lighting, low-carbon heating/hot water systems and efficient windows at our head office. We are also expanding our electric vehicle charging network with rapid chargers (50kW+) strategically placed across properties. Additionally, we are upgrading operational depots to provide modern work environments and replacing end-of-life assets.

6.5 Operational expenditure summary (Opex)

We use our controllable Opex to operate and manage our network and maintain our assets to ensure that the gas network is safe and resilient. We also provide a 24-hour, 365-day-a-year emergency and repair service when an interruption or leak does occur. Our indirect costs provide business support functions such as HR and training, as well as IT and finance, all of which ensure that our network operations are resilient and have the right resources to deliver our key outputs.

Non-controllable Opex includes costs that NGN cannot directly influence, including costs associated with gas lost due to theft, payments made to National Grid for the transportation of gas and licence fees paid to Ofgem (**see Section 1.3.3. in Appendix A21 Cost Assessment and Benchmarking Approach**).

6.5.1 Our RIIO-GD3 expenditure

Table 6.18 summarises our RIIO-GD3 Opex investments and compares the average planned expenditure to the five-year average we have seen in RIIO-GD2 to date. Figure 6.5 shows the key movements that drive the increase. Overall, we will increase expenditure from £115.66 on average to £131.27 per annum which is a 14% increase.

2023/24 prices	RIIO-GD2 average	Spend per year (£m)					RIIO-GD3 total	RIIO-GD3 average
		2026/27	2027/28	2028/29	2029/30	2030/31		
Work management	20.18	17.16	17.04	16.73	16.71	16.69	84.32	16.86
Work execution	64.15	77.92	77.38	74.61	74.20	73.80	377.92	75.58
Indirect activities	31.33	38.37	38.18	38.73	40.05	38.80	194.12	38.82
Total controllable Opex	**115.66**	**133.45**	**132.60**	**130.07**	**130.97**	**129.28**	**656.37**	**131.27**

Table 6.18 Opex in RIIO-GD3 **Note**: Figures match BPDT S1.00 may not sum in table due to rounding

Indirect and non-controllable Opex, while not part of Totex, include operational expenses needed to support NGN's business operations. These costs cover HR, finance, IT, legal support, property management and workforce training, including apprenticeships (**see Section 1.3.2 in the A21 Cost Assessment and Benchmarking Approach**).

Figure 6.5 shows the effect of various cost drivers to explain the increased spending required in RIIO-GD3 compared to RIIO-GD2. Each of these drivers is described in the following section.

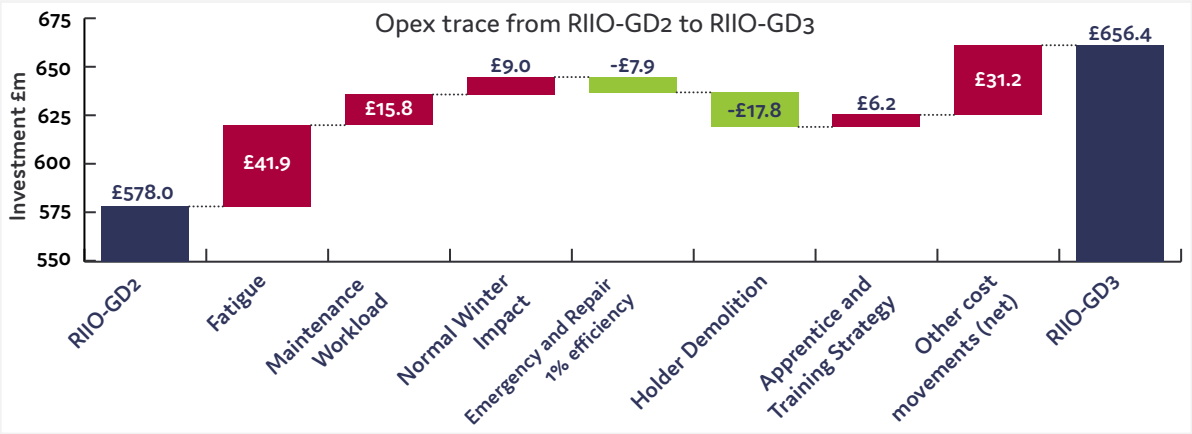


Figure 6.5 Opex trace from RIIO-GD2 to RIIO-GD3

Fatigue (£41.9m)

The updated HSE Fatigue management policies require 12- and 16-hour working standards. Despite reduced activity, emergency costs have risen due to hiring more engineers to enhance resilience and meet HSE requirements. This increase will continue into RIIO-GD3 and costs are reflected in work execution. For more information relating to this, please refer to our RIIO-GD2 HSE fatigue re-opener[8]

8 https://www.northerngasnetworks.co.uk/wp-content/uploads/2024/10/NGN-RIIO-GD2-HSE-Policy-Special-Condition-3.17-Re-opener-Submission-300924-redactedv2.0-2.pdf

Maintenance Workload (£15.8m)

Maintenance costs have significantly increased as we align our strategy to address maintenance in several areas which include:

- More work on District Governors to extend their operational life and reduce Capex
- Installing more Pressure Control systems which require increased maintenance
- An increase in valve surveys, cathodic protection and DR4 workload.

Accelerating this workload post the Covid-19 pandemic has proven more difficult than expected, with long lead times for some equipment and scarcity of resource. We have also included the impact of changing HSE legislation associated with Gas Safety Regulations (GSRs)[9] with an expectation of addressing the backlog during RIIO-3 and factoring in the impact of Advanced Leakage Detection. These costs are reflected in work execution.

Normal Winter Impact (£9.0m)

Our forecast for Emergency and Repair remains in line with our Business Plan and is based on a more prudent "normal" winter workload than we have seen in recent years. We would expect to outturn lower than this when weather is milder, but we cannot always assume this will be the case. This assumption has been continued in our RIIO-3 plan and includes a **1% year on year reduction (-£7.9m)** in cost to reflect a positive impact of the Repex programme on workload. These costs are reflected in work execution.

Holder Demolition (-£17.8m)

The main cost reduction driver within Work Management is due to the holder demolition programme that is due to be completed during RIIO-2. These costs are reflected in work management.

Apprentice and Training Strategy (£6.2m)

The apprentice programme will cost an additional £0.8m per year during RIIO-GD3 to train more apprentices. This investment is part of our strategy to replace the aging workforce and ensure we have skilled staff for future operational challenges. These costs are reflected in indirect activities.

Other cost movements

Two other key cost drivers of note include automated leakage detection (£5m) and meter box replacement (£8m).

For further details on all cost drivers, see **Section 1.3 in Appendix A21 Cost Assessment and Benchmarking Approach**.

6.5.2 Our operational investment strategy

Operational Expenditure is managed through a process that focuses on maintaining and operating our network efficiently while adhering to safety and regulatory standards. Opex increases have been limited through resource management, innovative operational approaches, and investments in technology and workforce capabilities. The direct controllable Opex strategy aims to meet service standards despite rising costs and external pressures.

The Opex pathway emphasises long-term sustainability and operational efficiency. Digital transformation will enhance operational efficiency. Utilising existing IT infrastructure, such as the SAP S/4HANA system, supports improved decision-making processes. **Section 6.9** outlines the benefits of digitalisation and open-data initiatives that aim to optimise resource allocation, predict maintenance needs and deliver smarter, more targeted interventions. **Figure 6.1** also describes broader benefits and strategic alignment within our plan.

6.5.3 Our efficiency and delivery record

NGN has enhanced efficiency during the RIIO controls, benefiting both NGN and UK consumers. Key initiatives have included updating labour terms, saving £9m annually, and implementing a Direct Service Provider (DSP) model, which reduced costs by £15m annually. Additionally, NGN has reinvested its savings into IT systems and productivity-enhancing projects such as SAP S/4HANA and the "Future Ways of Working" programme, aiming to improve customer experience and make NGN a more data-driven business.

NGN has managed its workforce strategically by optimising shift patterns and staffing levels while maintaining the capability to meet emergency response standards without significant cost increases. This process includes allocating time and resources based on productivity data to ensure no monthly shortfalls in work hours and flexibility in moving resources across Opex, Capex and Repex, depending on workload demands and spare capacity. For further information, please refer to **Appendix A7 Workforce and Supply Chain Resilience Strategy**

9 Gas Safety (Installation and in use) regulations https://www.hse.gov.uk/pubns/books/l56.htm

6.5.4 Work management

Work Management includes two key areas with distinct cost drivers:

- **Asset Management and System Control**, which involve the strategic oversight and day-to-day management of our distribution network assets. These costs are primarily driven by the number and condition of assets.
- **Operations and Customer Management**, which cover the daily supervision of emergency, repair and maintenance activities. These are influenced by workload demand and our commitments to achieving one and two-hour response time standards.

Table 6.19 compares our Work Management costs for RIIO-GD3 against our actual and forecast costs for the remainder of RIIO-GD2.

	RIIO-GD2 average	Spend per year (£m)					RIIO-GD3 total	RIIO-GD3 average
		2026/27	2027/28	2028/29	2029/30	2030/31		
Asset management	6.14	3.11	3.12	3.12	3.12	3.12	15.60	3.12
Operations management	10.87	9.73	9.76	9.78	9.78	9.78	48.82	9.76
Customer management	1.62	2.41	2.52	2.52	2.52	2.52	12.50	2.50
System control	0.73	0.96	0.96	0.96	0.96	0.96	4.79	0.96
Work management	**19.35**	**16.21**	**16.36**	**16.38**	**16.38**	**16.38**	**81.71**	**16.34**
Environmental remediation	0.84	0.95	0.67	0.35	0.33	0.31	2.62	0.52
Total work management	**20.18**	**17.16**	**17.04**	**16.73**	**16.71**	**16.69**	**84.32**	**16.86**

Table 6.19 Work management costs **Note**: Figures match BPDT C4.00 may not sum in table due to rounding

During RIIO-GD2, costs averaged £20.18m annually. This will drop by £3.32m per year to £16.86m during RIIO-GD3, mainly due to a £4m reduction in Holder Demolition costs as this programme concludes. Additional savings come from operational efficiencies through new technology for remote supervision and control.

We are committed to addressing legacy land contamination and pollution from historical use. In RIIO-GD2, we reassessed all at-risk sites, shaping our RIIO-GD3 strategy that combines monitoring, control and direct intervention, costing £2.62m over five years.

6.5.5 Work execution

Table 6.20 compares our Work Execution costs for RIIO-GD3 against our actual and forecast costs for the remainder of RIIO-GD2.

	RIIO-GD2 average	Spend per year (£m)					RIIO-GD3 total	RIIO-GD3 average
		2026/27	2027/28	2028/29	2029/30	2030/31		
Emergency	13.65	18.11	17.96	17.81	17.61	17.41	88.89	17.78
Repair	21.39	25.10	24.71	24.57	24.36	24.15	122.90	24.58
Maintenance	24.83	30.26	30.22	27.75	27.75	27.75	143.72	28.74
Other direct activities	4.16	4.46	4.49	4.49	4.49	4.49	22.41	4.48
Interruptions	0.12	-	-	-	-	-	-	-
Total work execution	**64.15**	**77.92**	**77.38**	**74.61**	**74.20**	**73.80**	**377.92**	**75.58**

Table 6.20 Work execution costs **Note**: Figures match BPDT C4.00 may not sum in table due to rounding

During RIIO-GD2, our Work Execution costs averaged £64.15m per annum. For RIIO-GD3, they will increase by £11.43m, bringing the average annual total to £75.58m.

Emergency and Repair

Costs will increase from £13.65m to £17.78m per annum for Emergency services, and from £21.39m to £24.58m per annum for Repair activities in RIIO-GD2. Emergency teams are first responders to gas escapes or supply interruptions, ensuring safety and performing immediate repairs when possible. This service operates 24/7 with strict response times: within one hour for uncontrolled escapes and two hours for controlled escapes. To meet these safety standards, we must maintain adequate resources. This is a standard that we will not compromise on. Our ambition is for 100% compliance, exceeding the minimum requirement of 97%.

Maintenance

Please refer to **Section 6.5.1**.

Other direct activities

Other direct activities include odorant costs, wayleaves and easements, some survey work, and general expenditure on materials, tools and equipment. The drivers behind these costs will not change in RIIO-GD3, so our forecast remains broadly flat.

6.5.6 Indirect activities

Indirect controllable Opex encompasses Business Support, and Training and Apprentices, with subcategories including IT and telecoms, property management, HR, audit, finance and regulation, insurance, procurement, CEO and Group management, and stores and logistics. Table 6.21 compares our Indirect Opex for RIIO-GD3 against our actual and forecast costs for the remainder of RIIO-GD2.

	RIIO-GD2 average	Spend per year (£m)					RIIO-GD3 total	RIIO-GD3 average
		2026/27	2027/28	2028/29	2029/30	2030/31		
IT and telecoms	8.03	9.49	9.53	9.53	9.53	9.53	47.61	9.52
Property management	2.88	3.13	3.14	3.14	3.14	3.14	15.70	3.14
Human resources	1.64	1.83	1.83	1.82	1.82	1.82	9.12	1.82
Audit finance and regulation	4.57	5.37	5.49	6.56	7.90	6.71	32.02	6.40
Insurance	3.76	4.64	4.83	5.02	5.02	5.02	24.54	4.91
Procurement and logistics	0.25	0.32	0.32	0.32	0.32	0.32	1.62	0.32
CEO and group management	5.73	6.67	6.68	6.68	6.68	6.68	33.39	6.68
Training and apprentices	4.46	6.93	6.36	5.64	5.63	5.56	30.12	6.02
Indirect activities	**31.33**	**38.37**	**38.18**	**38.73**	**40.05**	**38.80**	**194.12**	**38.82**

Table 6.21 Indirect activities costs **Note**: Figures match BPDT C4.00 may not sum in table due to rounding

During RIIO-GD2, our costs for Indirect Activities have averaged £31.33m per year. For RIIO-GD3, they will increase by £7.49m, bringing the total to £38.82m annually. We explain below in greater detail what is driving this increase.

IT and telecoms

Costs will increase by £1.49m per year in IT and telecoms. Key drivers of IT and telecoms expenditure include the number of users, service levels, applications and IT infrastructure. We will increase spend on cyber-resilience to comply with legislation and as we move to a more automated network and new legislation. For further details, please refer to **Appendix A13 IT & Telecoms Strategy**.

Property management

Property management costs will remain stable but with a slight £0.26m uplift to the RIIO-GD2 average. During RIIO-GD2, we invested significantly in property, including office and depot refurbishments and relocations. In 2023, we acquired our Thorpe head office in Leeds, enhancing it with solar panels and EV charging points to reduce long-term costs and benefit the environment.

Insurance

In RIIO-GD2, insurance costs have risen due to the cost-of-living crisis. Cover levels and types vary by network, affecting Totex costs. Claims, especially related to ill health, fluctuate yearly. Despite a slight drop in claim volume, increased payouts for complex issues are driving an annual cost increase of £1.15m.

Training and apprentices

In RIIO-GD3, we will recruit more apprentices, increasing training and apprenticeship costs by £1.56m annually. This is a change from RIIO-GD2, where we focused on hiring adults to drive cultural change, transition the workforce quickly and compensate for retirements.

