Cost Assessment and Benchmarking Approach

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WALES&WEST UTILITIES

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1. Our RIIO-GD3 Plan

1.1. Key principles of our plan

Investing wisely to continue delivering a high quality of service, sums up our RIIO-GD3 plan. As a well-run and efficient organisation that is shaped by what stakeholders say, we will keep on doing what we've always done for the upcoming price control period; with refinements only where necessary - to address the new and evolving challenges ahead. These include preparing for net zero, and the people resourcing required.

Over the last eighteen months we have refined our plan, balancing the investment required alongside our ambition. The investment we are requesting in this business plan has been put together with careful consideration of all the relevant messaging from Ofgem such as Sector Specific Consultation and Decision documents, working groups, and regular bilateral meetings. The key principles that inform our plan and demonstrate our compliance, are as follows.

Investment that focuses on delivering mandatory work

Aligning with our priorities to demand safety always and driving to exceed customer expectations, the vast majority of our investment in our gas networks is non-load related but mandatory. By focusing most of our investment on the work required to meet legislative safety requirements plus asset health means we're putting customers first by maintaining a safe and resilient network. Further detail is covered in section 1.2.

Continuing to achieve all standards and outputs expected by our customers

At WWU, we know that without our customers, there would be no need for the gas we transport to heat homes and businesses and fuel important everyday tasks. We have a long track record of delivering on, or exceeding, the commitments we make to our customers, and this will continue in RIIO-GD3. We expand on this in section 2.3

Investing in our people and maintaining a resilient workforce

People are at the centre of everything we do. Without our workforce, there would be no highly skilled people to run our company and make sure that every element of maintaining and developing our network of gas pipes is taken care of, so that we keep delivering a reliable, safe and value for money service. Our workforce strategy has always been crucial. As we prepare for the transition to a greener energy future, it is now more important than ever. We describe our approach to workforce resilience in chapter 2 and within our Workforce and Supply-Chain Resilience strategy.[1]

Looking after those most in need

Our work takes us into around 100,000 homes and businesses a year, giving us the opportunity to speak to a wide range of customers face to face. We understand first-hand and through our partnerships with trusted organisations, the complexity of vulnerability across the communities we serve. In our 2023 Sustainability strategy we committed to supporting customers through the UK energy transition so that no one is left behind, and we discuss this work in more detail within our Vulnerability Strategy [2].

[1] Document 50 – 'Workforce and Supply-Chain Resilience Strategy'
[2] Document 62 – 'Vulnerability Strategy'

Maintaining a secure and resilient network

In the face of growing threats, the resulting security and cyber resilience measures require significantly higher investment in RIIO-GD3 than in previous controls. Established by The National Cyber Security Centre (NCSC), the Cyber Assessment Framework (CAF) is an approach for organisations to assess their management of cyber risks. To ensure we stay on track and have the skills we need in house, we are already underway with increasing our headcount in both cyber and IT departments, roles that have largely been allowed by Ofgem through RIIO-GD2 reopeners. Our plan also includes critical investment protecting our critical assets and data.[3]

Embedding efficiencies of previous price controls

With a stretching ongoing efficiency challenge proposed, our plan embeds efficiencies from operating model changes, BAU innovation, and continuous improvement initiatives – we expand on this in chapter 3. Further efficiencies will be challenging but reflecting our ongoing priority to deliver value for money by working smarter to deliver affordable, value for money services - we are committed to finding new ways to achieve our stretching productivity targets. We cover this in chapter 4.

Readying ourselves for the future

Ensuring continuity of expertise in changing times, our plan includes an increase in NIA funding to actively engage, innovate and support preparatory work as the role of the Network System Operator (NESO) evolves and Regional Energy System Plans (RESPs) are developed. This will build on our RIIO-GD2 experience of Local Area Energy Planning; also expanding on our decades of experience in adapting and responding to industry changes. Our Innovation Strategy [4] sets out more detail.

Throughout this document we set out how these principles influence our RIIO-GD3 investment plan.

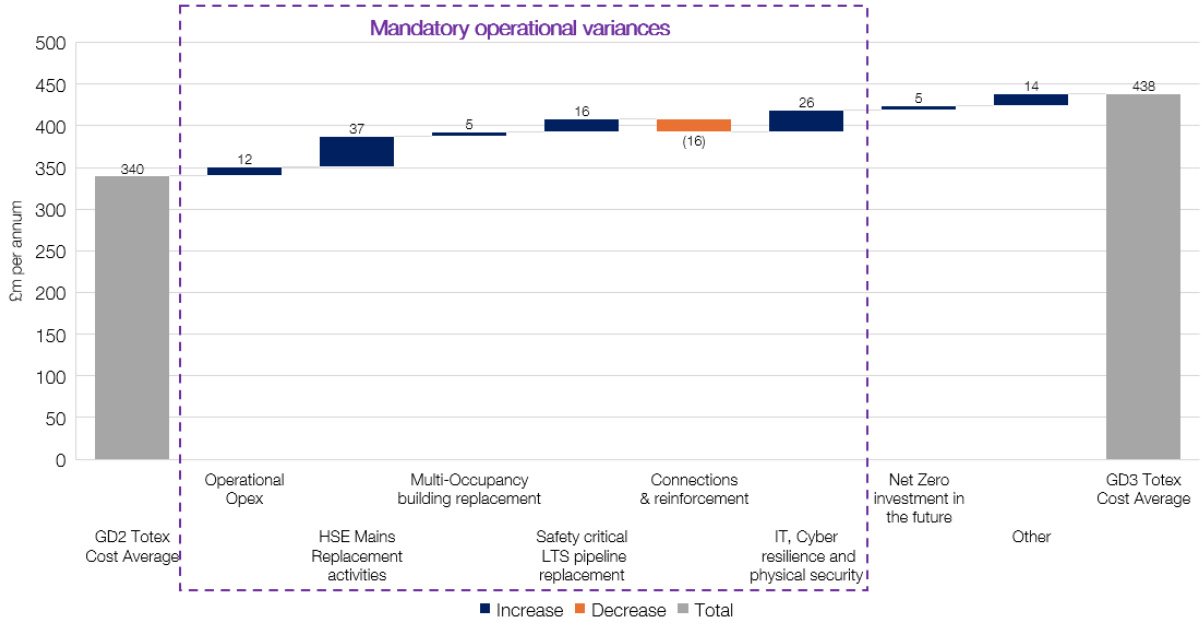
[3] Documents 37 – 46 – Cyber security and Cyber resilience related strategy and investment documents
[4] Document 55 – 'Innovation Strategy'

1.2. A plan centered on mandatory investment

1.2.1. Totex investment

The work required during the next five-year RIIO-GD3 price control period is a continuation of that required during RIIO-GD2, focusing on delivering the mandatory works programmes required to maintain a safe and resilient network. Our submission is aligned to this; a business that continues to deliver on its outputs, standards of service and other obligations, as we have done for successive price controls.

Financial movements from RIIO-GD2 to RIIO-GD3 are largely the result of Health & Safety Executive (HSE) mandated requirements in the management of gas assets, and new investment in the network not required in previous controls.



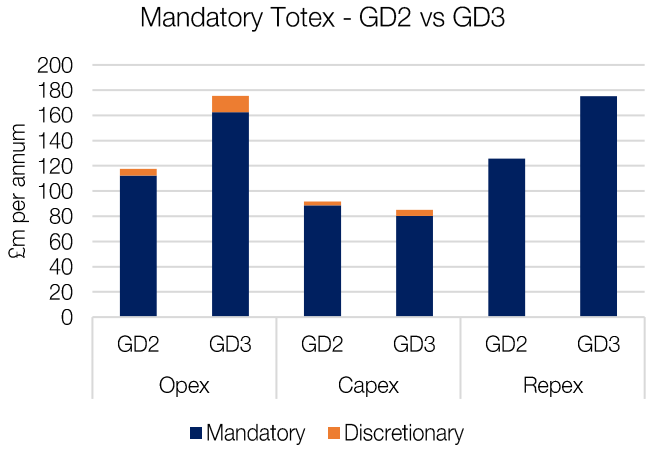
96% of our plan we consider to be mandatory[5] to deliver our core safety, legal, regulatory and statutory obligations. Replacement activities mandated by the HSE through the Iron Mains Risk Reduction Programme (IMRRP), and the replacement of critical Wales Transmission pipelines are the main reasons for the operational increases. These are offset by anticipated reductions in new connections and the resultant reduction in mains reinforcement required.

Investment into IT systems, cyber resilience and physical security upgrades are all areas that require increasing investment in the first half of the next price control to protect our people and our assets. These setup costs will serve in protecting our network now and into future controls.

[5] We define mandatory as work required to maintain compliance with safety, legal, regulatory and statutory obligations. Our plan includes the minimum levels of workload and cost to achieve this. Ofgem terminology of mandatory may differ, for instance Tier 2b mains replacement is not designated as mandatory for the whole asset population, but we need to intervene in a subset of the population to ensure compliance with Pipeline Safety Regulations. We consider the plan we put forward for a subset of the population as mandatory to retain compliance with these regulations.

Whilst we consider 4% of totex to be discretionary this expenditure is a continuation from RIIO-GD2 and is supported by Ofgem; this includes a request for flexible funding to continue delivering our Net Zero pathway, Environmental management, an apprenticeship scheme to support workforce resilience, and investment in our land and buildings to ensure our people are working in a fit for purpose environment aligned to workload location across our sparse network.

The chart below reiterates the mandatory nature of our investment programme, with c.96% of all RIIO-GD3 spend considered mandatory to deliver our core safety, legal, regulatory and statutory obligations:



1.2.2. Costs outside of Totex:

Network Innovation Allowance (NIA) – Our plan includes an average of £8m per annum in NIA funding, to explore future options and reduce carbon emissions. This aims to include preparing our network for repurposing in a range of decarbonisation scenarios, supporting vulnerable customers, and supporting energy system resilience.

Our plan does not include significant investment to enable wider Net Zero ambitions, such as development of hydrogen networks. This reflects Ofgem's position as set out in SSMD [6] that such funding would require further policy decisions. As projects evolve in RIIO-GD3 we plan to seek appropriate funding through uncertainty mechanisms or other government funding routes.

We will also use competitive funding from the strategic innovation fund (SIF) to support the future of the energy transition for the gas network.

Vulnerability & Carbon Monoxide Allowance (VCMA) – in RIIO-GD2 we increased our support for Vulnerable Customers considerably following repurposing of Fuel Poor Network Extension Scheme allowances. Our average cost of £4m per annum allows us to continue this vital support for our communities, an increase supported by customers (see willingness to pay research within our Vulnerability Strategy).

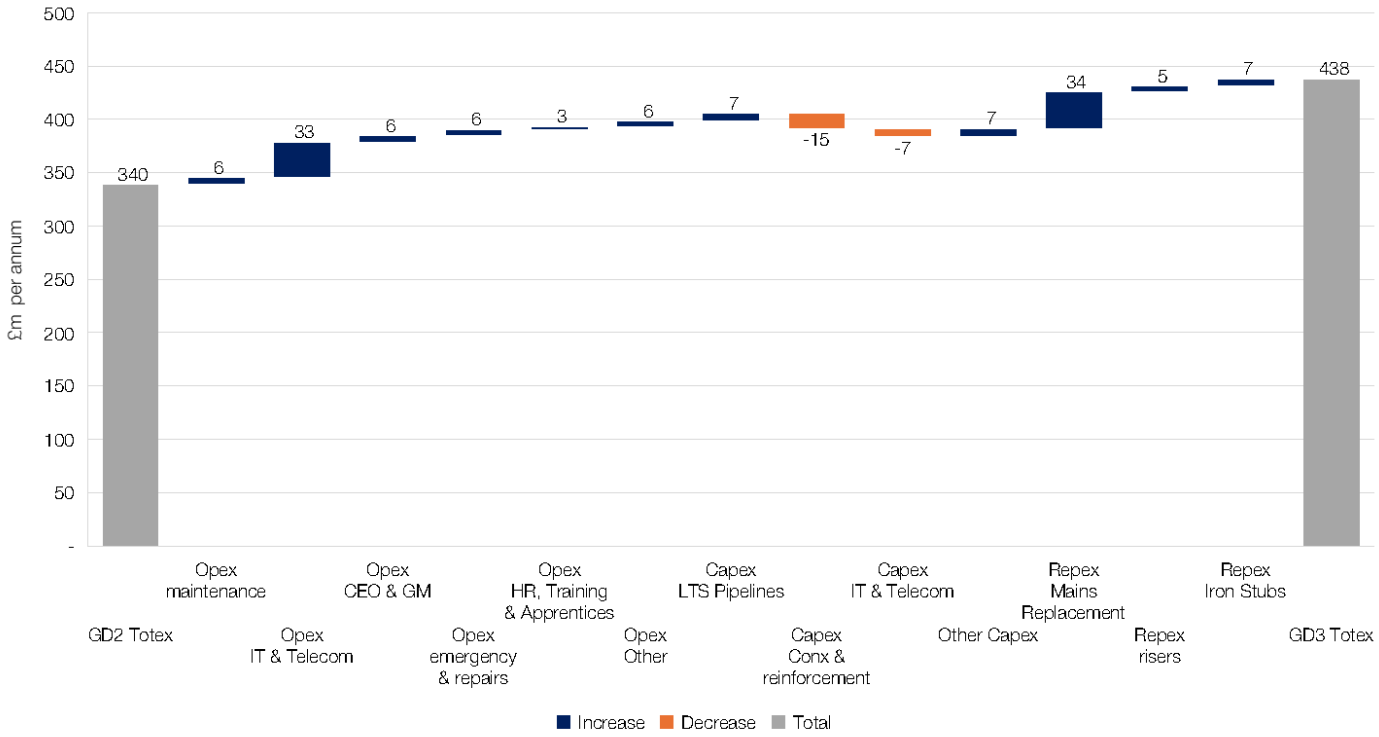
[6] Ofgem (2024), 'RIIO-3 Sector Specific Methodology Decision – Overview Document', chapter 4

1.2.3. Ongoing Efficiency

We consider 80% of our totex investment plan to be subject to Ongoing Efficiency, with 20% of activities being new to the price control. We propose a 0.6% p.a. ongoing efficiency challenge on this, c.£33m across the control, which is ambitious and towards the top end of the range identified by Economic Advisors. This represents a 0.5% p.a. ongoing efficiency challenge on 100% of totex. Chapter 4 provides the supporting evidence that underpins the range, and also which activities we consider are not applicable to Ongoing Efficiency.

1.3. Totex changes RIIO-GD2 to RIIO-GD3

The below sets out the material changes between our RIIO-GD2 forecast outturn and our RIIO-GD3 plan, the drivers of those cost increases, and how Ofgem should assess those increases.



Annualised average, 2023/24 prices – Totex already includes and is net of embedded BAU innovation from previous controls

Opex:

- Maintenance - £6m p.a. increase *SEPARATELY ASSESSED*

    - £4m p.a. increase - Intervention Opex (non-routine) - costs associated with maintaining our assets are increasing, with a particular increase due to environmental factors impacting our network, such as riverbed erosion.

    - £4m p.a. increase - Disconnections - costs resulting from gas consumers converting to alternative domestic heat sources and disconnecting from the gas network. Based on current policy we assume gas disconnection costs will be funded through totex. Volumes represent an uplift on actual volumes experienced today; however this is a lower volume than any Future Energy Systems (FES) published scenario given the lower actual experienced uptake in recent years.

- IT & Telecom - £33m p.a. increase *SEPARATELY ASSESSED*

    - In the final two years of RIIO-GD2 our allowances in this area increased significantly through the re-openers process, reflecting how we are adapting to technology advancements across the industry and an ever-evolving landscape of cyber threat. In response to this increasing cyber threat, we made changes during the period to achieve Base CAF profile and start

building towards Enhanced CAF profile. This means we exit RIIO-GD2 and enter RIIO-GD3 with a larger headcount and running cost than at the beginning of RIIO-GD2.

- £21m p.a. increase – IT & Telecoms - Increased spend recognises the move away from on-premise IT infrastructure towards more cloud infrastructure and Software as a service (SaaS), consumption-based IT, partly offset by a reduction in IT & Telecoms Capex work. This model is in line with industry best practice given the security and resilience benefits. We also have more applications as we enter RIIO-GD3 than our RIIO-GD2 starting point, resulting in a much larger application estate to support. These applications have been implemented to support delivery stakeholder needs, plus improve security and resilience.

- It also recognises the larger in-house team required to deliver the investment and maintenance requirements of our IT systems, a security priority as set out in our IT and Telecoms Strategy. We are recruiting now to put this team in place ahead of RIIO-GD3; this is in line with the structures advised by NCC Group as recommended and largely allowed by Ofgem within our RIIO-GD2 reopener.

- £11m p.a. increase – Cyber and Physical Security Opex - a continuation of the pathway set out in our submitted RIIO-GD2 re-openers and a continuation of the costs as we exit RIIO-GD2; detailing the factors required to keep our network safe and resilient, and to meet and maintain compliance with our obligations under the current Network and Information Systems (NIS) and Cyber Assessment Framework (CAF). The costs included in our plan achieve and maintain a CAF Enhanced Profile by 31 December 2027; further strengthening our cyber security environment will require use of the re-opener mechanisms where appropriate including in the situation where NCSC/NIS requires progress beyond the CAF Enhanced Profile.

- £1m p.a. increase - Data & Digitalisation - the increase includes the headcount required to meet our data and digitalisation obligations and is a continuation of the approved RIIO-GD2 reopener.

- CEO and Group Management - £6m p.a. increase *SEPARATELY ASSESSED*

  - £8m p.a. increase - Net Zero and Reopener Development (NZARD) Use It or Lose It (UIOLI) - this flexible and responsive funding source is important to allow innovation learning to be implemented and fits within the wider spectrum of net zero mechanisms (see our RIIO-GD3 Innovation Strategy for further detail). We expect to utilise this mechanism in advancing critical areas such a roadmap for hydrogen blending, supporting local energy plans, supporting the viability of decarbonised transport (i.e. hydrogen fuel-cell), and further the work already started on evolving gas networks for the future (termed business evolution).

  - In line with RIIO-GD2, we have included this within CEO and agree that as this spend is uncertain in nature, it should continue to be separately assessed as a UIOLI mechanism.

- Emergency & repairs - £6m p.a. increase *REGRESSION*

  - £4m p.a. increase – Emergency - the emergency service is a predominantly fixed cost, with 24/7/365 cover required to meet our emergency standards. During RIIO-GD2 we successfully reduced some of this fixed cost by utilising the necessary emergency waiting time to deliver flexible 3rd party metering contracts. This benefits consumers directly as these costs are transferred out of totex and therefore out of the customer bill. However, these non-formula

contracts are short-term and do not run into RIIO-GD3. Therefore, it cannot be assumed that this critical function is subsidised by uncertain future 3rd party contracts. For this reason the cost of labour transferred out of Totex in RIIO-GD2 has been moved back into controllable Totex in RIIO-GD3.

- As we do not have any contracts running into RIIO-GD3 and note that the other GDNs generally don't carry out this type of work, we expect Ofgem to adjust for the above in the cost assessment process and in setting allowances. We will continue to look for opportunities to deliver 3rd party contracted work where possible, including extending contracts from RIIO-GD2 into RIIO-GD3 if/when possible.

- £2m p.a. increase – Repairs - we expect the cost pressures experienced in the second half of RIIO-GD2 to continue to impact RIIO-GD3, including the increased cost of working in the road (in particular Street works costs which is a cost area all GDNs have submitted re-opener applications for in RIIO-GD2 [7]) and the increased cost of materials. We forecast an increase in repairs on larger diameter mains, considering the large focus on Tier 1 mains through the Iron Mains Risk Reduction Programme (IMRRP). The reduction in volume of repairs has been offset by the cost of repairs given the diameter of the pipes now requiring repair.

- HR, training & apprentices - £3m p.a. increase *REGRESSION*

  - £3m p.a. increase – Apprentices - investment in an Apprenticeship or equivalent scheme to support our workforce resilience strategy. Based on our analysis of succession plans and age analysis we have included the addition 84 apprentices into Operations over the 5 year period, plus a further 15 apprentices over the 5 years to be recruited into the back office. Further detail can be found within our Workforce and Supply Chain Resilience Strategy. [8]

Capex:

- Local Transmission System (LTS) Pipeline - £7m p.a. increase *SEPARATELY ASSESSED*

  - £7m p.a. increase – LTS pipelines - our Welsh networks are unique amongst the GDNs in the amount of LTS pipeline they contain. And we continue to see a deterioration of this subset of our unique pipeline population with three pipelines (HS007, HW009, HW010) included for wholesale replacement, plus a further pipeline for targeted short length replacement in RIIO-GD3. We actively monitor these pipelines given their significance to gas supplies within Wales and having appropriately managed them since they were laid, we have reached the point where replacement is now the only option; one of these pipelines has suffered a significant leak at 24bar in recent months, it has taken four months to successfully implement a temporary repair to stop the leaking gas. The total length reflects the minimum workload required to address risk, comply with legislation and minimise whole life cost.

  - The inclusion of this investment is justified by third-party specialist integrity studies, CBA assessment, and the need to manage safety of the public and our operatives. For more details on the rationale for completing in RIIO-GD3 period, see the associated Engineering Justification Papers and Cost Benefit Analysis documents.[9]

[7] Wales & West Utilities (2024), Specified Streetworks Costs Re-opener (STWt) Re-opener Application, September
[8] Document 50 – 'Workforce and Supply Chain Resilience Strategy'
[9] See documents referenced 7-9, which include EJPs, CBAs and Feasibility studies

- Connections & reinforcement - £15m p.a. reduction *REGRESSION*

  - £12m p.a. reduction - Connections - following recent consultation with Ofgem, we expect the Domestic Load Connection Allowance (DLCA), which charges the costs associated with the work on up to the first 10metres in the public highway to RAV (rather than a charge to the customer being connected) to be removed from the commencement of RIIO-GD3, and customers to pay in full for a new gas connection. On this understanding our net Totex cost has reduced, as the full cost is expected to be recovered from the customer requesting the connection in RIIO-GD3.

  - £3m p.a. reduction - Reinforcement - With fewer new gas connections we expect a reduction in general network reinforcement, which is driven by small scale growth of gas demands from individual customers connecting to the network and funded by GDNs. We expect specific network reinforcement, the cost of which is charged to the connecting customer, to also decrease given the move away from new gas boilers in new houses.

- IT & Telecom - £7m p.a. reduction *SEPARATELY ASSESSED*

  - £7m p.a. reduction - IT & Telecoms - as above, this decrease recognises the move away from on-premise IT solutions towards more Software as a service (SaaS), consumption-based IT based on our knowledge and experience within RIIO-GD2.

Repex:

- Mains Replacement (all mains) - £34m p.a. increase *REGRESSION*

  - £10m p.a. increase – mains replacement volume - our RIIO-GD3 mains decommission programme consists of 435km per annum which is an increase from 425km per annum in RIIO-GD2. Our focus continues to be the HSE mandated[10] Tier 1 mains and services programme, which must be completed by the end of 2032. We also include associated <=2" steel mains and services which require completion where attached to tier 1 mains. Other decommissioned mains and services workload (tier 2, tier 3, iron outside of 30m of a building, and steel) has been kept to a minimum.

  - £24m p.a. increase – mains replacement price - the cost of delivering mains replacement has increased in real terms throughout RIIO-GD2 as forecast within our appeal to the Competition and Markets Authority (CMA), and as reported on through our annual RIIO-GD2 Regulatory Reporting Pack (RRP) commentaries to Ofgem. The cost drivers that underpin Mains Replacement activities show that more effort (time) and materials will be required in RIIO-GD3 (that is, the work requires more effort to deliver the same linear length because of the underlying cost driver changes). This is largely driven by the location of the mains and the material of those mains; examples include a higher proportion of Ductile Iron Mains which take longer to work on than other iron materials, increased traffic management demands, and more costly techniques required (more 'open cut' required compared to insertion). We have set out the key cost drivers and cost pressures that impact mains replacement within our RRP commentary [11], recent Cost Assessment Working Group (CAWG) presentations, and later in this document in section 5.3.3.

[10] Enforcement Policy for the iron mains risk reduction programme 2021 - 2026 - HSE
[11] Wales & West Utilities (2024), 'RIIO-GD2 Year Three Strategic performance Overview', p15-p20

- £2m p.a. increase - mains in private property *SEPARATELY ASSESSED*
  Mains Replacement includes the cost of adhering to the recent changes from the Health & Safety Executive (HSE) on their expectations for infrastructure that is located within customer land (i.e. gardens). There is additional cost to re-locate the mains, which is more costly than using the existing in situ infrastructure as a conduit to the new main. A separate assessment for this defined programme should be undertaken given the significant cost increase to re-locate the mains and recognising that this is largely characteristic of Steel <=2" mains which WWU has substantially more of than other networks, hence the significant increase in this area.

- Risers - £5m p.a. increase *SEPARATELY ASSESSED*

  - £5m p.a. increase - risers - our risers programme increase is largely driven by the volume of buildings that require replacement activities in RIIO-GD3 over RIIO-GD2. This is the result of an extensive survey programme undertaken over the last two years which now informs our plan for the remainder of RIIO-GD2 and through RIIO-GD3 to ensure we only address those risers that require attention. We also include £1m p.a. to install safety critical valves.

- Tier 1 Iron stubs - £7m p.a. increase *SEPARATELY ASSESSED*

  - £7m p.a. increase – tier 1 iron stubs -these are short length pipes that require replacement under the IMRRP by 2032. These exist due to changes made by the HSE to the IMRRP in 2013 which removed the requirement to decommission all >8" iron mains (non-tier 1 mains), leaving short Tier 1 lengths attached to those mains that would otherwise have been removed on replacement of the larger diameter main.

  - To date, and as part of our RIIO-GD2 plan, we have not requested or received any allowances to complete this work, instead choosing to investigate and analyse these assets during RIIO-GD2 to define a structured programme. Other GDNs have already been provided allowances in RIIO-GD2 Final Determinations or through reopeners through separate assessment. We have chosen to review our population and put forward a more defined programme of works that require remediation. We would expect Ofgem to be consistent with RIIO-GD2 precedent and separately assess this based on the engineering requirement.

In summary, the most material changes in the cost base relate to mandatory programmes of work and require sufficient allowances to meet our safety, legal, regulatory and statutory obligations.

1.4. Economic, fiscal and social return from our business plan

Our business plan contributes significant value to the regional economy within which we operate from supporting local businesses to developing people and their futures. Our investment plan of circa £2bn contributes social and economic return to our region of £56 [12] per £1 we invest.

The investment in local businesses ensures we can deliver our vital services and support local trades and the economy. A large part of this benefit also comes from investing in an insourced employment network.

We employ over 2,000 people from our region which costs in excess of £100m per annum; this contributes to fiscal benefits such as training, development and health improvements. The Human capital benefits we provide significantly contribute the GDP of the UK. Given the sparse areas of our region we find some remote communities rely on our labour force and associated spend to support the local businesses.

Please see Workforce and Supply Chain Resilience Strategy [13] for further information on social returns on our human capital.

1.5. The impact of Future Energy Scenarios (FES) on our plan

The vast majority of investment in the gas networks is non-load related and required to meet legislative safety requirements and asset health intervention to maintain a safe and resilient network. This investment is largely unrelated to supply/demand scenarios. The cost of maintaining the networks is largely fixed over a single price control regardless of the FES scenarios and numbers of users, varying more with weather, inflation and capital, and replacement activities (in particular for the remaining years of the Iron Mains Risk Reduction Programme).

In addition, growing security and cyber resilience demands require sustained levels of investment for years to come. Demand related investments are largely confined to the connection and associated reinforcement. We also need to disconnect homes due to customer requests or where the gas meter has been removed for more than 12 months. Completion of these workloads ensures compliance with the Gas Act, Gas Safety Management Regulations and our Licence Conditions.

Further demand related optional investment is subject to cost benefit assumptions applied. Whilst the majority of our work is agnostic to any FES scenario as detailed above, we do have some concerns over recent changes to the framework and requirements for FES.

Reductions in operating costs are only anticipated to be achievable should certain geographic areas of the network be decommissioned and purged to air, eliminating the needs for an emergency response capability on that part of the network within an hour and associated maintenance and repair costs.