Other indirect activities

The remaining activities encompass various support and corporate functions, including human resources, audit, finance and regulation, procurement and logistics and CEO and group management remain broadly flat or with slight increases from RIIO-GD2 to RIIO-GD3

6.5.7 Non-controllable Opex

Non-controllable Opex covers the cost of gas to replace network losses (Shrinkage), including 95% leakage, 3% theft and 2% for our use. Table 6.22 compares our non-controllable Opex costs for RIIO-GD3 with our actual and forecast costs for the rest of RIIO-GD2. There will be a 15% reduction in costs compared to the previous period.

	RIIO-GD2 average	Spend per year (£m)					RIIO-GD3 total	RIIO-GD3 average
		2026/27	2027/28	2028/29	2029/30	2030/31		
Shrinkage	10.32	6.35	5.64	5.53	5.53	5.53	28.57	5.71
Ofgem licence	2.97	3.36	3.43	3.43	3.43	3.43	17.08	3.42
Network rates	43.49	40.70	40.87	40.87	40.87	40.87	204.17	40.83
Established Pension Deficit Recovery Plan Payment	7.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NTS exit costs	47.11	54.92	55.58	56.87	57.01	55.89	280.27	56.05
Innovation	3.23	4.19	4.03	3.57	2.64	1.09	15.50	3.10
Xoserve	3.48	6.69	6.66	6.60	6.60	6.60	33.15	6.63
Supplier of last resort	26.05	0.86	0.86	0.86	0.86	0.86	4.28	0.86
Non-controllable costs	**144.53**	**117.06**	**117.06**	**117.72**	**116.92**	**114.26**	**583.02**	**116.60**

Table 6.22 Non-controllable Opex costs **Note**: Figures match BPDT C4.00 may not sum in table due to rounding

Shrinkage gas

We are forecasting shrinkage costs to reduce by approximately 44.6% over RIIO-GD3. This forecast is based on current average wholesale prices, although actual costs may fluctuate with future changes in wholesale prices.

National Transmission System (NTS) pensions and NTS exit costs

Our costs also include the latest projections for NTS Exit costs provided by National Gas, reflecting increases due to rebalancing of NTS Offtake charging methodology. We have also factored in that the licence cost will remain stable throughout the period.

All other costs such as licence costs will remain broadly similar relative to RIIO-GD2.

6.6 Frontier shift

Frontier shift refers to the productivity and efficiency improvements set by leading companies. NGN is a leader in gas distribution efficiency, consistently performing well and setting industry benchmarks. This has resulted in lower cost allowances across the sector, determined by Ofgem.

We challenge industry norms with commercially focused, market-led solutions to maintain our lead over other gas networks. We aim to extend this trend into RIIO-GD3, further increasing NGN's efficiency lead.

6.6.1 Real price effects (RPEs)

NGN manages RPEs efficiently by monitoring market trends, strategic procurement and long-term contracts to control costs. We aim to keep our costs efficient through effective input price management.

Ofgem adjusts our cost allowances annually based on indexed RPE data, which can reflect both positive and negative input price pressures. For example, in some RIIO-GD2 years, input prices rose slower than CPIH.

RPE indexation ensures that efficiently incurred costs are covered, protecting both networks and customers. Proper incorporation of RPEs is crucial for avoiding unrecoverable costs and maintaining financial stability.

NGN supports continued RPE adjustments in RIIO-GD3. An indexation approach benefits both customers and networks.

However, we consider that there are potential improvements to be made to RPE methodology applied in RIIO-GD2. In particular, the specific price indices used to set RPE allowances have not accurately reflected the prices facing GDNs in recent years. This means that there is scope to refine the basket of reference indices to better capture actual GD input price movements.

The GDNs have jointly commissioned KPMG to undertake a comprehensive review of the RIIO-GD2 methodology; assess the relevant data and evidence; and provide recommendations for refinement in RIIO-GD3. The KPMG report is summarised within **A21 Cost Assessment and Benchmarking Approach**; together with key evidence and conclusions/ recommendations.

6.6.2 Ongoing efficiency (OE)

Ongoing efficiency represents the productivity improvements that even the most efficient companies are expected to achieve. The OE challenge is a fundamental component of the RIIO framework for determining cost allowances for gas network companies.

Ofgem's OE challenge should be grounded in evidence of what all network companies, including the top performer, can accomplish. We have been the leading company in efficiency during both RIIO-GD1 and RIIO-GD2 and will maintain this status in RIIO-GD3. Consequently, NGN can provide valuable insights into the sector's achievable frontier shift.

The GDNs have jointly commissioned Economic Insight (EI) to estimate a suitable OE challenge for RIIO-GD3. EI conducted a comprehensive review of data and evidence, offering recommendations on setting the OE target. Their report is included in this submission and summarised in **Appendix A21 Cost Assessment and Benchmarking Approach (Section 6)**.

EI concludes that OE at RIIO-GD3 for gas networks will plausibly range from 0.2% to 0.8%, with the mid-point being 0.5%.

One of the critical issues Ofgem needs to address for RIIO-GD3 is how to account for the sustained and significant reduction in productivity growth in the UK over the 15 years since the 2008 financial crisis. Energy networks are not exempt from this trend, and there is no indication of an imminent increase in economy-wide productivity over RIIO-GD3. In our view, outdated evidence from EU KLEMS[10] benchmarks should be given less prominence than Ofgem did in RIIO-GD2, recognising that the balance of evidence suggests a structural shift has occurred.

Additionally, the historic investments NGN has made to achieve efficiency gains to date are challenging to replicate. This includes, in particular, the efficiency savings that continue to benefit customers arising from: 1) the modernisation of labour terms and conditions (T&Cs) for the majority of our operational workforce; 2) our transition to a DSP model; and 3) major investments in IT systems through the SAP S/4HANA investment and the "Future Ways of Working" programme to improve customer experience and control costs. These substantial innovations were significant milestones for us, positioning us at the forefront – benefiting consumers nationwide as other GDNs now strive to catch up. However, the cost savings from our achievements are already incorporated into our baseline RIIO-GD3 forecasts – savings of this magnitude cannot easily be replicated or expected again in RIIO-GD3.

Overall, **we therefore consider that an OE Target of 0.5% year-on-year strikes the right balance.** This target demonstrates our ambition and is derived directly from the balance of evidence, reflecting a target that is ambitious and challenging for the leading company but also attainable.

6.7 Consideration of Uncertainty Mechanisms and baseline expenditure

In RIIO-GD3 we will be flexible and adapt to changing circumstances but also ensure customers do not fund projects before clear certainty of need and robust costs are evidenced. Even where we have a clear view of the type of work required, we are cognisant that volumes may vary over time, or we may need to respond to changing policy and legislation.

Ofgem has recognised the need for uncertainty mechanisms and has included several of them for RIIO-GD3. In developing our plan, we have carefully reviewed our forecasts and considered the following types of uncertainty mechanism to apply.

- **Re-openers** – where the needs case, timing or scope of a project is unclear.
- **Volume drivers** – where there is uncertainty about the future level of demand.
- **Price control deliverable** – where the volume and mix of work to be delivered is specified.

We do not consider it appropriate to include anticipatory investment within baseline expenditure, where there is not clearly defined policy. Similarly, we do not consider it appropriate to allocate expenditure into an uncertainty mechanism where we have a clearly defined need. As such, our baseline and best view of totex are very closely aligned.

We have a track record of delivering our outputs within allowances and at an efficient cost. Our RIIO-GD3 plan is based on known workloads and our baseline expenditure represents our "best view" of expenditure for RIIO-GD3, with very minor exceptions. We consider that any variance to allowances in GD3 will result from policy decisions outside of our control and for which there will be specific reopeners to manage these decisions. At the time of writing and to the best of our knowledge we cannot reasonably forecast when or what policy decisions will be made and so for the purposes of business planning we have not included policy related uncertainty costs in our baseline expenditure or "best view" of Totex. We have only included forecast costs where there is a clear audit trail of historic expenditure and a need for future

10 https://economy-finance.ec.europa.eu/economic-research-and-databases/economic-databases/eu-klems-capital-labour-energy-materials-and-service_en

expenditure. If certainty becomes apparent regarding the future levels or timings of the expenditure required, a reopener will provide an opportunity to recover or prevent any further costs on a justified basis, subject to any reopener threshold. We would expect to manage any variances below this threshold within our baseline allowances.

Table 6.23 outline schemes which we consider should be included within our best view of totex.

Scheme	Mechanism	RIIO-GD3 spend (2023/24 £m)	Difference from RIIO-GD2
Baseline Network Risk Output (NARM)	Price Control Deliverable	241.88	-15.68
Tier 1 Mains decommissioned Price Control Deliverable	Price Control Deliverable	450.64	135.69
Tier 1 Services Repex Price Control Deliverable	Price Control Deliverable	93.05	37.28
National Insurance Increase Additional Cost	Totex	13.89	13.89

Table 6.23 summary of uncertainty mechanisms

Please refer to **Appendix A21 Cost Assessment and Benchmarking Approach**.

6.7.1 Use it or lose it (UIOLI)

The Net Zero and Reopener Development (NZARD) "Use It Or Lose It" allowance (UIOLI) in RIIO-GD2 has been beneficial, allowing flexibility to respond to policy changes and gather evidence for net zero projects before seeking additional funding. We support Ofgem's stance to fund only those projects with clear supportive evidence.

For our RIIO-GD3 plan, we aimed for strategic low-regrets investments such as hydrogen blending, network sectorisation for future repurposing or decommissioning, and developing broader skill sets to support the Regional Energy Strategic Plan (RESP). However, due to uncertainty in costs and deliverability, we determined that further investigations are needed to build a credible case for implementation.

We will utilise the NZARD to flexibly deliver projects in RIIO-GD3. Our approach allows us to be agile in RIIO-GD3, addressing net zero challenges at the lowest cost to consumers while meeting the needs of future consumers.

In RIIO-GD2, our NZARD UIOLI was £4.5m (18/19 prices), based on a 0.25% total revenue calculation. This represented the lowest funding award for the highest performing company and limited our ability to deliver a range of projects compared to companies with higher allowances. To address this imbalance, we will increase this in RIIO-GD3 to 0.35% or £12.5m (23/24 prices). This increase will enable NGN to provide the necessary evidence to support the industry's net zero journey. We are confident that our track record of delivery and cost efficiency justifies parity of allowances in this critical area, ensuring gas networks can undertake appropriate work and evidence efforts to keep bills low for current and future consumers. Table 6.24 provides an overview of the key themes and example projects for the UIOLI allowance. For specific details regarding UIOLI expenditure, please refer to **Section 4.3** and **Appendix A14 Innovation Strategy**.

Theme	Example projects identified
Cross-vector collaboration for net zero	1. RESP coordination and engagement
Network capabilities for net zero	2. Network sectorisation 3. Understanding disconnection and decommissioning
Whole-system decarbonisation	4. Industrial and commercial hydrogen use 5. Hydrogen blending
Shrinkage reduction	6. Smart leakage identification and repair
Customer safety	7. Proactive removal of gas from MOBs

Table 6.24 Summary of UIOLI themes and example projects

6.8 Growth Duty

The Growth Duty came into statutory effect on 29 March 2017 under the Deregulation Act 2015 and requires regulators to have regard to the desirability of promoting economic growth, alongside the delivery of protections set out in relevant legislation. On 21 May 2024, the Growth Duty was extended to include Ofgem. NGN is an anchor institution and a key employer in our region. We provide high-quality, skilled and stable jobs. Our comprehensive investment in training and apprenticeships, along with open and inclusive recruitment policies as discussed in **Chapter 5**, positions us as a crucial provider of opportunities for our communities and the skills needed by the UK economy. By the end of RIIO-GD3, we will employ approximately 1,700 full-time equivalent (FTE) direct employees, 65 apprentices and over 1,000 contract labour FTEs. Additionally, our impact on local supply chains and partner businesses safeguards thousands more jobs.

Our investment programme across Capex and Repex totals £1.2bn over RIIO-GD3. Our extensive use of local DSPs in Repex has allowed us to push the efficiency frontier of the sector while maximising our impact on regional Gross Value Added (GVA) through the engagement of smaller local businesses within our communities. Focusing our supply chain on small, local engineering firms results in better customer service due to their understanding of the community. We are exploring opportunities to extend our DSP model into Capex areas to expand these benefits further for both customers and the local economy. Using a conservative economic multiplier of 1.75, based on New Economics Foundation LM3 Modelling, we estimate the regional GVA impact of our business plan to be at least £2bn. Therefore, not supporting and funding our plan would adversely affect Ofgem's Growth Duty and the regional and UK economy.

6.9 Data and digitalisation

Data and digitalisation are essential in running our network efficiently and safely, as well as in the energy sector's transition to a secure, resilient and consumer-focused net zero. This section details the work required in RIIO-GD3 to support our commitments in other parts of our business plan and continue leading in open and shared data. We will outline our commitment to appropriate data and digitalisation practices, even when challenging, and explain how our work will contribute to opening up future energy sector data. Not taking these actions risks falling behind industry standards and missing customer expectations. We are committed to improving data and digitalisation, a focus embedded throughout our organisation. We have worked hard on this during RIIO-GD2, particularly with the SAP S/4HANA programme affecting all areas of our business.

For each Specific, Measurable, Achievable, Relevant, Time-bound (SMART) objective, we have included an options appraisal which can be found in the **Appendix A12 Digitalisation Strategy & Action Plan**.

Each option has been assessed against four criteria: Resource Capacity (Workload); Resource Capability (Skills); Cost/ Value to Customers and Time to Deliver, to provide a recommendation. Context on these proposals, along with detail on data and digitalisation work done in RIIO-GD1 and RIIO-GD2, can be found in our Digitalisation Strategy. As we have embedded digitalisation as a Business As Usual activity, our Digitalisation Strategy covers both work that is found in this section, and work that is detailed in **Appendix A13 IT & Telecoms Strategy**. To highlight the latter, in the Digitalisation Strategy we categorise this work as Digitalisation As Usual (DAU). All options detailed here are costed at approx. £9.5m. If not invested as outlined here, we would still need to undertake certain activities, such as sharing data, but this could be done inefficiently and at a higher cost, risking poor data quality and assurance.

79% of informed customers and stakeholders have said our commitments to ensure long-term efficiency and value for money through data and digitalisation are acceptable.

6.9.1 Data management and quality assurance

Launched in 2018, the Data and Information Centre of Excellence (DICE) serves as NGN's central authority on data best practices. DICE leads major data and digitalisation projects with a growing management portfolio of tools, policies, procedures and relationships for RIIO-GD3.

Data classification

Classifying data by sensitivity and shareability is crucial for applying Open Energy Data. We will focus on robust and consistent classification of both structured and unstructured data as we expand data sharing and use generative AI. For more detail about our work on data classification, where we are now, and any gaps that we have identified, see the **Data Classification section in Appendix A12 Digitalisation Strategy & Action Plan**. NGN will continue to work closely with all organisations across the energy sector to promote a consistent approach to data classification.

Action	Performance measure	Dependencies	Associated RIIO-GD3 outcome	Timeframe	Option
Build an automated data classification solution using SAP Datasphere for all data held in S/4HANA. Focus is on S4 data initially as this will include a large majority of the data required for the DSI.	Data is classified to enable the seamless sharing of data through the DSI, or publication through Open Data Portal **Compliance point**: Data Best Practice Principles 9 and 11.	Continued engagement with National Energy System Operator (NESO) and Ofgem	Infrastructure fit for a low-cost transition to net zero; secure and resilient supply	Q1 2026 – Q3 2027	Option 3: Hybrid Approach
Classification of new data generated by NeRV		Continued engagement with NeRV partners and stakeholder groups		Q1 2026 – Q4 2031	Option 2: Business Only
Classification of new data generated by sensors deployed for network monitoring		Finalised requirements for Digital Platform for Leakage Analysis		Q1 2026 – Q4 2031	Option 2: Business Only

Table 6.25

Data quality

In RIIO-GD3, DICE will proactively create new practices to promote and maintain data quality in NGN. Relying solely on DICE is unsustainable, so we are collaborating with colleagues and external stakeholders such as Xoserve to enhance data quality skills. This effort will continue to expand in RIIO-GD3. The **Data Quality section of Appendix A12 Digitalisation Strategy & Action Plan**) gives more detail on the work of the DICE and the benefits we have realised through robust data quality control.

Action	Performance measure	Dependencies	Associated RIIO-GD3 outcome	Timeframe	Option
We will use SuccessFactors LMS to deliver data quality training designed by NGN, focusing on data users' needs.	Training data will be tracked, and any changes in data quality metrics will be analysed. Training participation will be measurable and reportable through the LMS, while Integrated Information Management will allow for analysis and reporting on related improvements in data quality. **Compliance point:** Data Best Practice Principle 7	n/a	Secure & resilient supply	Q1 2026 – Q4 2031	Option 2: Business Only

Table 6.26

Interoperability

We're working with the other GDNs and National Gas Transmission to develop Gas Data Interoperability.

We know that interoperability does not end with getting gas data in order, and we will continue to work across sector and vector to develop energy data interoperability. More detail on our work in this area can be found in the **Data Interoperability section of Appendix A12 Digitalisation Strategy & Action Plan**.

Action	Performance measure	Dependencies	Associated RIIO-GD3 outcome	Timeframe	Option
We will create and use a gas equivalent Common Information Model (CIM) for asset characteristics, condition information, and gas supply and demand data.	A consistent standard across gas distribution and transmission that will be published via our Open Data Portal. **Compliance point:** Data Best Practice Principle 8	Continued collaboration across both gas and electricity Engagement with NESO re: DSI requirements	Infrastructure fit for a low-cost transition to net zero; secure and resilient supply	Q1 2026 – Q4 2027	Option 3: Hybrid Approach

Table 6.27

6.9.2 Digital platforms

Open Data

The expansion of Open Energy Data will continue to be a focus for NGN throughout RIIO-GD3. Taking the learnings gained from stakeholder interaction with our existing Open Data Portal, we have designed a comprehensive, ambitious programme of improvement in RIIO-GD3 to maintain NGNs leading role in Open Energy Data, providing data users with high-quality open data products and services. Find more detail on our work in this area in the **Open Data section of Appendix A12 Digitalisation Strategy & Action Plan**.

Action	Performance measure	Dependencies	Associated RIIO-GD3 outcome	Timeframe	Option
Introduce an API library and a smart visualisation interface (with geospatial functionality). This expansion will be driven by insights from engagement linked to Data Personas.	Datasets available for consumption via a variety of methods, e.g direct download, M2M interface, in-portal smart data visualisation. Fully interactive data catalogue with searchable metadata tags for self- and assisted- search. Datasets updated at a frequency that suits data users. **Compliance point:** Data Best Practice Principles 5 and 11	Further engagement with data users	High quality of service from regulated firms	Q1 2026 – Q4 2026	Option 3: Hybrid Approach
Explore a more automated Data Request/Triage process utilising conversational AI (powered by MS Co-Pilot)					Option 3: Hybrid Approach
Build in Inclusivity software such as Recite Me		Targeted engagement with digitally excluded stakeholder groups			Option 4: Outsourced Only
Secure integration with our S/4HANA ERP and SCADA				Q1 2027 – Q4 2027	Option 2: Business Only
Configure SAP Datasphere and MS Dataverse to act as data brokers, facilitating the movement of data without manual intervention					Option 3: Hybrid Approach
Live data-streaming from our NeRV		Data classification work Open Data Portal expansion		Q1 2028 – Q4 2028	Option 3: Hybrid Approach

Table 6.28

6.9.3 Digital infrastructure

Data sharing

Enhanced data sharing across the energy sector will be an important legacy of RIIO-GD3. We will make sure that our RIIO-GD3 plans are aligned with the requirements of the Data Sharing Infrastructure and will work with Ofgem and the other network companies to make this important initiative a success. Data sharing, and the success of the DSI will be a major focus for us in RIIO-GD3. See the **Data Sharing Infrastructure section in Appendix A12 Digitalisation Strategy & Action Plan**.

Action	Performance measure	Dependencies	Associated RIIO-GD3 outcome	Timeframe	Option
Inclusion of a limited access 'Shared Data' area of our portal, for trusted partners such as RESPs and Local Area Energy Plans (LAEPs) to access data classified and licenced as "Shared".	The provision of data that can be used for carbon reduction initiatives or short-long-term net zero planning but that has a level of sensitivity that precludes open sharing. **Compliance point:** Data Best Practice Principle 9	Data Classification, Open Data Portal expansion. Continued engagement with DESNeZ and NPSA regarding data security.	Infrastructure fit for a low-cost transition to net zero; secure and resilient supply	Q1 2026 – Q4 2026	Option 3: Hybrid Approach
Configure SAP Datasphere and MS Dataverse to act as data brokers, facilitating the movement of data without manual intervention	A sustainable architecture to ensure that NGN plays a full role in the success of the Data Sharing Infrastructure. Facilitates whole-systems use cases for the DSI	Data classification Data interoperability		Q1 2027 – Q4 2027	Option 3: Hybrid Approach
Implement a Data Preparation Node in line with requirements of the Data Sharing Infrastructure and securely integrate with our S/4HANA ERP and SCADA		Continued engagement with NESO and Centre for Digital Britain			Option 2: Business Only

Table 6.29

6.9.4 Digital processes

The responsible and sustainable use of new technologies

Our Digital architecture and the principles of Integrated Information Management were designed specifically so that we could introduce new technologies, new ways of working or new practices, without a massive impact on our cost base, or an increase in technical debt.

Automation and optimisation

Automation is central to our digitalisation efforts, enabling us to scale efficiently. We will enhance back-office processes and address issues such as data quality, manual input and actionable information by developing innovative solutions through collaboration with colleagues. The **Automation and Optimisation section of Appendix A12 Digitalisation Strategy & Action Plan** details our work in this area, highlighting some of the architectural choices we have made and the efficiencies we have unlocked.

Artificial intelligence

At NGN, we are committed to the exploration and expansion of artificial intelligence & machine learning (ML) in a responsible, safe and sustainable way, maximising the benefits of this exciting technology whilst minimising the risks.

Action	Performance measure	Dependencies	Associated RIIO-GD3 outcome	Timeframe	Option
Introduce AI in network planning to identify, assess and report on suitable locations for reinforcement, diversion or other interventions	Robust assessment of the benefits of using AI in network planning, integrity and operations. For every solution, we will complete an Artificial Intelligence Impact Assessment (AIIA) and perform a sustainability assessment that will be published as part of our Digitalisation Action Plans.		Infrastructure fit for a low-cos transition to net zero; secure and resilient supply	Q1 2029 – Q4 2031	Option 3: Hybrid Approach
Using image recognition AI to assess/identify outliers and triggers, for example encroachment on, or erosion of, assets, etc.		Data classification Data quality	Secure and resilient supply	Q4 2027 – Q3 2028	Option 3: Hybrid Approach
Introducing GenAI to help users to explore and access information using voice or text		Data classification Data quality, Enterprise document management (retention, versioning etc)	High quality of service from regulated firms	Q1 2026 – Q3 2027	Option 3: Hybrid Approach
AI-assisted site surveys, risk assessments and streetworks			Secure and resilient supply	Q1 2029 – Q4 2031	Option 3: Hybrid Approach
AI-assisted routine operations and permits to work			Secure and resilient supply	Q1 2029 – Q4 2031	Option 3: Hybrid Approach
Increase the digital skills in NGN around the use of Python	Increased use of Business Only option for AI and ML delivery		High quality of service from regulated firms	Q1 2026 – Q3 2027	n/a
Build an in-house capability for the further development, deployment and maintenance of AI solutions	Implementation of AI solutions at scale in the most efficient, cost-effective, and sustainable way.		High quality of service from regulated firms	Q1 2026 – Q4 2031	n/a

Table 6.30

Customer service improvements

In **Chapter 3** of this plan, we have outlined our strategy on customer communication channels. Based on stakeholder engagement, we have made the decision not to invest in new forms of digital channels for communication but to focus on making the best use of those channels we already operate.

Action	Performance measure	Dependencies	Associated RIIO-GD3 outcome	Timeframe	Option
Work to integrate our CRM system (MS Dynamics) with our ERP system (S/4HANA) to enable the secure transfer of PSR information and improve the provision of information about our works to our customers	Secure, GDPR compliant processing of sensitive customer data with demonstrable reduction in the risk of breach	Stakeholder engagement to agree reasons for processing and minimum data requirements	High quality of service from regulated firms	Q1 2026 – Q4 2027	Option 2: Business Only
Adding new mobile forms to our work management applications to digitise the Services Beyond the Meter process.	Reduction in the time taken to assess eligibility and take action.		High quality of service from regulated firms	Q1 2026 – Q3 2026	Option 2: Business Only

Table 6.31

6.9.5 Network monitoring

Intelligent assets

As a result of our digitalisation work, we have a solid foundation for a true Internet of Things, covering our entire network. Gathering Real-Time, or Right-Time, data directly from the assets that make up our network will generate massive opportunities to make improvements in pressure management, reduce leakage and shrinkage, and planned maintenance. See the **Network Monitoring section in Appendix A12 Digitalisation Strategy & Action Plan** for more detail.

We will spend the rest of RIIO-GD2 discovering, discussing and designing this optimisation, ready for RIIO-GD3.

Action	Performance measure	Dependencies	Associated RIIO-GD3 outcome	Timeframe	Option
Using the asset data held in S/4HANA, and the telemetry data from our OT sensors, we'll build Prescriptive Maintenance models that tell us when and how to maintain our assets	Reduction of long-term monetised network asset risk	Automatic update of asset data through our maintenance app	Secure and resilient supply	Q1 2027 – Q4 2029	Option 3: Hybrid Approach
Integrate our SCADA system with our HANA database and associated analytical and modelling solutions for both pressure management and fault management	Flexible models based on real-time data, that can integrate with digital twin solution	SCADA & BA upgrades	Secure and resilient supply		Option 2: Business Only
Develop a Digital Twin solution for network integrity and validation	Real-time visualisation of physical networks. etc. Twins will be available for consumption through DSI	DSI architecture and governance, Engagement with NESO and Centre for Digital Britain, SCADA/HANA integration	Infrastructure fit for a low-cost transition to net zero; secure and resilient supply	Q1 2028 – Q4 2031	Option 3: Hybrid Approach
Implement an Internet of Things Hub to parse data received from sensors and other OT solutions.	Real-time collection, collation and calculation of asset performance data	Sensor rollout, Cyber Security requirements	Secure & resilient supply		Option 3: Hybrid Approach
Build an in-house capability for the further development, deployment and maintenance of digital twins	Implementation of AI solutions at scale in the most efficient, cost-effective, and sustainable way.		Infrastructure fit for a low-cost transition to net zero; secure and resilient supply		n/a

Table 6.32

6.9.6 Digitised field works

In previous RIIO periods, we developed a robust enterprise architecture with reliable processes, applications and well-managed data. In RIIO-GD3, we aim to enhance this by creating user interaction (UI) components that improve user interaction with our digital architecture for daily operations. A detailed overview of our Enterprise Architecture and the planned changes for RIIO-GD3 is available in our Digitalisation Strategy. The Strategy also includes examples of the UI work initiated in RIIO-GD2, with more details on these individual projects provided in our Digitalisation Action Plans.

Action	Performance measure	Dependencies	Associated RIIO-GD3 Outcome	Timeframe	Option
Enhanced UI for the capture and analysis of financial data	Data integrity, availability improvements, use of advanced analytics techniques	Colleague engagement; RRP engagement with Ofgem	High quality of service from regulated rirms	Q1 2029 – Q4 2029	Option 2: Business Only
Create an integrated NARMs-specific asset risk application sitting within S/4HANA	Increased resilience and planning capabilities through the use of real-time asset data, use of advanced analytics techniques	Digitalisation As usual asset data enhancements (see IT&T Strategy)	Secure and resilient supply	Q1 2028 – Q4 2028	Option 3: Hybrid Approach
Create an integrated Pressure Systems application sitting within S/4HANA	Replacement of aged technology, improvements in data integrity and availability, use of advanced analytics		Secure and resilient supply	Q1 2026 – Q3 2026	Option 2: Business Only
Enhanced UI for the Business Applications used in pressure and demand management	Simplified Enterprise Architecture with increased integration, improvements in data integrity and availability, improvements in modelling and decision-making, use of advanced analytics	Digitalisation As Usual SCADA upgrade (see IT&T Strategy)	Secure and resilient supply	Q1 2030 – Q4 2030	Option 2: Business Only
Create an integrated Theft of Gas application sitting within S/4HANA	Data integrity and availability improvements, use of advanced analytics techniques		Secure and resilient supply; high quality of service from regulated firms	Q3 2026 – Q1 2027	Option 2: Business Only
Expand the use of S/4HANA to include Major projects, by creating a UI application to simplify project management	Replacement of aged technology, improvements in data integrity and availability, use of advanced analytics		Infrastructure fit for a low-cost transition to net zero; secure and resilient supply	Q2 2026 – Q4 2027	Option 2: Business Only
Enhance the functionality of the asset maintenance app to include automatic update of asset data.	Improvements in data integrity and availability		Secure and resilient supply	Q1 2027 – Q4 2027	Option 2: Business Only
Digitised stores through the introduction of enhanced UI and mobile applications to facilitate the monitor and control of stock levels	Data integrity and stock availability improvements, use of advanced analytics techniques, reduction in waste	Colleague engagement	Secure and resilient supply	Q1 2028 – Q4 2028	Option 2: Business Only

Table 6.33

6.10 Concluding summary

NGN is committed to maintaining its frontier position as the most efficient gas distribution network (GDN) while delivering exceptional value for customers. Our RIIO-GD3 plan balances continued risk reduction, sustainable cost management, and innovation. We have a good understanding of our costs that enables us to drive efficiencies, improve productivity, and adapt to future challenges, to continue delivering more for less.