[12] This is based on using UK HMT green book parameters for specific factors we have chosen linked to our employee benefits and construction industry impacts. This is not comparable to the SROI calculations used for vulnerability across GDNs as stipulated previously by Ofgem.
[13] Document 50 – 'Workforce and Supply Chain Resilience Strategy'

2. Our Company

2.1. Our culture and focus on efficiency

Our people are at the heart of everything we do - we invest in them so that they have all the skills, confidence and innovative thinking needed to build our business long into the future. Our people are guided by our Ambition, Priorities and Values – our framework that fosters a culture of innovation and continuous improvement:

Below are a few, day to day examples that promote this culture:

Communications and colleague engagement - its critical to inform, consult and involve colleagues in key business decisions and changes, and we use a broad range of communication channels to deliver this. As an example, our face-to-face Roadshow Programme, led by the Executive Team and Senior Manager teams, host sessions with teams and their managers right across the network. These roadshows allow us to share information across a wide range of topics of interest based on our business priorities, check in to see how our operational colleagues are feeling, discuss opportunities for continuous improvement savings, and discuss local and network-wide matters of interest with colleagues.

Our development programmes – our focus continues on high performance coaching and programmes which support the development of our leaders, managers and colleagues to reach their full potential.

Investment in skills and training - ensuring colleagues are competent to deliver a safe and reliable service remains a priority and we have a comprehensive Workforce Resilience Strategy. Working with our sector skills council, Energy & Utility Skills, and other key partners, we are able to effectively and proactively plan for the future, and the changing skills required within our industry. Apprenticeships and Graduates continue to provide an opportunity to attract new diverse talent to our organisation and we plan to continue to recruit into these schemes through RIIO-GD3.

Our Workforce and Supply Chain Strategy [14] explains where we are, and what our focus areas are in RIIO-GD3 and beyond.

[14] Document 50 – 'Workforce and Supply Chain Resilience Strategy'

2.2. Our Operating Model

2.2.1. Our inhouse delivery model

Unlike other GDNs, at the start of RIIO-GD2 we transitioned away from an outsourced, contractor dependant operating model for the delivery of our mains replacement programme, instead employing an insourcing strategy. We had to do this given the tender prices received from the external market (explained in greater detail later in section 3.2.1). This fundamental change has benefitted our efficiency greatly, strengthened our workforce resilience, provided greater flexibility and efficiency in how we utilise our industrial workforce, and continues to benefit our people and the communities they serve (for instance, in our ability to keep consumers safe by exceeding our performance targets even on the coldest and busiest winter days). We give examples of these benefits throughout this chapter.

The Mains Replacement programme, representing over a third of Totex, was historically delivered through a partnership between WWU and one or more leading contractor organisations. This Alliance contract provided significant financial benefits to WWU and customers through a contract with a risk sharing mechanism, with the contractor ultimately making a sizeable loss on the long-term contract under that mechanism ~ benefitting gas consumers. Unsurprisingly with the existing contract ceasing at the end of RIIO-GD1, we anticipated a stepped increase in our cost base back to real market prices in our RIIO-GD2 business plan and this increase transpired.

In readiness for RIIO-GD2 we undertook an extensive external tender process to test our operating model efficiency (explained further in section 3.2.1). This identified a contractor market which provided no benefit to our organisation including reduced competition (less suppliers willing to tender given market conditions), no bids in the sparser extremities of our network, lower risk appetite and an expectation of higher profit margins.

Considering this against a backdrop of our significant underfunding of Repex allowances and a limited market offering, this resulted in our decision to take control of the programme, insource the work thereby eliminating future contractor profits and back-office duplication, and control the full cost base to partially mitigate these cost pressures.

From June 2021 we insourced the mains replacement programme workforce; this included the transfer of c.250 contractor employees working on our contract into our workforce, including industrial, back-office support and management. We also began contracting directly with the c.50 small contractor organisations that previously subcontracted, now becoming directly managed by WWU.

This removed c.£5m (in 23/24 prices) of contractor management and profit fees from our cost base entering into RIIO-GD2. This was before any other associated savings were recognised.

We made these changes for the clear financial and operational benefits to delivery of the RIIO-GD2 Mains replacement programme however we could see the potential complementary opportunities that the move to an insource model could offer more widely across our operational activities. Now as we have progressed through RIIO-GD2 the in-house delivery model continues to demonstrate we made the right choice for our colleagues and our customers by bringing skills in-house, having direct and greater control over all aspects of the programme and partly mitigating the pressures we identified in continuing in an outsourced environment. We set these out throughout the rest of this chapter.

We explain later in section 3.2.2 how we continue to test the efficiency and value for money of this decision through another robust external tendering process, in the lead up to RIIO-GD3. [redacted]

2.2.2. Other changes made early in RIIO-GD2

Concurrently with insourcing mains replacement we completed other business restructure and cost saving initiatives including:

- A new Head of Operations structure – with all operational delivery activities under one organisational structure. Having all staff working as one team under one organisation provides us the opportunity to train and flex a wide pool of resources across all work activities and our geography, deploying our people in the most efficient way and maximising productivity. It also provides greater flexibility to react to changing operational demands (i.e. a peak winter) without commercial pressures getting in the way. This was a key enabler to many of the operational changes discussed in this chapter.

- Merged departments to align business processes – for instance our emergency department and network services department (responsible for network maintenance) were merged to allow cross-sharing of skills and utilisation of staff across activities, ultimately increasing efficiency and removing contractor costs. Our reported cost for these two activities has reduced by c.£4m p.a. from RIIO-GD1 to RIIO-GD2.[15]

- Workspaces, such as depots, were all combined - the managers and teams, whether leakage, repair, maintenance, connections or replacement are all based out of the same depots which helps our teams to discuss, plan and react accordingly to changing demands on the network.

- Operational support and back-office departments were also reorganised and merged.

- Changed our workforce pay structure, moving from a flat pay-structure to a tiered structure aligned to skills and competence. This has provided a clear pathway from entering the workforce through to management positions, helping with retention and workforce resilience. Proactively making changes to pay structures has been crucial to our compliance with HSE policy on Fatigue Management – something we have been compliant with within RIIO-GD2 (which differs to other GDNs).

- 126 employees left the business through voluntary redundancy – incurred to enable the departmental changes above. A one-off cost was incurred to embed long term savings into the operating model.

- We adopted a buy rather than hire strategy – particularly on vehicles, wheeled and core plant and equipment we purchased assets rather than hiring. This again was a commercial opportunity to remove profit margins and maintain ownership of assets that are critical to our business, removing the reliance on third parties.

- We closed the Defined Benefit Scheme to future accrual, providing a c.6m p.a. (23/24 prices) annual saving across the business.

We embedded significant savings within our RIIO-GD2 cost base from year one of RIIO-GD2. Over the last three years we have then developed this further and maximised all other opportunity areas, some of which are covered within the rest of this chapter. These cost efficiencies are embedded in RIIO-GD2 and are

[15] For costs reported in Emergency and Maintenance, this represents the 3 year average cost from 2017-2020 compared to the 3 year average cost from 2022-2024 (all in 23/24 prices). We have excluded 2021 due to the impact of Covid-19. To avoid double counting, we have adjusted the 2017-2020 cost base downwards by £1.9m p.a. to exclude the benefits of closing the Defined Benefit scheme – this saving has been reported separately in the list.

therefore reflected within our RIIO-GD3 plan – figures quoted in the business plan are net of these embedded efficiencies.

2.2.3. Other insourcing activities within the RIIO- GD2 period

Following the success and savings experienced from insourcing at the start of RIIO-GD2, we continued this through the price control, identifying other contractor work where it would be more beneficial (financially and retained skills) to deliver inhouse; we have completed this and the associated savings are embedded in our plan.

Insourcing Direct Operatives

We insourced the previously outsourced engaged operatives that were employed across our Network Services and Workshops departments. This provided the employees greater job security, but also reduced the overall cost of employment for WWU by removing the overhead costs, profit margin and risk costs that the outsourced partner had built into their rates. Savings of c.£0.1m per annum were achieved.

2.2.4. Investing in our people

Our people are at the heart of everything we do - we invest in them so that they have all the skills, confidence and innovative thinking required to build our business, and maintain and develop our assets long into the future. Having all industrial colleagues within one organisational structure ensures that when we invest, we are investing in the people that will be serving our communities for years to come.

By continually investing in training, development, and facilities, and ensuring we use the most innovative training techniques, we ensure that our colleagues are skilled and competent to deliver a safe and reliable service. We can also better manage the quality and consistency of training so that our people have the necessary competencies to meet changing demands – demands that are changing as we progress through RIIO-GD2 and will continue to shift in RIIO-GD3 as work activities flex (i.e. connections reducing, repairs reducing but moving to larger diameter repairs, complexity of Mains Replacement activities).

We are also already well advanced in meeting the HSE's fatigue management policy. Pro-active investment entering RIIO-GD2 into pay structures and conditions has meant we are already compliant with HSE policy; other GDNs are not in this position and will likely see a step-change in RIIO-GD2 to RIIO-GD3.

It should come as no surprise that our industry has been heavily impacted by the changing labour environment. We have experienced significant levels of churn within our workforce – losses to other GDNs, other utilities or out of the utility sector completely. As a business we reacted quickly to mitigate the loss of staff and contractors by heavily recruiting across the entire network, both into our direct labour organisation and into our supporting contractor teams.

We are in a position where we have home-grown resources to continue to meet our RIIO-GD2 commitments, a position that we understand other GDNs have struggled with. This also provides a solid foundation for RIIO-GD3; we forecast an increased FTE requirement, an increase we have started to plan for and is costed within this plan (i.e. Apprenticeship scheme).

Further information can be seen in our Workforce and Supply Chain Strategy. [16]

[16] Document 50 – 'Workforce and Supply Chain Resilience Strategy'

2.2.5. Embedded utilisation and efficiency gains

Having all staff working as one team under one organisation provides us the opportunity to train and flex a wide pool of resources across all work activities and across our geography, deploying them in the most efficient way and maximising their productivity. Other GDNs operate separate Repex, Opex and Capex teams with little flexibility or agility across work activities.

Our delivery model is different; instead, we have a multiskilled workforce who operate and can increase utilisation across all work activities, driving efficiencies and continuous improvement, and making the right Totex decision for consumers daily.

We believe we have driven significant efficiencies into the workforce that no other GDN has yet benefited from. Below are real life examples of how our operating model promotes the right behaviours and ensures we make the right choices everyday:

Example: All DLO trained to attend leaks

All of our Direct Labour "build and repair" (B&R) industrial colleagues who are trained to deliver Mains Replacement, are also qualified and competent to attend emergency leaks and repair those leaks and can deliver domestic connections.

This flexibility is central to our efficiency, resilience and management of fatigue. During summer periods when leaks are low, we flex these staff onto Repex activities who, under other operating models, would have been unproductive within Opex.

Critically, during the winter cold period, our whole B&R department (c.550 FTEs) are trained and available to mobilise onto leaks and repairs alongside our Emergency function (c.250 FTEs), ensuring we can keep our customers safe and meet our standards, should we experience a severe weather event in the winter; this can be difficult to achieve through other, more rigid operating models as has been seen in recent years without adding in FTEs with high levels of unproductive time. By tripling the trained resource pool, we are able to manage peaks in work whilst remaining fatigue management compliant (we understand from recent reopener applications that other GDNs are not fatigue management compliant and require substantial changes to their working practices and costs to come).

With domestic connection volumes reducing year on year, teams can be utilised onto Mains replacement activities until new connections or disconnections works are required.

Example: Utilising our Emergency FCOs on other value-add activities

Emergency First Call Operatives (FCOs) demand is driven by incoming reports of leaks they need to attend within set standards – this combination determines the number of FTEs and associated work patterns required. Due to daily and seasonal variations FCOs have necessary but unproductive "spare time" as they await incoming reports of escapes – this is akin to the fire service who are required to reach anywhere in the network 24/7/365.

FCO's are in the unique position of covering the whole network; under our operating model we utilise their spare capacity by cross flexing them into other activities such as:

- Completing the vast majority of Purge and Relights across our Repex and Capex activities.
- Completing out of hours safety barrier checks on mains replacement projects.
- Undertaking Multi-Occupancy Building surveys.
- Maintaining our above ground sites (i.e. grass cutting)

Our operating model enables the greater utilisation of teams who are already funded, and we avoid paying third parties to undertake work activities we can complete without profit margins.

2.2.6. Operating with no contractual barriers

With everyone working for the same organisation and with the same common goal, we can deliver without any contractual tension, something that in our experience can become a significant blocker and slow down processes in times where agility is needed.

For instance, we understand we are the only GDN to widely train mains replacement teams in leakage and repairs, thus providing us with flexibility, resilience and also meeting the increased obligations on fatigue management (for further information on this, please see our fatigue re-opener). [17]

Contractual barriers, as we had in our previous operating model, would significantly hinder the ability to operate in this way – with commercial tension around training (both the cost of, and the time away from site to train), every time a contractor team attended leaked a leak (required stand-down time because of fatigue management rules), and all resulting in overruns on their mains replacement programme.

Under our operating model, there are no questions on who is paying to train and maintain mains replacement teams with leakage competency or who is going to pay for the downtime and extension costs incurred in attending leaks if a winter spike occurs.

Example: B&R teams make the right choice

On mains repairs the team can decide whether to undertake a repair, or whether it's better to take the opportunity to undertake replacement. Teams and local management are empowered and competent to make the best decision for the consumer and the local community depending on the individual situation (i.e. replace instead of repair to minimise the repeat impact of future leaks and repairs), with no need to consider contractual arrangements or pass the job onto another team.

2.2.7. Overall impact on efficiency, resilience and quality of service

The business wide changes embedded at the start of this price control have provided much more than just the now realised financial benefits.

It also contributes to the resilience and efficiency of our workforce. Throughout RIIO-GD2 we have invested significantly in our people and training, resulting in all our direct labour B&R teams being skilled, competent and available to mobilise to multiple work activities as needed by our management team. We believe that our operating model provides us with a much more resilient workforce than other operating models, as proven in recent years when winter workload spikes have hit and we have maintained our standards.

The workforce has embraced the opportunity to have more variety in their working days and also having a full working day (rather than sat waiting for a leak or repair). This all helps with staff morale which also then helps to improve the quality of service our customers receive.

2.2.8. Impact on cost assessment

Such a significant business change can lead to inconsistencies in year-on-year financial information, particularly moving from RIIO-GD1 to RIIO-GD2. Examples include:

1. Cross-utilisation of industrial teams results in their cost being allocated across work activities, leading to different trends across operating models.
2. We provide in-house training to all our industrial teams. Following lengthy discussions with our auditors, all our training costs are included within Opex, even for those teams who work solely on

[17] Wales & West Utilities Ltd (2024), HSE policy reopener application, September

Capex and Repex activities. Other GDNs likely have training costs embedded within their Repex cost base as training is paid for by contractors and recovered in their Repex invoices – this was how it operated for us in RIIO-GD1.

3. Similarly, our back-office FTEs and structure may appear different to other GDNs' given those costs are embedded in contractor arrangements for them – for us, we transferred these staff members in from the Repex contractor during the insource transition.
4. Our Capex purchasing programme will look different to other GDNs, because we are purchasing capital items for an entire workforce, whereas other GDNs require their mains replacement contractors to purchase fleet, equipment, plant etc. and include in their rates for undertaking their Repex work.

We have made Ofgem aware of these differences through the Cost Assessment process and Ofgem must consider this when determining models it should use when setting allowances. We provide further detail within section 5.2.

All these differences are justified and are the result of a positive step in efficiency and resilience, often two things that are not complementary. With all operational costs under our direct control we have full visibility of our cost base and end to end processes. We have built our RIIO-GD3 bottom-up cost model from this foundation. Further detail on this bottom-up build is set out in section 5.3.2.

2.3. Our proven track record

2.3.1. Overview

We are a company that prides ourselves on our track record of delivering on its commitments. In RIIO-GD1, despite the disruption felt from the COVID-19 pandemic, we delivered on all our Primary Outputs (with the exception of a small volume of Fuel Poor Connections) [18].

In RIIO-GD2 we are on track and forecasting to meet all Outputs, both annually and across the control as appropriate, again, with the exception of a small number of Fuel Poor Connections as this scheme has largely closed. In agreement with Ofgem the allowances from this output have been repurposed to help vulnerable customers [19].

	Output	RIIO-GD2 view
Meeting the needs of consumers and network users	Consumer vulnerability minimum standards	●
	Fuel poor connections (no.)	●
	Complaints metric	●
	Guaranteed standards of performance	●
	Emergency response - 97% controlled gas escapes	●
	Emergency response - 97% uncontrolled gas escapes	●
	Loss of supply – number of unplanned interruptions	●
	Loss of supply – duration of unplanned interruptions	●
	Loss of supply – number of planned interruptions	●
	Loss of supply – duration of planned interruptions	●
	Planned interruptions survey (score out of 10)	●
	Emergency response and repair survey (score out of 10)	●
	Connections survey (score out of 10)	●
Maintaining a safe and resilient network	Repex – tier 1 mains replacement	●
	Repex – tier 1 services	●
	Capital projects	●
	NARMs	●
Delivering an environmentally sustainable network	Shrinkage and environmental emissions	●
	Biomethane connections information	●
	Environmental action plan and annual environmental report	●
	Business Carbon Footprint (BCF) reporting	●
	Carbon monoxide awareness	●
	Introduce distributed gas entry standards (scmh connections)	●

Extract from our RIIO-GD2 Year 3 RRP Strategic Performance Overview

● On track ● At risk ● Not on track

[18] Wales & West Utilities (2021), 'RIIO-GD1 Eighth Year Annual Report', p24-p31
[19] Wales & West Utilities (2024), 'RIIO-GD2 Year Three Strategic performance Overview', p28

We view delivery of our Outputs as the most important objective of a price control, as they focus on maintaining a safe and resilient network for our consumers.

We are a GDN that continues to deliver on its commitments and has a proven track record of delivering when others have failed to plan and mitigate delivery risks accordingly. All of the benefits of our operating model have, in recent years, ensured that we are able to maintain our emergency standards in times of peak demand, keeping our customers safe in times of need.

We do not shy away from taking the difficult decisions to ensure we can meet the varying demands on a network, such as maintaining a skilled and resilient workforce ready to adapt to the demands upon us. Our Mains Replacement delivery strategy in both RIIO-GD1 and RIIO-GD2 has been to cumulatively be ahead of the programme by the middle of the price control, thus derisking delivery issues that can arise towards the end of the control.

2.3.2. Reflecting track record in the cost assessment process

We understand other GDNs have not employed similar workforce planning and instead are unable to deliver their RIIO-GD2 plan, quoting resource issues and demands of contractors. This has resulted in handing back workload because it is too expensive to complete [20], a position with which we do not agree with.

We would expect a basic principle of the cost assessment process to reward those who can deliver on their commitments, and also to adjust a GDN's cost base which been softened by handing back outputs due to pressures it could have mitigated. In RIIO-GD2 Business plans, other GDNs (including those now failing) put forward this same principle.

We made similar arguments in RIIO-GD1 where a number of GDNs failed their emergency standard but were influencing Ofgem's cost benchmark for the industry, creating an inappropriate efficiency challenge. Ofgem agreed with the issue and made adjustments as a result: *'[Ofgem] made an adjustment of +£0.75m to emergency costs in 2010-11 for each GDN (all four NGGD and NGN) that failed the emergency standard in that year. The adjustment reflects our assessment of the additional costs that would have been required to meet the standard.* [21]

Similarly, an additional or alternative adjustment for deliverability of plans within the cost assessment process itself should be considered. We welcome Ofgem's consideration of this point when setting allowances for the next price control.

2.3.3. Our track record in comparative analysis

To better understand our cost base and ensure we are as efficient as possible we look at our regression position for RIIO-GD1 outturn (8 years actual 2013-2021), and the current RIIO-GD2 outturn (3 years actual 2022-2024).

We have utilised models shared by the Ofgem team with the GDNs. We have updated for costs submitted up to and including the year 3 2023/24 RRP. We have adjusted underlying reported costs to remove expenditure relating to reopeners, as submitted within the 2024 AIP; this normalisation should provide a more comparable basis to assess efficiency of the current price control to date.

[20] Document 60E - Oxera (2024), 'Review of Ofgem's proposed approach to cost assessment at GD3', November, section 2.3.
[21] Ofgem (2012), 'RIIO-GD1: Final Proposals - Supporting document - Cost efficiency', December, para 6.8., p31

The following tables summarise the results alongside our observations of our performance:

OPEX

GDN	GD1 outturn	2021/22	2022/23	2023/24*	GD2 outturn
EoE	6	7	6	4	6
Lon	8	8	8	7	8
NW	7	6	7	5	7
WM	5	4	3	3	3
NGN	3	1	2	6	4
Sc	1	2	1	2	1
So	2	3	5	8	5
WWU	4	5	4	1	2

GD1 outturn	GD2 outturn
6	6
8	8
7	7
5	3
3	4
1	1
2	5
4	2

Observations and relevance to RIIO-GD3:

- the initiatives undertaken in RIIO-GD2 have improved our relative ranking from 4th to 2nd position.
- This is particularly evident from the continued improvement in the 23/24 year which we expect to continue into the final two years.
- This is as expected given the efficiencies we have benefited from through the joined up in-house operating model and the success of our short-term non-formula contracts
- This cost efficiency has been delivered with an operating model that has met all our Standards of Performance, particularly our emergency response
- We continue this level of embedded efficiency into our RIIO-GD3 Business Plan.

CAPEX

GDN	GD1 outturn	2021/22	2022/23	2023/24*	GD2 outturn
EoE	7	5	3	8	6
Lon	2	2	5	1	2
NW	3	7	6	7	7
WM	5	8	8	6	8
NGN	8	4	2	3	1
Sc	6	3	4	2	3
So	1	1	7	4	5
WWU	4	6	1	5	4

GD1 outturn	GD2 outturn
7	6
2	2
3	7
5	8
8	1
6	3
1	5
4	4

Observations and relevance to RIIO-GD3:

- Ranking year on year is difficult to assess given the fluctuating nature of Capex spend, so we focus on the ranking movements between price controls.
- we have retained our 4th position across controls.
- we are on target to deliver all our Capex workload in RIIO-GD2. In the above we assume all GDNs will deliver on their RIIO-GD2 commitments also.

REPEX

GDN	GD1 outturn	2021/22	2022/23	2023/24*	GD2 outturn
EoE	3	7	7	6	7
Lon	5	6	6	5	5
NW	4	5	5	4	4
WM	7	8	4	3	3
NGN	1	1	3	1	1
Sc	6	2	1	2	2
So	8	4	2	8	6
WWU	2	3	8	7	8

GD1 outturn	GD2 outturn
3	7
5	5
4	4
7	3
1	1
6	2
8	6
2	8

Observations and relevance to RIIO-GD3:

- In RIIO-GD1 we were upper quartile, a position maintained for many years.
- In the final years of RIIO-GD1 it was clear to us that the cost assessment models were not adequate to compensate for the significant shift in the profile and work mix of RIIO-GD2; the cost drivers and cost pressures that we as a network had visibility over. As a result, inadequate allowances were set and our relative efficiency ranking has worsened as predicted given those cost drivers were not adjusted in RIIO-GD2. Later in section 5.3.3 we set out the cost drivers that are impacting RIIO-GD2 as well as RIIO-GD3, in particular those drivers that comparatively impact WWU to others (i.e. ductile iron). Equally no sparsity adjustment was applied to repex activities; we find evidence (both from econometric analysis and operationally) that demonstrates this to be wrong – see section 6.2.
- Our 2021/22 performance is due to large contract related provision releases and contractual 'pain/gain' benefits (profit or loss sharing) in the first quarter of the year (contract ceased 31 June 2021); this effectively meant the contractor was making significant losses in the millions per month, and was subsidising the contract out to closure, benefitting the costs supported by the consumer.
- We note we have not adjusted for Streetworks or HSE policy (fatigue) reopeners submitted within RIIO-GD2, which impact WWU significantly within RIIO-GD2 Repex, and we assume the other GDNs as well. This is because other GDNs have redacted their claim values and so there is no comparable value to adjust all cost bases. Through the Annual Iteration Process for 2025/26 price setting, we will gain this visibility and will re-run this comparative assessment.
- It is non-sensical that a company that has improved efficiency across Opex and retained its relative position in Capex could move from 2nd to 8th on Repex over the same period. This contrasts with the cost saving programme completed and the financial efficiencies described above. The lack of recognition of a sparsity impact on Repex and the earlier impact on WWU of higher unit costs has resulted in an apparent deterioration in efficiency. We would expect that once these two elements are accounted for through a regional factor adjustment and modelling using RIIO-GD3 data that our estimated efficiency would return to RIIO-GD1 outturn level.
- We reiterate that the cost assessment process is not adequately reflecting the cost drivers impacting the programme (explained further in section 5.3.3), the impact of sparsity on Repex (explained further in section 6.2), or the shift in costs over a short time period (explained further in section 5.4). Without changes to the assessment models to address all these issues our underperformance and comparative ranking will continue into RIIO-GD3.

- For our RIIO-GD3 plan, we developed and assured our "Mains Replacement Cost Component Model" – the bottom-up model that forecasts the cost of each pipe, project and therefore the programme to be delivered in RIIO-GD3. This ensures our Repex submission is as accurate and efficient as possible, and it accurately reflects the changing cost drivers being experienced today. This work is set out in section 5.3.3. Our Mains Replacement forecasts have been through external assurance by qualified experts who find it to be robust and in line with best practice as set out in section 5.3.2. We ask Ofgem to take account of this evidence and Assurance, among other works, once provisional allowances have been derived from updated Cost Assessment models.

TOTEX

GDN	GD1 outturn	2021/22	2022/23	2023/24*	GD2 outturn
EoE	7	7	8	7	8
Lon	8	8	7	4	6
NW	6	5	5	5	4
WM	5	6	4	3	3
NGN	1	1	1	2	1
Sc	3	2	2	1	2
So	4	3	6	8	7
WWU	2	4	3	6	5

GD1 outturn	GD2 outturn
7	8
8	6
6	4
5	3
1	1
3	2
4	7
2	5

Observations and relevance to RIIO-GD3:

- Our RIIO-GD2 Totex performance has deteriorated from 2nd to 5th only because the assessment models do not adequately account for Repex cost drivers.

- Our repex forecasts are robust and we are tracking in line with our year 4 forecasts. We expect our comparative position to move downwards due to repex only.

2.3.4. Repex and our CMA appeal

In 2021 WWU appealed Ofgem's proposed changes to the Licence to implement their RIIO-GD2 Final Determinations to the Competition and Markets Authority ('CMA') inter alia over its Repex allowances set by Ofgem in the Final Determinations[22]. This followed recognition of escalating costs highlighted by the prices submitted by suppliers in our extensive external tender event, demonstrating that our Repex allowances were set too low. We did not take this decision lightly but could see that the cost assessment outcome was not adequate.

However, we are now experiencing the price rises predicted. Our forecasts in that appeal were robust and supported by external market tender results and have come true - our latest RIIO-GD2 forecasts show an adjusted underperformance in Repex of c.£82m[23] (18/19 prices); our CMA ask was c.£76m (18/19 prices) based on the evidence available and presented to Ofgem and subsequently the CMA.

As set out, we reacted accordingly to mitigate the financial risks we could see coming over the horizon and acted decisively. Our allowances were set too low and the cost assessment methodology flawed.

For reference, later in this document we set out the perceived issues with the cost assessment model for Repex (see chapter 5) including accurately reflecting all cost drivers (section 5.3.3) and the impact of sparsity on Repex (and maintenance) (section 6.2.4).

[22] Notice of appeal: Wales & West Utilities Limited, part III, C, p79-p120
[23] RRP reported numbers, adjusted for one off inconsistencies in allowance allocations, and one-off contractual releases

3. Efficiency in our plan

3.1. How we test the efficiency of our plan

At WWU we continually assess the efficiency of our cost base, whether that be the strategic operating model we employ, the supply chain we work with, or the size of our supporting departments. In this chapter we explain each of these areas:

- How we have market tested the cost efficiency of our operating model
- How we regularly check the value for money of our supply chain
- How we assess the efficiency of our back office and support departments
- What efficiency we have embedded in our plan, already embedded through BAU innovation.

Ongoing efficiency is discussed separately within chapter 4.