CHAPTER 7:

FINANCIAL INFORMATION

This Chapter sets out the financial parameters of our RIIO-GD3 Business Plan which have been estimated using Ofgem's SSMD[i1] working assumptions for Cost of Capital allowances and other regulatory finance inputs. We identify key financial risks that we will face during RIIO-GD3 and suggest the most appropriate ways of balancing those risks between customers and investors. We outline financial projections for each year of RIIO-GD3, set out our target credit ratings and key credit metrics, and analyse options to address financeability. Financial projections are provided for notional and actual financial structures under Ofgem's SSMD working assumptions.

Our proposals for the Cost of Capital allowances and other elements of the financial package are also summarised in this Chapter with more details contained in a separate document to the main Business Plan - Appendix A24 Finance Annex[ii]. This Chapter contains key financial indicators only. Further financial information under both Ofgem's and our proposals, the detailed results of the financeability assessment, including stress test scenario outcomes, and copies of Ofgem-prescribed BPFM[2] outputs can be found in Appendix A23 BPFM Commentary[iii].

7.1 Key messages

7.1.1 Investability of the gas distribution sector

The gas distribution network will remain critical to our UK energy system needs over the coming decades, providing energy for industry, and heating and cooking for millions of homes. The UK Government acknowledges that "the continued resilience of necessary infrastructure remains a key priority in order to maintain our safe, efficient and reliable gas networks"[iv]. This resilience imperative underlines a clear need for continued and significant investment in gas distribution - not only in RIIO-GD3 but in the decades to come.

At RIIO-GD3 Ofgem has decided to introduce the notion of 'investability', alongside its existing financeability assessment, to understand if the allowed return on equity is sufficient to retain and attract necessary equity investment. We welcome this as an important addition for the Gas Distribution sector. As we set out in this business plan, significant investment is required in our network - our plan proposes £1,189m (real 2023/24 prices) during the RIIO-GD3 period, compared with £957m during RIIO-GD2. This investment is essential to network resilience, and continuing to meet our safety obligations, ensuring that the services and high service levels demanded by our customers can be met sustainably and efficiently.

Ensuring investability is critical for us to be able to deliver this investment and meet the needs of our customers. Specifically, investability means meeting the reasonable requirements of our equity and debt providers. Our planned investment implies a substantial amount of debt and under certain scenarios equity financing within the RIIO-GD3 period. It is also vitally important that the sector is able to retain existing investment in the face of increasingly competitive capital markets in the UK and worldwide. Ensuring investability will also facilitate an effective energy transition over the next two to three decades.

7.1.2 The macroeconomic environment

The RIIO-GD3 price control is being set in the context of very different financial markets compared with the last price control. Ofgem and other regulators' determinations of the Cost of Equity trended down markedly during the prolonged period of low interest rates that followed the global financial crisis. However, the interest rate environment changed abruptly in 2022 following major global shocks, and we now face a "higher for longer" interest rate environment. This means that Ofgem cannot simply roll forward the RIIO-2 CAPM approach – instead, Ofgem needs to reverse course as to the reductions it made to the Cost of Equity in response to low interest rates. There are also wider challenges, including greater competition for infrastructure capital across the UK and beyond.

1 When we refer to SSMD or Ofgem's Assumptions throughout the document, we mean RIIO-3 Sector Specific Methodology Decision – Finance Annex with any subsequent updates made by Ofgem where relevant.

2 Ofgem's Business Plan Financial Model

Given the fundamental shift in macroeconomic conditions since the RIIO-GD2/T2 Final Determination, it is important that the CAPM approach is carefully calibrated to ensure the investability of the sector over the next price control. Ofgem must address the new challenges head-on by appropriately interpreting the UKRN guidance and market-based cross-checks in order to provide a fair and investable financial package.

7.1.3 Stranding risk in the gas distribution sector

Holding aside the issues with the 2024 Future Energy Scenarios (FES24) pathways identified in **Chapter 4**, the FES pathways illustrate that there are plausible scenarios in which a long-term future for the gas grid is critical for UK customers. However, there is also material uncertainty surrounding the long-term demand for gas as the UK moves towards the 2050 Net Zero target. While steps such as adjusting the depreciation policy can help to partially mitigate the risk that investors will not be able to recoup their investments under low gas demand scenarios, in the absence of Government guarantees some degree of stranding risk will remain.

The perception of growing stranding risk for GDNs has materially increased since RIIO-GD2 and this is driving material changes in investor behaviour. Debt investors are less willing to provide longer-term debt and require a premium compared with other utility sectors. Based on analysis and survey data, KPMG has found that debt pricing for gas networks is wider than equivalent debt pricing for electricity networks, with investors generally expecting a gas premium of at least 25bps. KPMG also finds that secondary market spreads for gas bonds have traded on average c.22bps wider than for electricity bonds in recent years. Debt tenors available to gas networks have also shortened compared to electricity networks, with lending appetite for gas now generally limited to 15 years or less.[v] The same fundamental risk drivers must logically also affect equity investors. It is highly likely that asset-stranding risk is the main driver of these changes. As Oxera[vi] explains, the stranding risk may not be fully captured by the backwards-looking CAPM framework, especially to the extent it is asymmetric in nature (as acknowledged by the CMA[3] and Ofgem[4]). In the absence of Government guarantees, this risk must be both mitigated and remunerated via appropriate regulatory mechanisms.

7.1.4 Depreciation policy

Ofgem is planning to make changes to the regulatory depreciation policy for gas networks in light of the natural gas demand uncertainty arising from Net Zero. This will result in an acceleration of allowed revenue and an increase in gas bills in RIIO-GD3, which will have the benefit of correspondingly lower customer bills in future - albeit Ofgem's modelling shows that material overall bill increases in later periods would still be likely under all Net Zero compliant FES scenarios.

Ofgem's approach must take into account intergenerational fairness - the correct calibration of the regulatory framework needs to strike a balance between the interests of present and future consumers. This is particularly challenging when material long-term demand uncertainty remains; as well as uncertainty about the prospects for re-purposing gas grid assets for alternative uses. The trade-off Ofgem faces is to balance the **certainty** of bill increases today in order to offset the **risk** of higher bill increases in future. To weigh this trade-off appropriately, it is necessary to place at least some weight on scenarios where the gas network continues to be used beyond 2050. As a result, it would be wrong (from an intergenerational fairness perspective) for Ofgem to target a RAV of zero in 2050, as Ofgem's default approach does. Doing this creates the clear problem that customers today would be unfairly over-charged, relative to customers tomorrow, if it turns out that the gas networks are used for longer.

Given that it would run counter to intergenerational fairness to target a zero RAV in 2050 (as three of Ofgem's proposed options do), our view is that a more measured reduction in asset lives from 56/45 years to 35 years is a more appropriate course of action than Ofgem's proposed options. This helps to partially mitigate asset-stranding risk but limits the downsides for inter-generational fairness associated with Ofgem's proposed depreciation options which target zero RAV in 2050. Our proposal also avoids the more fundamental/structural changes that are envisaged under some of Ofgem's depreciation options (such as asset lives that change each year; differential treatment for new investment; or the new acceleration (variation) factors Ofgem has suggested, which appear likely to cause year-on-year volatility between price controls which would run contrary to customer preferences - we know from our customer insights that predictability of charges is always one of the key concerns for gas shippers and suppliers. In our view, Ofgem's objectives can be met more simply, while retaining the broad regulatory structure that investors are familiar with.

3. In the RIIO-GD2/T2 Appeals, the CMA stated "we were not persuaded by the argument that any risks associated with the Net Zero agenda constitute increased systematic risk [...] We did, however, recognise that Net Zero could theoretically lead to gas networks and their investors becoming exposed to additional non-systematic risks – but concluded that if this is an issue, it would be better considered in relation to 'aiming' the cost of capital, as opposed to beta." CMA RIIO-GD2/T2 Appeals, FD Volume 2A, paragraphs 5.437-5.438.
4. At RIIO-2, Ofgem acknowledged that stranding risk is asymmetric in nature: "It did not seem to us that stranding risk is perfectly systematic, although we did see some basis for it being asymmetric". Ofgem (8 December 2020) RIIO-2 FD Finance annex, paragraph 3.76. In RIIO-3 SSMC Ofgem alluded to the need to recognise asymmetry: "we may need to adjust the allowed return on equity such that expected returns match our best estimate of the cost of equity".

We recommend that Ofgem revisits the calibration of depreciation trajectory/profile ahead of RIIO-GD4, once more information is known about how the market is evolving – including following the anticipated 2026 Government decision on hydrogen for heat. We will continue to work with Ofgem and the Government to ensure equitable outcomes for current and future generations of consumers.

As noted above, accelerating depreciation can only partially mitigate stranding risk. This is because even with accelerated depreciation, Ofgem's modelling shows significant bill increases are required in the 2040s under some FES pathways – raising questions about the feasibility of whether required revenues can be recovered in the long term in those scenarios. Further, the profile of gas demand and the rate of decline of the consumer base is fundamentally uncertain – the market may evolve faster (or slower) than currently anticipated in the FES pathways.

Under any scenario, and in both the short- and long-term, Ofgem will still need to ensure that companies remain financeable and investable in the face of this uncertainty. We think investability and financeability require a need for Ofgem to make crystal clear that it recognises its responsibility to lenders and equity investors and will keep the companies both financeable and investable, adjusting to changing circumstances and policy as necessary. Further, in our view additional Government intervention (e.g. to provide assurance that RAV recovery will be underwritten by the Government or otherwise socialised if charges become unsustainable) is required and valuable for society, given:

- Net Zero policy is the key driver of long-term demand uncertainty;
- depreciation policy and RAV recovery have clear distributional implications for customers and society more generally (notably including vulnerable customers, and I&C customers); and
- the way the Government approaches this type of risk exposure for debt and equity investors in gas grids has potentially wider implications for the cost of attracting capital to deliver other long-lived Net Zero infrastructure.

7.1.5 Financeability

Ofgem has a duty to ensure that companies can finance the activities they are required to carry out under their licence.

NGN has an obligation (Standard Special Condition A38 of the gas transporter licence) to maintain an investment-grade credit rating. Based on the assessment set out in **Section 7.3.3** below, our plan is financeable based on the Ofgem notional company assumptions, including capital structure, Cost of Debt and other key modelling inputs. NGN's plan is also financeable on an actual company basis, with credit metrics remaining at the level required to maintain our target credit rating of BBB+/Baa1.

However, it is important to highlight that this position is clearly affected by Ofgem's requirement that our modelling builds in two significant policy changes relative to RIIO-GD2 (accelerated depreciation using Ofgem's 'Option 2' with an acceleration (variation) factor of 1; and the semi-nominal Cost of Debt allowance). These policies bring forward cash flows and thereby improve the financial ratios for RIIO-GD3. However, the impact that these policies might have on longer-term financeability should also be considered.

One helpful 'sense-check' to understand how financeability is evolving on a like-for-like basis to RIIO-GD2 and assess the 'underlying' resilience of the business is to test what the RIIO-GD3 metrics would be absent these 'cash accelerating' policy decisions. On that basis, we observe a worsening of key credit metrics over the RIIO-GD3 period. It is therefore possible that Ofgem's cash-accelerating policies are storing up issues for the future. Our high-level indicative longer-term financeability assessment results in RIIO-GD4 demonstrate a concerning trend of some key financial metrics (e.g. AICR) deteriorating to levels below the Baa1 threshold. More details are provided in **Appendix A23 BPFM Commentary**.

Before providing details on credit metrics below, it is important to note that Ofgem's financing duty should not be narrowly interpreted to be only about debt financing. Companies need to retain and under certain scenarios attract equity investment in the GD sector for RIIO-GD3 – and Ofgem's new investability concept should aim to achieve this. We consider that Ofgem has a critical objective to ensure that the allowed return as a whole for the gas distribution companies in RIIO-GD3 is investable both for debt and equity investors. Ofgem should not prioritise metrics for debt investors to the detriment of equity investors.

7.2 Our target credit rating

We are currently rated by two major credit rating agencies, Moody's Investors Service Inc. (Moody's) and S&P Global Ratings (S&P). To maintain our licence requirements, we need to maintain an investment grade issuer credit rating, i.e. not lower than BBB- by S&P or Baa3 by Moody's.

Since our incorporation, we have chosen to target a credit rating two notches above that minimum (targeting BBB+ and Baa1 ratings) and so have consistently exceeded the minimum thresholds required by our licence. We have therefore delivered value to consumers through our effective and proven management of exposure to financial risk; and through our ability to raise efficient finance. We are also aligned with Ofgem's views on best practice: Ofgem acknowledged at RIIO-2 that two notches above the minimum investment grade is an appropriate level to target.[vii]

Table 7.1 below sets out the key credit metrics required to maintain our target credit ratings from Moody's and S&P. It also shows the debt covenants we need to meet to avoid defaulting on our existing debt obligations.

Table 7.1 Target credit metric and bank covenant thresholds

Parameter	Moody's (Baa1 Credit Rating)	S&P (BBB+ Credit Rating)	Debt Covenants
AICR	>1.4x		>1.3x
Net Debt/RAV	<75%		<75%
FFO/Net Debt	>11%	>9%	
RCF/Net Debt	>7%		

The target credit rating is an important factor in ensuring that the balance of risk and reward between customers and investors remains appropriate in the short and long term. There are several key factors we have considered in identifying the correct target credit rating for both the 'notional' and 'actual' company, which we set out in turn below, i.e.:

- Importance of financial resilience;
- Consistency with Ofgem's Cost of Debt allowance methodology;
- Customer impact of targeting a lower credit rating.

Based on these considerations, our assessment of the financeability of Ofgem's and our own proposals has been carried out against a target credit rating of Baa1 (Moody's) and BBB+ (S&P). In our view, this strikes an appropriate balance which is in the best interests of customers in both the short and longer term.

7.2.1 Financial resilience to shocks

Appropriate credit ratings across the sector provide headroom over licence obligations and help ensure the financial resilience (and hence also the operational resilience) of the networks and stability of the regulatory framework.

It is crucial for all stakeholders, particularly customers, that the company (and the sector) is financially resilient. The target credit rating is key to ensuring that the company can access debt markets at rates that match its funding criteria set by Ofgem, therefore being financeable and financially resilient to external shocks. Targeting a comfortable investment grade such as BBB+/Baa1 as a steady-state credit rating, in the long run, is necessary to provide adequate headroom to accommodate possible cost or macroeconomic shocks.

7.2.2 Consistency with Ofgem's Cost of Debt indexation methodology

Ofgem has proposed to continue calibrating the Cost of Debt allowance using the iBoxx Utilities index, which in theory aligns with its objective to ensure that debt financing decisions and costs remain efficient. This index currently comprises a basket of A and BBB-rated bonds. By implication, a company would have to have a rating positioned between A- and BBB+ to incur interest costs broadly aligned with the iBoxx Utilities index.

A company that is rated below the level consistent with the implied Cost of Debt allowance could not be expected to achieve the cost of financing indicated by the pricing of the index chosen by Ofgem. Our decision to target a credit rating of BBB+/Baa1 is not only aligned with NGN's long-term actual credit rating but can also be seen as a logical extension of Ofgem's policy decision of using iBoxx Utilities as the benchmark index to set the Cost of Debt allowance for the sector.