3.2. Testing the efficiency of our operating model

3.2.1. Our RIIO-GD2 external tender

In readiness for RIIO-GD2, we completed significant External Market Engagement that consisted of two rounds of Pre-Market Engagement and a Tender event that included in its scope all WWU Operational activities (Mains replacement, Connections, Maintenance, leakage and repairs). The entire process was the culmination of almost 3 years work and involved a dedicated project team.

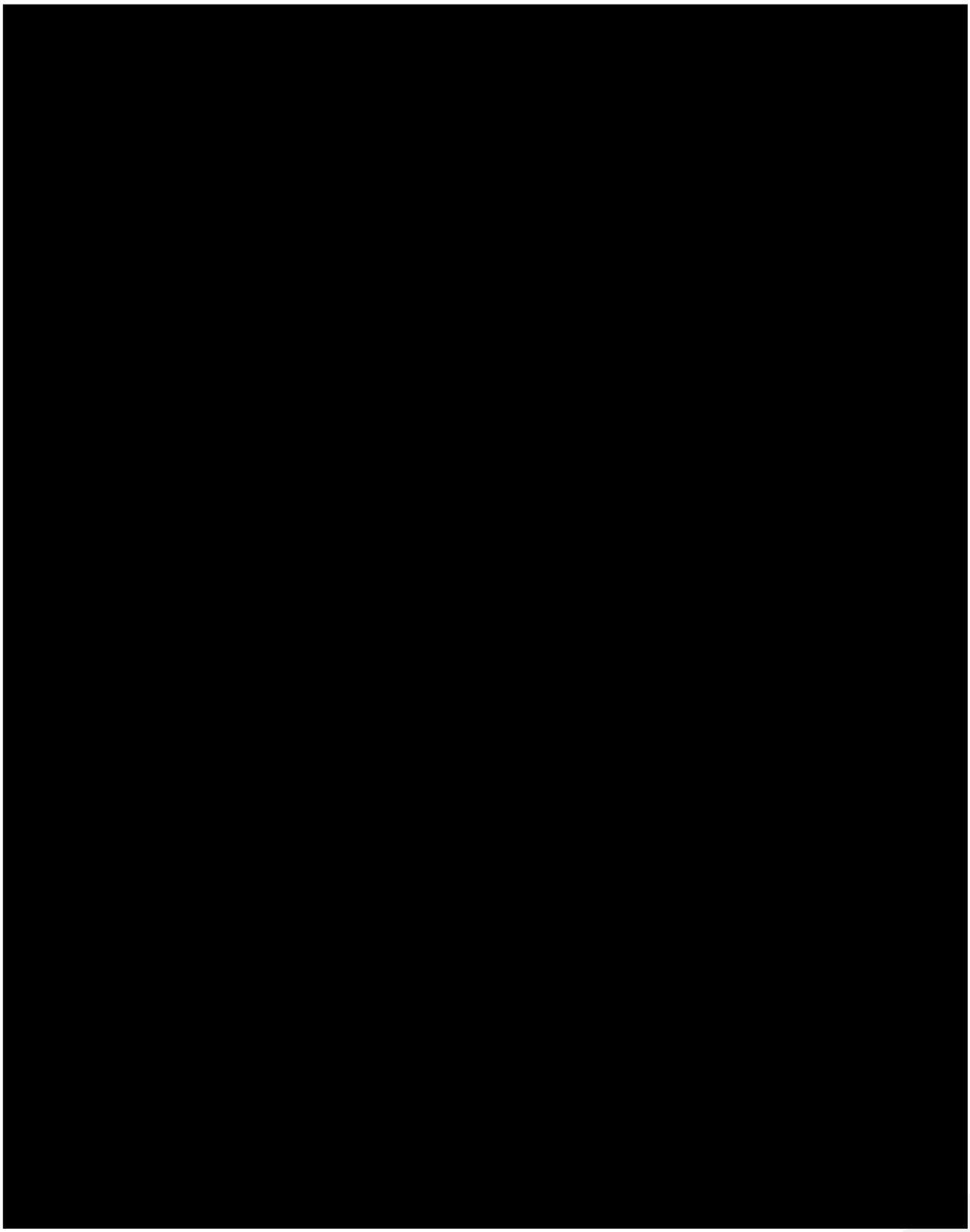
The headlines from this tender process were:

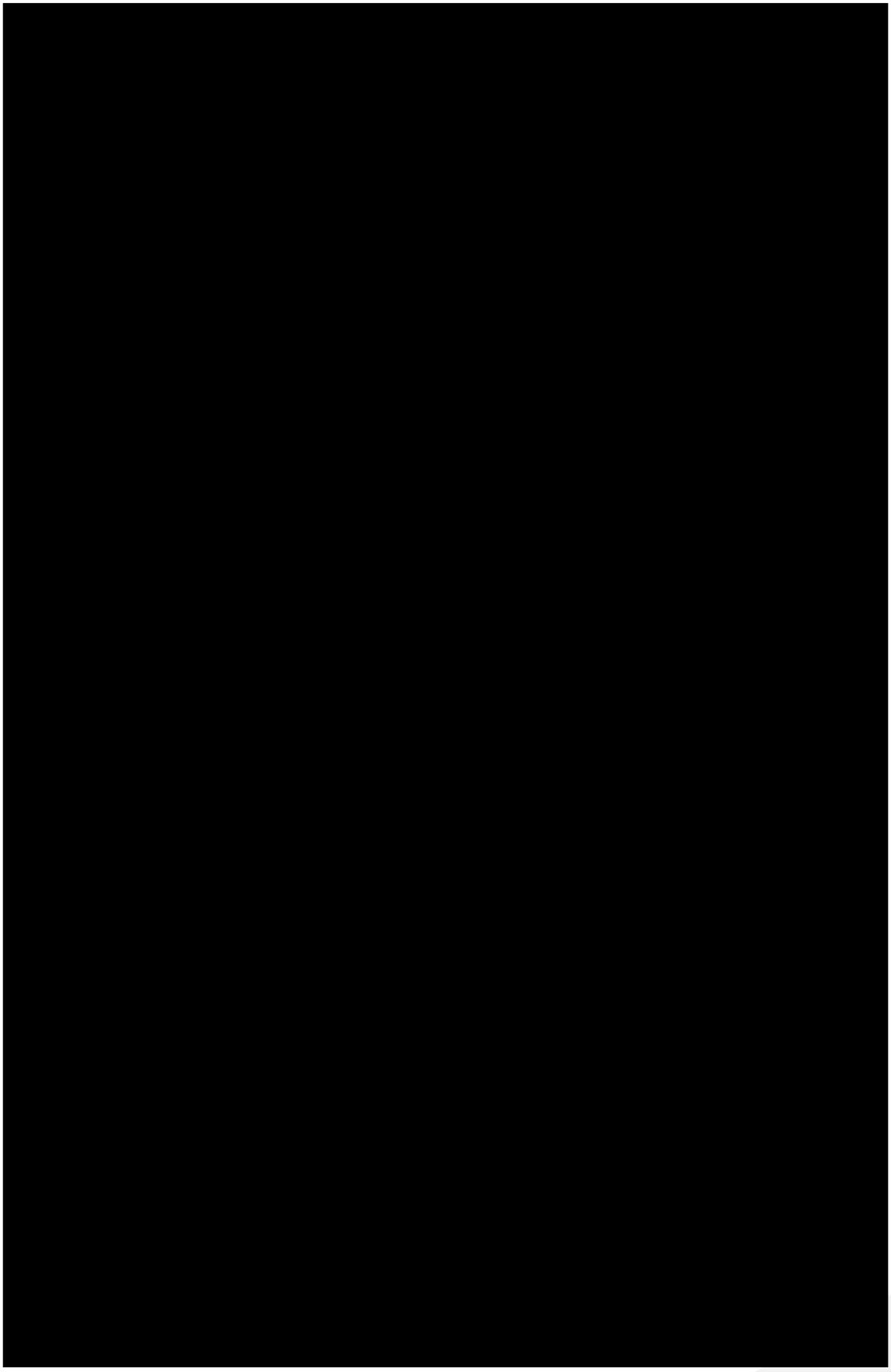
- There was little viable interest in Maintenance or Emergency activities. No award was made in these areas, and it was clear in-house delivery of these activities was the only viable option.
- Mains Replacement had good external market interest. There were 27 expressions of interest and 12 responses to the Pre-Qualification questionnaire. We chose to take 8 organisations through to tender negotiation.
- There was interest in the regions encompassing the M4/M5 corridor areas. There were no bids for some of the sparser areas of our region, such as Plymouth and Cornwall.
- Following two rounds of clarification and negotiations, 4 tenderers remained.
- Remaining tenderers were unwilling to consider risk-sharing arrangements (like the existing pain-gain). They also expected a much higher management fee/profit than the existing £5m p.a. (23/24 prices) RIIO-GD1 contract. This included the incumbent contractor.
- The results of the Best and Final Offers showed that the unit cost of outsourcing mains replacement was c.£17m per annum more than allowances, an £88m underperformance across GD2.

During the process of the tender over 2019 and as it completed through 2020, it became clear that the changing risk profile in the market would lead to an increase in costs significantly above that allowed.

Concurrently with the tender, WWU designed the now embedded internal delivery model which has delivered substantial savings compared to the external market alternative. The full tender process, internal delivery model costing and comparisons between two options were subject to a third-party assurance

review, undertaken by expert consultants Turner & Townsend. Their report from 2021 as submitted alongside our CMA appeal is attached and available to Ofgem on request. This report demonstrates that WWU ran a robust process and enacted the delivery model that delivers the lowest cost option for WWU and consumers heading into RIIO-GD2.





3.3. Testing the efficiency of our supply chain

3.3.1. Our continuous approach to testing our supply chain

Our policies and processes are setup to maximise competitive tension, ensuring that multiple suppliers or contractors are competing for opportunities relating to services, such as developing infrastructure, maintaining the network, or supply contracts. Enabling this competition, ensures that we secure the best prices, quality of service, and contract terms. By keeping options open and not committing to a single provider too soon, we encourage all parties to improve their offers and performance, insisting on the best for our network.

With the move to an internal operating model, the majority of purchasing and spend now comes directly through WWU rather than through outsourced contracts. This provides us with greater visibility over our spend with our supply chain partners and better allows us to continually test the market to ensure we are getting the best value for money from our supply chain.

Market testing remains a key part of identifying fit-for-purpose solutions from quality partners that maximise value for the gas customer. Testing can be carried out in the form of quotes, formal tenders, best and final offers, negotiations or combinations of.

3.3.2. Our experience in RIIO-GD2

Entering RIIO-GD2 we found that supplier appetite for risk was vastly diminished, and we expect this to continue through into RIIO-GD3. This has made risk pricing, risk allocation, contract schedules, incentives and the risk we must assume all items for negotiation. We have, and will continue to use risk workshops, pricing and our own risk position to negotiate best value for the gas customer. We have increasingly found running a tender event with a single participant to be common in RIIO-GD2, but to ensure competitive tension we will continue with the tender event, to provide the illusion of competition to the bidder/s where possible and beneficial.

We have long-standing relationships with many of the suppliers in our supply chain. There is a balance to be struck between value creation and innovation versus over reliance and familiarity. Effective contract management, acute commercial management and periodic market testing can ensure that standards are being maintained. To ensure that we have a robust, effective and best value supply chain for the UK gas customer, we operate with a small team of professionally qualified procurement staff; partner with a best-in-class logistics provider; and use the fundamentals of market testing; the principles of the Procurement Act, as well as competitive tension.

3.3.3. Continual tendering activity

Our operating model results in all purchasing and procurement activity coming directly to us rather than large parts of our operating cost being procured through third parties. Our centralised procurement team manage the efficient procurement of these services and goods, undertaking over 100 procurement events annually. Our procurement experts are responsible for specialist areas to maximise opportunities for savings, split across Engineering Services, Engineering Products, Non-Engineering Goods and Services.

Another key challenge that has arisen for our supply chain since 2021 is the long lead times that are now in place for key components from governors to light commercial vehicles to steel pipe - especially for short production runs. We have had to adopt longer planning horizons, greater transparency, earlier ordering and aggregating volumes to avoid or mitigate these timings.

Since the in-source of the mains replacement activity in 2021 the vast majority of major supply or material contracts have been through a competitive process to maximise any procurement or commercial opportunity that could be achieved, including aggregated spending, geographical tendering, longer term contract terms etc. These savings are already embedded in our experienced cost base and therefore embedded in our RIIO-GD3 plan. Examples include:

Example 1 – Aggregating Volume and Planning.

The HN039 Pipeline is a major deliverable for WWU in RIIO-GD2. The 13km pipeline required replacement and significant planning due to the technical and environmental challenges. The pipeline required both PE and Steel sections of pipe. The tender event for the steel was combined with the requirements of a fully chargeable diversion for a customer. This increased the volume for the suppliers and improved the outturn costs for both projects. The event attracted interest from 7 providers (where historically we had struggled to get interest from 3) and generated like for like savings of over £200k (~50%)

For the PE pipe the existing frameworks were used to benchmark the value, but by aggregating spend and running the event well in advance of the delivery date the requirements were released wider than the contracted parties. In the end the framework prices were undercut by 28% (efficiencies in a long, planned production run and utilising an ex-works pricing model), representing some £115k in price reduction.

Example 2 - Aggregating Volume

In 2021, following a Utilities Contract Regulations compliant tender event, that aggregated the Cloud Infrastructure Support and Digital Services (including Azure Integrations and Office 365 optimisation) was completed. The tender event attracted 74 expressions of interest and finally 16 bids from a variety of IT service providers. This aggregation of requirements and the increased leverage from a larger scope attracted more market interest, generating more competition and ultimately releasing better value.

In the final analysis and using a Best and Final offer as part of the advanced negotiations, annual savings of £0.4m per annum (2023/24 prices) were achieved on a like for like basis.

Example 3 - Consolidation of Traffic Management

In 2022, following a Utilities Contract Regulations compliant tender event, we performed a Traffic Management tender to consolidate Traffic Management services, moving to geographically based contract agreements. The tender event attracted 74 expressions of interest and finally 16 bids from a variety of IT The value-add benefits included maximisation of supplier commitment, efficiency in ordering, enhance opportunity to drive efficiency and effectiveness of the management of the contract (e.g. proactive off-hiring).

The commercial value was estimated to be 18%, £0.3m saving per annum (2023/24 prices).

Example 4 – Consolidation and aggregation of Non-Operated Plant & Hire Equipment

In 2022, following a Utilities Contract Regulations compliant tender event, we performed a Non-Operated Plant and Equipment Hire tender to consolidate existing services across multiple service providers. The tender event attracted 13 expressions of interest and finally 7 bids from a variety of viable providers. The value-add benefits included maximisation of supplier commitment, efficiency in ordering, and enhanced opportunity to drive efficiency and effectiveness of the management of the contract (e.g. proactive off-hiring).

The commercial value was estimated to be 8% of total spend, £0.4m saving per annum (2023/24 prices).

3.3.4. BAU innovation already embedded in our GD3 plan

3.3.4.1. Context

In addition to the savings and efficiencies set out above, as gas networks we have completed a number of innovation projects to improve safety and efficiency which are embedded in BAU. These span across all work activities such as leakage and repairs and mains replacement.

We have dedicated roles that focus on maintaining performance across several areas, including but not limited to safety, time efficiencies, environmental and customer satisfaction. Finance, Best Practice, Commercial and Operations teams work together to good effect improving awareness, identifying trends and reducing costs where possible. The focus on these best practice areas is required to maintain the efficiencies that we're achieving today and which is embedded within our GD3 plan.

We will face challenges in RIIO-GD3 in identifying any further BAU innovation that will result in a financial benefit to consumers. Most notably, we are now entering the final phase of the IMRRP; innovative techniques are already adopted and embedded where possible and suitable to our network. Given the time it takes to validate innovative technologies as safe for use and operationally roll-out, we do not anticipate there will be any substantial innovation in RIIO-GD3 on BAU that results in financial savings. This will certainly be the case for third parties who have an investment payback period limited by the end of the IMRRP on 31 December 2032. This is also true for other operational activities; we do not expect innovation on business-as-usual operational activities to be wide ranging or yield material productivity improvements within GD3. Instead, we expect them to focus on safety and compliance challenges.

We discuss this in further detail within our Innovation Strategy. [24]

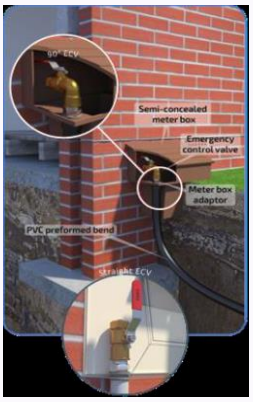
3.3.4.2. Example of BAU innovation

There are significant benefits already embedded in our day-to-day practices already, following years multiple price controls of investment and embedding. The following provides some specific examples of innovative solutions that are now embedded within BAU:

Example: single person repairs (M-CEX Kit (Emergency Control Valve Exchange Kits))

The M-CEX Kit allows a single FCO to carry out an emergency control valve exchange following a gas escape, rather than utilise a 2-person repair team. Based on the initial efficiency study, 500 exchanges were to be conducted per annum and so switching to a single person repair presented a significant opportunity for utilisation and cost savings.

The most significant benefit has been the improved utilisation of manpower; repair teams have been able to undertake other tasks and typically this has led to a reduction of 2,491 repair team requests. The disruption to the customer has also been significantly reduced through less time off gas and fewer, if any, excavations on their property.



Other innovative solutions which have supported delivery through RIIO-GD1 and RIIO-GD2, and are embedded in our RIIO-GD3 plan include:

[24] Document 50 – 'Innovation strategy'

- High ratios of insertion for tier 1 replacement. Insertion is always the preferred method, and through focusing on project design and closely monitoring the operational teams to ensure they are delivering as per plan we maximise insertion which is the cheapest solution.

- A focus on live insertion, reducing the number of customer interruptions and delivering real customer benefits. Live insertion requires just one interruption to the supply instead of two interruptions (usually on different days) required by utilising the dead insertion technique.

- Our self-funded innovation project to develop 500m coil trailers has significantly supported insertion and has driven down cost and environmental impact. This is now used throughout the GDNs, driving improved performance for all gas consumers.

- Capital purchase of welfare units, vans, and plant to avoid paying a premium for these through plant supplier hire rates.

- Ductile Iron Cutter – we use the ductile iron cutter to reduce the impact on customer interruption times and to partly mitigate the time taken to access a new main following live insertion of the pipe to be abandoned, albeit the time taken cannot be reduced to levels experienced on Cast and Spun Iron.

3.4. Testing the efficiency of our back-office and support departments

In our RIIO-GD2 Business plan we undertook benchmarking analysis for a number of our back office and operational support departments. Those reports concluded:

1. Finance[25] - "The overall Total Expenditure (Totex) spend on finance services (£11.5m evaluated) is reasonable and appropriate to an organisation of the size and scale of WWU; and represents 'Value for Money' to WWU and its customers."

2. People and engagement (HR, payroll, stakeholder engagement, corporate affairs, Occupational health, training of employees)[26] - "The size of the People & Engagement function is commensurate to an organisation of the size and scale of WWU"

3. Office and depots[27] - "having reviewed the WWU budget costs it is apparent that despite limited personnel and resources WWU provide an efficient and cost-effective property management and facilities services that adheres to industry standards with an appropriate service delivery for portfolios of this type, scale, and requirements."

The outcome of these reports still stand given our FTE headcount in these departments remains stable, with the exception of marginal increases to recognise the Mains Replacement operating model change. These FTEs and costs are now direct costs to us rather than through an overhead charge or management fee charge from a contractor.

[25] Alchemmy ImprovIT (2018), appendix-9i-finance-independent-benchmarking-consultant-report
[26] Alchemmy ImprovIT (2018), appendix--people-engagement-independent-benchmarking-consultant-report
[27] Cushman & Wakefield (2019), appendix-9k-office-depot-property-portfolio-independent-benchmarking-consultant-report

IT & cyber costs - there has been a significant increase in cost and headcount within both IT & cyber departments, an increase which we are already underway with given the majority of roles requested through RIIO-GD2 reopeners were approved and deemed required by Ofgem. To determine the roles required within these departments, consultancy experts NCC Group helped us determine the operating model required to meet and maintain Enhanced CAF by the required deadline. Our plan also includes critical investment protecting our critical assets and data. We set out our headcount and associated cost within our IT & Telecoms Strategy[28], which is supported by an independent IT Benchmarking Report undertaken Gartner. [29] Further information on cyber security, which has been benchmarked by Ofgem through the recent reopener allowances, is included within our Cyber Security Strategy.[30]

Cost assessment - as set out in sections above we operate a different operating model to other GDNs and this will impact any FTE comparative analysis that Ofgem undertakes and will create differences across GDNs. We discuss the impact on cost assessment within section 5.2.

Economies of scale - it should also be noted that, as a single GDN, we are unable to leverage economies of scale that other GDNs can. Our view on this is set out in section 5.6.

[28] Document 59 – IT & Telecoms Strategy
[29] Document 59A – IT Benchmarking Report (Gartner)
[30] Document 37 – Cyber Security Strategy

4. Ongoing Efficiency

4.1. Work commissioned

4.1.1. Work commissioned with Economic Insight

Through 2024, Gas Distribution and Gas Transmission jointly commissioned Economic Insight (EI) to report on the potential range for Ongoing Efficiency (OE). This work was facilitated through the Energy Networks Association (ENA) and then subsequently Future Energy Networks (FEN).

In May 2024, EI provided their initial report 'Ongoing Efficiency for Gas Networks at RIIO-3' (the Economic Insight report)[31] on the potential for OE at RIIO-3 recommending a range of 0.2% to 0.8% p.a. EI did not advocate any particular point estimate within that range, but recommended that:

(a) post-benchmarking adjustments to the range should be avoided; and

(b) point estimates from any benchmarked range should generally be taken from values 'towards the middle' of the range.

(c) the OE target for RIIO-3 should reflect the wider slowdown in UK productivity growth.

In September 2024 EI produced a supplemental report with additional updated evidence on the relevance of the wider UK productivity slowdown to the setting of OE at RIIO-3[32] further supporting a figure closer to the middle of their initial report would be most suitable.

4.1.2. Further complementary work undertaken with Oxera

As a cross-check to the EI reports and OE range, we have worked alongside our economic advisors, Oxera, to assess the range proposed and consider evidence that allows us to select an evidence based, stretching OE challenge that is specifically applicable to our cost base and activities. This complementary wok undertakes a detailed mapping exercise of our activities to relevant comparator sectors to narrow the OE range.

We consider each of these EI reports below, and the additional cross-check work undertaken, in concluding on our stretching OE challenge for the RIIO-GD3 period.

4.2. Our view of work undertaken by Economic Insight

In this section we set out the appropriate interpretation and implications of the Economic Insight (EI) report. This summary is complementary to the EI report and subsequent report, as both submitted documents support the ongoing efficiency (OE) assumption over the RIIO-3 price control within our business plan.

Based on analysis of productivity in the UK economy, EI reported its 'recommended range' for the OE challenge at RIIO-3 for GDNs. This range is from 0.2% to 0.8% p.a., and states that numbers towards the middle of the range are most appropriate.[33]

[31] Document 60B - Economic Insight (2024), 'Ongoing Efficiency for Gas Networks at RIIO-3', May
[32] Document 60C - Economic Insight (2024), 'Further Evidence on OE for Gas Networks at RIIO-3. Supplementary report', October
[33] Document 60B - Economic Insight (2024), 'Ongoing Efficiency for Gas Networks at RIIO-3', May, p71-p73

Subsequently EI has produced a supplementary paper [34] which updates the position from their original report. It concludes that

- the factors driving the wider productivity slowdown also apply to gas networks;
- the total factor productivity (TFP) growth of the gas networks has been significantly below Ofgem's OE targets and reflective of the poor overall productivity growth observed for the UK; and
- the most up-to-date forecasts do not indicate that the 15 year long structural break in productivity growth will come to an end in the near future.

Given EI's recommendation, its supplementary report, our own insight and the context of RIIO-GD3, we consider that a stretching point estimate is 0.6% p.a on Totex on which OE should be applied (c.80% of totex), which is 0.5% p.a. on all totex. This is what we have assumed within our business plan.

The following provides our reasoning for suggesting this value as an appropriate OE challenge and is structured as follows:

- We review the appropriateness of the comparator industries selected and the weighting that each is given in Economic Insight's calculation of an OE estimate in light of the activity mapping exercise we have undertaken as part of our cross-checking work
- We consider specific areas of our cost base and whether any should be excluded from having an OE challenge applied.
- We assess the approach used to estimate the upper bound in the EI report.
- We present our concluding remarks and the selected stretching OE challenge.

4.2.1. Comparator selection

The selection of relevant comparator industries is a crucial step in finding an appropriate OE estimate. Problems can arise if irrelevant industries are included in the comparator set, or, if less relevant industries are given a higher weighting than more relevant ones. In either scenario, the resulting calculation will provide an OE estimate that is not reflective of the productivity growth capable of the company upon which the challenge is being applied.

The EI report uses an approach to comparator selection that selects industries based on if they conform across three criteria. These are:

(i) similarity of activities being undertaken.
(ii) competitiveness of industry; and
(iii) extent of scale effects.

Following the selection of 11 comparator industries, EI has used the February 2023 publication of EU KLEMS (which includes data from 1995–2019) to estimate the annual productivity growth for each over two different time periods. The time period used for the lower bound is 2010–2019, as this is identified as

[34] Document 60C - Economic Insight (2024), 'Further Evidence on OE for Gas Networks at RIIO-3. Supplementary report', October.

the most recent business cycle (used as productivity is generally accepted to be procyclical). The period used for the upper bound is 1970–2019 as this is the full period of data that is available in EU KLEMS [35].

A simple average of the productivity growth rates for all 11 comparators is taken for both time periods, which implies an equal weighting on each comparator industry in the final estimates of 0.2% p.a. and 0.8% p.a. for the lower and upper bounds respectively.

In our view, the results of the comparator selection approach used lead to an overweighting on the manufacturing industry and as evidenced through the activity mapping exercise from our cross-checking work, omit some relevant comparators such as the professional services and the IT and information services sectors.

As a result, the overweighting of manufacturing and the issues evidenced by the activity mapping cause the recommended range to include higher estimates than are appropriate.

4.2.2. Weighting on manufacturing

Of the 11 constituents of EI's preferred comparator set, seven are related to manufacturing. This includes 6 subsectors in addition to the aggregated industry, resulting in a total weighting of 64% placed upon the sector.

This majority weighting is, in our view, too high for the following reasons.

There are 15 disaggregated groupings of the manufacturing sector contained within the EU KLEMS database, far more than there are for other industries. This reflects the broader economic context during the development of such productivity metrics, as manufacturing was a significant contributor to the economy as a whole and productivity metrics were designed to measure the sector in greater detail than other sectors. Moreover, it is relatively straightforward to measure the process of transforming physical inputs into physical outputs. In comparison, sectors like 'Transportation and storage' or 'Information and communication' did not contribute as much to national output, which is why it was acceptable to capture their output only at an aggregated level. Had there been an equal level of disaggregation across all industries in the EU KLEMS dataset, it is possible that more non-manufacturing sectors would have been included in the final comparator set.

Considering manufacturing both at the aggregated and disaggregated levels presents an issue of double counting and is inconsistent with the other comparator sectors that have only been considered at an aggregated level. For instance, one of the comparator industries is the aggregate manufacturing industry 'Total manufacturing' and there are then six disaggregated components of manufacturing. This may present a double counting issue, as the latter are sub-categories of the former. Additionally, Economic Insight identifies that 'industry level estimates of productivity are inherently more volatile than more aggregated measures'.[36] Hence, this disaggregation may introduce additional volatility risk to the data and analysis relative to if it were done at an aggregated level.

We consider that there is little evidence to suggest that GDNs operate as manufacturing companies. As a gas distribution network, our primary purpose is not to manufacture goods but to repair, maintain and replace gas infrastructure. These activities align much more closely to the UK Standard Industrial Classification (SIC) Hierarchy definition for construction than they do to manufacturing.[37]

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[35] EU KLEMS has released two databases named NACE I and NACE II, with the former covering the period 1970–2007 and the latter from 1995–2019. Economic Insight uses a weighted average of the estimates calculated using these two databases, as they cannot be combined.
[36] Document 60B - Economic Insight (2024), 'Ongoing Efficiency for Gas Networks at RIIO-3', May p. 8.
[37] See ONS, 'UK SIC Hierarchy',

The definition of construction states that it:

'includes general construction and specialised construction activities for buildings and civil engineering works. It includes new work, repair, additions and alterations, the erection of prefabricated buildings or structures on the site and also construction of a temporary nature.'