7.2.3 Customer impact of targeting a lower credit rating

We have assessed the impact of targeting a lower credit rating than BBB+/Baa1, in terms of the quantifiable increase in the cost of capital driven by the debt premium that would be required to raise debt at a lower credit rating. The cost to GB gas consumers of a sector-wide downgrade from BBB+ to BBB was estimated to be over £300m (2023/24 prices) in NPV terms as at the start of RIIO-GD3 in 2026. The negative impact in the case of a downgrade from BBB+ to BBB- would reach as high as £700m, NPV in 2026[5].

Importantly, however, and as discussed above, the detrimental impacts of a credit downgrade reach beyond the quantifiable impact on the debt premium, by reducing financial headroom to withstand shocks.

5. The methodology was originally developed for our RIIO-2 Business Plan (Appendix A26 – Assessment of a Comfortable Investment Grade Credit Rating). Calculations were updated in 2024 based on recent data and assumptions.

7.3 Financeability assessment

We have assessed the financeability of our plan under Ofgem's SSMD working assumptions on a notional company basis but also tested this against our actual company financial projections to determine whether the company remains financeable over the RIIO-GD3 period.

Economic Insight has provided independent assurance of NGN's compliance with Section 7 of the RIIO-3 Business Plan Guidance in general and the modelling guidance from Ofgem in particular[viii].

As required by Ofgem, this assessment is based on the allowed return on capital parameters set out in Ofgem's SSMD and the BPFM. These parameters are detailed below.

We separately outline our proposed alternative Cost of Capital estimates in **Section 7.5** below.

7.3.1 Ofgem's working assumptions

Ofgem has set out its working assumptions for the Cost of Capital and other parameters of the RIIO-GD3 Financial Package in the SSMD Finance Annex, Business Plan Financial Model (BPFM) and Business Plan Guidance documents. We have used Ofgem's BPFM to analyse the impact that these assumptions and our RIIO-GD3 expenditure forecasts have on our revenue and credit metrics/ratings. Economic Insight has independently reviewed the Ofgem-prescribed BPFM and the NGN Bespoke BPFM[6] and found no areas of concern based on the assurance process that it has undertaken[ix].

Table 7.2 outlines Ofgem's key RIIO-GD3 financial package working assumptions in the context of their evolution since RIIO-1.

Table 7.2 Evolution of key financial parameters of RIIO price controls.

Parameter	RIIO-GD1 average (converted to CPIH real)	RIIO-GD2 average (CPIH real)	RIIO-GD3 average (CPIH real)
Risk-free rate	2.9%	0.6%	1.27%
Equity beta	0.9	0.759	0.760 (range: 0.64-0.89)
TMR	8.2%	6.5%	6.75% (range: 6.5-7.0%)
Allowed Return on Equity	7.6%	5.1%	5.43%
Allowed Return on Debt	3.1%	2.1%	2.90%
Notional gearing	65%	60%	60%
Allowed Return on Capital	4.7%	3.3%	3.92%
RAV Indexation	Actual RPI	Actual CPIH	Actual CPIH for 58% of RAV No indexation for 42% of RAV (nominal WACC allowance for fixed-rate debt)
Depreciation policy	56/45 years SoD + catch up	56/45 years SoD	SoD with RAV returned by 2050
Capitalisation rates	Capex: 35% Repex: 75% "Fast money" pot: c.49%	Capex: 34% Repex: 100% "Fast money" pot: c.37%	Capex: 35% (natural average) Repex: 100% "Fast money" pot: c.36%
ILD	25%	30%	30%
TIM rate	63.98%	49%	50%*
Dividend yield	5%	3%	3%

*as assumed in the BPFM

Before we turn to our financial projections on the basis of these parameters, it is worth noting that the RIIO-GD2 price control represented a significant step down of 30% in the allowed return on capital, as well as a tightening of a number of other elements of the financial package (e.g. the reduction in the TIM rate, and the proportion of "fast money" in Totex). This was driven in large part by the unusually low interest rate environment that followed the global financial crisis - an environment which has abruptly changed in recent years.

Moreover, as explained in this Chapter and **Appendix A24 Finance Annex**, there is a growing perception of stranding risk in the gas distribution sector, evidenced by the debt markets, investor surveys and credit rating agencies' commentary. In addition to any changes that are made to the depreciation policy, this risk needs to be captured in both the Cost of Equity and the Cost of Debt allowances.

Our view is that neither Ofgem's RIIO-GD3 Cost of Equity point estimate of 5.43%, nor the Cost of Debt estimate of 2.90%, are compatible with the realities of financial markets and the risks faced by the GD sector. We discuss the calibration of the financial package, and provide our views on individual parameters, in more detail in **Section 7.5** and **Appendix A24 Finance Annex**.

6. More details on BPFM versions (copies) are provided in **Appendix A23 BPFM Commentary**.

7.3.2 Key financial projections based on Ofgem's working assumptions

For the financial modelling of Ofgem's Base Case using both notional (i.e. 60% gearing) and actual capital structures, we have made certain assumptions consistent with the requirements of Ofgem's Business Plan Guidance and further guidance and clarifications received from Ofgem on a bilateral and PCFM Working Group levels. This does not constitute an endorsement of Ofgem's assumptions but is a requirement of Ofgem's Business Plan Guidance. Our proposed assumptions and resulting financial projections differ from Ofgem's and are detailed in **Appendix A24 Finance Annex** and **Appendix A23 BPFM Commentary**.

The tables below summarise the key financial parameters in the RIIO-GD3 period based on Ofgem's Base Case assumptions. The complete set of financial parameters for the actual and notional companies as required by Ofgem can be found in **Appendix A23 BPFM Commentary**.

Table 7.3 Revenue and RAV (SSMD assumptions) £m 23/24 prices

Parameter	GD-2 Average	31-Mar-27	31-Mar-28	31-Mar-29	31-Mar-30	31-Mar-31	GD-3 Average	GD3 vs GD2 (average)
Fast money	114.17	140.63	128.93	130.95	128.94	131.00	132.09	16%
Pass-through expenditure	144.08	120.74	114.94	110.78	110.55	109.11	113.22	-21%
Depreciation	152.33	236.48	242.83	249.63	257.75	266.93	250.72	65%
Return	93.54	133.31	134.13	133.28	132.79	133.34	133.37	43%
Equity issuance costs	1.33	0.00	0.00	0.00	0.00	0.00	0.00	-100%
Base revenue	**505.45**	**631.15**	**620.83**	**624.65**	**630.02**	**640.38**	**629.41**	**25%**
Business plan incentive	1.43	0.00	0.00	0.00	0.00	0.00	0.00	-100%
Output delivery incentives	2.12	0.00	0.00	0.00	0.00	0.00	0.00	-100%
Other revenue allowance	7.75	12.61	13.42	7.18	6.43	5.03	8.93	15%
Calculated revenue (before tax)	**516.75**	**643.76**	**634.25**	**631.83**	**636.45**	**645.42**	**638.34**	**24%**
Tax allowance	30.36	63.56	65.22	66.97	68.70	71.01	67.09	121%
Calculated revenue	**547.11**	**707.32**	**699.48**	**698.79**	**705.15**	**716.42**	**705.43**	**29%**
Total Investment (Capex+Repex)	191.5	224.1	218.7	237.5	245.5	262.8	237.7	24%
Closing RAV	**2891.44**	**2923.82**	**2881.25**	**2845.72**	**2813.29**	**2785.49**	**2849.92**	**-1%**

Despite a 24% increase in investment, the average RAV falls by 1% under Ofgem's Accelerated Depreciation Option 2 with an acceleration (variation) factor of 1, which Ofgem has required companies to use for their financial modelling[x]. The resulting 65% increase in Depreciation charge, combined with a 43% increase in Return resulting from Ofgem's decision to set a nominal allowance for fixed-rate debt and a resulting 121% increase in the tax charge, all drive a 29% real-terms increase in Revenue.

We calculate that if Ofgem's assumptions on cashflow timings remained in line with RIIO-GD2, our business plan – despite the increase in investment shown above - would only lead to a modest c.2.8% increase in the NGN gas distribution network component of customer bills from c.£170 p.a. to c.£175 p.a. in real 2023/24 prices. This is shown in the first two bars of the chart below.

However, as the chart shows, under Ofgem's new modelling assumptions the overall gas distribution network component of domestic bills is expected to rise by 27% (albeit this will clearly be lower as a proportion of total domestic energy bills) to £215 p.a. The most material contributor to the overall domestic customer bill increase is policy decisions within Ofgem's SSMD (including accelerated depreciation and semi-nominal Cost of Debt allowance). Further increases are driven by other factors outside NGN's control, specifically a 23% increase in NTS exit costs and a sustained fall in demand/customer numbers (a conservative assumption based on the assumed rate of customer disconnections). These increases are offset by a £10 p.a. reduction in the Supplier of Last Resort (SOLR) element of bills.

Figure 7.1 Domestic customer bills (SSMD assumptions)[7]

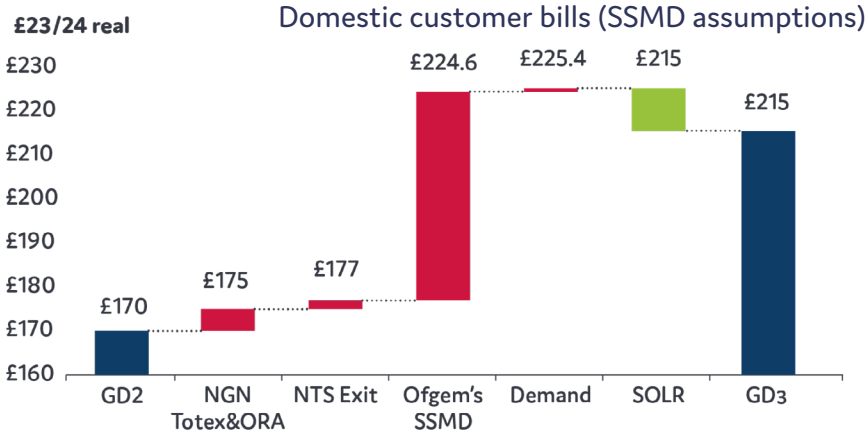


Table 7.4 Domestic customer bills annual breakdown (SSMD assumptions)[8]

Parameter	GD-2 Average	31-Mar-27	31-Mar-28	31-Mar-29	31-Mar-30	31-Mar-31	GD-3 Average	GD3 vs GD2 (average)
Assumed YoY change in demand, %	-2.6%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	95%
LDZ element	151	204	202	202	204	208	204	35%
NTS Exit element	9	11	11	12	12	11	11	24%
SOLR element	10	0	0	0	0	0	0	-100%
Total	**170**	**216**	**213**	**213**	**215**	**219**	**215**	**27%**

It is worth noting that bills would be lower in RIIO-GD3 under our proposed financial package – please refer to **Section 7.5.7** for details.

7.3.3 Financeability assessment

We outline the impact of Ofgem's SSMD Base Case proposals on key credit metrics in the tables below[9]. Overall, under Ofgem's SSMD Base Case proposals, the key credit metrics show that if a company matched the notional assumptions, particularly with respect to gearing (kept constant at 60% each year by varying the equity injection/return of capital levels where possible according to Ofgem's new guidance for RIIO-GD3) and the Cost of Debt, then it could be financeable at those levels.

Table 7.5 Credit metrics (Notional Company, Ofgem's Base Case assumptions)

Parameter	GD-2 Average	31-Mar-27	31-Mar-28	31-Mar-29	31-Mar-30	31-Mar-31	GD-3 Average	GD3 vs GD2 (average)
AICR, adjusted (Moody's)	1.94	1.83	1.79	1.79	1.78	1.76	1.79	-8%
Closing Gearing	53.49%	60.00%	60.00%	60.00%	60.00%	60.00%	60.00%	7%
FFO/Net Debt (S&P)	11.79%	16.37%	16.86%	17.45%	18.10%	18.80%	17.52%	6%
RCF/Net Debt	10.87%	12.48%	12.95%	13.67%	14.38%	15.18%	13.73%	3%

For the actual company, most financial metrics deteriorate over the RIIO-GD3 period[10].

Table 7.6 Credit metrics (Actual Company, Ofgem's Base Case assumptions)[11]

Parameter	GD-2 Average	31-Mar-27	31-Mar-28	31-Mar-29	31-Mar-30	31-Mar-31	GD-3 Average	GD3 vs GD2 (average)
AICR, adjusted (Moody's)	2.34	1.99	1.87	1.79	1.67	1.66	1.80	-23%
Closing Gearing	64.40%	67.81%	69.13%	70.52%	70.92%	71.10%	69.90%	6%
FFO/Net Debt (S&P)	10.33%	15.04%	14.53%	14.83%	14.90%	15.65%	14.99%	5%
RCF/Net Debt	5.62%	9.58%	9.15%	9.67%	11.44%	12.57%	10.48%	5%

7. 'NGN Totex & ORA' refers to NGN's requested totex allowances and Other Revenue Allowances, which include Network Innovation Allowance (NIA), Net Zero Research Village (NeRV) and Vulnerability and Carbon Monoxide Allowance (VCMA) funding.
8. As per Ofgem RIIO-3 PCFM Development Working Group 12 guidance, we used NGN's estimates of RIIO-GD3 customer bills.
9. Reported using Ofgem-prescribed BPFM from FBPOutputs, FinancialRatios or RatingSimulator tabs as appropriate. The FFO/Net Debt (S&P) metric was adjusted for inflation accretion to better reflect the S&P's methodology in the NGN Bespoke BPFM as permitted by Ofgem.
10. Actual company gearing while demonstrating a similar upward trend, stays within the NGN's internal gearing limit (our prudent approach to financing among other things presupposes that gearing should not consistently exceed c.70%) when estimated using our internal modelling, which differs from the BPFM. Differences mainly arise in the nominal closing RAV calculations (we use FYE inflation as per the current RFPR methodology), tax paid forecast and credit metric adjustments that are often made by the CRAs but assumed away in BPFM. NGN estimates of the actual company gearing are provided in the BPDTs and are reflected in Table 7 8.
11. RIIO-GD2 average values are our estimates as the BPFM does not contain the relevant values for the actual company.

We note this position is clearly affected by Ofgem's requirement that our modelling builds in two significant policy changes relative to RIIO-GD2 (accelerated depreciation using Ofgem's 'Option 2' with an acceleration (variation) factor of 1; and the semi-nominal Cost of Debt allowance). These policies bring forward cash flows and thereby improve the financial ratios for RIIO-GD3. However, the impact that these policies might have on longer-term financeability should also be considered.

One helpful 'sense-check' to understand how financeability is evolving on a like-for-like basis to RIIO-GD2 and assess the 'underlying' resilience of the business is to test what the RIIO-GD3 metrics would be absent these 'cash accelerating' policy decisions. On this basis, the metrics look materially less robust:

- For the notional company, gearing would rise above 65% in 2029/30 and trigger c.£205m of equity issuance in 2030/31. Absent this significant equity issuance, the key financial ratios would deteriorate below the Baa1/ BBB+ thresholds.
- Equivalent analysis for the actual company also demonstrates that all metrics show significant strain, with NGN potentially becoming at risk of a credit rating downgrade in this hypothetical scenario.