Whilst the definition of manufacturing is:

'the physical or chemical transformation of materials, substances, or components into new products… The materials, substances, or components transformed are raw materials that are products of agriculture, forestry, fishing, mining or quarrying as well as product of other manufacturing activities.'

While some activities include maintenance and repair, we are much more similar to construction companies (see evidence based on activity mapping below). We note that 'construction' is identified as a comparator by EI, but, since EU KLEMS data only contains the aggregate sector, we consider that it is underweighted in the calculation (9%) relative to manufacturing (64%).

Finally, the high weighting on manufacturing is in contrast to the regulatory precedent. The dissimilarities between network companies and manufacturing were acknowledged by Cambridge Economic Policy Associates (CEPA) in its analysis which informed the Gas and Electricity Markets Authority's (GEMA) approach at RIIO-2 to setting the OE target. Due to the identified differences, manufacturing was excluded from CEPA's targeted comparator set.[38]

Conducting the total factor productivity (TFP) analysis using CEPA's methodology and targeted comparator set using the updated EU KLEMS data results in an estimate of -0.3%, both when the same time period is used as at RIIO-2 (1997–2016) and when the analysis considers the full NACE II period (1995–2019).[39]

If, as we see appropriate, the disaggregated manufacturing sectors were removed to keep only the aggregated 'total manufacturing' sector, and a simple average taken over the resulting five comparators, the range would shift significantly to 0.0%–0.3% p.a.

4.2.3. Activity mapping

To construct a comparator set that we think is more closely aligned to our operations, we undertook an activity mapping analysis to map our costs to the EU KLEMS sectors based on the similarity of outputs. A representative sample of all projects across Capex, Opex, and Repex was selected, and the outputs were broken down to a level that allowed mapping to the disaggregated levels of the SIC classification available in the EU KLEMS database (such as manufacturing of electrical equipment, IT and other information services, etc.). Mapping to aggregated sectors was prioritised as estimates at the disaggregated sub-sector level are inherently more volatile. However, in cases where mapping activities to aggregated sectors would be unsuitable—such as when an aggregated sector includes multiple sub-sectors that are not relevant to our business—the activities have been mapped to disaggregated sectors instead. In addition, both an aggregated sector and the disaggregated sectors within it have not been included jointly in the targeted set to ensure that there is no double counting.

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[38] CMA (2021), 'Cadent Gas Limited, National Grid Electricity Transmission plc, National Grid Gas plc, Northern Gas Networks Limited, Scottish Hydro Electric Transmission plc, Southern Gas Networks plc and Scotland Gas Networks plc, SP Transmission plc, Wales & West Utilities Limited vs the Gas and Electricity Markets Authority Final determination Volume 2B: Joined Ground B, C and D', 28 October, para. 7.199.

[39] Document 60B - Economic Insight (2024), 'Ongoing Efficiency for Gas Networks at RIIO-3', May p.101. Note that CEPA's narrow-set included Construction, Wholesale and retail trade; repair of motor vehicles and motorcycles, Transportation and storage, and Financial and insurance activities.

Based on this analysis, the industries that are best aligned to our operations are as follows:

Industry	SIC
Manufacturing	C
Manufacture of electrical equipment	C27
Manufacture of furniture; jewellery, musical instruments, toys; repair and installation of machinery and equipment	C31-C33
Water supply; sewerage; waste management and remediation activities	E
Construction	F
Transportation and storage	H
Information and communication	J
IT and other information services	J62_J63
Financial and insurance activities	K
Professional, scientific, technical, administrative and support service activities	M_N
Education	P

Note: The aggregated sectors of 'Manufacturing' and 'Information and communication' are not included in the targeted comparator set since they include multiple sub-sectors that are irrelevant to WWU's activities and including them would lead to an inaccurate mapping. Instead, for these activities, mapping has been done to disaggregated sub-sectors 'Manufacturing of electrical equipment,' 'Manufacture of furniture; jewellery, musical instruments, toys; repair and installation of machinery and equipment,' and 'IT and other information services' since they are more closely aligned to WWU activities.

Source: Oxera analysis based on WWU data.

The activity mapping exercise also identifies the appropriate weighting of each of these sectors. This is set out later in section 4.2.7.

4.2.4. Applicability of OE to cost areas

To ensure an appropriate OE target is applied to the correct areas of the cost base, two approaches can be considered. One approach would be to apply a higher OE estimate, derived from a less refined comparator set, to a smaller cost base that excludes cost categories that are generally non-BAU, where achieving OE is challenging. Alternatively, a lower OE estimate, derived from a highly relevant comparator set, including only industries such as construction, could be applied to the entire cost base. Since industries such as construction also involve complex and discrete projects like GDNs, they may face similar limitations in learning by doing and this may result in lower relative productivity levels. In our view, applying a high OE target to the entire cost base is inappropriate and puts excessive burden on GDNs.

At RIIO-2, Ofgem applied an OE challenge to Capex, Opex and Repex for GDNs. However, at RIIO-3 we expect some major cost areas will consist of more complex projects where there is less scope for learning-by-doing over time, for instance the large LTS pipeline replacement projects required.

There is regulatory precedent to suggest that there should be consideration of the applicability of OE to certain cost areas. In the PR19 final determination (FD), Ofwat specified that it will only apply frontier shift

to certain enhancement cost areas [40]. The applicable cost areas were said to 'encompass large, relatively homogenous, programmes of work that are more common across companies'.[41] This seems to align with Ofgem's RIIO-3 SSMD, in which Ofgem has suggested that it intends to carry out further discussions with GDNs on the applicability of OE to specific cost areas.[42]

Thus, to the extent that there is verifiable evidence that areas of a company's cost base are heterogenous and novel, and that this is not the case in the comparator sectors, then exceptions should be made to the application of an OE challenge, and that it is under consideration by Ofgem.

4.2.5. Evidence of areas unsuitable for OE

There are specific cost areas in our submission that appear less suitable for an OE challenge during RIIO-GD3 than others, as set out below:

Category - £m in 23/24 prices	26/27	27/28	28/29	29/30	30/31	Total
LTS pipeline replacement	4	25	25	25	2	82
Tier 1 stubs replacement	7	7	7	7	7	34
Complex Distribution Systems	1	1	1	1	1	5
Data & digitalisation	1	1	1	1	1	7
IT & Telecoms - Opex (new to GD3)	21	22	24	21	22	109
IT & Telecoms - Capex (new to GD3)	10	9	8	6	5	37
Cyber Resilience - Opex (new to GD3)	17	17	17	16	16	82
Cyber Resilience - Capex (new to GD3)	6	4	4	3	3	19
Physical Security - Opex	0	0	0	0	0	2
Physical Security - Capex	11	3	-	-	-	14
Net Zero and Reopener Development UIOLI	11	11	7	7	7	42
Advanced Leak Detection	5	0	0	0	0	6
Digital Platform for Leakage Analytics	0	0	0	0	0	1
Vulnerability costs moved to Totex	1	1	1	1	1	5
Total new spend - not subject to OE	95	102	96	89	65	447
Remaining investment plan	345	353	348	350	349	1,744
Total investment plan subject to OE	440	455	443	439	414	2,190
New spend as a % of total plan	*22%*	*22%*	*22%*	*20%*	*16%*	*20%*

In general, costs requiring a bottom-up technical assessment, unlike repeatable costs that are modelled through regression, are exempt from benchmarking efficiency adjustments. This further underscores their unique nature, requiring that they should also be exempt from OE targets.

Given the above evidence from EI, from our mapping exercise we have identified that 20% of our cost base accounts for areas where the application of an OE challenge is inappropriate because the comparator

[40] These areas were metering and the water industry national environment programme (WINEP). Frontier shift is Ofwat's equivalent to an OE challenge.
[41] Ofwat (2019), 'PR19 final determinations: Securing cost efficiency technical appendix', p. 122.
[42] Ofgem (2024), 'RIIO-3 Sector Specific Methodology Decision – Overview Document', July, para. 9.27.

sectors do not have similar issues. As such, in establishing our point estimate we have applied a detailed activity mapping approach and thus consider that this approach is appropriate to the entirety of our cost base. To the extent that Ofgem develops benchmarks based on less comparable sectors that do not have these issues then we consider that such a benchmark should only be applied to 80% of our cost base.

It is also worth noting that the Iron Mains Risk Reduction Programme (IMRRP) is due to end in 2032 and much of the possible innovation identified over the past 20+ years is already embedded by GDNs. Investment in innovative practices is unlikely to occur, as explained in EI's supplementary report[43], with suppliers unlikely to put additional capital into the programme due to the low probability of yielding adequate returns. With the IMRRP at the end of its delivery and no new similar investment opportunities anticipated, finding OE beyond that already achieved is likely to be challenging.

4.2.6. Estimation of the upper bound

The upper bound of the range presented in the EI report of 0.8% is too high to use as a point estimate. Whilst EI states that it does 'not advocate any particular point estimate' within its range, it does state that any point estimate should come from 'towards the middle' of a benchmarked range.[44] Given the lower bound of 0.2% p.a., this implies a point estimate of around 0.5% p.a. To refine the identification of an appropriate benchmark point estimate we consider EI's upper bound in more detail.

The upper bound of EI's OE range is calculated as the weighted average of the OE achieved over NACE I (1970–2007) and NACE II (1995–2019) periods.[45] The two values are weighted by the number of years that are included in each period. However, we consider that this methodology has the following limitations:

i. The analysis is not conducted over full business cycles, where UK business cycles since 1974 are identified as: i) 1974–1975; ii) 1975–1981; iii) 1981–1992; iv) 1992–2010; and v) 2010–2020.[46] as is generally accepted and consistent with the Competition and Market Authority's (CMA) redetermination for PR19 and final determination following the RIIO-2 appeals productivity should be calculated over complete business cycles.[47] Indeed, in the PR19 final report, the CMA stated that productivity analysis should be undertaken 'over full business cycles because productivity growth is typically procyclical'.[48] While Economic Insight calculates the upper end of the OE range over the complete NACE I and NACE II periods, it does not separate the data by business cycles. Specifically, the 1992–2010 period is not considered as a standalone business cycle since it spans across both NACE databases.

ii. The inclusion of data from 1970 is arguably not useful for understanding current and short-term achievable levels of productivity growth, rendering the results less relevant for the upcoming GD3 period.

Given the above, a more representative estimate could be obtained by utilising data over the most recent complete business cycle.

The use of the most recent business cycle (2010–2019) which is pre-COVID ensures that the OE analysis is reflective of the current macroeconomic conditions that are expected to continue over RIIO-3. Moreover,

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[43] Document 60C - Economic Insight (2024), 'Further Evidence on OE for Gas Networks at RIIO-3. Supplementary report', October, p16
[44] Document 60B - Economic Insight (2024), 'Ongoing Efficiency for Gas Networks at RIIO-3', May, p12.
[45] Document 60B - Economic Insight (2024), 'Ongoing Efficiency for Gas Networks at RIIO-3', May, p24.
[46] Document 60B - Economic Insight (2024), 'Ongoing Efficiency for Gas Networks at RIIO-3', May, 114.
[47] CMA (2021), 'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations Final report', 9 April.
[48] Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations Final report', para. 4.533.

as highlighted in the EI supplementary report, the most recent economic forecasts for the UK do not provide strong evidence supporting an unwinding of the productivity slowdown or indicate any short-term improvement in productivity growth to return to pre-crisis levels.[49] Additionally, the issue of underinvestment that has affected the broader UK economy also permeates the UK energy sector, which has seen a significant decline in investment since the financial crisis.[50]

Based on the above arguments, our OE analysis employs a weighted average approach, using a targeted comparator set identified through precise activity mapping for the 2010-2019 period.

4.2.7. OE analysis

Based on the activity mapping detailed in section 4.2.3, the weightings applied to the mapped industries are shown below:

Industry	Weight (TOTEX)
Manufacturing	
Manufacture of electrical equipment	1.0%
Manufacture of furniture; jewellery, musical instruments, toys; repair and installation of machinery and equipment	13.0%
Water supply; sewerage; waste management and remediation activities	2.3%
Construction	49.2%
Transportation and storage	3.8%
Information and communication	
IT and other information services	5.5%
Financial and insurance activities	0.7%
Professional, scientific, technical, administrative and support service activities	23.6%
Education	0.9%

Source: WWU/Oxera analysis based on EU KLEMS and data provided by WWU.

The productivity analysis is carried out for this targeted comparator set over the most recent business cycle of 2010–2019, as identified by EI, and using the gross output (GO) Total Factor Productivity (TFP) measure. As confirmed in EI's report, GO is the more appropriate measure as it also considers intermediate inputs, which represent around 50% of a GDN's controllable Opex.[51]

Under this approach and considering disaggregated comparator industries, the OE estimates are 0.4% for Capex, 0.0% for Opex and 0.3% for Repex. This leads to a weighted average for TOTEX of **0.2% p.a.** We note EI identifies that individual industry estimates of productivity are inherently more volatile than

[49] Document 60C - Economic Insight (2024), 'Further Evidence on OE for Gas Networks at RIIO-3. Supplementary report', October, p. 6.
[50] Document 60C - Economic Insight (2024), 'Further Evidence on OE for Gas Networks at RIIO-3. Supplementary report', October, pp. 11–13.
[51] Document 60B - Economic Insight (2024), 'Ongoing Efficiency for Gas Networks at RIIO-3', May, p. 17.

aggregated measures.[52] Due to this, we also conduct the analysis by mapping our activities to aggregated sectors only. The resulting weightings and comparator set is as shown below:

Industry	Weight (TOTEX)
Total manufacturing	13.9%
Water supply; sewerage; waste management and remediation activities	2.3%
Construction	49.2%
Transportation and storage	3.8%
Information and communication	5.5%
Financial and insurance activities	0.7%
Professional, scientific, technical, administrative and support service activities	23.6%
Education	0.9%

Source: WWU/Oxera analysis based on EU KLEMS and data provided by WWU.

Conducting the OE analysis with this targeted comparator set over 2010–2019, using GO TFP measures, the OE estimates are 0.6% for Capex, 0.5% for Opex and 0.4% for Repex. This leads to a weighted average OE estimate for TOTEX of 0.5% p.a.

Given our analysis, we believe an OE range of 0.2% - 0.5% p.a. is more appropriate over RIIO-GD3 and sits wholly within EI's range.

Additionally, considering CMA's decision that both simple and weighted average approaches had their pros and cons, the OE estimate using a simple average approach for the targeted set is -0.1% for Capex, -0.3% for Opex and -0.2% for Repex. This leads to an OE estimate of -0.2% for TOTEX which is well below the ranges otherwise set out, and demonstrates the upper bound estimates may be too high.

4.2.8. Conclusion and our selected OE challenge

Based on the above analysis, the upper bound proposed by EI is too high for the RIIO-GD3 period. We have calculated a more appropriate range, having considered EI's recommended range, its supplementary report, and the outcome of our activity mapping exercise which we consider to be 0.2% to 0.5% p.a. of spend on which OE is suitable.

Our mapping exercise also identified that c.20% of our cost base accounts for areas where the application of an OE challenge is inappropriate. We consider c.80% of our totex investment plan able to be subject to OE.

Considering the above we have selected a stretching ongoing efficiency challenge of 0.5% p.a. on 100% of totex, c£33m (in 23/24 prices) across the control. This represents 0.6% p.a. challenge on the activities suitable to an OE challenge. We confirm that our business plan submission does not include Ongoing Efficiency in the underlying BPDT figures as required by Ofgem.

[52] Document 60B - Economic Insight (2024), 'Ongoing Efficiency for Gas Networks at RIIO-3', May, p. 8.

4.3. Avoiding the risk of double counting efficiency

4.3.1. Issue of double-count

With the multiple mechanisms expected to be deployed by Ofgem at RIIO-GD3, such as OE, RPEs and the UQ cost assessment, there is a potential risk of 'doubling up' on these efficiency challenges. It is important that Ofgem is conscious of this risk and considers the approaches that it can take to ensure it does not set an OE challenge that results in double counting of efficiency.

In its report, EI identifies the double-count risk[53] but states that it can be avoided as long as the approach:

- allocates an OE challenge between cost reduction and output / outcome incentives; and
- avoids allocating the entirety of the OE challenge to cost reductions, whilst also setting outputs / outcomes incentives that implicitly include a degree of OE challenge.

This view is supported by the note in Annex 10 of the EI report, written by Professor Anthony Glass.[54] This note primarily deals with the interpretation of productivity growth. Productivity is measured on the basis of input and output quantities and is computed as the difference between changes in output quantities relative to input quantities. As such, an increase in productivity can, other things being equal, represent:[55]

- Input quantity reductions (and thus cost reductions) – doing the same with less;
- Output quantity increases (and thus revenue increases) – doing more with the same;
- Output quality increases (where both input and output quantities remain the same, but output is improved relative to the previous period) – doing better with the same.

Precedent suggests that regulators tend to interpret productivity growth as a route to cost reductions because, typically the 'base' output of a regulated utility company is assumed to be fixed (such as WWU, in operating and maintaining a fixed distribution network), with increases in output handled by a separate mechanism.

It is important that Ofgem's approach considers the possibility of realising required productivity gains as quality increases and not solely cost reductions. As cost reductions passed through to customer bills is one form of productivity gain, but reinvesting cost savings into quality-enhancing projects is another, ultimately a combination approach may be the best.

4.3.2. Linkage with RIIO-GD3

Given the above, we believe that there are a few key factors that must be taken into consideration by Ofgem to ensure that there is no issue with doubling-up on efficiencies.

- Productivity growth can be decomposed into two main components, catch-up to best practice and frontier shift, whilst TFP analysis assumes it represents frontier shift only, hence there is a risk of double counting. However, it is now standard practice in UK regulation to adjust for this – the assumption is that competitive sectors are efficient so TFP represents frontier shift. This is often why the regulated sector is not used as a comparator and was excluded at RIIO-GD2. Indeed, EI's analysis considers the competitiveness of the sector as one of its comparator selection criteria.

[53] Document 60B - Economic Insight (2024), 'Ongoing Efficiency for Gas Networks at RIIO-3', May, p. 69.
[54] Document 60B - Economic Insight (2024), 'Ongoing Efficiency for Gas Networks at RIIO-3', May, p. 120.
[55] This is given the assumption that the OE target is based on productivity estimates that incorporate only disembodied technical change (which is the standard assumption of the growth accounting frameworks).

- TFP can also sometimes be adjusted for economies of scale, this was another selection criteria considered by Economic Insight.

- In RIIO-2, companies were guided to discuss interactions between OE and innovation funding in their business plans. Ofgem's proposal of a 0.2% uplift for innovation funding was considered a material error by the CMA and overturned due to the following reasons: (i) other sectors also have R&D spend and so the benchmark TFP figures captured the effect; (ii) companies had accounted for innovation funding impact in their business plans; and (iii) innovation funding primarily focused on wider environmental / quality elements rather than cost reductions.

To conclude, it is important that Ofgem considers the potential risk of introducing double-count of efficiency when it applies its approach to setting the OE challenge at RIIO-GD3, especially considering the events of the RIIO-2 CMA appeals.

5. Cost Assessment approach

5.1. Overview

As we set out in our SSMC response, overall we do not think wholesale change is needed to the Cost Assessment Approach taken by Ofgem in the previous control, albeit we consider there to be some specific cost driver modifications required, and also consideration given to the significant cost changes of RIIO-GD2. The Cost Assessment models and toolkit can accommodate these changes as we set out in this chapter.

We have requested Oxera to conduct a review of Ofgem's overall modelling approach, specifically (i) the scope of Ofgem's main modelling considerations for RIIO-GD3 and (ii) whether these are likely to be sufficient in scope to deal with the step change in costs and the technical complexity of workloads that are expected over RIIO-GD3 [56].

In addition to how to deal with the continued increasing complexity, particularly in the mains replacement programme, and the areas of new spend to the control (i.e. Tier 1 stubs, IT & cyber) and other shared group costs (discussed below), the Oxera report highlights the following key considerations regarding Ofgem main regression specification:

- Level of aggregation (section 5.2): given reporting inconsistency concerns [57] (and potential implications for operational trade-offs and cherry-picking of efficiency benchmarks), a TOTEX approach is likely to remain the most appropriate at RIIO-GD3.

- Repex complexity (section 5.3): as WWU and Ofgem's consultants had also noted at RIIO-GD2 determinations,[58] the Repex synthetic cost driver (and accompanying regional factor normalisations) will need to account for additional complexity drivers such as the technique, ground surface, pipe material [59] and sparsity of workloads.

- Time period of assessment (section 5.4): it will be important to conduct tests for a structural change in cost–cost driver relationships. Contingent on the results thereof (for each relevant cost assessment category), Ofgem may need to reconsider the relative weighting and/or treatment of historical and forecast data in its benchmarking. This includes placing greater weight on more recent and/or forward-looking costs by using similar models over alternative time periods (e.g. RIIO-GD2 and RIIO-GD3 only, or RIIO-GD3 forecasts only), and/or testing alternative time dummies, trends, and multiplicative terms (to capture changes in the strength of relationships over time).

- Choice of benchmark (section 5.5): the choice of benchmark will depend on the robustness of Ofgem's models for RIIO-GD3 (e.g. relating to the precision of estimates and the reliability of the underlying data). For example, the use of an 85th percentile benchmark for RIIO-GD3 may not be justified if the robustness of the modelling suite decreases at RIIO-GD3. This is something that needs to be tested empirically. It is also important that Ofgem retain a sufficiently long and recent

[56] Document 60E - Oxera (2024), 'Review of Ofgem's proposed approach to cost assessment at GD3', November, Report prepared for Wales & West Utilities
[57] That is, that cost allocations and capitalisation rates differ between GDNs, and within GDNs over time. See Ofgem (2024), 'RIIO-3 Sector Specific Methodology Decision – GD Annex', 18 July, paras 5.25–5.28 and WWU (2023), 'RIIO-3 Sector Specific Methodology Consultation (SSMC) – Wales & West Utilities (WWU) response', 6 March, GDQ50 and GDQ53, pp.66–72.
[58] For example, see business plan document WWU (2019), 'Appendix 9D – Mains Replacement Performance RIIO-GD1', pp. 14–15 and CEPA (2020), 'RIIO-GD2: Synthetic Unit Costs Update', 27 February, p.7.
[59] Accounting for types of iron mains (ductile vs spun or cast iron), and the differences in costs between them, at a more disaggregated level.

benchmarking period (e.g. the current five-year forecast period) and ensure that the benchmark is not influenced by GDNs that are under-investing and/or not meeting minimum service standards.

- Economies of scale - accounting for shared group costs (section 5.6): Oxera note that Ofgem's current treatment of BSCs and other shared group-level costs, benchmarked at the GDN level, is not consistent with operational or economic rationale (or Ofgem's treatment of similar costs in ED2, currently, and RIIO-GD1 previously). Costs that benefit from company-level economies of scale should be benchmarked at the group level.

- MEAV as the scale and complexity driver (section 5.7): the alternative scale drivers being considered by Ofgem (e.g. customer numbers, throughput) will remain stable and eventually decline over time—and are thus inappropriate for capturing the cost increases that are occurring and will continue to occur over GD3. That is, they would not account for increased operational costs per unit of scale. An asset value metric (such as MEAV) is more appropriate, as it at least incorporates increased workload complexity (and cost) steadily over time. As Ofgem notes, MEAV performs well at the TOTEX level, and when adding CAPEX to the cost pool.[60] As noted above, a more appropriate solution may thus be to find alternative activity drivers for, or separately assess, the elements of business support costs and work management that are not as well explained by MEAV. Note that a greater weighting to customer numbers or throughput, as alternative scale drivers, would also affect the level of pre-modelling regional factor adjustments required (given the correlation between customers/demand and sparsity/density).[61]

Each section is set out below, with further detail and precedent contained within Oxera's 'Cost Assessment and Benchmarking Approach' report [62]. We conclude with a summary of our views on the appropriate cost drivers per cost area in section 5.8.

[60] Ofgem (2024), 'RIIO-3 Sector Specific Methodology Decision – GD Annex', 18 July, para. 5.34.
[61] As discussed in Document 60F - Oxera (2024), 'Regional factors for RIIO-GD3: Sparsity', November. Report prepared for Wales & West Utilities
[62] Document 60E - Oxera (2024), 'Review of Ofgem's proposed approach to cost assessment at GD3', November, Report prepared for Wales & West Utilities

5.2. Level of aggregation – a top-down Totex approach

In general, the use of multiple models can make a cost assessment outcome both more (i) robust (if all the models used are similarly robust); and (ii) transparent (as consistencies and inconsistencies between models can be investigated and understood). In this sense, the use of middle-up and disaggregated models should at least help validate and explain TOTEX, top-down results.

However, for RIIO-GD3 cost determinations, we consider that TOTEX models are the preferred approach given two issues that would specifically affect disaggregated models.

- Reporting inconsistencies: on many occasions GDNs have noted concerns about differences in cost allocations and capitalisation rates between GDNs, and within GDNs over time.[63] Ofgem will not have the consistent allocation of costs to activities necessary for bottom-up benchmarking, which in itself is a sufficient reason to focus on TOTEX models for allowances. This is especially so for us who operate a different operating model to other GDNs; one we consider provides us with improved efficiency, resilience and flexibility. WWU should not be detrimentally impacted because of differences in cost allocation. As an example, as WWU organise and manage all training across WWU, all training whether for Repex, Capex or Opex teams is charged to Opex under Accounting Standards. This differs to other GDNs (as it was for is in RIIO-GD1) where the training and competency of the workforce is the responsibility of the contract organisation, and as such training cost is part of the overall price of work which is then booked to the activity it relates to (i.e. Repex).

- The need to account for operational trade-offs: relating to the need for consistently allocated cost/activity data across GDNs (to compare activities on a like-for-like basis), disaggregated models would need to be carefully specified to account for operational trade-offs (i.e. potential substitution or complementarity between different types of spend addressing the same outcomes). For example, there are likely to be differences between GDNs in whether Opex or Capex intensive activities are the most efficient solutions for specific outcomes (e.g. asset maintenance or replacement). Even if consistently reported data existed, these issues could notionally be addressed within the modelling framework. However, the evidence to date suggests that there is not sufficient alignment on the relevant cost pools, nor the consistency in reporting required.

In contrast, top-down TOTEX models, are not subject to the same concerns due to their level of aggregation. Further, for a suite of disaggregated models to be considered as an alternative/complementary basis for cost determinations, these models collectively need to be deemed at least as robust as, and provide additional insight on top of, the top-down modelling. We note that the disaggregated models tested by Ofgem through the CAWG process perform significantly worse than the top-down models.[64]

Assuming the above issues can be resolved and disaggregated models are used for cost determinations, the efficiency benchmark for disaggregated models would still need to be determined at the aggregate, TOTEX, level to avoid cherry picking; that is, by aggregating up individual model cost predictions first, and then determining the benchmark. If the benchmark were chosen at the disaggregated activity level (where GDNs' operational focus and strategy may differ, such as relying on Opex solutions rather than Capex solutions and vice versa), it would create a notional 'super-efficient GDN' aggregate benchmark. Such a

[63] Ofgem (2024), 'RIIO-3 Sector Specific Methodology Decision – GD Annex', 18 July, paras 5.25–5.28. See also WWU (2024), 'RIIO-3 Sector Specific Methodology Consultation (SSMC) – Wales & West Utilities (WWU) response', 6 March, GDQ50 and GDQ53, pp.66–72.

[64] For example, comparing model fit and other statistical results of Ofgem's TOTEX models relative disaggregated models in Ofgem (2024), 'RIIO-GD3 Cost Assessment Working Group 7. Totex modelling and BPDT development', 10 April, slides 10–15.

benchmark would be too stringent and not based on what any GDN can achieve across all its activities in practice. That is, if benchmarks are first set for each individual activity and then aggregated to the TOTEX level, it would be for a notional 'super-efficient company' that performs at the frontier on each activity, while this performance is likely to be impossible for any single GDN to achieve in practice.

As such, we continue to support Ofgem using a Top-down Totex approach to setting allowances.

5.3. Repex complexity

We have concerns that the traditional approach to cost assessment will not provide the allowances required to deliver efficient mains replacement in RIIO-GD3, as proven by the way allowances were calculated for RIIO-GD2 and the associated significant underfunding that has been exposed in the RIIO-GD2 results to date and is expected over the remainder of the control across the GDNs.

In 2021 we appealed to the Competition and Markets Authority (CMA) inter alia over the insufficient Repex allowances set by Ofgem in the Final Determinations. This followed recognition of escalating costs highlighted by the prices submitted by suppliers in our extensive external tender event, demonstrating that our Repex allowances were set too low. Our position remains unchanged; we continue to feel the impact of the cost drivers we set out in our CMA appeal and are concerned that, with no change to the approach to cost assessment, we will see further significant underfunding of a mandatory and safety critical programme in RIIO-GD3.

Below, we set out four areas that must be adequately accounted for within the Cost assessment process related to Repex:

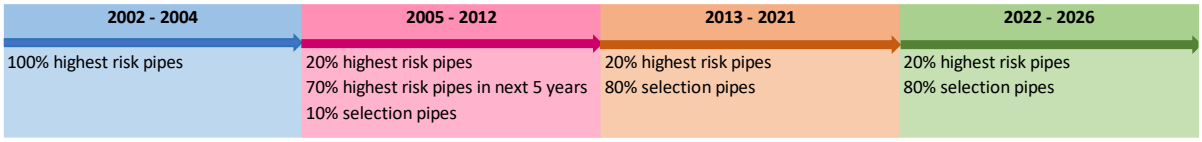
- the change in workload in RIIO-GD3, which is the result of previous policy decisions and the changing design constraints of the 30/30 programme. See section 5.3.1.
- the cost drivers impacted by these policy decisions which should be incorporated into the synthetic unit cost used for Mains replacement to reflect the changing nature of work. See section 5.3.3.
- the time period of assessment needs careful consideration given the changing profile of costs and the pressures that are upon GDNs through RIIO-GD3. See section 5.4.
- within the "Regional Factors" section 6.2.3, the evidence and consideration required given the evidence that sparsity also impacts the delivery of Mains replacement activities

5.3.1. Changing design constraints of the 30/30 programme

The Iron Mains Risk Reduction Programme (IMRRP), also known as the 30/30 programme, which drives the vast majority of the Repex work we undertake, is a mandatory programme directed by the Health and Safety Executive (HSE). Since the inception of the IMRRP in 2002 the HSE has changed the focus and prioritisation of that programme at successive controls, rightly re-focusing each control on the riskiest pipes and therefore the greatest risk to the public.

To date, many pipes in our network did not meet the required replacement criteria in place for each of those prior controls. These pipes are therefore the residual lower risk pipes that now need replacing in the remaining time by 2032.

The below illustration sets out the changing regimes:



Key points:

- A strict regime in the first 10 years - the strict design criteria of the first 10 years, to replace 100% of the most risky pipes in our network first, has contributed to many pipes being 'stranded'; small in length and isolated away from other replacement pipes, reducing the opportunity to build cost effective and efficient schemes in the last years of the programme. This can clearly be seen in the project lengths now remaining. See "cost drivers" in section 5.3.3

- A focus on customer safety and risk - quite rightly, the focus of HSE and Ofgem policy has been on risk – GDNs promoted to deliver lower diameter tier 1 pipes, close to houses, consisting of material most at risk of leak (cast/spun iron).

- RIIO-GD3 is a fixed programme impacted by the policy decisions of the past - a greater proportion of Ductile Iron, a greater proportion of 8" diameter mains, smaller project and overall, more complex works remain in the final years of the 30 year programme. See "cost drivers" in section 5.3.3

- Targeting higher risk to life focused work into cities and towns – work is continuing to move to sparse areas of the network – these are more expensive to run and support. See "sparsity/urbanity" in section 6.2.

Put simply, the pipes left to replace in the remaining programme are fixed and the result of those previous policy decisions and direction from the HSE. The changes that the HSE has made to its risk prioritisation policies since 2002, to maximise the safety benefit to the consumer, have resulted in many of the remaining pipes being short lengths with no ability to grow more efficient schemes for delivery around them. They are also more focussed in the rural and extremity areas of our region, increasing the challenge on resources, especially in Devon and Cornwall.

The cost assessment approach should take account of this changing complexity. How this complexity manifests itself can be understood by examining our mains replacement cost component model, which we explain next.

5.3.2. Our "Mains Replacement Cost Component Model"

Our in-house operating model provides us with all the data and insight needed to model forecast costs at a more granular level than any other GDN (given their outsourcing model). For instance, for Mains Replacement we utilise a bottom-up cost component model known as the "Mains Replacement Cost Component Model"[65]. This provides a forecast derived using detailed data on specific pipe attributes, locations, and replacement techniques together with the costs we are incurring today.

This approach provides a robust view in a much more representative efficient cost of delivering mains replacement in RIIO-3 compared to the use of historical costs. These models are used within our business to aide budgeting and workload forecasting and are therefore suitable for the underlying costing of our

[65] Methodology and output presented to the Cost Assessment Team via bi-lateral on 3rd July 2024

RIIO-GD3 Business Plan. The cost component model is based on first principles, best practice cost forecasting.

To evidence this, the Mains Replacement Cost Component model has been assured by cost management experts Turner and Townsend, who confirm that the model follows best practice and concludes that our Mains Replacement forecasts as robust and accurate.

In their full expert assurance report[66] they conclude:

Based upon our review, Turner & Townsend can confirm our audit has determined that WWU has followed a robust process, that is aligned to industry practice, in calculating its forecast GD3 Mains Replacement costs.

Further, based on the material provided and our team's analysis of the significant amount of data that Turner & Townsend has reviewed over the past 6 weeks, Turner & Townsend considers there is:

- *Appropriate evidence that the model process and its application capture appropriate cost components and activities;*
- *Appropriate evidence the model draws on cost information that is relevant and reflective of available information;*
- *Appropriate evidence that the process of applying the model has been appropriately controlled.*

As such, Turner & Townsend considers there is good evidence that the model outputs are robust, accurate and complete.

Given its detail, importance and use across our business, we also have an internal governance group formed to internally assure the cost component model. This team consists of an Executive sponsor, senior manager and managers from Finance, Programme Management and Operational Support, and Operations departments. That group has reviewed and approved all aspects of the cost model ahead of business plan submission.

5.3.3. Mains Replacement - cost drivers

Underlying the cost component model is a detailed workload asset dataset, which is the mains and services we will replace in RIIO-GD3.

Cost drivers are the attributes of work that lead to more or less time spent to complete these activities. Using Mains Replacement as an example, the number of excavations on a 100m length of main will determine time taken, materials required and therefore cost to complete the works; 10 excavations will be more material intensive, time consuming and therefore more costly than 2 excavation on a similar 100m main (one at each end and an insertion between). Thus, length is not the only primary driver of cost.

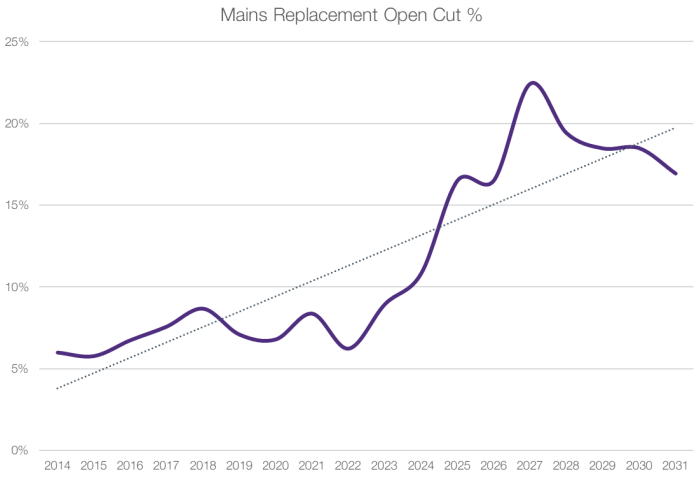
As we progress through RIIO-GD2 and into RIIO-GD3 we are seeing underlying cost drivers changing resulting in increased cost per unit of Repex completed. The cost drivers currently not explicitly accounted for include:

Technique - 'Insertion'; where a new pipe is inserted into the existing pipe this requires single excavations at either end of the pipe length replaced and the pipe is then inserted in (pushed through) the old metal pipe from one excavation to the other. 'Open cut' is where a full-length trench is required as the existing pipe is unable to be used. The open cut technique is far more expensive because it requires more time to

[66] Document 60D - Turner & Townsend (2024), 'Mains Replacement Cost Model Assurance report', November, section 1.3

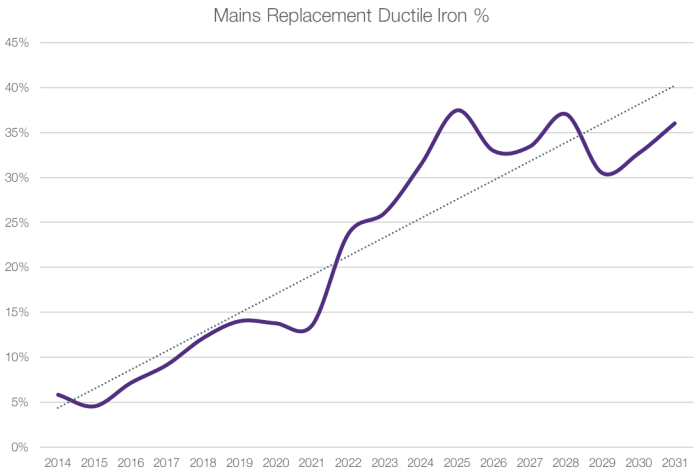
dig, more materials to backfill holes, more Traffic Management, and a greater surface to reinstate to original condition. Open cut costs up to 140% more than the equivalent insertion project. (i.e. £100 per metre insertion up to £240 per metre open cut)

As demonstrated in the above figure, we are experiencing a greater proportion of open cut works as we continue through RIIO-GD2 and as we head into RIIO-GD3. This is in part due to residual pipes remaining, and as a result of the capacity constraints on the network from progressively replacing existing mains which now limits the ability to insert into existing pipes. We have a 1:20 winter license condition requiring us to ensure security of supply. As mains have been inserted and customers have connected there is less opportunity year on year for downsizing pipes than previous controls.



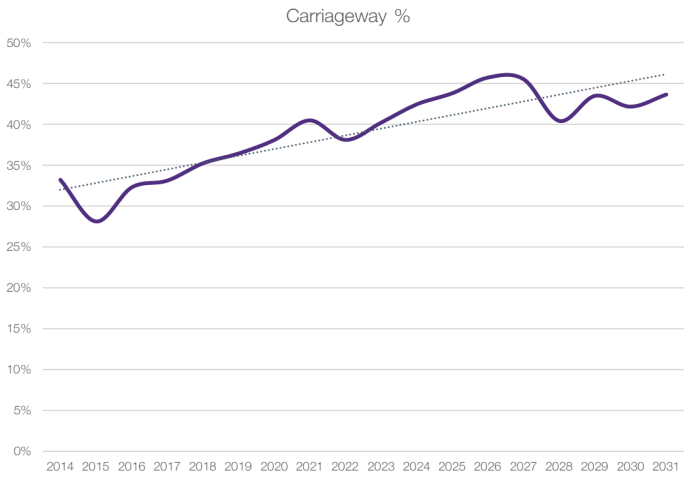
Material - the material used for the main being replaced drives costs. Whether the main is ductile iron as opposed to cast/spun iron. Ductile iron mains take longer to break open the existing main, requires specialist tools and larger excavations to work on the main. The additional time spent working on a ductile iron main is estimated as 20% longer than a cast/spun iron equivalent. This is even after considering the time saving from the Ductile Iron cutter innovation project which has been embedded in BAU for a number of years. This adds c.10% additional cost to the project compared to the cast/spun iron equivalent (i.e. £100 per metre cast iron main up to £110 per metre ductile iron main).

We continue to experience a greater proportion of Ductile Iron as we continue through RIIO-GD2 and expect this to continue in RIIO-GD3. Ductile Iron mains are not as prone to fracture in the same way as Cast and Spun Iron, so historically cast and spun iron mains scored more highly in all risk prioritisation regimes and were replaced and disproportionate level to ductile iron. These remaining ductile iron mains now form a greater proportion of the programme than in the past and require replacing as we reach the end of the IMRRP.



Location - whether a main is in the carriageway, footpath or verge impacts the activity and time required to replace that main (such as traffic management, reinstatement type, backfill and spoil requirements, site setup and ease of working environment) and the associated cost can differ drastically.

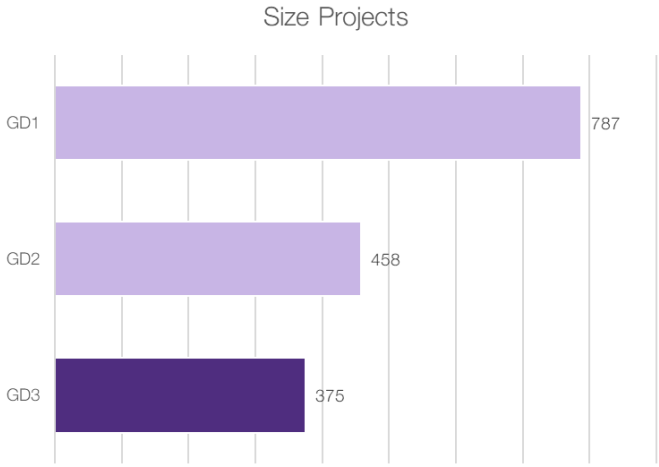
We are experiencing a shift to carriageway working which adds complexity in the site preparation (road closures, noticing, customer liaison and impact, planning availability to work on the road and restrictions in working practices etc), setup, and then management of traffic (manned traffic lights). These mains are further away from properties, so historically other mains scored more highly in all risk prioritisation regimes, but these mains now form a greater proportion of the programme than in the past.



In particular, we are seeing an increasingly onerous stance being taken by Highways Authorities on the requirement for manned traffic management lights, and in particular manning lights for 24 hours and weekend cover to improve traffic flow and minimise the impact of our, and others, roadworks. We are seeing more and more local authorities reviewing the introduction of permit schemes, and we also continue to see Streetworks costs significantly increasing in the tourist hotspots in our network, especially Cornwall and North Wales. The restrictions imposed on us in these areas are magnitudes higher (costs in 2023/24 are 4 times higher than our RIIO-GD2 Business plan which was based on experienced costs, and costs have nearly doubled within two years [67]) than ever experienced or forecast previously, and the indications we get from the highways' authorities are that these will continue and increase.

Size of projects - smaller projects increase the unit cost on those schemes because of fixed project costs; these include more mobilisation and de-mobilisation costs being a greater proportion of the overall individual scheme cost, increased connection volumes, and more frequent noticing and consultation with Highway Authorities.

The strict top-down risk reduction regimes applied by the HSE of the first 10 years of the IMRRP (2002 – 2012) has contributed to many pipes being 'stranded'; small in length and isolated away from other replacement pipes. Following this, (2012-2026) direction has rightly been focused on risk reduction. The programme being delivered through RIIO-GD2 and RIIO-GD3 is the result of those previous policy direction, making remaining schemes smaller and less efficient.



[67] Wales & West Utilities (2024), Specified Streetworks Costs Re-opener (STWt) Re-opener Application, September

5.3.4. Implication for Mains Replacement cost drivers

Given this, additional cost drivers for Mains need to be incorporated into the synthetic unit cost used for Mains replacement to ensure appropriate calibration of allowances. We think the following should be considered for inclusion:

- Material of Iron pipes being replaced (i.e. ductile iron, cast iron or spun iron) given the operational differences required to operate and replace these mains. We do recommend Ofgem independently assess the impact additional complexity and cost associated with Ductile Iron; GDNs do not record costs on a pipe-by-pipe basis, instead recording at street or project level. As such, assumptions on cost allocation over material type is an exercise undertaken for RRP, and GDNs are likely to have different basis of assumptions.

- Technique of pipe replacement (open cut, insertion) given the larger and longer excavations result in most components of cost increasing.

- Road surface category and location of main (carriageway, footway, or verge); working in a carriageway is significantly more expensive than working in the footpath or the verge due to the implications on traffic management and reinstatement costs.

All of this information is available to Ofgem to include in their regression analysis from the annual RRP submissions as well as the RIIO-GD3 BPDT. Other GDNs have made similar representations at Ofgem working group meetings also [68].

Other significant cost drivers such as data on connection/push pits (these are the connections where two mains connect, requiring a large hole) is not readily captured by GDNs and so pragmatically we understand why Ofgem would not have sufficient data to account for this cost driver.

5.4. Time period of assessment

The cost profile of GDNs has changed over the last 5 years and we see this continuing for the rest of this control and into the next. In addition, the nature of our work is changing as we decommission the remaining pipes in the last years of the IMRRP with cost drivers increasing the underlying investment required by GDNs. We are also seeing cost pressure increases in associated areas such as Streetworks and the impact of fatigue management on our network.

GDNs will also face a challenge different to that in other utility sectors or the wider economy, with the 30 year IMRRP programme coming to its conclusion in 2032, and a sector that can be perceived as having doubt over its long-term future. The combination of these, plus the substantial investment increases in other sectors will put pressure on maintaining our workforce and supply chain unlike we have seen so far.

As an example, our mains replacement tier 1 mains unit cost demonstrates the impact of changing prices over recent years, and the upward pressure on costs over time:

[68] e.g. Cadent at Cost Assessment Working Group 15, slide 18, proposing 'Nature of streets' regional factor adjustment - similar to ED2)

As Ofgem has noted during the Cost Assessment Working Groups, it needs to test for structural breaks (with the inclusion of RIIO-GD3 BP data),[69] given initial evidence of a step change in costs and a change in workload/activities driving it. That is, Ofgem should test for changes in cost–cost driver relationships over time (e.g. between the different regulatory periods, and between outturn and forecast data).

Ofgem must also reconsider how much weight it places on historical and forecast data—for example by:

- placing greater weight on more recent and/or forward-looking costs by using similar models over alternative time periods (e.g. RIIO-GD2 and RIIO-GD3 only, or RIIO-GD3 forecasts only);
- testing alternative time dummies, trends, and multiplicative terms (to capture changes in the strength of relationships over time).

The Oxera report [70] provides examples of where Ofgem reconfigured its RIIO-ED2 modelling approach based on similar considerations, where Ofgem (i) amended cost drivers (specifically, forward-looking drivers) to better capture the expected step change in costs; (ii) excluded other costs where there was a significant change in costs (but not captured/accommodated in the main modelling suite); (iii) placed more weight on forecast data. Ofgem has indicated that a similar differential weighting between historic and forecast data 'could be a key element in constructing a multiple model approach' at RIIO-GD3.[71]

For these reasons alongside other escalating costs, we consider that the cost base of GDNs in RIIO-GD1 is no longer representative of that incurred today, and instead a cost base reflective of historic costs in RIIO-GD2, and forecast cost in RIIO-GD3, should be used. We look forward to reviewing Ofgem's assessment of these issue in due course.

[69] Ofgem (2024), 'RIIO-GD3 Cost Assessment Working Group 7. Totex modelling and BPDT development', 10 April, slide 7.
[70] Document 60E - Oxera (2024), 'Review of Ofgem's proposed approach to cost assessment at GD3', November, Report prepared for Wales & West Utilities, p29-p30
[71] Ofgem (2024), 'RIIO-GD3 Cost Assessment Working Group 7 Totex modelling and BPDT development', 10 April, slide 7.

5.5. Choice of benchmark

The choice of catchup efficiency benchmark reflects the regulators' best *estimate* of what the efficient company cost level will be (in this case, over RIIO-GD3). The choice of benchmark thus depends on the robustness and reliability of the models, and thus on how much confidence and certainty the regulator can have in the resulting efficient cost estimates.

At RIIO-GD2, Ofgem set a glide path from the upper quartile (75th percentile) at the start to a more stringent 85th percentile benchmark by the end of the period. This was challenged during the RIIO-GD2 appeals, with the CMA eventually considering that Ofgem was justified in doing so. In making its decision, the CMA gave weight to Ofgem's regulatory judgement and the fact that improved data quality and additional years of data were expected to improve the reliability of the modelling (at least to some extent).[72] However, the CMA noted that there was limited statistical evidence to support Ofgem's view that the precision of the models had improved (given comparability issues between the RIIO-GD1 and RIIO-GD2 modelling suites, which were not taken into account).[73]

Model robustness may be affected by the significant step changes in costs discussed above, if not otherwise accounted for.

Therefore, the use of an 85th percentile benchmark for RIIO-GD3 may not be justified if the robustness of the modelling suite decreases at RIIO-GD3. This is something that needs to be tested empirically.

In terms of the length of benchmark period, we note that it would remain appropriate to determine the benchmark over the full five-year RIIO-GD3 period (similar to Ofgem's RIIO-GD2 approach). A longer benchmarking period is required to smooth out profiling mismatches across GDNs, and the RIIO-GD3 period is appropriate as it captures GDNs updated views on recent cost pressures.

In addition, to ensure the catch-up challenge is not determined on the basis of an artificially stringent benchmark, Ofgem should examine the minimum service delivery performance and differences in time profiles of capital spend across the relevant GDNs. That is, Ofgem should also ensure that benchmark GDNs are not merely appearing more efficient because they are underinvesting or not meeting minimum service standards.

For example, at RIIO-GD1 some GDNs influencing the cost benchmark failed their emergency standards—so creating an inappropriate efficiency challenge for other GDNs meeting these commitments. In response, Ofgem made an upward cost adjustment for these GDNs historical costs, to reflect the additional costs that would notionally have been required to meet the standard.[74]

Given the reported issues in RIIO-GD2, this type of adjustment would be applicable to this control in a number of areas, most notably Emergency and Repex.[75]

Ofgem may also want to conduct a similar assessment to that undertaken by Ofwat at PR24. Ofwat assessed whether companies at-or-above the benchmark were in a maintenance trough (i.e. had uncharacteristically low capital maintenance spend) over the relevant five-year period [76]—to assess whether the benchmark may have been set an artificially too stringent level.

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[72] CMA (2021), 'Final determination Volume 3: Individual Grounds', 28 October, paras. 12.138–12.140.
[73] CMA (2021), 'Final determination Volume 3: Individual Grounds', 28 October, paras. para 12.135(c).
[74] Ofgem (2012), 'RIIO-GD1: Final Proposals - Supporting document - Cost efficiency', December, para 6.8
[75] As discussed in Document 60E - Oxera (2024), 'Review of Ofgem's proposed approach to cost assessment at GD3', November, Report prepared for Wales & West Utilities, section 2.3.
[76] Ofwat (2024), 'PR24 draft determinations: Expenditure allowances', 12 July, pp. 24–27.

We also recommend Ofgem remain flexible enough to consider the impact of year 4 RIIO-GD2 outturn performance and key messaging around RIIO-GD2 delivery, which will be reported between Draft Determination and Final Determination. Given the material forecast changes in year 3 of RRP, Ofgem should remain flexible and assess the impact of year 4 RRP outturn, and also consider the accuracy of future forecasts if actuals are found to be materially different to forecast within the BPDTs.

5.6. Economies of Scale – accounting for group shared costs

Economies of scale for back-office departments, particularly in a shared services model, occur when multiple companies or business units consolidate their administrative and support functions into a single, centralised unit. This approach can lead to significant cost savings and efficiency improvements in comparison to individual setups.

Typically, by pooling resources and standardising processes, shared services can reduce duplication of efforts and lower overall cost. For example, instead of each business unit having its own HR, finance, or IT department, these functions are centralised, leading to reduced staffing and infrastructure costs.

WWU, as a single network, does not have the opportunity to benefit from these economies of scale, and currently the cost assessment process does not account for this sizeable difference.

It is clear that the scale effect needs to be taken into account given the opportunity this affords other GDNs and not single GDN companies such as ours. This is particularly important with six of the eight GDNs being able to benefit from such economies of scale.

The following sets out departments that other GDNs would benefit from a single team shared across multiple GDNs:

Department	£m per annum RIIO-GD3
IT & Telecoms	[redacted]
Cyber Resilience	
Physical Security	
Data & Digitalisation	
Net Zero / UIOLI	
CEO and Group Management	
Finance	
HR	
Occupational Health	
Insurance	
Legal	
Internal Audit	
Procurement	
Corporate Affairs	
Stakeholder	
Regulation & Strategy	
Asset Strategy	
Asset Integrity	
System Ops	
Environment	
Health & Safety	
Transport	
Total per annum	130.3
%age of Totex per annum	*30%*

The simplest way to deal with this would be a separate assessment at the group level, aligned with Ofgem's RIIO-GD1and RIIO-ED2 approach to business support costs, with a company-specific factor a second-best solution. The Oxera report includes examples of this precedent and further analysis.[77]

We request that Ofgem take account of this difference between GDNs.

[77] Document 60E - Oxera (2024), 'Review of Ofgem's proposed approach to cost assessment at GD3', November, Report prepared for Wales & West Utilities, section 3.5.

5.7. MEAV as the scale (and complexity) driver

At RIIO-GD2, MEAV was used as the scale driver for all Opex and Capex categories without a specific activity driver. Ofgem preferred MEAV over other measures of scale, such as customer numbers, because it was deemed to better capture network complexity (alongside scale).[78]

We do not believe that the alternative scale drivers that Ofgem is considering for RIIO-GD3 (some combination of customer numbers, throughput or network length) would be an improvement.

Ofgem noted in the SSMD that MEAV may not be a particularly robust cost driver for Work Management and Business Support costs, but that it performs well at the TOTEX level and when adding Capex to the cost pool.[79]

As outlined in the accompanying Oxera report[80], any cost driver that remains fairly stable over time would be a poor predicter in an environment where there is a change in workload complexity/ the underlying nature of the activity and so a step change in costs. This would explain why a fairly stable MEAV metric may perform less well on more recent work management and business support costs.

However, the alternative cost drivers being considered are all stable or expected to decline (customer numbers and throughput are expected to decline for all GDNs, given the expected drop-off in gas demand [81]). Therefore, even in a steady-state environment (where the costs to maintain the existing network are largely fixed), declining scale drivers would be inappropriate and risk underpredicting costs for all GDNs on a forward-looking basis. This is exacerbated in the current environment where workload complexity and costs are increasing per unit of scale (be it per customer or unit of gas supplied). In comparison, an asset value metric (like MEAV), while still not capturing a step-change in costs immediately, is more appropriate as it at least incorporates increased workload complexity (and cost) steadily over time.

Relatedly, we note that if a greater weighting were given to customer numbers or throughput as a cost driver in the TOTEX level modelling,[82] this would also require Ofgem to reconsider its pre-modelling regional factor adjustments (given the correlation between customer numbers and sparsity/urbanity). For example, the greater weighting to customers, the larger the compensating sparsity adjustment that a GDN such as WWU would require (given the relatively fewer customers to serve/demand to meet over larger land areas). Urbanity regional factor adjustments would need to be revisited for the same reason.

The more appropriate solution would be to separately assess the elements of business support costs and work management that are not as well explained by MEAV and/or the current GDN-level modelling. We include a number of these in chapter 7 on Separate Assessment and under economies of scale (section 5.6 above). Alternatively, Ofgem should consider alternative activity drivers for the elements of work management and business support costs not well explained by the current top-down modelling.

We recommend Ofgem conclude on the areas that they consider require separate assessment early in 2025 and share this with GDNs; by doing so Ofgem and GDNs can discuss the cost base net of separately assessed costs and only then test if an alternative driver is suitable.

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[78] Ofgem (2021), 'Decision - RIIO-2 Final Determinations – GD Sector Annex (REVISED)', 3 February, para. 3.114.
[79] Ofgem (2024), 'RIIO-3 Sector Specific Methodology Decision – GD Annex', 18 July, para. 5.34.
[80] Document 60E - Oxera (2024), 'Review of Ofgem's proposed approach to cost assessment at GD3', November, Report prepared for Wales & West Utilities
[81] See NESO (2024), 'Future Energy Scenarios'
[82] That is, even if Ofgem were to use customer numbers as a cost driver for, say BSC or work management, it would still be modelled at the TOTEX level (and thus affects the cost predictions for all costs with which customers are correlated, in proportion to the weighting given to it in the TOTEX CSV).

5.8. Our summary view on the appropriate cost drivers

We believe that Ofgem's RIIO-GD2 cost assessment approach (including cost drivers) forms a good basis for the approach at RIIO-GD3. However, we consider there to be some specific cost driver modifications required (especially for Repex complexity).