This means that financeability at RIIO-GD3 is currently dependent on these two policies, which may mask a potentially concerning position if the assessment were conducted on a like-for-like basis with RIIO-GD2. Moreover, any longer-term weakening of financial metrics is not reflected in the tables above which focus on RIIO-GD3.

This implies extra emphasis should be placed on a longer-term analysis by Ofgem. An underlying worsening of financial metrics might be masked by a combination of particular circumstances for RIIO-GD3, when Ofgem's cash-accelerating policies coincide with a return base (RAV) which is still at its peak. This brings forward more cash in RIIO-GD3, albeit interest costs are likely to grow disproportionally more in later periods as lower-cost embedded debt continues to fall out of the average Cost of Debt. Our high-level indicative longer-term financeability assessment results in RIIO-GD4 demonstrate a concerning trend of some key financial metrics (e.g. AICR) deterioration to levels well below the Baa1 threshold[12].

7.3.4 Regulatory regime and credit quality assessment

We note that all the relevant credit rating agencies (CRAs) rely on qualitative factors in their assessment of the credit ratings for the sector: e.g. the track record of performance of the company; and the stability, predictability and supportiveness of the regulatory regime set by Ofgem.

We consider that Ofgem's RIIO-GD3 decisions will need to be updated (relative to SSMD) to ensure these qualitative assessments continue to support strong credit ratings.

In particular, longer-term uncertainties around gas demand evolution are well-recognised and noted by all agencies. Based on KPMG's review of CRAs' perception of risk for GDNs , CRAs are increasingly aware of the risks around possible reduction in network utilisation and consider that they are becoming more acute. According to some agencies, time is running out for regulatory action to be an efficient mitigant against the risk of RAV stranding and hence they expect action in RIIO-GD3. Importantly, where the risks associated with longer-term demand uncertainty are not appropriately addressed, this could result in CRAs reassessing the associated business risk and potentially tightening credit ratios for the sector.

Ofgem's forthcoming determinations on the RIIO-GD3 price control are therefore a key factor in determining CRAs' overall assessment of the regulatory framework.

7.4 Financial risk and resilience

In support of our overall assessment of the financial resilience of the company, we have considered the principal short-and longer-term risks relevant to the company and stress-tested the Business Plan for the period through to 2031. In stress-testing the Business Plan, we have considered reasonable risks that could impact the financial viability of the business in isolation and in aggregate.

7.4.1 Risk assessment and financeability stress tests

Ofgem requires each network company to have a robust financial plan over the RIIO-GD3 period that is stress-tested and proven to be financeable under a range of future outcomes. Our Business Plan has been tested under Ofgem-prescribed and bespoke stress test scenarios for both notional and actual companies. The key high-level outcomes of this analysis are summarised below with full results presented in **Appendix A23 BPFM Commentary**.

The average of the credit metrics over RIIO-GD3 demonstrates a financeable position for all of the Ofgem-prescribed stress tests for both notional and actual companies, with at least an A3 rating overall in all cases for the Moody's credit rating assessment and at least a BBB+ rating in all cases for S&P. The summary results for the Moody's stress tests in the Ofgem-prescribed scenarios are as follows:[13]

- Notional company: 6 out of 14 stress tests at an A2 overall rating, and 8 out of 14 at A3.
- Actual company: 1 out of 14 stress tests at an A2 overall rating, and 13 out of 14 at A3.

12. More details are provided in **Appendix A23 BPFM Commentary**.
13. We primarily refer to Moody's credit rating methodology as it offers greater transparency regarding the precise thresholds between credit ratings, enabling easier comparison of stress-testing results across different scenarios.

The stress test results for the actual company imply a credit rating one notch below the notional company assessment using Moody's current thresholds in 5 out of the 14 stress tests, with all Ofgem-prescribed tests at least meeting our overall credit rating target of Baa1. However, there is a deteriorating trend over time for some metrics. For instance, the AICR falls below the Baa1 threshold (which is 1.4x) by the end of the RIIO-GD3 period in the Low RoRe stress test, reaching 1.38x for the notional company and 1.30x for the actual company in FY 2030/31.

While these tests currently suggest a financeable position, we would like to reiterate that credit metrics for the RIIO-GD3 period will be significantly improved by Ofgem's cash-accelerating policy changes (i.e. accelerated depreciation and semi-nominal Cost of Debt allowance) and that RIIO-GD3 metrics will not reflect possible financeability issues in the long-term. To consider this further, we have conducted estimates of the RIIO-GD4 position in the Ofgem Base Case assuming that the RIIO-GD3 SSMD assumptions stay constant beyond FY 2030/31. We provide this analysis in **Appendix A23 BPFM Commentary** and find that for the Ofgem Base Case, the AICR falls below the Moody's investment-grade threshold (of c.1x) by the end of RIIO-GD4 for the actual company, with a value of 0.90x in FY 2035/36, which would pose a significant risk to our overall credit rating. We note that these RIIO-GD4 estimates are not part of the NGN Business Plan and are merely intended to indicate longer-term financeability issues under the SSMD Base Case.

Given these new RIIO-GD3 fundamental policy changes, we would expect the CRAs to update their approach to financeability assessment: e.g. they may adopt updated financial metric thresholds for assessment meaning that stronger ratios might be required for a given credit rating. Therefore, while the metrics currently demonstrate a financeable position, it is important to update this assessment once the CRAs have considered their approach for RIIO-GD3 following Ofgem's new policies.

We have also provided results for additional stress tests in **Appendix A23 BPFM Commentary**. These stress tests, recommended by Economic Insight, expand beyond the Ofgem-prescribed scenarios in two important ways:

- Firstly, they modify the Ofgem-prescribed stress tests where appropriate to ensure the variation in the scenario factor fully reflects plausible historical fluctuations.
- Secondly, they allow for multiple macroeconomic variables to change concurrently such as inflation and interest rates. We think this is more realistic than the assumption in the Ofgem-prescribed stress tests which only allows one macroeconomic variable to move at a time while others stay the same.

The results for the bespoke Economic Insight-recommended stress tests suggest a financeable position, with all cases at least meeting our target of an overall credit rating of a Baa1 for Moody's and BBB+ for S&P for both the notional and actual companies. The summary results for the Moody's stress tests in these additional bespoke scenarios are the following:

- Notional company: 6 out of 11 stress tests at an A2 overall rating, 4 out of 11 at A3, and 1 out of 11 at Baa1.
- Actual company: 1 out of 11 stress tests at an A2 overall rating, 9 out of 11 at A3, and 1 out of 11 at Baa1.

7.4.2 Financial risk management

Our prudent approach to financial risk management is evident from our capital structure and modest actual gearing and is underpinned by a formal Treasury Policy and supportive owners. Current gearing is substantially below both the 75% debt financial covenant default level and our own internal 70% threshold. All external group debt is at the licensee level (or raised through its financing subsidiary) with no security package in place.

Our board-approved Treasury Policy and operating practices support financial risk management as follows:

- Liquidity risk – we aim to hold sufficient liquidity in the form of available cash and undrawn credit facilities to meet expected obligations over the following twelve months (at least). This helps to maintain a "strong" liquidity assessment from the credit rating agencies, satisfies auditor going concern considerations and underpins the Licence requirement to provide assurance on the availability of resources.
- Refinancing risk – exposure is managed by ensuring that maturing credit facilities are replaced in sufficient time to avoid captive re-pricing and that the maturity of facilities is staggered over time, such that at any one time at least 50% of debt by value has a time to maturity of more than five years.
- Interest rate risk – we are exposed to both rising interest rates (actual debt costs) and falling interest rates (adverse impact on the regulatory Cost of Debt allowance). These risks are managed through the use of interest rate derivatives. At any one time, substantially all of our debt is subject to fixed interest rates, but the terms of the fixes are staggered such that the exposure can be re-fixed on a progressive basis aligned with the underlying interest rates contributing to the regulatory allowance. This approach ensures that any interest rate shocks only affect our actual debt costs to an extent that could broadly be expected to be compensated through the allowance.
- Credit risk – exposures to bank counterparties on deposits and the fair values of interest rate swaps are subject to strictly applied limits. The actual exposures and credit standing of the counterparties are subject to constant monitoring.
- Inflation risk – with our revenue and asset base both being subject to indexation by CPIH inflation, a period of lower-than-expected inflation would put pressure on credit metrics through both lower nominal revenue to cover interest payments and higher gearing by virtue of lower nominal RAV. Around 30% of our debt has been swapped to a CPI inflation basis, providing a partial hedge against these effects (accretion-related finance charges and the accretion element of debt would both be correspondingly lower).

- Operational risk – the risk of fraud and other financial losses is managed through a robust governance framework incorporating clearly defined levels of authority, segregation of duties, policies & procedures, systems & controls, periodic audit and Board oversight.

We are committed to continuing our 'business-as-usual' approach to risk management, as described above, through RIIO-GD3. We have also assessed the financial viability of the business over the RIIO-GD3 period based on our planned expenditure. In practice, we expect that we will be able to continue to operate and meet our liabilities as they fall due over the plan period. Our assessment has been made with reference to our presented Business Plan forecasts, the identified business risks and how these are mitigated.

However, while we are satisfied that our plan is financeable, we would reiterate that Ofgem's financing duty should not be narrowly interpreted to be only about debt financing. Our view is that Ofgem's proposed financial package, on the basis of its current working assumptions, undermines the equity investability of the sector, particularly in light of recent movements in financial markets and growing stranding risk in the sector. Companies need to retain and attract equity investment in the gas distribution sector for RIIO-GD3, and this will be a challenge if Ofgem's financial package does not adequately take into account market conditions faced by equity investors.

We have identified actions, listed in Table 7.7 below, that would mitigate the effects of adverse outcomes under downside scenarios. We note that our standard operating practices for managing financial risk, as described above, reduce the likelihood that the mitigating actions below will be needed.

To be clear, these mitigating actions should not be treated as levers to resolve financeability issues arising due to insufficient allowed returns under Ofgem's Base Case proposals, as described in **Section 7.3.3** above. The proper solution to those issues is to amend the Base Case parameters to properly reflect market evidence and sector-specific risk. The mitigants set out in this Section would be used in downside shock scenarios, such as those tested in **Appendix A23 BPFM Commentary**. It is also important to recognise that these mitigating actions may have detrimental impacts of their own (e.g. cost reductions or investment profiling may impact the level of service that customers receive and reduction of dividend distribution could negatively impact the attractiveness of the company to retaining existing and raising future equity investment), and therefore should only be treated as short term solutions to temporary shocks.

We have assessed how mitigating actions could be used under each of the scenarios tested, and the resulting impact on liquidity, solvency and credit metrics. As noted in **Section 7.4.1** above the Ofgem-prescribed stress tests do not accurately reflect the risks to financeability as the cash-accelerating policies improve the position relative to the existing credit metric thresholds which might be updated by credit rating agencies. However, we summarise the results of the risk assessment and mitigating actions which are relevant for each of the tested scenarios.
We note that the order in which mitigating actions are taken will not necessarily reflect the order in which they appear in the table, but will differ based on the precise circumstances.

Table 7.7 Financial risk assessment and potential mitigating impact

Scenario/Sensitivity	Impact		Mitigation					
	Credit Metrics	Loan/Debt Covenants	Cost Reduction	Short-Term Exemptions on Covenants	Reduction in Distributions	Profiling of Investment within a period	Credit Metrics	Loan/Debt Covenants
High Interest rates (+2%)								
Low Interest rates (-2%)			✓		✓			
High inflation (+2%)								
Low inflation (-2%)			✓		✓			
High RPI-CPIH divergence, due to changes in CPIH (+0.5%)			✓		✓			
Low RPI-CPIH divergence, due to changes in CPIH (-0.5%)			✓		✓			
High RPI-CPIH divergence, due to changes in RPI (+0.5%)			✓		✓			
Low RPI-CPIH divergence, due to changes in RPI (-0.5%)			✓		✓			
Totex underperformance (-10%)			✓	✓	✓	✓		
Totex outperformance (+10%)								
RoRe underperformance (-2%)			✓	✓	✓			
RoRe outperformance (+2%)								
High proportion of Index-Linked Debt (+10%)			✓		✓			
Low proportion of Index-Linked Debt (-10%)			✓		✓			

In support of our overall assessment of the financial resilience of the company, we have considered the key short and medium-term risks relevant to the company and modelled scenarios to stress test the Business Plan for the period through to 2031. We have modelled the impact of the scenarios proposed in Ofgem's Business Plan Guidance, on our key credit ratings and covenants. We have also assessed the impact of the scenarios and identified realistic mitigating actions for each scenario that we would be able to take.

We have a strong track record of taking this prudent and efficient approach in managing the short and long-term financial viability of the business. We have concluded that under each of the scenarios, the mitigating actions would allow the company to remain viable for the period under review. However, we would highlight that these actions need to be considered in the context of the role that equity investors in particular would be required to play in addressing the base financeability constraints.

7.5 Our proposed financial package

Ofgem's Base Case scenario, when combined with our business plan expenditure forecasts, results in a weakening of key financial metrics which are used to measure our financeability, which is particularly acute when the effect of Ofgem's cash-accelerating policies is stripped away. In addition, financeability testing does not capture the impact of Ofgem's proposals on equity investors, and in particular, whether Ofgem's proposals deliver a financial package that will retain and attract the necessary investment required to maintain reliable and resilient gas networks.

Importantly, Ofgem's working assumptions do not properly reflect the fundamental changes in financial markets that have taken place since the RIIO-GD2 price review or the material asymmetric risks faced by the gas distribution sector.

More details on our proposals can be found in **Appendix A24 Finance Annex**.

7.5.1 Regulatory depreciation

Currently, gas distribution company assets – through the RAV – are depreciated in the following ways:

- Pre-2002 – over 56 years using the sum of digits;
- Post-2002 – over 45 years using the sum of digits.

Gas distribution assets have very long physical asset lives reaching 45–60 years. Regulatory depreciation policy where possible aims to reflect this long-term nature of asset utilisation. That said, some FES scenarios suggest that gas network utilisation may fall rapidly in the next 25 years, as we approach the 2050 Net Zero target. This raises the question of whether depreciation should be accelerated, to provide some mitigation against long-term stranding risk and to avoid high tariff spikes for remaining customers in the 2040s (who are more likely to be vulnerable customers). Shortening asset lives or changing the depreciation profile will return RAV to network companies sooner, which would increase bills today with a corresponding bill reduction in the future (relative to the status quo), albeit Ofgem's modelling shows that material bill increases in future would still be likely under some FES scenarios.

Ofgem is currently considering four depreciation options, three of which fully depreciate the RAV by 2050, and one of which retains the current depreciation profile for existing assets but fully depreciates new assets.

Ofgem's approach must take into account intergenerational fairness - the correct calibration of the regulatory framework needs to strike a balance between the interests of present and future consumers. This is particularly challenging when material long-term demand uncertainty remains; as well as uncertainty about the prospects for re-purposing gas grid assets for alternative uses. The trade-off Ofgem faces is to balance the certainty of bill increases today in order to offset the risk of higher bill increases in future. To weigh this trade-off appropriately, it is necessary to place at least some weight on scenarios where the gas network continues to be used beyond 2050. As a result, it would be wrong (from an intergenerational fairness perspective) for Ofgem to target a RAV of zero in 2050, as Ofgem's default approach does. Doing this creates the clear problem that customers today would be unfairly over-charged, relative to customers tomorrow, if it turns out that the gas networks are used for longer.

Given that it would run counter to intergenerational fairness to target a zero RAV in 2050, our view is that a more measured reduction in asset lives from 56/45 years to 35 years is a more appropriate course of action than Ofgem's proposed options. This helps to partially mitigate asset-stranding risk but limits the downsides for inter-generational fairness associated with Ofgem's proposed depreciation options which target zero RAV in 2050. Our proposal also avoids the more fundamental/structural changes that are envisaged under some of Ofgem's depreciation options (such as asset lives that change each year; differential treatment for new investment; or the new acceleration (variation) factors Ofgem has suggested, which appear likely to cause year-on-year volatility between price controls which would run contrary to customer preferences (we know from our customer insights that predictability of charges is always one of the key concerns for gas shippers/suppliers). In our view, Ofgem's objectives can be met more simply, while retaining the broad regulatory structure that investors are familiar with.

We recommend that Ofgem revisits the calibration of depreciation trajectory/profile ahead of RIIO-GD4, once more information is known about how the market

is evolving – including following the anticipated 2026 Government decision on hydrogen for heat. NGN will continue to work with Ofgem and the Government to ensure equitable outcomes for current and future generations of consumers.

Importantly, depreciation policy alone cannot entirely remove stranding risk, as there will always remain inherent uncertainty over the pace of technological change, policy change, and customer behaviour. Therefore, unless there is a credible commitment from the Government to underwrite the RAV of the gas networks, some stranding risk will remain. For the sector to remain investable, it is therefore critical that any change in depreciation policy is accompanied by an appropriate return on capital which reflects the risk borne by investors in the gas distribution sector. This is discussed and quantified further in **Appendix A24 Finance Annex**.

Finally, we stress that the objective of shortening asset lives should not be to support short-term financeability – rather, the objective relates primarily to striking an appropriate balance between current and future customers. Short-term financeability impacts should therefore not be used to justify a preference for one particular depreciation policy over another. Further, while accelerating depreciation does increase cashflows in the short term, it would have an offsetting effect on cashflows in the longer term (under scenarios where the gas networks continue to be utilised). Some credit rating agencies discount these short-term cash re-profiling effects, taking a longer-term view of financeability. Our view is that Ofgem should mirror these credit rating agencies' approach as a matter of good regulatory policy that creates a relatively stable environment for investors and customers alike.

7.5.2 Cost of Equity

There is strong empirical evidence that Ofgem's assessment of a base Cost of Equity of 5.43% is too low, particularly for gas networks that face both systematic risks and unique asymmetric risks associated with the uncertainty of the longer-term role of gas in the energy mix in the UK. The evidence points instead to a Cost of Equity of 6.39%, underpinned by the parameters below.

- The risk-free rate (RfR) should include a convenience premium, to reflect that the Government can borrow at rates substantially lower than even the highest-rated corporate borrowers. Following the CMA precedent from the PR19 review would automatically incorporate the convenience premium and give an RfR of c.1.8%. Alternatively, Ofgem could retain its approach but incorporate a separate uplift, which Oxera estimates to be c.27bps[xii].
- Movements in interest rates since 2022 imply that the TMR must now be higher than Ofgem's SSMD mid-point of 6.75%. This is supported by a substantial body of empirical evidence, including all cross-checks. A TMR of 7.0%, at the upper end of Ofgem's range, is aligned with the long-run evidence and should be the minimum estimate for RIIO-GD3.
- A beta of 0.89, at the upper end of Ofgem's range, would start capturing systematic elements of gas-specific risk, as evidenced by international comparators from the gas sector. This figure is supported by Oxera[xiii], as well as through estimates using only the gas sector comparators from Ofgem's beta comparator set.

Given that this is not materially different from the top end of Ofgem's SSMD range of 6.36%, we use the latter figure as our Cost of Equity proposal. A Cost of Equity of c.6.4% is also consistent with a broad range of cross-checks, including Ofgem's own, as we explain further in **Appendix A24 Finance Annex**. We have also evaluated the required Cost of Equity uplift (relative to Ofgem's 'mid-point') which would be necessary to compensate investors for the probability-adjusted risk of asset stranding. This points to a Cost of Equity of c.6.3-6.4%, further corroborating the requirement for a beta at the upper end of Ofgem's range.

Our view is that a point estimate of 6.36%, in line with the top end of Ofgem's SSMD range (updated for the latest RfR estimate in Ofgem's BPFM), is an appropriate estimate of the allowed Cost of Equity.

It is clearly in customers' best interests for the allowed return on equity, and the overall allowed return, to be set at a level that is in line with companies' efficient costs of raising finance. This is because an allowed return on equity that is too low makes the sector less attractive to both existing and new investors, which may impact investment and ultimately the service that customers receive. This is why we are proposing an allowed Cost of Equity that is better aligned with the evidence. Our views on the Cost of Equity are further detailed in **Appendix A24 Finance Annex**.

7.5.3 Cost of Debt

Given the remaining uncertainty around the precise calibration of the Cost of Debt allowance, we are not currently able to provide a view on this (Ofgem's SSMD working assumptions are simply a placeholder and could change materially by the time of the RIIO-GD3 Draft Determinations). We will review Ofgem's Cost of Debt proposals at Draft Determinations to assess whether they meet the stated objective of broadly matching debt allowances with sector-expected efficient debt costs for RIIO-GD3.

We note, however, that it is important that Ofgem considers relevant market evidence when determining the Cost of Debt allowance calibration.

For example, based on analysis and survey data, KPMG has found that debt pricing for gas networks is wider than equivalent debt pricing for electricity networks, with investors generally expecting a gas premium of at least 25bps for new issuance of the same tenor and credit rating. KPMG finds that secondary market spreads for gas bonds have traded on average c.22bps wider than for electricity bonds in recent years. Debt tenors available to

gas networks have also shortened compared to electricity networks, with lending appetite for gas now generally limited to 15 years or less[xiv].

Furthermore, we consider Ofgem should include the following additional costs, which are not reflected in the iBoxx index:

- The **gas distribution sector** faces higher borrowing costs than a vanilla energy company, with at least a **10bps** gas premium uplift required to the total Cost of Debt allowance as evidenced by NERA[xv].
- In relation to **additional borrowing costs**, Ofgem has assumed an allowance of 25bps in line with RIIO-GD2. However, these costs for the sector have increased. Based on NERA's estimates, we consider additional borrowing costs are now c.36bps for a vanilla energy network[xvi]. As set out fully in **Appendix A24 Finance Annex**, the increase relative to Ofgem's RIIO-GD2 assumption is driven mainly by higher than Ofgem's estimate of carry costs, liquidity costs and the new issue premium which was completely assumed away by Ofgem. We also note that 36bps is a conservative assumption since it excludes NERA's view of the CPIH premium, which could entail a further 21bps. At this time, we consider Ofgem should review the evidence to assess whether its estimate has to be increased by at least **11 bps** for a vanilla energy network.
- The **premium for infrequent issuers** of debt should increase to **c.14bps** (compared to Ofgem's allowance at RIIO-GD2 of 6bps) due to shorter debt tenors available to GDNs according to NERA[xvii].

Overall, therefore, the current evidence suggests that Ofgem's 25bps additional costs of borrowing assumption needs to be increased to at least 60bps for an infrequent issuer GDN – comprising of c.36bps additional borrowing costs; at least 10bps for gas risk premium; and c.14bps for infrequent issuer premium. For the purpose of assessing the impact of NGN's financial proposals, we have adopted a 35 bps uplift to Ofgem's allowed Cost of Debt estimate (which already includes 25 bps) as a placeholder until we can reevaluate the evidence at the Draft Determinations stage.

We believe that our proposed financial package for RIIO-GD3 better reflects the underlying efficient financing costs as well as the short and longer-term risks that exist in the sector. The proposal represents a more appropriate balance between the allocation of risk and reward between investors and customers. It also avoids the potentially significant longer-term increases in cost to customers from the perceived increase in risk for investors implied by Ofgem's base working assumptions.

7.5.4 Dividend and equity issuance policy

At SSMD, Ofgem has stated that it will continue to work with stakeholders to identify an appropriate dividend yield assumption for the notional company, but that the working assumption at SSMD is maintained at the 3% used at RIIO-GD2. This working assumption is significantly lower than even the base allowed Cost of Equity of 5.43% and is therefore clearly insufficient.

We maintain our view that equity investors have a role to play in managing the overall financeability of the business. Discretionary reductions in the dividend payout ratio relative to the base Cost of Equity could be appropriate in limited cases when necessitated by financial resilience considerations. Flexibility to shape dividend payments can support continued investment in the business under a range of plausible downside scenarios. By way of example, in 2009/10 when inflation was unexpectedly low, we reduced our distributions by c.60% to maintain a stable level of gearing and sufficient headroom above minimum credit metric thresholds commensurate with a comfortable investment grade credit rating. Moreover, even in 2022/23 when inflation was high and our credit rating was confirmed at BBB+/Baa1, we utilised the additional RAV capacity to further bolster our financial resilience – we paid out even lower dividends than in the previous regulatory year.

However, it is inappropriate to assume a dividend yield as low as 3% as the baseline expectation for the notional GDN. As set out by Oxera in its report on GDN dividends, benchmarking across European gas networks finds that the average dividend yield has increased from 5.4% in 2018 to 7.4% in 2023[xviii].

Furthermore, Oxera finds that the average dividend yields of European gas networks exceed that of European electricity networks, the latter remaining relatively constant over the same period, between 4.1% and 4.8%. Oxera states that this observation is consistent with the growth rates in RAV being different across the two sectors. If RAV growth in a sector is expected to flatten, or even be negative, over multiple price controls, then the dividend yield will tend towards the Cost of Equity as the (expected) growth rate in dividends tends to zero. This ensures appropriate remuneration and return of capital to shareholders over time, and over an asset's lifecycle.

Ofgem's assumption at RIIO-GD2 that a significant portion of the allowed Cost of Equity can be deferred is therefore incompatible with the context of the GD sector. Dividend deferral can make sense in industries with expected long-term growth, whereby lower dividend yields in the short term can be acceptable to equity shareholders given the expected growth in future equity returns, either through future dividend growth or via accrued asset value (realised upon sale). Given the material uncertainty surrounding future demand for gas as the UK moves towards the 2050 Net Zero target, sustained RAV growth is no longer expected in the GD sector. A continued assumption of dividend deferral therefore would be incompatible with capital structure and investor expectations for the sector going forward. Indeed, if the sector expects a decrease in RAV in the long run, then there should be a return of capital back to the investors, over and above the full payment of allowed equity returns in the form of dividends.

A 3% dividend yield assumption effectively equates to a notional equity injection of £214.5m[14] over the RIIO-GD3 period and results in the gearing level falling to approximately 53%, which is clearly not consistent with the notional company financial structure.

The principles that underpin our dividend policy for RIIO-GD3 will remain unchanged from RIIO-GD2. We have a long-standing dividend policy that recognises that shareholder returns should be transparent, that promotes us to exceed our commitments to customers, that supports sustainable and prudent financing and is fair and balanced in both the short and longer term. Dividends paid will reflect our performance against regulatory standards, ensuring that investors will continue to challenge us to deliver the best long-term results for all stakeholders.

Additionally, we will maintain a prudent and efficient financial structure within the business. In this context, our dividend policy will continue to support appropriate levels of gearing in the business that is in line with our target credit rating of Baa1/BBB+. We will continue to maintain a level of gearing within the band of 60-70% over the RIIO-GD3 period.

Based on these principles, our assessment of the actual company includes a base dividend yield of 6.36% p.a. in line with NGN's proposed Cost of Equity estimate (and lower than the dividend benchmarking independently conducted by Oxera [xix]).

Ofgem has decided to maintain a 60% notional gearing level in every year of RIIO-GD3. We have modelled gearing levels for the notional company and found that maintaining 60% gearing requires total distributions (base dividend yield plus return of capital) to be at an average level of c.6.5% across the price control. Using Ofgem's dividend yield of 3% for the notional company this implies a return of equity capital of 3.5% on average for RIIO-GD3. For the actual company, we have calculated the total distributions to be c.8.7% on average over RIIO-GD3 in order not to exceed our 70% internal upper bound of gearing throughout the period. The latter value comprises a Base dividend yield of 6.36% (equal to NGN's proposed Cost of Equity) and a further 2.3% return **of** capital on average for the period of RIIO-GD3.

Table 7.8 Distributions and gearing

Parameter	GD-2 average	31-Mar-27	31-Mar-28	31-Mar-29	31-Mar-30	31-Mar-31	GD-3 average	GD3 vs GD2 (average)
Base dividend yield (notional company)	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	0%
Return of capital (notional company)	0.0%	3.6%	3.7%	3.6%	3.5%	3.3%	3.5%	-
Total distributions (notional company)	3.0%	6.6%	6.7%	6.6%	6.5%	6.3%	6.5%	118%
Closing notional gearing	53.5%	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%	12%
Base dividend yield (actual company)	8.3%	6.4%	6.4%	6.4%	6.4%	6.4%	6.4%	-24%
Return of capital (actual company)	0.0%	3.6%	3.7%	3.6%	0.6%	0.0%	2.3%	-
Total distributions (actual company)	8.3%	10.0%	10.1%	9.9%	7.0%	6.4%	8.7%	4%
Closing actual gearing	64.4%	67.3%	68.4%	69.6%	69.9%	70.0%	69.0%	7%

We have considered whether it is appropriate and in the long-term interests of customers to address any financeability issues through restrictions on distributions to equity holders. Under certain downside shock scenarios, it may be necessary in the short term (e.g. in a single year) to amend or reprofile distributions to support financial resilience. However, deferral of justified dividends should not be used as a lever to mitigate financeability issues caused by insufficient allowed returns under Ofgem's Base Case proposals. The solution to these issues is to amend the Base Case to properly reflect market evidence and sector-specific risk. We also note that our fiduciary duty to shareholders would preclude us from withholding dividends systematically or indefinitely.

There is clear theoretical and empirical evidence[xx] that deferral of justified dividends could result in increased costs for customers in the long run. In theory, a deferral in current dividends relies on the assumption that the business would be able to yield higher cash flows in the long term, potentially on sale or through a higher WACC. However, there is no expectation that this will be the case for GDNs, and indeed there is a potential concern in gas distribution that investors are exposed to a heightened risk of asset stranding in the future.

14. Calculated as the difference between the total distribution value to maintain gearing at 60% in RIIO-GD3 and 3% Ofgem-assumed dividend yield multiplied by the equity portion of RAV.