Some other areas may be more appropriately considered under a separate assessment or require additional activity drivers to be added to the top down modelling, especially the elements of work management and business support costs that are not as well explained by the current top-down modelling (given the step-change in underlying IT and cyber activities and the group-level economies of scale, neither of which are not captured by the existing drivers and GDN-level modelling)

Area	Category	GD2 cost driver (part of Totex CSV)	Suggested GD3 driver/approach
Opex	Emergency	Emergency csv (80% customers, 20% external condition reports)	As at GD2
	Maintenance	Maintenance MEAV	As at GD2
	Repairs	Total external condition reports	As at GD2
	Work management	MEAV (scale and complexity driver)	Mostly as at GD2: account for group-level economies of scale (on some elements).
	Business support		Mostly as at GD2: account for group-level economies of scale and separate assessment or activity drivers to account for step change in IT and Cyber.
	Other direct activities		As at GD2
	Training & apprentices		As at GD2
Capex	Mains reinforcement	Reinforcement synthetic costs	As at GD2
	Connections	Connections synthetic costs	As at GD2
	LTS, storage and entry	MEAV (scale and complexity driver)	As at GD2
	Governors		As at GD2
	Transport plant		As at GD2
	Other Capex		Mostly as at GD2: separate assessment or activity drivers to account for step change in IT and Cyber.
Repex	All tiers and services	Repex synthetic cost	Update cost driver to account for workload complexity, at least: - technique - ductile vs cast/spun iron - road surface/location

6. Regional Factors

6.1. Overview

Regional factors identify cost differentials across the eight gas networks which are outside those GDNs control. Where Ofgem's costs models do not capture these and adjust accordingly, a GDN requires a regional cost adjustment claim as part of the Ofgem cost assessment toolkit.

We consider the RIIO-GD2 methodology to be a reasonable basis to build from. However, we expect Ofgem to carefully consider the areas that regional factors apply to and reconsider the areas it deemed there to be no need for a regional factor methodology through the RIIO-GD2 process, by recognising the further evidence presented below.

In this chapter we set out our position and evidence in relation to sparsity (see section 6.2) and our view of accounting for regional wage differences (see section 6.3).

6.2. Sparsity/urbanity

6.2.1. Background

At RIIO-GD2 a sparsity factor was applied to WWU's costs in RIIO-GD2 through a pre-modelling adjustment, but only to the labour part of emergency and repair activities. Other work activities, outside of centralised services - any activity regionally based, did not receive a sparsity adjustment even though they are affected by sparsity in the same way as emergency and repair costs and utilise the same resources.

Operationally, this is inconsistent and wrong. We appealed this decision to the CMA, challenging Ofgem's decision not to allow a sparsity adjustment specifically to its Repex costs (our CMA appeal was confined to Repex only).

Building on the reports submitted alongside our RIIO-GD2 Business plan [83], we address the evidential and empirical points raised by the CMA through our Regional Factors report [84] by our Economic Advisors Oxera which is summarised within section 6.2.5. This concludes there is clear empirical evidence of sparsity for both Repex and Maintenance activities. They also find empirical evidence that supports the continuation of a sparsity adjustment for Emergency and Repair activities as is well established from previous controls.

Furthermore, section 6.2.7 provides further compelling evidence from the results of our robust external tender process, where we offered lots on a regional basis within our operational geography. This tender response evidence clearly demonstrates that market prices account for the impact of sparsity, with the lots with the highest pricing aligned to the ONS categorisation of sparsity in the UK.

Finally section 6.2.8 sets out the evidence found within the analysis of our own cost base. We note that recent RIIO-GD2 HSE policy changes in relation to fatigue management will impact sparse networks more than others, (we are already compliant with HSE's framework) given active fatigue management relies on working less than 12 hours at a time, of which travel time contributes. Thus, more time for a team travelling then becomes a restricting factor for completing works (i.e. repair a leak when called-out in the evening). This is well documented in our HSE policy application.[85]

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[83] Oxera (2019), 'Regional factors in the cost assessment for GD2', 29 November, Table 3.3.
[84] Document 60F - Oxera (2024), 'Regional factors for RIIO-GD3: Sparsity', November, Report prepared for Wales & West Utilities.
[85] Wales & West Utilities (2024), HSE Policy reopener application

6.2.2. Our region

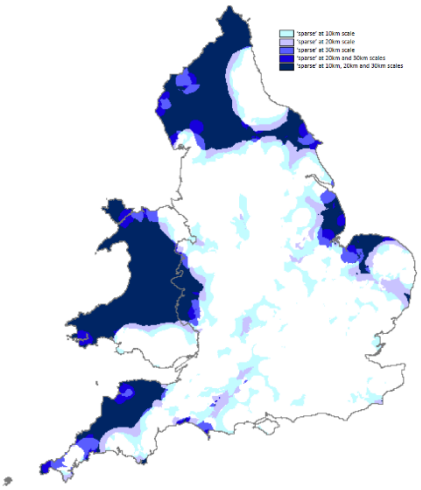
It is well recognised by Ofgem from the previous price control cost assessment process that our region is one of the sparsest in the UK.

In 2011 the Office for National Statistics (ONS) published the rural-urban classification (RUC2011) [86] which allows for a consistent rural/urban view of datasets.

Dark blue depicts the most sparse geographical regions, with the concentration of dark blue within Scotland, Wales and the South West. A large proportion of our network is within the blue regions.

For Repex, we manage our network in 12 geographical regions; 4 of those regions correlate directly with the ONS sparsity mapping, being our North (including mid) Wales, West Wales, Devon/North Devon and Cornwall regions.

Figure 13: Hectare Cells Sparse at all Three Scales (10km, 20km and 30km);2011



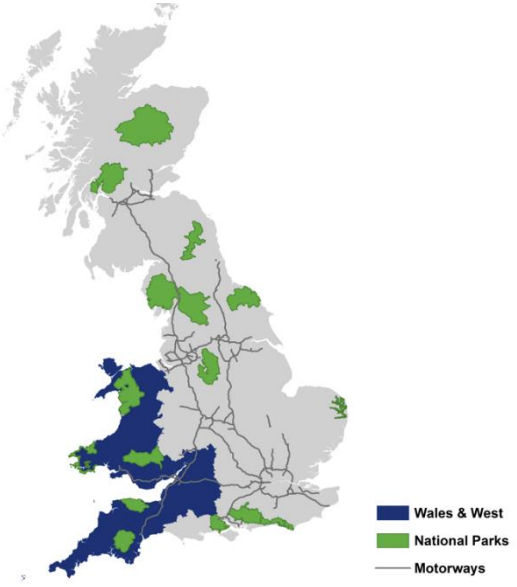
Our network has clusters of customers and large empty patches, with long driving times between local networks.

Our network is long, irregularly shaped and divided into three distinct geographic areas, each with its own Local Distribution Network and separated by significant natural barriers, such as the Severn Estuary and the Bannau Brycheiniog national park and valleys.

This is clearly different to some other networks, for example the West Midlands, which is almost circular-shaped (shown in blue). Our network has clusters of customers but large empty patches around them and long driving times in between.

For instance, five of the 15 national parks in the UK are located in WWU's area. These national parks split our networks and make road travel difficult, due to this geographical set up, along with the Severn Estuary, we operate three distinct networks.

Moreover, along with Scotland and the East of England, the road network is not as developed as in other areas. For example, motorways exist in only parts of the area, leaving Cornwall and large parts of Somerset, Devon and Wales served only by A roads, increasing travel time.



[86] Office for National Statistics, 2011 rural/urban classification - Office for National Statistics

6.2.3. The impact of sparsity

The topography, road infrastructure, sparsity and density of a company's region are key cost drivers.

Activities undertaken in sparse regions are more costly, for geographical and topographical reasons outside of management control. This is because of the need for more local depots; greater travel costs (as sparser areas also have less-developed road infrastructure and/or difficult topographies); larger distances to quarries and mines (for materials acquisition and waste tipping); and increased labour costs, for both direct labour and third party contractors (e.g. a greater number of engineers are required per customer for emergency and repairs costs due to longer travel times over the same distance vs other GDNs[87]).

A list of the mechanisms in which sparsity affects different cost areas was provided in WWU's regional factors annex for RIIO-GD2.[88]

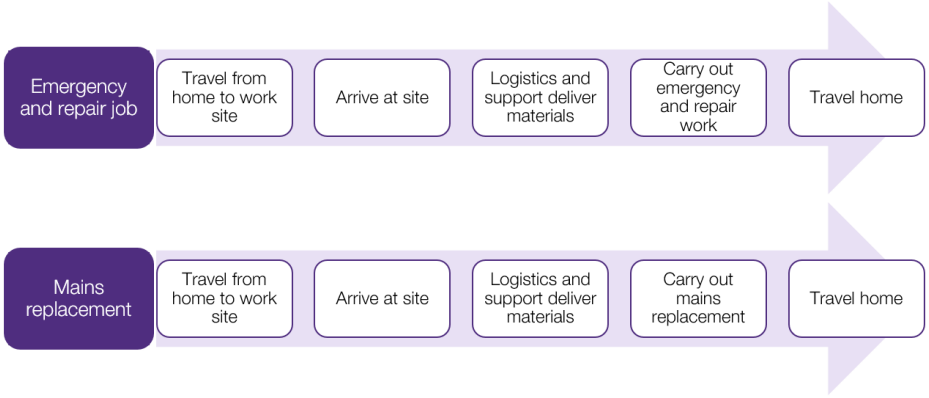
We summarise the main operational impacts below:

Sparsity impact	Cost base affected
Increased travel times due to types of road and more time travelling	Labour and associated costs (PPE, van and fuel, equipment etc)
More depots required, each of which needs to be staffed and stocked with specialist equipment.	Emergency, repairs, maintenance, Repex, property management, insurance
Additional travel time of transporting materials to the depots.	Emergency, repairs, maintenance, Repex, property management, insurance
Fuel costs are higher due to more miles travelled.	Emergency, repairs, maintenance, Repex, connections
Additional vans and equipment are needed given more heads are needed, and additional 'wear and tear' costs are incurred	Emergency, repairs, maintenance, Repex, connections, other Capex
More engineers are needed per customer, either on stand-by or carrying out alternative work when possible in order to be able to attend escapes within the time standard required.	Emergency and operations management
More engineers are required to reach a new customer; and more managers are needed in sparse areas.	Connections
More above-ground assets are needed to reach customers in the sparser areas of our network.	Maintenance, work management, mains reinforcement, LTS and AGIs -Capex
Difficult topography (e.g. valleys) and local ground conditions result in longer time to complete works	Connections, mains reinforcement, Repex
Higher reinstatement rates for leakage than for mains replacement. Sparse areas do not have that many gas pipeline, so mostly just need reinstatements for leakage.	Reinstatement
Specialist contractors have to travel further to remote areas	Capex

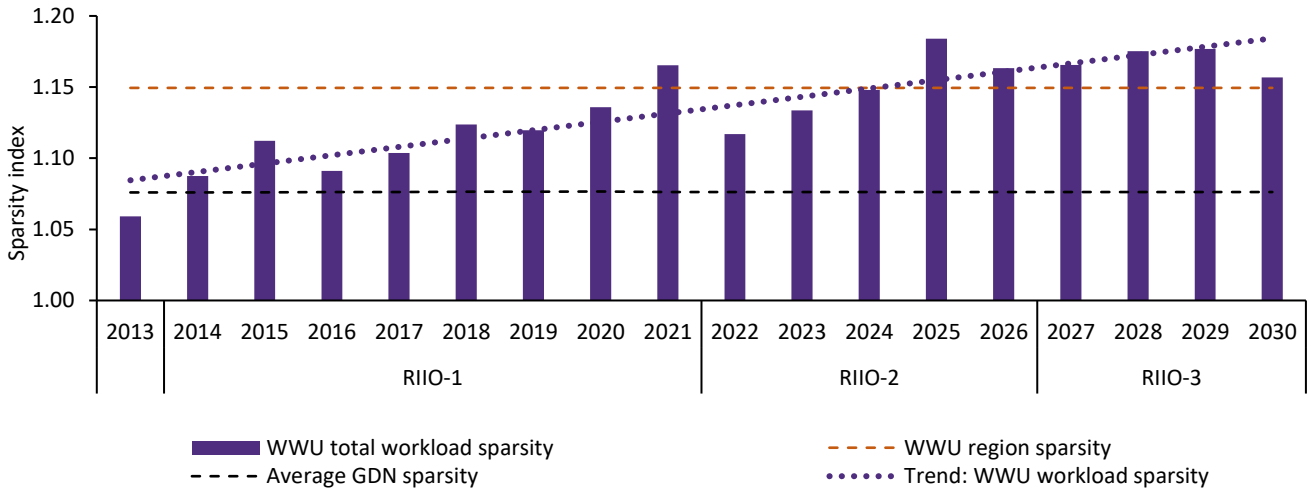
[87] For emergency costs, a minimum number of engineers per area are required to be on standby (or carrying out alternative work, like repairs, when possible), so that they are able to attend escapes within the time standard required. In Ofgem's current TOTEX modelling suite, the number of customers is assumed to be the greatest cost driver for emergency costs, reaffirming the need for a sparsity adjustment in a sparse region like Wales and the South West of England.
[88] Oxera (2019), 'Regional factors in the cost assessment for GD2', 29 November, Table 3.3.

6.2.4. The impact of Sparsity on Repex and Maintenance

There is also a clear case for Ofgem to reconsider its previous position on sparsity impacting other activities, in particular Repex and Maintenance. At an operational level, it is difficult to understand how these areas could be considered as not being impacted by sparsity. This can be simplified by looking at the working day of teams within WWU; below we provide a simple example of the day in the life of attending an emergency/repair compared to attending a Mains Replacement project. There is no operational difference between the two.



The graph below, extracted from Oxera's report on sparsity;[89] compares our total workload with the sparsity of all GDNs on average. WWU's remaining workload will be sparser than workloads to date:



Note: Outturn workload sparsity up to 2023, forecast from 2024. Based on UQ threshold.

Source: Oxera based on WWU REPEX workload data (metres replaced per LA).

[89] Document 60F - Oxera (2024), 'Regional factors for RIIO-GD3: Sparsity', November, Report prepared for Wales & West Utilities, section 4.2.

6.2.5. Oxera review of sparsity [90]

6.2.5.1. Context:

WWU appealed Ofgem's decision not to allow a sparsity adjustment to its Repex costs. In its final decision, the CMA acknowledged that the evidence provided by WWU illustrated a U-shaped impact of sparsity and urbanity on *its own* Repex costs (that is, relatively high costs in both WWU's sparse and dense regions).[91] However, the CMA stated that WWU did not provide the appropriate evidence to illustrate *'how the overall costs of a network in a sparse region would compare with one in a densely populated region.'*[92] In particular, the CMA stated that WWU needed (but failed) to show:

1. the extent to which GDNs in sparser regions have structurally higher costs than those with more dense regions; and

2. the extent to which one should expect an increase in costs as WWU's profile of work moves from more urban to rural areas (in effect, whether WWU's workload moves from a lower to a higher point in the U shape). [93]

Our consultants address these points in their current report [94] by:

(a) assessing the top-down modelling evidence for structurally higher costs for GDNs operating in sparser regions (they do so for the main areas of cost where this effect can be modelled robustly: emergency, repair, maintenance and Repex); and

(b) given the granular within-company data available, Oxera also assess whether WWU's own mains replacement activities are relatively more expensive as workloads move to sparser areas.

6.2.5.2. Results

Both sparse and dense regions will have relatively high costs, while regions in between these two extremes will have lower costs. That is, there is a U-shape impact of sparsity/density on GDNs costs. This effect is similar to that estimated by Ofwat in both PR19 and PR24 draft determinations,[95] and it was the standard economic rationale accepted for density/sparsity impacts by Ofgem and the CMA at the RIIO-GD2 appeals.[96]

There is empirical evidence to support a sparsity claim for all four activities - emergency, repair, maintenance and Repex. The results are also robust to a range of sensitivities.

The graphs below show the top-down relationship between sparsity and costs for the notional average GDN across the 2014-2023 period, by activity type, with levels of sparsity increasing from left to right. This is based on disaggregated regression modelling using Ofgem's current RIIO-GD2 cost drivers (corresponding to the respective cost areas) and using the upper quartile (UQ) sparsity metric (the sparsity/density metric that performs best from both an operational and statistical perspective). These demonstrate that there is a similar sparsity impact across each of the activities the GDNs undertake; and it is not limited to just emergency.

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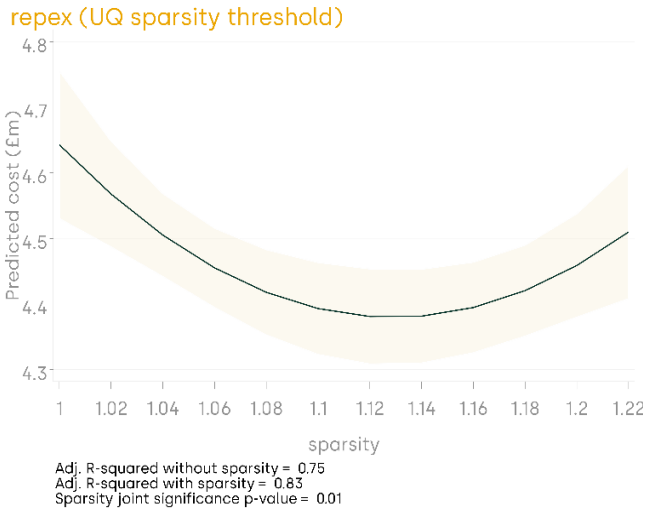
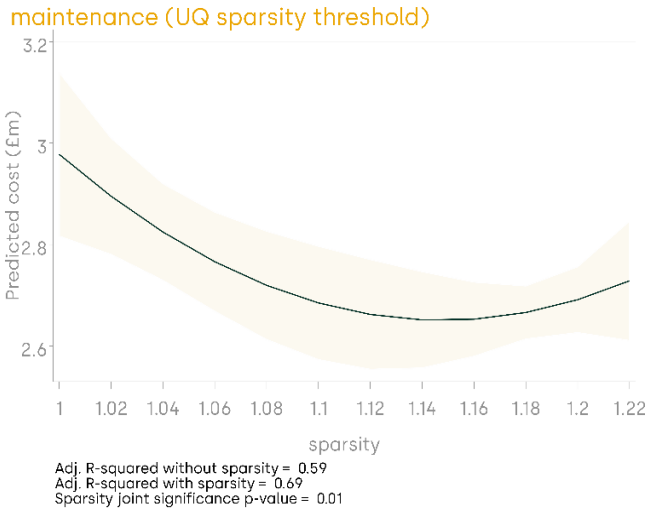
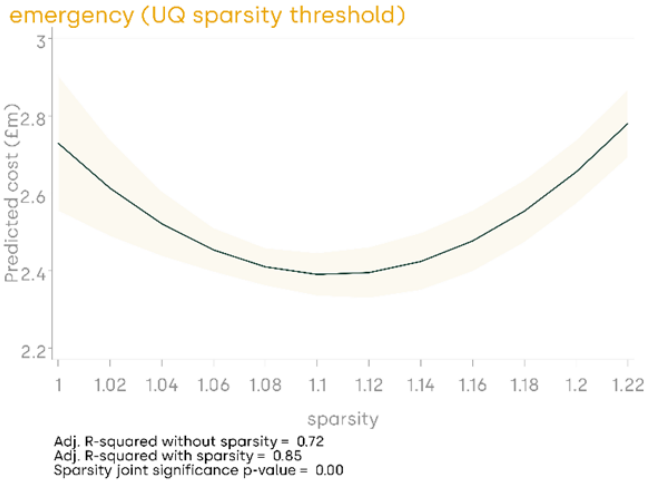
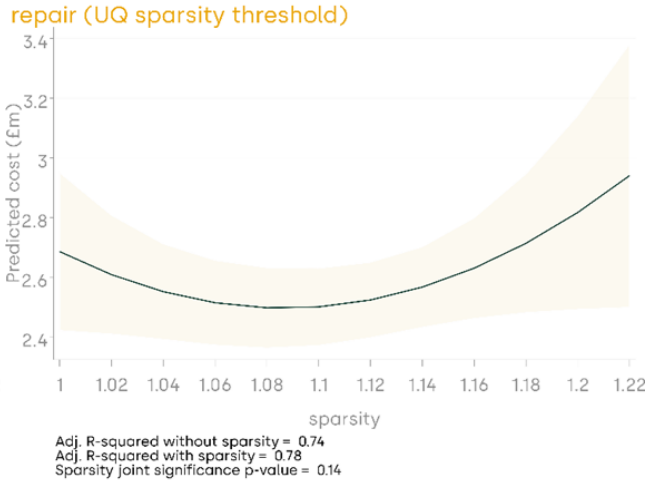
[90] Document 60F - Oxera (2024), 'Regional factors for RIIO-GD3: Sparsity', November, Report prepared for Wales & West Utilities
[91] CMA (2021), 'GD2 appeals final determination', October, paras 15.56, 15.65, 15.67–68.
[92] CMA (2021), 'GD2 appeals final determination', October, para. 15.68.
[93] CMA (2021), 'GD2 appeals final determination', October, para. 15.67.
[94] Document 60F - Oxera (2024), 'Regional factors for RIIO-GD3: Sparsity', November, Report prepared for Wales & West Utilities
[95] Ofwat (2019), 'Supplementary technical appendix: Econometric approach', January; and Ofwat (2019), 'PR19 final determinations: Securing cost efficiency technical annex', December and Ofwat (2024), 'PR24 draft determinations: Expenditure allowances – Base cost modelling decision appendix', August.
[96] CMA (2021'GD2 appeals final determination', October, paras 10.248-10.249.









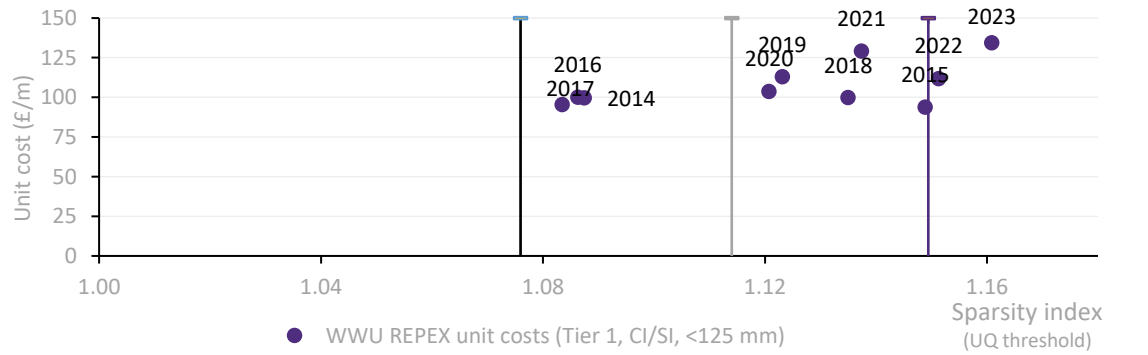
Notes: Analysis on 2014–23 outturn period; shaded area = 95% confidence interval; outturn models include a single time trend.

Source: Oxera based on Ofgem updated cost assessment dataset (November 2023).[97]

[97] Document 60F - Oxera (2024), 'Regional factors for RIIO-GD3: Sparsity', November, Report prepared for Wales & West Utilities, section 4.1.

The Repex results are also supported in WWU's own bottom-up data, which shows the costs of similar activities increasing as workloads have moved to sparser areas over time—as shown in the following:

WWU's high-volume, Tier 1 Repex unit costs by sparsity



Note: Gross unit costs for relevant mains.

Source: Oxera based on WWU workload data (metres replaced per LA) and Ofgem's Repex cost and volume data for WWU (as at November 2023).

Note that at RIIO-GD2, Ofgem's sparsity index classified all local authority (LA) areas below Great Britain average population density as sparse. However, the average threshold was not based on operational insight and, in practice, the costs associated with sparsity only begin to manifest at higher levels (as other GDNs have also noted [98]).

We thus propose that a more stringent upper quartile (UQ) threshold be used, to capture the effect of workloads in truly sparse and more remote areas. As the sparsity metric acts as a proxy for the workloads in the more remote areas—those rural areas that are more distant from depots, tipping points and quarries, require significant travel times to reach and/or more employees—the sparsity index should also only capture workloads in these truly sparse, more remote areas.

Oxera also note that a further top-down assessment of other cost categories for which these is a strong operational rational would be required once more forecast data and/or robust bottom-up models are available (e.g. connection costs, property management, elements of work management—see table above).[99] For example, they find similar U-shaped relationship is evident at the TOTEX level—which suggests that sparsity may structurally affect other areas of GDN's cost base as well.[100]

[98] Northern Gas Networks (2024), 'RIIO-3 Sector Specific Methodology Consultation Overview & GD annex - NGN Response', pp. 65–66.
[99] Oxera note that a lack of robust bottom-up models (potentially due to cost allocation and changing capitalisation rule issues) precludes them from providing robust estimates for other categories for which we have provided a strong operational rationale, both here and previously. See for example Oxera (2019), 'Regional factors in the cost assessment for GD2', 29 November, Table 3.3; Oxera (2020), 'A review of Ofgem's cost assessment approach in the RIIO-GD2 Draft Determination', 4 September, paras 4.1–4.18.
[100] Oxera (2024), 60F - 'Regional factors for RIIO-GD3: Sparsity', November, Report prepared for Wales & West Utilities, section 4.1.

6.2.6. Implications for Ofgem's approach

First and foremost, these results require additional sparsity adjustments for Repex and maintenance costs, alongside the continuations of adjustments for emergency and repairs.

It also highlights the following key implications for Ofgem's approach.

1) Pre-model adjustments are still required: while within-model adjustments for sparsity and urbanity would be ideal in theory, this is not possible given the practical limitations of the current framework (e.g. small sample size, London-specific bias/overfitting - as demonstrated during RIIO-GD2 appeals[101], and the risk of double-counting regional wage impacts). Bottom-up evidence and pre-modelling adjustments thus remain the most reliable approach.

2) An Upper Quartile sparsity metric is more appropriate: as it more precisely captures the effect of workloads in truly sparse and more remote areas and performs the best among alternative metrics from both an operational and statistical perspective.

3) More granular data is required: more detailed workload distribution data should be considered to refine sparsity cost assessments during RIIO-GD3—especially for Repex. Proxy measures are insufficient to capture the underlying workload impacts precisely. GDNs should all start or continue to collect data on the GPS locations of their respective REPEX projects, so Ofgem is able to use this data.

4) Cost model specification affects adjustments: the extent of pre-modelling adjustments required will depend on Ofgem's final RIIO-GD3 cost model suite. For example, alternative scale drivers to MEAV, such as customer numbers or throughput, would necessitate larger sparsity adjustments for GDNs with sparser workloads (as discussed above) to ensure the control is appropriate fair and balanced. Similarly, if Ofgem are not able to account for increasing Repex workload complexity, with greater weight placed on historical RIIO-GD1 data, then the greater the compensating sparsity adjustment will need to be.

[101] CMA (2021), 'GD2 appeals final determination', October, paras 10.249–10.251 and 10.268–10.270.

6.2.7. The market tender rates demonstrate the sparsity impact on Repex

As set out in section 3.2.2, ahead of RIIO-GD3 we completed a robust tender process for Mains Replacement activities. We asked the market to submit their prices using a disaggregated cost matrix which articulates the price per metre of mains (insertion and open cut priced separately), services (relay or transfer), by material type and by diameter. For the purposes of the tender, we grouped the 12 geographical areas we operate into 8 geographical regions (e.g. the separate Bristol and Frome areas were grouped together into one region).

[redacted] who submitted prices for all 8 geographical regions had recognised the complexity of working in certain locations within our network and had included a premium for those regions that correlate to the areas considered as sparse by ONS. This is unsurprising to us given our experienced costs in these areas – North Wales, West Wales, North Devon area, and Cornwall.

The quoted price to deliver one metre of 75mm to 125mm diameter main insertion main across each region highlights this variation:

Area	Price Per Metre*	Variance to Bristol & Frome	Variance to Bristol & Frome
Bristol and Frome	[redacted]		
South and East Wales			
Exeter and Plymouth			
Gloucester and Swindon			
North Devon (inc Taunton)			
Cornwall			
West Wales			
North Wales			

**Price per metre represents only a proportion of the total cost incurred. Only one matrix rate has been selected to illustrate the variance. Other matrix rates show a comparable variance.*

We find that the prices for the geographical regions that have the highest price quoted by the market correlate to the areas of our network most sparse. This clearly demonstrates the market also considers there to be financial impact of sparsity in the cost to deliver Repex.