7.5.5 Gearing

As discussed above, our financial policies focus on sustainable and prudent gearing that is fair and balanced in both the short and long term.

Economically speaking, the efficient capital structure is one that balances the costs and benefits of gearing. Where a company is under-geared, it may be failing to fully utilise:

- The tax benefits of interest deductibility (reducing total financing costs);
- The benefits of oversight and monitoring by debt investors; and
- The discipline benefits that debt can place on management – providing an incentive to manage cash flows efficiently.

Where a company is over-geared:

- There are greater risks to financial resilience; and
- The cost of debt may rise to levels that are inefficient.

An efficient capital structure will ultimately provide the best value to customers since it should strike the best balance between finance costs, tax costs, incentives and resilience.

Guidance from CRAs provides insight into efficient financing structures, reflecting their view of best practice as gleaned from their comprehensive monitoring of debt markets. For example, Moody's 2022 global methodology for Regulated Electric and Gas Networks[xxi] has a gearing range of 60%-75% for the Baa rating band. This implies that 60% gearing for regulated networks is at the bottom end of the gearing range that is compatible with financial resilience and achieving investment-grade costs of debt.

As discussed above, we have a prudent approach to financial risk management which includes maintaining a gearing level within a band of 60-70%. As shown in Section 7.3.3, our average gearing level at RIIO-GD2 has been c.64% on average, well below both the 75% debt financial covenant default level and our own internal upper threshold of 70%. Historic actual gearing levels of companies in the Gas Distribution sector have typically exceeded 60% and are forecast to be at 63% at the end of RIIO-GD2. Ofgem has proposed to maintain notional gearing levels at 60% during RIIO-GD3 which effectively assumes that the average GDN would have to immediately inject equity to match the notional assumptions.

For NGN, reducing gearing to the notional level of 60% would require our equity holders to inject c.£209m of cash in 2026/27 to provide the increased cash buffer to manage the increased risk. However, Ofgem's proposed allowed return on equity for RIIO-GD3 is not supported by the evidence and is therefore not compatible with the increased role equity is expected to play in such a scenario. Equity investors therefore cannot put more capital into the business unless the returns to equity are made sufficient and commensurate with the risks faced and the wider financial market environment. If Ofgem adopts a lower notional gearing assumption than companies are able to achieve without providing a sufficiently attractive package for the equity investors, it would further increase the perception of risk within the regulatory framework and place upward pressure on the long-term cost of equity for the sector.

Nonetheless, as required by the Business Plan Guidance, we have considered a reduction of actual gearing to assess the effect of such an incremental equity buffer. A reduction in gearing would improve the actual company's financial standing compared with the Base Case. However, the scenario is not meaningful given that securing the significant extra equity injection at the insufficient allowed levels of return proposed by Ofgem is highly unlikely. Further, it's unreasonable to assume that notional gearing would deviate too much from the long-term regulatory assumption for the notional gearing, which has historically been in the range of 60-65%. In any case, it would be implausible to assume that GDNs would be able to accommodate a significant and sustainable change in their actual capital structure within one price control.

The level of NGN's actual gearing in RIIO-GD3 will depend on many variables, some of which are outside of our control. These variables include the allowed Cost of Equity and Cost of Debt, Totex, ODI and ORA allowances, the exact profile of Depreciation allowance, the levels of inflation and interest rates, company performance, actual distributions and other elements of the price control. The tables above demonstrate modelled levels of NGN's gearing based on the current assumptions, but we note that they will change at different stages of the price control.

7.5.6 Capitalisation rates

Capitalisation rates determine the portion of expenditure that is added to the RAV and paid to companies over the assumed asset life through depreciation ('Slow Money'), versus the portion which is not capitalised and therefore paid to companies in the year in which it is incurred ('Fast Money').

We agree with Ofgem's proposal for Capitalisation Rate 1 (which applies to ex-ante allowed Totex) to continue to broadly reflect the actual split of capital expenditure (Capex) and operating expenditure (Opex) expected over the price control – i.e. using the average 'natural' capitalisation rate over the price control. This approach ensures that charges over time reflect actual expenditure and are therefore fair to both existing and future consumers.

We also understand that Ofgem is proposing to retain a separate Capitalisation Rate 2, which will apply to reopeners and uncertainty mechanisms, and will reflect licensees' anticipated natural capitalisation rates during RIIO-GD3. We do not yet know what this figure will be, so we assume it will remain at 70% in line with RIIO-GD2.

Capitalisation rates are summarised in the table below.

Table 7.9 Capitalisation rates

Parameter	GD-2 average	31-Mar-27	31-Mar-28	31-Mar-29	31-Mar-30	31-Mar-31	GD-3 average	GD3 vs GD2 (average)
Capitalisation rate 1, %	34.00%	33.66%	33.66%	33.66%	33.66%	33.66%	33.66%	-1.00%
Capitalisation rate 2, %	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	0.00%
Fast Money, %	37.48%	39.20%	36.57%	35.51%	34.14%	33.31%	35.68%	-4.80%
Slow Money, %	62.52%	60.80%	63.43%	64.49%	65.86%	66.69%	64.32%	2.88%

Similar to our view on depreciation, we would stress that artificially changing capitalisation rates is not an effective or appropriate tool to support financeability. First, if an artificial adjustment were made to 'natural' capitalisation rates in order to bring revenue forward, this may not improve credit rating agencies' financeability assessments as some of them make adjustments for excess fast money received in revenue. In addition, this would create a disconnect between those customers who benefit from assets and the customers who fund those assets, undermining inter-generational fairness.

However, we note that Ofgem's approach results in a further (as was the case in RIIO-GD2) reduction in the proportion of the "Fast Money" pot due to an increasing share of Repex. This exacerbates potential financeability challenges.

7.5.7 Customer bills

We have historically been the most efficient GDN in the UK. This has allowed us to keep revenue and our part of customer bills broadly flat for c.10 years whilst continuing to invest significant amounts in the network and continuously improving the level and quality of service we provide.

In this business plan, our ambition is to stretch our service levels, and as a minimum continue to deliver a high-quality and reliable service to all network users and consumers. We are pushing ourselves to improve efficiency and add value wherever possible whilst delivering these stretching targets in an increasingly uncertain environment. Our stakeholders have once again told us that we need to prioritise safety, reliability, customer service and environmental sustainability. We have built these priorities into our plan and our delivery model to ensure that we will remain resilient to the challenges and pressures we expect to face.

Figure 7.2 Gas distribution network component of domestic customer bills (NGN assumptions)

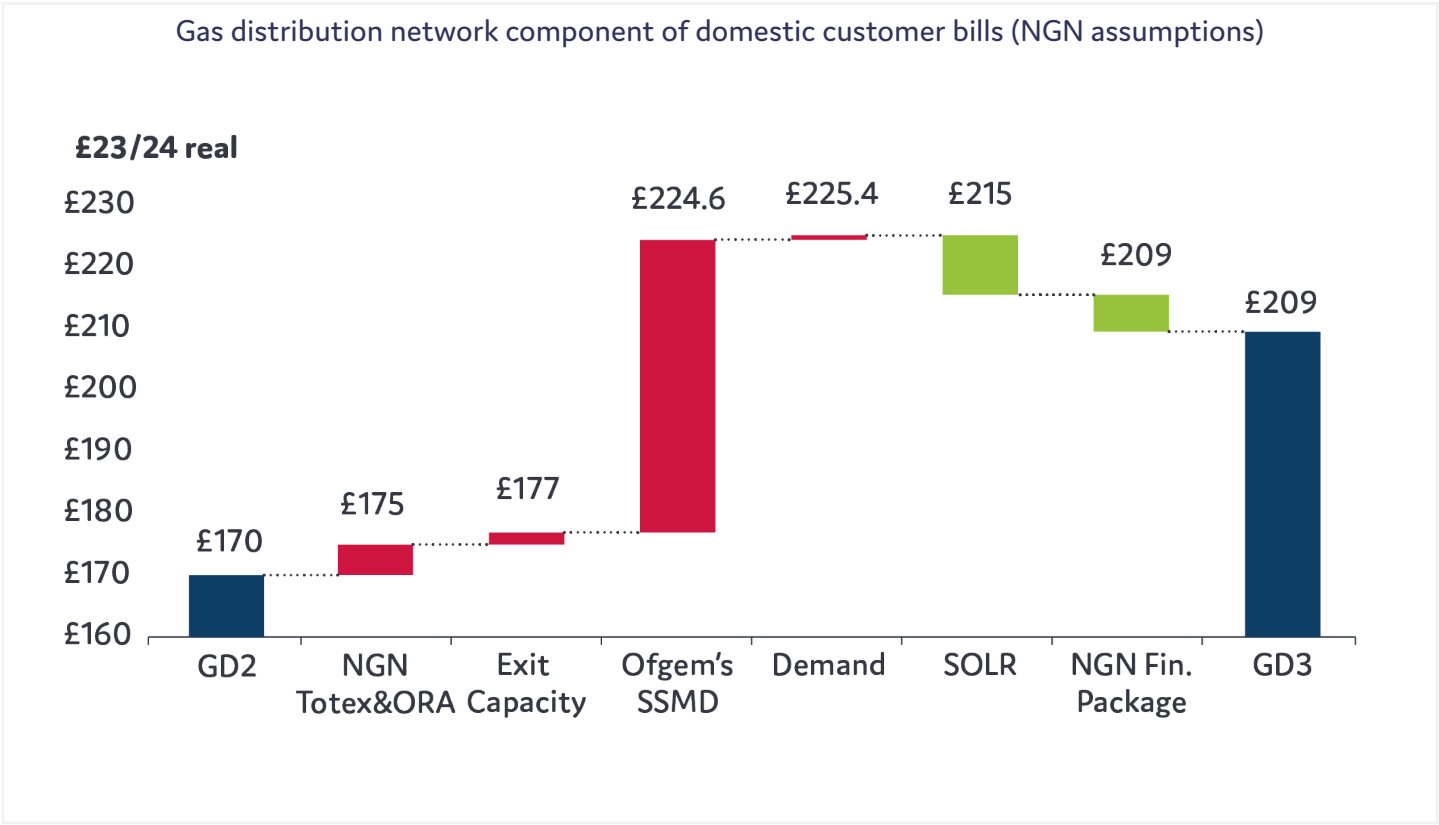


Table 7.10 Gas distribution network component of domestic customer bills (NGN assumptions)

Parameter	GD-2 average	31-Mar-27	31-Mar-28	31-Mar-29	31-Mar-30	31-Mar-31	GD-3 average	GD3 vs GD2 (average)
Assumed YoY change in demand, %	-2.6%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	95%
LDZ element	151	203	198	196	196	197	198	31%
NTS Exit element	9	11	11	12	12	11	11	24%
SOLR element	10	0	0	0	0	0	0	-100%
Total	**170**	**214**	**210**	**208**	**207**	**209**	**209**	**23%**

Under our proposed financial package assumptions, the gas distribution network component of customer bills (the first two bars in the chart above) would increase modestly by 2.8% from c.£170 to c.£175 p.a (2023/24 prices) on average over RIIO-GD3 if everything else (including depreciation policy and the approach to setting the Cost of Debt allowance) were to remain unchanged from RIIO-GD2. Under Ofgem's proposals to fully depreciate the RAV by 2050, combined with the other factors which are outside of our control, the bill would increase by 27% to £215 p.a. However, a more cautious approach to accelerated depreciation, where asset lives are shortened to 35 years in line with our recommendation, will result in a more moderate domestic customer bill increase of 23% to £209 p.a. on average over RIIO-GD3.

Feedback from our engagement programme showed that informed customers understood both the cost-of-service implications and the potential impact of Ofgem's policy proposals on bills. Our business plan acceptability testing with informed customers and stakeholders revealed an average acceptance rate of 79% for our RIIO-GD3 business plan, which among other things reflects the ambition of our commitments. After being informed about the services provided, performance levels, and the portion of the gas bill allocated to NGN, 80% of informed customers considered our proposed bill profile to offer good value for money. More details about our Engagement programme are provided in **Chapter 2** of our RIIO-GD3 Business Plan and **Appendix A3 Stakeholder Engagement and Decision log**.

Endnotes:

i. Ofgem (2024), RIIO-3 Sector Specific Methodology Decision – Finance Annex, 18 July.

ii. NGN (December 2024), Appendix A24 Finance Annex, NGN's RIIO-GD3 Business Plan, Proposed Financial Package for RIIO-GD3.

iii. NGN (December 2024), Appendix A23 Business Plan Financial Model Commentary, NGN's RIIO-GD3 Business Plan.

iv. DESNZ (May 2024), Strategy and Policy Statement for Energy Policy in Great Britain, p. 19, **https://assets.publishing.service.gov.uk/media/6631ff75ed8a41eeaf58c0eb/strategy-and-policy-statement-for-energy-policy-in-great-britain.pdf**.

v. KPMG (March 2024), Debt market analysis: gas distribution networks and UK regulated comparators (confidential), and KPMG (April 2024) Perception of risk for Gas Distribution Networks (GDNs) under RIIO-3 and beyond: debt investor survey (confidential).

vi. Oxera (November 2024), Cost of equity for RIIO-GD3. Prepared for GB gas distribution networks.

vii. Ofgem (December 2020), RIIO-2 Final Determinations, Finance Annex, paragraph 5.36.

viii. Economic Insight (December 2024), NGN Financeability Assurance Statement. NGN RIIO-GD3 financeability.

ix. Economic Insight (November 2024), BPFM Assurance Statement. NGN RIIO-3 financeability.

x. Ofgem (August 2024), Letter signed by Thomas Mackenzie, Interim Deputy Director, Gas Network Price Controls, of 13 August 2024.

xi. KPMG (March 2024), Credit Rating Agencies' perception of Risk for Gas Distribution Networks (GDNs) under RIIO-3 and beyond (confidential).

xii. Oxera (November 2024), RIIO-3 cost of equity – CAPM parameters. Prepared for the Energy Networks Association.

xiii. Oxera (November 2024), Cost of equity for RIIO-GD3. Prepared for GB gas distribution networks.

xiv. KPMG (April 2024), Perception of risk for Gas Distribution Networks (GDNs) under RIIO-3 and beyond: debt investor survey.

xv. NERA (March 2024), Impact of GDNs' Reduced Debt Tenor on Additional Cost of Borrowing at RIIO-3.

xvi. NERA (February 2024), Additional Cost of Borrowing for the RIIO-3 Price control.

xvii. NERA (March 2024), Impact of GDNs' Reduced Debt Tenor on Additional Cost of Borrowing at RIIO-3.

xviii. Oxera (December 2024), Gas distribution networks' dividends in RIIO-GD3. Prepared for GB gas distribution networks.

xix. Oxera (December 2024), Gas distribution networks' dividends in RIIO-GD3. Prepared for GB gas distribution networks.

xx. NGN (December 2019), Appendix A28 of NGN's RIIO-GD2 Business Plan - Review of NGN's Financial Analysis for RIIO-GD2.

xxi. Moody's (April 2022), Rating Methodology, Regulated Electric and Gas Networks.

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