6.2.8. Quantifying the impact of sparsity on our work activities

The following information is provided to aide Ofgem in its calibration and quantification of sparsity – it is evidence that we have gathered from our internal data and headcount mapping that demonstrates the impact of sparsity across our network, and in particular the areas of our network that align with the ONS sparsity.

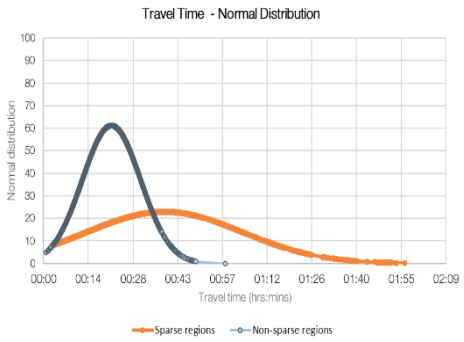
We still consider the easiest way to account for sparsity to be applying existing sparsity measures to all operational activities.

6.2.8.1. Mains replacement and repairs – c.6.9m per annum

As set out in section 2.2, our mains replacement and repairs activities are delivered by our Build & Repair (B&R) teams who cross-flex across activities to minimise downtime. As such, we have considered the impact of sparsity on these teams together.

Firstly, for mains replacement we have calculated the difference in driving times across our network to estimate its impact:

Travel time: using google analytics and postcode data for all pipes in our plan we calculated the on-the-road driving time between our closest regional depot and each pipe and project within our business plan. The normal distribution graph demonstrates the difference in travel time between the 4 (of 12) geographical regions that map to the ONS data, compared to the other 8 less sparse areas (of 12). It is clear there is a very different travel time profile between the sparse regions (North Wales, West Wales, North Devon inc. Taunton and Cornwall) and the other regions – this is demonstrated by the difference in travel times between these regions, as visualised in the normal distribution graph above.



Travel cost: We have identified the operational roles that visit site including operational teams, first line managers, operational/back office, and logistics teams. For each role we have estimated the frequency of visits based on standard working patterns (i.e. operatives round trip once a day). We then use actual salaries from our pay scale to calculate the cost of differences in travel time. Other costs such as fuel are calculated using observable prices.

Reinstatement is calculated by reviewing the differences in pricing between the sparse and non-sparse geographical regions as served by our reinstatement contractors.

The following sets out the estimated impact:

	Baseline time	North Wales	West Wales	North Devon	Cornwall	P.a. £m	5 year £m
Average round trip time (hrs:mins)	00:44	01:29	01:14	01:25	00:50		
Travel Time Cost Impact - (£m p.a)	-	£2.3m	£1.4m	£1.7m	£0.5m	5.8	29.2

Our repair teams, much like emergency, are impacted by sparsity; this is well recognised. We have reviewed the actual number of operatives employed in each geographical region as required to maintain minimum standby rotas within each geographical region. From this, we find that both North Wales and West Wales require higher staffing levels to manage standby rotas and manage repairs.

We also note that fatigue impacts sparse areas more than urban areas because time travelling to and from site counts towards the HSEs definition of "excessive working hours" – longer driving times to sites reduce the working hours available within the 12-hour working hour limit particularly when being called out to leaks and repairs. We explain the impact at length within our HSE policy reopener application submitted in September 2024 [102] and we request Ofgem teams read this to understand the impact.

From this analysis we employ [redacted] additional FTEs in the Wales region to manage leaks and repairs, in particular in West Wales. An additional [redacted] First Line Managers are required based on normal management ratios. Using actual resource costs, we estimate the total cost to be an additional **c.£1.1m p.a. or £5.5m for the full 5 years.**

The estimated impact for B&R teams, in total, is c.£7m p.a., c.£35m across the RIIO-GD3 price control.

6.2.8.2. Facilities (depots and stores) - £1.6m p.a.

To satisfy service level requirements, provide appropriate support to our mobile field force and to properly manage the asset base, we operate several offices, depots and secondary "drop off points" across our large and disperse operating region. Over the last 20 years we have significantly rationalised our property portfolio however, despite this significant cost reduction, our costs are relatively high given our geographical spread and coverage required.

We currently have 27 active sites within our network, comprising 1 head office, 1 centralised stores/stock system, 13 main depots and 12 drop off points (a base to ease sparsity). The main depots are situated at strategic locations around our network to enable logistical support and distribution of stock. The drop off points are unmanned stores, with a relatively small stock base to help support the sparse areas without the need to drive back to centralised depots (aim to minimise travel time, fuel etc). Without these drop-off points additional colleagues would be required to fulfil our operational needs.

Using West Midlands (as depicted above), we compare our network to theirs using the latest available data from year 3 RIIIO-GD2 RRP. The variance between our network and there demonstrates the incremental number of sites we operate to cover our sparse (and stretched shape) network:

Type of site	WWU No.	WM No.	Variance No.	Cost £k	P.a. £m	5 year £m
Head office	[redacted]				-	-
Main depots					1.4	7.1
Mains stores					-	-
Drop off points					0.2	1.0
Total					1.6	8.1

Based on this analysis we need to be funded for the additional depots and drop off points we are incurring costs for to ensure we continue to deliver the service levels and license obligations we are currently achieving.

The estimated impact is c.£1.6m p.a., c.£8m across the RIIO-GD3 price control.

[102] Wales & West Utilities (2024), HSE Policy reopener application

6.2.8.3. Emergency £3.1m p.a.

To meet emergency standards, we need to station our skilled engineers and their managers at depots or drop off points or ensure they live within a one-hour travel radius of all populated areas regardless of if there is a gas connection or not. Whilst we have been able to mitigate down-time and increase utilisation through our operating model, we continue to see the impact of operating in a sparse network on our emergency costs, as recognised by Ofgem in RIIO-GD2 cost assessment process; this remains unchanged.

We have calculated the difference between average FTEs required to cover non-sparse regions, and compared that to the FTEs required to cover the sparse areas of our network (FTEs per km^2). We have used the average of the non-sparse regions (not just the most dense) to provide a fair and balanced comparative. We have used actual costs to calculate the impact.

	Resources FTE No.	P.a. £m	5 year £m
First Call Operative (FCO)	[redacted]	2.8	14.2
First Line Manager (FLM)		0.2	1.0
Total		3.1	15.3

[redacted] additional FCOs are required in Wales, and [redacted] additional FCOs are required in the South West. To manage an additional [redacted] FCOs would take [redacted] FLMs at an average management ratio (i.e. one per region for those identified as sparse).

As mentioned above, fatigue management does have an impact on Emergency teams and more so in sparse areas – we ask Ofgem recognise this impact.

The estimated impact is c.£3m p.a., c.£15m across the RIIO-GD3 price control.

6.2.8.4. Maintenance - £0.7m p.a.

Whilst we have been able to mitigate down-time and increase utilisation through our operating model, we still see the impact of operating in a sparse network on our maintenance costs.

As with Emergency, we have calculated the difference between average FTEs required to cover non-sparse regions and compared that to the sparse areas of our network (FTEs per km^2). We have used actual costs to calculate the impact. We have used this measure as our above ground Maintenance teams are required to attend faults within set times, and therefore geographical coverage is required.

	Resources FTE No.	P.a. £m	5 year £m
Operative	[redacted]	0.6	3.1
First Line Manager (FLM)		0.1	0.6
Total		0.7	3.7

[redacted] additional operatives required, largely in Wales. An additional FLM would be required to manage this additional headcount.

The estimated impact is c.£0.7m p.a., c.£3.7m across the RIIO-GD3 price control.

6.2.8.5. Conclusion and inclusion in modelling

We estimate the total cost of sparsity across our network is c.£12m-£13m p.a., c.£62m over the control, summarised as follows:

	Ofgem impact category	P.a. £m	5 year £m
Repair & Mains Replacement: Labour, logistics and reinstatement	Repairs & Mains Replacement	6.9	34.7
Depot and facilities	Opex - Facilities	1.6	8.1
Labour - Emergency service	Opex - Emergency	3.1	15.3
Repair & Mains Replacement: Labour, logistics and reinstatement	Repairs & Mains Replacement	6.9	34.7
Total		12.4	61.8

This is a fair and reasonable estimate of the impact of sparsity on our region, built in a way comparing costs internally within our own region (except for facilities). Note that £62m would be a higher number if we based the variance against the densest area of our network instead of comparing to the average of non-sparse areas.

We recognise that we do not have access to comparable data for other GDNs to perform the same analysis – however Ofgem will have/can request this information and should explore some of these simple measures.

The above information is provided to aide Ofgem in its calibration of the impact of sparsity. We still consider the easiest way to account for the above would be to apply existing sparsity measures to all operational activities and to relevant cost types associated with those activities.

6.3. Evidence of regional wage differences converging

6.3.1. Context:

Ofgem's RIIO-3 Sector Specific Methodology Decision for gas distribution (GD) indicates plans to re-evaluate the regulator's regional wage adjustment methodology for gas distribution networks (GDNs). Ofgem rightly highlights wage convergence between the London region and the rest of the UK.[103]

In setting RIIO-GD2, Ofgem calculated the regional wage index based on regional occupational data using the two-digit Standard Occupational Classification (SOC) codes. These codes are weighted using industry-average occupational weights based on the number of full-time equivalent employees (FTEs).

Ofgem moved to two-digit SOC codes, rather than the three-digit ones used at RIIO-GD1, to 'reduce uncertainty and missing data in the ASHE wage estimates' [sic].[104] However, we find that the current two-digit Standard Occupational Classification (SOC) methodology results in inaccurate adjustments.

As detailed in the accompanying Oxera report,[105] due to its level of aggregation, the current approach results in distorted regional wage adjustments that overstated adjustments in RIIO-GD2, as now acknowledged by Ofgem[106].

A more granular approach, using three-digit SOC codes, would better capture actual GDN occupations and would have largely mitigated this overstatement in RIIO-GD2. Oxera find that previous Ofgem concerns about missing data are negligible (fewer than 0.7% of the relevant observations). For the limited relevant cases, we propose a simple method to estimate any missing three-digit-level information.

However, given that there is such a negligible amount of missing data, an index based on three-digit SOC codes offers the most accurate adjustment (irrespective of the preferred treatment of missing values).[107]

Where an adjustment is deemed required, we'd recommend that the forecasting method used references the downward trend from the most recent years, particularly post-COVID, better reflecting the greater mobility and increased home working of the labour force.

Further detail is included within the Oxera report "Regional Factors for RIIO-GD3: Regional Wages".

6.3.2. Results:

Below we show the wage index for Cadent's London GDN, as the GDN with the highest regional wage index, over time. The index is calibrated to show the wage levels relative to one, such that GDNs that do not serve customers in London or the South East of England all have an index of one (with only GDNs London, East of England, and Southern having indices greater than one). The figure compares three indices for London, specifically, as follows.

- **Original GD2 (two-digit):** the regional wage index estimated by Ofgem at the time of the GD2 FD—which forecast values over 2020–26 based on the five-year average of the latest outturn data at the time (2015–19).

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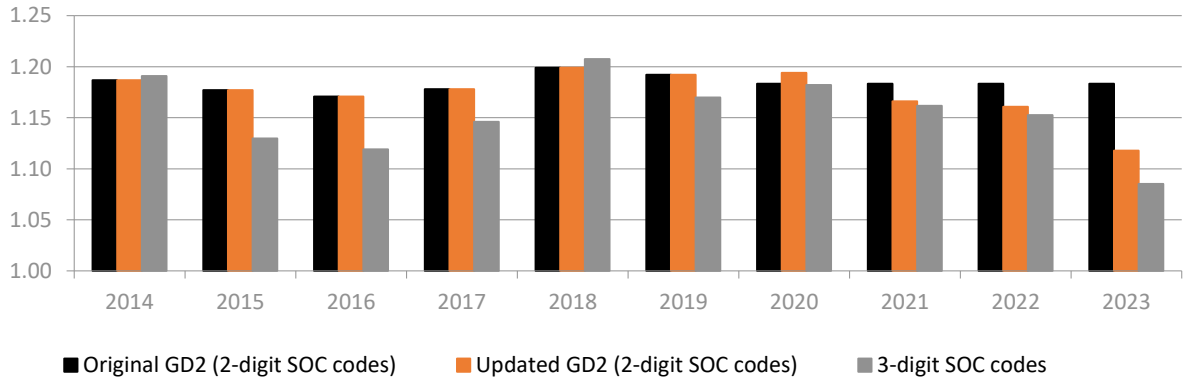
[103] Ofgem (2024), 'RIIO-3 Sector Specific Methodology Decision – GD Annex', 18 July, paras 5.46–5.47.
[104] Ofgem (2020), 'RIIO-GD2 Final Determinations: Step-by-Step Guide to Cost Assessment', 8 December, Appendix A, Table 7.
[105] Document 60G - Oxera (2024), 'Regional factors for RIIO-GD3: Regional wages', November, Report prepared for Wales & West Utilities.
[106] Ofgem (2024), 'RIIO-GD3 Cost Assessment Working Group 7. TOTEX modelling and BPDT development', 10 April, slide 19..
[107] When rounding to two decimal points, Oxera find that it makes no difference whether missing data points are ignored or inferred.

- **Updated GD2 (two-digit)**: updating the GD2 two-digit index with the latest data from the ONS ASHE data up to 2023.[108]
- **Three-digit approach**: showing the index values resulting from our suggested approach above and the 2023 updated ONS data.

This clearly shows wage convergence across the industry. As Ofgem has noted,[109] when updating the RIIO-GD2 two-digit methodology, the difference between wages in London and in the rest of the country has decreased in recent years (compared to forecasts at RIIO-GD2). Using the three-digit SOC codes, as proposed, further reduces the wage premium for GDNs such as London.

Updated and alternative regional wage indices for Cadent's London network



Note: ONS data for 2023 is provisional. Source: Oxera based on ONS ASHE tables 3a, 15.5a and 14.5a.

One reason for the downward trend in the relative wage differential for the London region is likely to be the more flexible work environment and increase in remote working since COVID-19. This reduces the need for employees to be physically located in high-cost areas (e.g. London). For example, recent ONS research shows that 28% of UK adults have hybrid working arrangements (and c. 12% work fully remotely)—a trend that has remained fairly stable post pandemic.[110]

This is consistent with the trends that we have been observing. For example, we have faced increased competition from other GDNs for REPEX contractors who used to work only within our region. We are also seeing wage-setting and bargaining dynamics shifting across the sector, and many organisations in the sector no longer implement regional weightings in light of the increase in hybrid and flexible working, particularly in back office and support staff.

6.3.3. Forecasting method:

Forecasting methods also warrant a re-examination and possible revision. At RIIO-GD2 final determinations, Ofgem averaged wage indices from 2015–19 to forecast adjustments over RIIO-GD2.

While this approach may have been appropriate at the time, GDNs London, the East of England and Southern's wage indices have declined since COVID-19 (as shown above). This suggests that alternative approaches need to be considered for RIIO-GD3, such as rolling forward the latest data point or using a

[108] That is, the ASHE series over 2020–23, where 2020–22 are revised editions and 2023 is the provisional data (the latest version for which three-digit data is available at the time of writing).
[109] Ofgem (2024), 'RIIO-GD3 Cost Assessment Working Group 7. TOTEX modelling and BPDT development', 10 April, slide 19..
[110] Office for National Statistics (2024), 'Who are the hybrid workers', 11 November.

shorter three-year historical average (if not trends). The question of the most appropriate approach can be revisited when 2024 ONS data becomes available, in order to confirm trends, prior to Draft Determinations.

Failing to revise the forecast approach and methodology risks significantly overcompensating some GDNs for the regional wage adjustment required. For instance, Ofgem's regional wages pre-modelling adjustment for London at RIIO-GD2 final determinations was c.£100m. Based on updating Ofgem's current two-digit methodology with data to 2023 and rolling forward the latest three-year average over 2024–26, Oxera estimate that Cadent's London GDN received a £19.5m (or 24%) higher pre-modelling adjustment than warranted ex post. Under our proposed three-digit approach (and similar three-year average forecast), this estimated overcompensation rises to £28.5m (or 39%).

Moreover, moving to a three-digit approach would have helped mitigated this overcompensation/forecast error. For example, if Ofgem's ex ante forecasts had been instead based on the equivalent three-digit index at the time (even if still using a five-year average forecast), this would have reduced the estimated overcompensation for London to only 6% or 19% (rather than 24% or 39%) based on the respective two- and three-digit outturn.

6.3.4. Conclusion

There is clear and logical reasoning for Ofgem to use three-digit SOC mapping to better determine regional wage indices differences and determine if an adjustment is required. This is particularly the case given the outturn of RIIO-GD2 to date; to not amend would lead to an over-compensation for other GDNs.

Where an adjustment is deemed required (if at all), the forecasting method used needs to reference the downward trend from the most recent years, particularly post-COVID.

7. Separate Assessment

7.1. Summary of separately assessed costs

As set out in the SSMD - GD annex 5.48 – 5.58 Company specific factors, and GD annex 5.59 – 5.67 Exclusions, in RIIO-GD2 Ofgem excluded historical and/or forecast costs from regression modelling where costs were not well-represented by the drivers in the totex regression model. In these cases, engineering-based models, unit cost models or an evaluation of tender quotes from sub-contractors can be used to supplement Ofgem's assessment of costs.

Overall, this framework should continue into RIIO-GD3, however the areas that require separate assessment should be refined to accommodate several new workload and programmes unique or new to this price control and therefore no reasonable historic trends can be utilised.

The table below sets out those areas that require separate assessment in RIIO-GD3 (either non-regression analysis or technical assessment). Firstly, we summarise the separately assessed areas applied in RIIO-GD2. Overall, we see justification in continuing with these within RIIO-GD3 and draw out a few important cost profile shifts between price controls.

We then set out those areas suitable for separate assessment in RIIO-GD3. We provide a principled view of whether these costs should be assessed through comparable non-regression techniques or through technical assessment (expert review), however the decision on the most suitable assessment technique will be for Ofgem to decide using all GDN comparable data.

Category	Description	GD2 costs (£m)	GD3 costs (£m)	GD2 Assessment	Our view for GD3
Applied in RIIO-GD2					
Opex	Streetworks	31.6	55.4	Non-regression	Non-regression
Opex	Land remediation	5.1	6.9	Non-regression	Non-regression
Opex	SIU	0.2	0.2	Non-regression	Non-regression
Opex	Smart metering	0.4	0.0	Non-regression	Regression
Opex	Net Zero and Reopener Development (NZARD)	19.8	40.6	Technical	Technical
Capex	Growth Governors	0.2	0.0	Non-regression	Regression
Repex	Tier 1 stubs	0.0	34.2	Non-regression	Non-regression
Repex	Multi-Occupancy Buildings	11.0	38.4	Non-regression	Non-regression
Repex	Diversions	7.0	7.1	Non-regression	Non-regression
Opex & Capex	Cyber Security, IT & Telecoms (inc. data and digitalisation)	240.1	370.8	Technical	Technical
Opex & Capex	Physical Security	16.4	10.8	Technical	Technical
Opex & Capex	Gasholder demolitions	1.9	0.0	Technical	Regression
Capex	Large Capital Projects	16.2	81.0	Technical	Technical
Repex	Large REPEX projects (>£5m)	0.0	0.0	Technical	Technical
New to RIIO-GD3					
Opex	Disconnections	0.0	19.0		Non-regression
Repex	Mains in private property	0.0	11.5		Non-regression
Opex & Capex	DPLA and ALD	0.0	7.1		Technical
Capex	Land and buildings	16.0	19.9		Technical
Capex	Non-PSUP Physical Security	0.0	6.0		Technical
Capex	ZEV infrastructure	0.0	4.9		Technical
Repex	Built over mains	0.0	4.6		Technical

Each area is set out below with further rationale.

7.2. Separate assessment applied in RIIO-GD2

7.2.1. Streetworks

At RIIO-GD2, Ofgem assessed each network's proposed Streetworks costs against their own recent historical average and forecast costs (from 2016/17 to 2025/26). Ofgem assumed no new permit schemes in RIIO-GD2, but retained a re-opener to accommodate material additional costs driven by new schemes introduced during RIIO-GD2.

Ofgem noted at the time that a GDN-specific assessment is required, as they did not think that 'there is an appropriate common workload driver, since Streetworks costs can vary significantly, relative to workload, between networks based on regional, environmental and operational differences.' [111]

While the latter is still true, the cost of Streetworks has significantly increased through RIIO-GD2, leading to all GDNs submitting reopener submissions in September 2024; WWU's claim being material at £24.4m in 18/19 prices (c.£31m in 23/24 prices). [112]

As such, historic costs are not reliable or representative of forecast costs, and so an alternative approach should be considered. Such an assessment would need to factor in this recent shift in increased costs. As a first step, it would be more appropriate to consider more recent outturn costs, and potentially apply a growth factor to model future spend (while still retaining the re-opener mechanism)—similar to Ofgem's approach at RIIO-ED2. [113]

Ofgem's assessment would also need to account for the changing approach of Highway Authorities (not just Lane rental and permitry schemes). Ofgem has collated Totex cost forecasts within the Streetworks table to compare across GDNs and provide sufficient allowances for this growing cost base. We do not consider an adjustment based on road type (i.e. carriageway) to necessarily be able to fully account for the cost increases. Our experienced costs show that traffic management is also impacted local Highways priorities – for instance Cornwall mandating manned lights traffic management and placing limitations on working (either shortened days or requirement to work weekends in premium time) during summer periods when tourism is at its height.

Because of the continued change in approach by the highway's agencies, we welcome the continuation of the reopener mechanism for RIIO-GD3.

7.2.2. Land Remediation

Each GDNs' land remediation programme is specific to the remediation work undertaken before it in previous price controls, and specific to the geographical hazards on their network. As such, the programme put forward by each GDN will be specific to them. WWU's land remediation plan is supported by third party expert risk assessments which derive the remediation required. This can be technically assessed by reviewing the independent expert reports and evidence of expected works across the control.

We are on track to deliver all the remediation works within our RIIO-GD2 plan including our highest risk site at a cost in excess of £1m (23/24 prices).

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[111] Ofgem (2020), 'RIIO-2 Draft Determinations – GD Annex.', 9 July, para. 3.158
[112] Wales and West Utilities (2024) - 'Specified Streetworks Costs Re-opener', September
[113] Ofgem (2022), 'RIIO-ED2 Final Determinations Core Methodology Document.', 30 November, paras 7.528–7.541.

7.2.3. SIU

Only WWU and SGN have these sites. This is not material for WWU, however we principally think Ofgem should continue to separately assess the cost of managing these sites for both GDNs given the small population and lack of comparability.

7.2.4. Smart metering

As per the SSMD, we no longer consider this to be a relevant adjustment, and so propose these costs can be included within regression analysis.

7.2.5. Net Zero and Reopener Development (NZARD) UIOLI

In RIIO-GD2 Net Zero investment was excluded in regression analysis and benchmarking and was assessed separately – this treatment should continue into RIIO-GD3. Drivers of these cost are not relevant to regression and this is not an area of spend that GDNs should be incentivised to cut back on or include low levels of spend on, particularly given the costs include NESO and RESP requirements which will vary depending on each network.

7.2.6. Growth Governors

Given the shifting demand on gas and the expectation of lower reinforcement, we also forecast minimal growth governors within our plan. As such, we think this activity is not material and should be included within regression analysis.

7.2.7. Tier 1 Stub ends

Iron stubs are required to be completed by 2032 in line with the IMRRP. These exist due to changes by the HSE to the IMRRP in 2013, removing the requirement to decommission all >8" iron, leaving short Tier 1 lengths attached that would have been removed when the larger diameter main was replaced.

Over the last 18 months we have been analysing our records, reviewing each pipe to determine the type of work required. This now provides us with a more robust workload, allowing us to submit a more accurate cost and workload forecast to Ofgem within our RIIO-GD3 Business Plan. This is the reason we did not submit within the RIIO-GD2 reopener window.

As we have not undertaken a large historic stub replacement programme, we do not have a historical unit cost. However, we have derived a cost by reviewing the individual activities required to undertake an average stub replacement project and created a cost based on experienced actuals for those individual activities (i.e. time and therefore labour costs, traffic management costs of working on busy junctions, reinstatement in the carriageway etc).

Our costs are as follows:

Action assumed	Volume (No.)	Unit cost £k	Total cost £m
Requires remediation	1,527	£20.3k	£31.0m
Confirm no stub	1,055	£3.1k	£3.2m
Total	2,582	£13.2k	£34.2m

We have also compared these costs to those referenced by other GDNs within their RIIO-GD2 year 3 RRP submissions (converted from 18/19 prices to 23/24 prices) and their RIIO-GD2 reopener submissions. For instance, NGNs unit cost for 23/24 for remediation is £18.8k, and confirm no stub ('stub not found') unit cost of £2.8k.

Other GDNs have already been provided allowances to commence this work within RIIO-GD2 and have received separately assessed allowances through RIIO-GD2 reopeners. We require equitable treatment in RIIO-GD3 allowance setting with WWU costs being separately assessed.

For further information see the Mandatory Programme (including Stubs) Engineering Justification Paper[114].

7.2.8. Multi-occupancy Buildings (MOBs)

In RIIO-GD2 we continued to inspect and risk assess the gas assets on Multiple Occupancy Buildings (MOBs). Our inspections have evolved based on the learnings from the Grenfell inquiry and the experience and knowledge gained from our own work as well as that of the other GDNs. We agree with Ofgem that our dataset is sufficiently robust to include an accurate level of workload within our RIIO-GD3 plan[115].

The riser intervention programme for RIIO-GD3 reflects the data collected and the subsequent risk assessments. This has resulted in a higher workload volume when compared to RIIO-GD2, and a programme that we have already started in the final two years of this control.

We recognise there are volume differences between GDNs, both in terms of number applicable buildings within regions, and low-rise/high-rise differences, and would expect Ofgem to normalise for differences in volumes.

However, there should be cost comparability across GDNs based on the type of building, and there will also be a good dataset for historical cost analysis also. For this reason, we suggest that Ofgem considers comparative unit cost analysis, and an allowance based on the accurate volumes submitted in our plan.

Please see associated Engineering Justification Paper[116] which sets out the options considered and cost benefit analysis.

7.2.9. Diversions (including large loads and loss of development claims)

We consider diversions and development claims to be areas that should be kept outside of regression. There have been specific schemes in RIIO-GD2 allowed through reopeners that, if not adjusted for, could impact regression analysis. Ofgem have already confirmed the intention to continue the development claim reopener into RIIO-GD3, which demonstrates the uncertainty and variable nature of these costs.

7.2.10. Cyber Security, IT & Telecoms (inc. data and digitalisation)

Through RIIO-GD2 the cost of Cyber Resilience and core IT & Telecoms, has increased significantly, and the two are now interconnected and interdependent on each other. This is documented within the Cyber related reports submitted alongside this Business Plan,[117] given the requirement to attain and maintain CAF Enhanced profile by 31 December 2027, together with countering the increasing threat landscape.

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[114] Document 18 - Mandatory Programme (incl. Stubs)- EJP
[115] Ofgem (2024), 'RIIO-3 Sector Specific Methodology Decision – GD Annex', P45. 3.71 – 3.75
[116] Document 29 – 'Risers & MOBs - EJP', Document 30 – 'Risers & MOBs CBA'
[117] Documents 37 – 46, in particular see document 37 – 'Cyber submission – Executive Summary', and 38, 'Cyber security Strategy'

The actions required are exogenous, required to maintain adequate and proportionate security against increased threats.

Large elements of the significant increase in investment and resulting step-change in ongoing operating costs (i.e. FTEs and systems) through RIIO-GD2 has been allowed via separate assessment – either separate assessment within the RIIO-GD2 Business Plan or through one of many reopeners within the price control.

The RIIO-GD3 cost assessment approach must reflect and account for such an increase in costs and the step-change from RIIO-GD2 to RIIO-GD3. As there are no specific cost drivers in Ofgem's main regression that would capture this step-change in ongoing operating costs, we urge Ofgem to conduct a more thorough, separate assessment of IT&T, cyber & physical security costs and data & digitalisation costs (either engineering based or some other form of activity-specific benchmarking). We note that this would be similar in principle to the approach considered for electricity distribution networks at RIIO-ED2. [118] Only this approach, and taking each GDNs individual programmes on its own merits, will provide adequate allowances to each GDN, and to underfund investment in these areas combined would be detrimental to safety, security and resilience of our assets.

As with other business support and shared group-level costs, Ofgem should also account for scale benefits from multiple network ownership.

7.2.11. Physical security

Our RIIO-GD3 physical security programme has already been defined within our RIIO-GD2 reopener submissions. The capital programme spans price controls, and Ofgem have already allowed in full the RIIO-GD2 part of the total programme and are supportive of the full programme build.

The second half of the programme, which falls into RIIO-GD3, is above materiality thresholds as stated within the SSMD – GD Annex[119]. We expect the RIIO-GD3 cost assessment team to leverage the assessment work already undertaken by Ofgem on our physical security reopener submission and provide adequate, separate allowances to complete this programme of work which is specific to WWU.

To provide Ofgem with appropriate monitoring, we propose that the RIIO-GD2 PCD which covers the capital build aspect of the Physical Security reopener is extended into RIIO-GD3.

7.2.12. Gasholder demolition

All our gasholder demolition work has been completed in RIIO-GD2 and so this is no longer applicable.

7.2.13. Large capital projects

We continue to experience instances of integrity related leakage from our LTS pipeline network in Wales, large parts of which were constructed and commissioned in the 1950's and 1960's, before the introduction of recognised standards for materials, construction methods and quality assurance procedures. This configuration is relatively unique to WWU amongst the GDNs, and restricted to our Welsh region. Building on the case accepted for the replacement of one such pipeline in RIIO-GD2 (HN039 Derwenlas to

[118] E.g., Ofgem (2022), 'RIIO ED2 Final Determinations Core Methodology Document', November, paras. 7.291-7.303.
[119] Ofgem, (2024), RIIO-3 Sector Specific Methodology Decision – GD Annex, para. 5.60, p114

Aberdovey) which is a PCD, we completed feasibility studies to replace further similar vintage pipelines in GD3.

The capital costs included for these pipelines are greater than £5m (23/24 prices) at £81m, and we therefore expect these pipelines to be separately assessed on their technical merits. The associated Engineering Justification Papers[120] set out the options considered and the feasibility studies with full costings included by independent third parties.

We propose two PCDs, each aligned to one of the two Engineering Justification Papers (EJPs).

7.2.14. Large Repex Projects

We consider our Complex Distribution Systems Repex programme, where the GDN is responsible for the gas network within large commercial properties, for example Bristol Cribbs Causeway shopping centre, should be separately assessed.

Expenditure for each project will vary significantly dependant on type of property (and disruption to property), condition, location of pipe, length of pipe. Given the new nature of this spend and no historical unit cost, we expect this cost to be technically assessed on the merits of the schemes.

[120] See documents referenced 7-9, which include EJPs, CBAs and Feasibility studies

7.3. New areas for separate assessment in RIIO-GD3

7.3.1. Disconnections

Within chapter 8 Managing Uncertainty in totex, we set out the uncertainty relating to disconnections volumes in RIIO-GD3. From recent working groups, GDNs and Ofgem both recognise the uncertainty that prevails.

We propose disconnection costs included within Business plans, which GDNs will all have estimated based on different volume assumptions, should be normalised (removed) by Ofgem to avoid any adverse comparative efficiency impact.

Whilst historic volumes are low, Ofgem are likely to have sufficient available unit cost data to undertake unit cost comparative analysis, both on historic and forecast costs submitted in the BPDTs. This should be used to set a unit cost allowance within a Volume Driver (see section 8.5.3 for further information).

7.3.2. Mains in private property

The HSE has provided direction that mains situated in private land (running under gardens and driveways) will need to be moved out of private property into the footpath or the road. This is a forward-looking requirement that impacts mains replacement in future controls, and currently does not extend to previously replaced mains.

This will incur additional costs as the gas main can no longer be utilised for insertion (the cheapest mains replacement method) and instead we will need to open cut the footpath or road to lay a new main in public land. Additional work may be required to the meter point (i.e. moving from the back to the front of the house) and a new service relayed. As such, historic unit costs are not representative of future costs as they do not account for this increase.

<2" steel mains are the most common pipe to be found in private property – it acts as a small diameter main to feed short services from. Below is the % of <2" steel mains decommissioned compared to all mains decommissioned for the 3-year actuals of RIIO-GD2 (extracted from RRP tables):

	2022	2023	2024	3 year
WWU	14.2%	16.4%	14.9%	**15.2%**
Sc	8.0%	9.7%	10.9%	**9.6%**
NW	4.6%	5.5%	6.0%	**5.3%**
NGN	8.1%	6.2%	6.1%	**6.8%**
So	3.3%	3.0%	3.7%	**3.3%**
Lon	2.6%	3.8%	3.1%	**3.2%**
WM	3.4%	2.6%	2.6%	**2.8%**
EoE	2.3%	2.3%	2.1%	**2.3%**

WWU has the highest proportion of <2"steel mains, and therefore the largest proportion of mains in private property. There is also a clear correlation between the sparsest networks and the % of <2" steel GDNs replace on their network.

Not all <2" steel mains will be located in private property; our analysis shows greater than 20% of <2" steel mains for RIIO-GD3 would require relocation. WWU has one of the highest network percentages for <2" steel mains of GDNs, and so this HSE direction will have the largest impact on our costs.

We have quantified the incremental impact on our RIIO-GD3 mains population; this is £11.5m across the price control (in 23/24 prices). We request Ofgem assess the impact of the HSE direction, the increased impact on companies with more <2" steel, and provide a sufficient upwards allowance adjustment.

7.3.3. Digital Platform for Leakage Analytics (DPLA) and Advanced Leak Detection (ALD)

DPLA - As per the SSMD, we have included £1m rollout costs within our IT&T cost base. This is on the basis that the associated SIF project provides an implementable product. We welcome further interaction with Ofgem teams over the coming months.

ALD - Following recent HSE direction to undertake proactive ALD on iron mains, we have included in our plan £6.1m to purchase and run car-based ALD, this is based on recent quotes from a market leading provider. This is split £4.4m in Other Capex for the cars, and £1.7m across 5 years (£0.3m p.a.) in Work Execution in emergency as running costs.

The requirement of each GDN is the same, however our network is impacted by sparsity, and therefore driving our network will take longer, require more cars and associated running costs (including fuel). We ask for the cost of sparsity to be recognised by Ofgem within its models. If this is included within regression then a sparsity adjustment should be applied.

7.3.4. Land and buildings

In our RIIO-GD2 Business Plan we requested no allowance for land and depot builds as we considered our depot locations to be suitable to service the previous outsourced operating model. In RIIO-GD2, following the in-source of Mains Replacement and the other operational changes made, and to improve resilience by moving from leased to owned sites, we have invested in several new depots.

These investments are strategically placed around the network to accommodate the work movements in our network. For instance, we have built a new depot in Redruth Cornwall, we are building a new site in Cullompton and are developing several sites to be fit for purpose across the region.

Our RIIO-GD3 plan continues this, with the development and build of a site in Plymouth, required given the work moving further into the South West extremities of our region. We are also investing in existing depots to improve their green credentials.

We request these costs are separately assessed, recognising their requirement to support the movement of operational works to match the sparse nature of our network, and to recognise the investment being made into our existing depots to continue to improve their environmental impact.

7.3.5. Non-PSUP physical security

We propose this cost to be separately assessed given its intrinsic link to cyber security and security of assets.

7.3.6. ZEV infrastructure

Within section 8.4.1 of Managing Uncertainty, we explain our position relating to investment in an electric fleet. In summary, we have not included a request for an electric fleet because there is currently no suitable vehicle available, or on the horizon, that can meet the demands of our network without a materially adverse impact on cost and productivity, and a significant increase in risk to consumer safety.

Instead, we have included the cost of the charging infrastructure (land, charging points and electricity infrastructure) in our plan. This enables us to build charging infrastructure during the control, at strategic locations (including already owned land and at depots), that enables a ZEV roll out when vehicles become operationally supportable with no detriment to Operational efficiency. When that opportunity arises we expect the cost of vehicles to be commercially comparable to petrol/diesel equivalents, and therefore the switch should not come at a significant cost to the consumer.

Our plan includes £5.6m for the charging infrastructure to accommodate the switch to electric vehicles as early as possible, when suitable. For the fleet, we ask Ofgem to reconsider its position and instead provide a reopener, timed in the middle of the price control, that allows GDNs to request additional funding if the market offering improves.

We would welcome a review by Ofgem's engineering teams and transport teams to engage with us, and review the wider EV fleet market to validate the concerns we have.

7.3.7. Built over mains

These are pipes where third parties have built over our mains and they require diverting to remove the risk to life. In these cases, there is no opportunity to recover expenditure from third parties.

The location of mains on each project and therefore cost to relocate can differ significantly by GDN. We request Ofgem's technical and engineering teams to make a technical assessment of these pipes.

8. Managing Uncertainty in Totex

8.1. Overview

8.1.1. The uncertain outlook for Totex for RIIO-GD3

With uncertainty over Government policy, the transition to Net Zero and entering the final years of the 30-year IMRRP, which ends in 2032, this next price control brings greater uncertainty than those that came before. Such uncertainty brings with it operational risks such as:

- Loss of critical front line operating staff and inability to recruit new staff to support workload growth
- Loss of contractors to other industries that have significant investment plans, for example water and electricity
- Weakening supply chain resilience, including access to tools, equipment and materials
- Policy and legislative changes that impact our operational delivery, both how we carry our day-to-day operations and the total workload demand (i.e. a change in HSE direction, government policy decisions)
- Inability to adequately plan and prepare for future changes

GDNs face greater uncertainty in RIIO-GD3 than in any other price control period to date and so a wider range of reopeners and Uncertainty Mechanisms (UMs) is required. The alternative would be providing up-front allowances for uncertain costs and risking consumers overpaying or network companies being underfunded. Whilst we sympathise with Ofgem's aim to rationalise and simplify the reopener mechanisms available in RIIO-GD3, this can be at odds with this changing risk profile, if emerging risks and uncertainties aren't appropriately dealt with and can cause issues for consumers and GDNs.

8.1.2. Reflecting on the RIIO-GD2 regulatory mechanisms

The use of Uncertainty Mechanisms (UMs) is well established across regulatory controls; mechanisms that balance unknown or unquantifiable cost and volume risk with the requirement to provide GDNs adequate allowances for investment, whilst protecting consumers from inappropriate charges. Building on previous controls, a range of UMs were included in the RIIO-GD2 allowance regime, the most significant of those being:

- Reopeners – allows a GDN to raise a claim for additional allowances to fund costs for an activity that was deemed too uncertain prior to the price control.
- Volume drivers/volume adjusters – adjusts GDN allowances based on actual volume delivered
- Use It or Lose It allowances – provides GDNs with upfront allowances that are handed back if not spent
- Real Price Effects adjustments – an index calculated adjustment to allowances that mitigates the risk of excessively high or low changes in certain costs (e.g. oil) that are unpredictable.

RIIO-GD2 mechanisms left GDNs with a material amount of risk on entering and managing in the control. However, whilst each can be refined, in the round these mechanisms have been largely effective to date. For RIIO-GD3, along with an appropriate allowance for cost of equity which is calibrated to allow for systematic and non-systematic risks, they should provide the basis for the toolkit to appropriately manage RIIO-GD3 uncertainty, a price control that will have more uncertainty than those previous.

Whilst we still have a few critical reopener submissions to be determined, overall, we consider the mechanism to have been effective to date and fair way of dealing with uncertainty relating to the matters subject to the reopener claims. Positive and negatives include:

Positives:

- It has protected the consumer from setting allowances too high
- Ofgem's administration and assessment to date has been challenging but fair and reasonable ensuring consumers only fund fully justified costs; the criteria for application have been clear, Ofgem assessors have asked challenging clarification questions, and have been consistent in their acceptance of high-quality robust claims. WWU have had a high percentage of claims allowed to date, with some areas remaining to be resolved, and we expect the same for recently submitted Streetworks and HSE policy (fatigue) reopeners, as is assumed in our financeability assessments.
- The reopener windows were spread out across the control in line with the likely risk, thus providing a sensible staggering of submissions for both GDNs to complete and Ofgem to determine upon.
- Ofgem have been flexible, both in adapting the timing of some reopener submissions and in clarifying the definition of what can be claimed.

Negatives:

- They have a specific, sometimes narrow scope which leads to a residual risk that material uncertainty is not covered, particularly given prevailing uncertainty over future energy pathways
- There is no guarantee of recovering efficient costs incurred, exposing GDNs to residual risk
- Amounts spent individually below materiality thresholds can become material in aggregate, however the ability to aggregate was removed in RIIO-GD2
- Following GDN submission, it has taken 6-12 months to reach draft and final determination. With a price control of 5 years, GDNs are often spending material £m values without any certainty over allowances. Further, this exposes WWU to exceeding the regulatory threshold for gearing before the allowance is confirmed, thus incurring a disproportionate and material loss of revenue through tax clawback. This matter is covered in more detailed in the Finance Annex.
- Approved allowances follow a pre-determined split across Opex, Repex and Capex irrespective of the nature of the cost. This makes true variance reporting (allowance vs. cost) more difficult. For reporting purposes (internally and externally) we unwind the allocation difference to provide a truer reflection of performance. For example, in RIIO-GD2 we had a large pipeline diversions and development claims reopener – 100% of the cost was in capex but the allowance was split 80% repex / 20% capex. This creates a material difference between the two cost areas to unwind.
- Reopener determinations are specific to a price control, but some reopener projects span price control periods. It is unclear how any over or underspends will be treated at RIIO-GD2 close out, and how that will impact our RIIO-GD3 allowances. We are assuming that re-opener spend approved as part of a GD2 re-opener but which cannot be spent by 31st March 2026 due to reasons beyond our control, for example third party land issues, will be allowed to be spent in RIIO-GD3, adjusted through the close out process. This fair and reasonable approach would de-risks changes to spend profile for GDNs. For this reason, spend included in our RIIO-GD3 business plan is as per the reopener submissions to avoid duplication. Our Physical Security programme is an example of this.

We welcome the collaborative working adopted by Ofgem through this business planning process and welcome this continuing post-submission ahead of setting of the RIIO-GD3 framework. In particular, we have looked back at the experience in RIIO-GD2 and have some recommendations to improve the governance and efficiency of the process, thus allowing both companies and Ofgem to focus on delivering the appropriate outcomes to consumers.

We recognise the need to streamline the volume of reopeners down to a manageable and structured level and we would advise they could be broken down in a smaller number that include the grouped uncertain areas i.e. legislative change. A grouped approach could aggregate up the materiality trigger level and ensure there is a planned approach to timely reopeners. We had a similar approach in policy for RIIO-GD1 we could utilise.

We welcome further discussions on the potential streamlining of the existing reopener suite, and discussing the potential for an aggregated reopener though policy working groups and licence drafting.

In the following sections we set out the uncertainty that is expected to prevail in the next control, and our view of the best solution to manage that uncertainty.

8.2. Retained Reopeners for Uncertainty

8.2.1. Unchanged Uncertainty Mechanisms

We support the proposal to retain the following uncertainty mechanisms with unchanged scope:

- Diversions and loss of development claims (including the widened scope for work needed due to environmental factors outside of the GDNs control)
- Net Zero Pre-construction Works and Small Net Zero Projects Re-opener
- New Large Load Connections

We also support the proposal to retain the uncertainty mechanisms below, however the scope needs to be reviewed to ensure that they cover the likely uncertainties of the next price control.

8.2.2. HSE Policy

As we have experienced over recent years, the HSE may change its policy on a range of issues based on a revision of its view of what is reasonably practicable, under existing legislation, and not just in a response to a change in legislation. In RIIO-GD3 this could include changes in approaches to:

- Low pressure service cut off and mains in gardens and the time allowed to repair all leaks within 12 hours
- Work required on Multiple Occupancy Buildings
- Impacts of HSE decision on Iron Mains Replacement programme and leak detection and consequential remedial actions (section 8.6.1)
- New requirements, for example to participate in a National Underground Asset Register

As such, we welcome the mechanism being retained, in conjunction with a widening of the scope to include issues that may emerge during RIIO-GD3. We consider a Materiality Threshold similar to RIIO-GD2 to be appropriate.

8.2.3. Net Zero

It is unclear exactly what engagement we will need with National Energy Systems Operator (NESO) particularly in respect of the Regional Energy System Planner (RESP) role. We will be required to interact with NESO and RESPs during RIIO-GD3, these requirements are being developed at the same time as we are finalising our Business Plan and therefore the costs, we have included in our plan for this interaction and system development are subject to uncertainty. In addition the costs for implementing hydrogen blending are uncertain and the Net Zero re-opener should also allow for the potential need to fund such costs.

As NESO only came into existence on 1st October 2024 the resource impact on GDNs is unclear, and whilst we have estimated this impact, it remains uncertain. It seems likely that GDNs will incur some additional costs in supporting the RESP; however, at this stage it is not clear whether those costs will exceed the Materiality Threshold potentially leaving us with additional costs that we cannot recover.

Implications of RESP recommendations during RIIO-3 are inherently uncertain but may require relatively fast response and have implications across the GDN sector as well as in specific regions. The Net Zero reopener therefore needs a broad scope, with mechanisms and resource to respond quickly, to be able to meet such recommendations. We suggest that the scope of the Heat Policy or Net Zero re-openers to include these costs would be sensible in case these costs are higher than expected at this early stage. These costs are likely to include additional staff, new systems, data sharing platforms, analytics, and engagement.

The SSMD refers to RESP costs being included in the Net Zero re-opener and we assume that this refers to our costs as well as NESO costs. The SSMD position is that this reopener is Authority triggered and subject to the Materiality Threshold. We request that GDN reopener windows are introduced, and a nil materiality threshold should be appropriate.

8.2.4. Net Zero and Small Projects (NZASP)

We recognise that Ofgem wishes to avoid dual funding but there is a gap in funding between the Ofgem mechanisms and larger scale funding sources. To fill this gap the NZASP funding needs to be available to develop eligible projects to the stage where they can apply for these other funding mechanisms. Without this support projects are likely to stall between demonstration of proof of concept and a project that is developed enough to be able to be put forward for other mechanisms. We therefore welcome the retention of this mechanism.

8.2.5. Specified Streetworks costs

Given the material changes that have occurred in RIIO-GD2, we agree this should be retained. This mechanism must also cover changes in Highways Authorities approach to enforcing existing legislation or choosing to implement schemes under existing legislation as well as removal of exemptions, for example regarding spoil from road excavations as well as any new legislation or regulations.

We consider a Materiality Threshold similar to RIIO-GD2 to be appropriate.

8.2.6. Non-operational IT Capex re-opener

The SSMD confirmed that this will be captured within a broader digitalisation reopener. We support the retention of a reopener to cover this uncertainty.

8.3. New Reopeners for Uncertainty

8.3.1. Heat policy

With government heat policy decisions due within the price control, this reopener is likely to be critical and possibly of significant material value. We agree that there is a wide range of potential outcomes of heat policy decisions, and uncertainty on what activities may be required for delivery within RIIO-GD3 or in preparation for activity beyond RIIO-GD3. There is also further evidence needed around repurposing or decommissioning that will be required beyond the UK government's hydrogen heating policy decision expected in 2026.

8.3.2. Resilience

We support the introduction of this broader re-opener which will cover:

- Cyber resilience;
- activities associated with physical security (specifically CNI sites and associated personnel and systems);
- changes to engineering and resilience standards;
- changes to emergency measures or protocol; and
- further work required as a result of risk assessment or mitigation work included in the National Risk Register.

Given the current uncertain landscape we would welcome this mechanism being widened to include the workforce and supply chain risks that may be seen as the IMRRP comes towards its conclusion.

We think that the resilience reopener being authority triggered adds risk for GDNs and should be GDN triggered; if this remains then Ofgem must continue to engage with GDNs to understand the materiality impact of the changes that fall within its scope and be open to multiple reopeners throughout the price control.

8.4. Removed Uncertainty Mechanisms

8.4.1. Commercial Fleet EV

Converting to a Zero Emissions Fleet is a real challenge for us here at WWU – it's an area we want to be highly ambitious in however there simply isn't currently a suitable operational alternative (electric, hydrogen or other) for a large proportion of our fleet.

In the SSMD, Ofgem stated that the conversion to Electric Vehicles was now a BAU activity, with less uncertainty, and the cost of continuing to convert should be included in base totex.

We disagree given there is mostly no suitable alternative to our existing Diesel fleet (see our year 3 RRP report which sets out the challenges currently faced) [121] which makes up the largest proportion of our fleet. We anticipate this will improve only slowly in RIIO-GD3 and beyond, as van manufacturers deliver an increased range of zero emission van specifications that meet the full range of operational requirements currently covered only by diesel.

[121] Please see WWU's year 3 RRP report submitted to Ofgem for further detail.

Removing this Uncertainty Mechanism and requiring expenditure within base totex has the potential to drive significant inefficiencies into a GDN submission.

The impact of implementing current market offerings would:

1. Impact operational efficiency – the efficiency of our operating model is driven by the flexibility of our workforce across multiple activities, best utilising their valuable time and skillset. For instance, current ZEV offerings have reduced duty cycle (range), reduced payload, inability to provide onboard power, longer lead times for maintenance and fewer suppliers who can offer this maintenance, to name a few. All of the above make current EV offerings not fit for purpose for the majority of the operational tasks we require. These would combine to produce an increase in inefficiency and puts at risk our ability to maintain standards without impacting other factors like fatigue and public safety.

2. Put at risk our standards of performance – How our FCOs operate would have to fundamentally change to accommodate in-day charging and overnight charging. In a sparse network like ours, FCOs and leakage repair teams would need to be duplicated, with battery life being a restriction on the vehicle range across the sparse geographical region – not reaching a leak due to battery range or not having enough power to fix a leak could become a real issue, and not one we are currently willing to take.

3. Increased capital, maintenance and replacement costs significantly – all of the above would lead to additional teams and vans being required to meet the same standards as today, all of which would be inefficient and increase customer bills.

We have a high ambition to find a suitable alternative, as demonstrated with our market-leading testing of Hydrogen powered vans over the last 12 months [122]. Recognising the uncertainty in the Electric van market, we have led the way in demonstrating this alternative with promising results, however this is not yet available at scale to be seen as an alternative option to Diesel, albeit stakeholder and consumers have praised the initial trials.

It is clear that alternatives are entering the market, and subject to further improvements and testing there could be viable options at a sensible price within the RIIO-GD3 period. As an example, it is not clear what technology or when an alternative will be available.

As such, our position remains unchanged from RIIO-GD2 and our RRP annual report - we cannot justify including these costs given the uncertainty in the market, the significant inefficiencies this will drive, and therefore the inefficient use of consumer money. We also are not willing to risk not meeting our standards of performance.

Instead, we have included the cost of the charging infrastructure (land, charging points and electricity infrastructure) in our plan. This enables us to build charging infrastructure during the control, at strategic locations, that enables a ZEV roll out when vehicles become operationally supportable with no detriment to Operational efficiency.

For the fleet, we ask Ofgem to reconsider its position and instead provide a reopener, timed in the middle of the price control, that allows GDNs to request additional funding if the market offering improves.

We would welcome a review by Ofgem's engineering teams and transport teams to engage with us and review the wider EV fleet market to validate the concerns we have.

[122] ENA Innovation Portal, 'Hydrogen Storage for Zero Carbon Fleet Transport'

8.4.2. Multi-Occupancy Buildings (MoB)

In the last three years we have undertaken a significant survey programme to inform the RIIO-GD2 and RIIO-GD3 plan. As such, we agree that the Multi-Occupancy Building reopener can be removed as long as our base allowances sufficiently allow the workload and cost that has been requested, including new workstreams driven by HSE direction, including the PE/copper, valve and manifold replacement programmes identified for RIIO-GD3.

This is on the basis that the HSE Policy reopener is sufficient in its scope and materiality to allow future direction changes to be requested through the mechanism.

8.5. Uncertainty related to volume

8.5.1. Tier 1 mains replacement and associated services

As set out in our SSMC response [123], we do not think there is any reason for a cap on Tier 1 mains or services work. The work required to deliver the close out of the IMRRP is largely fixed with the exception of dynamic growth pipes, and we are bound by legislation to complete all of those pipes by 2032.

Given the 100% capitalisation rate of Repex, any over-delivery has a minimal impact on customer bills and would only be accelerating mandatory work forward by a maximum of 21 months. If a GDN has the resource to efficiently deliver its programme earlier than submitted in their business plan, this would only be of benefit to the consumer.

For mains diameter bands, we accept that the PCD provides protection to consumers by adjusting allowances for the diameter mix delivered and this should continue.

8.5.2. Domestic connections

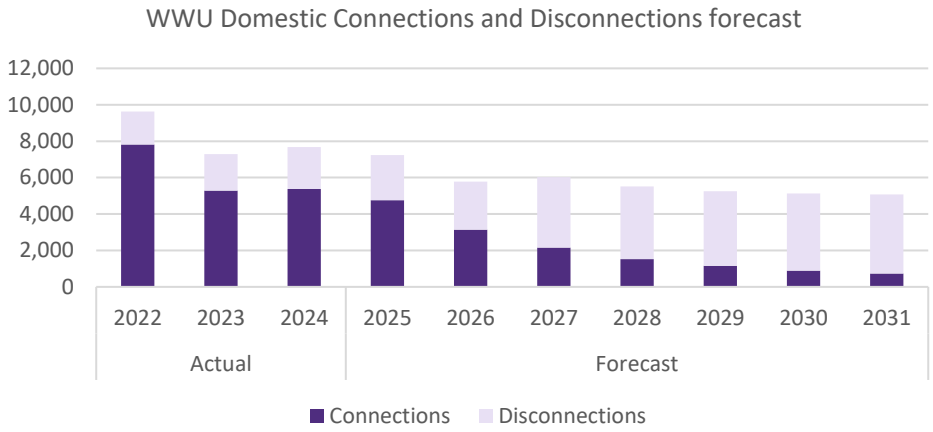
We recognise that with no Domestic Load Connection Allowance (DLCA) there will be no net cost and therefore no requirement for a domestic service volume driver.

We have statutory obligations under the Gas Act and our Licence to quote and connect customers to our gas network within the set standards of service. We have seen a developing trend of customers still requesting quotes for a gas connection but taking up other heating solutions. The resources required and work involved in issuing a quote is extensive and required regardless of quote acceptance numbers; this continuing decline in volumes is resulting in back-office costs which cannot be borne by an ever-reducing volume of customers who want to connect.

We are mitigating the impact where possible through cost reductions, but this is being offset by the cost pressures above inflation and the fixed overheads required to operate effectively within our licence obligations; this results in a stranded cost. Our plan is based on the majority of back-office costs being borne through connection pricing.

It is also our view that any stranded back-office teams on 1st April 2026 will not be able to be readily utilised to support the disconnections increase in RIIO-GD3 as the two workloads do not align within the price control. This is illustrated below:

[123] Wales & West Utilities, 'RIIO-3 Consultation Response', p52



8.5.3. Disconnections

With government incentivisation of heat-pump and other low carbon heating solutions, we expect the number of disconnections to increase as we move through RIIO-GD3, as illustrated by the workload forecast in the graph above.

However, our experience in RIIO-GD2 suggests that uptake is well behind the government targets (600,000 new heat pumps being installed each year and allowing for the majority of new housing to have heat pumps) even after higher subsidies have been offered to consumers to promote the switch. Even if heat pump uptake was to increase in line with Government targets, this does not necessarily convert to a gas disconnection with many customers opting to keep both heating solutions.

As such, our RIIO-GD3 plan forecasts a moderate increase in disconnections in our region over the price control. We do recognise that the FES scenario would result in a materially higher number of disconnections in our region, as shown in the below table. We have deviated from the FES scenarios as we have no credible historic evidence to support such a materially higher pathway.

		2027	2028	2029	2030	2031	Total
WWU Forecast	No.	3,866	3,983	4,103	4,226	4,354	20,532
	£m	2	3	3	3	3	14
FES Holistic pathway	No.	203,034	203,034	203,034	203,034	203,034	1,015,171
	£m	172	172	172	172	172	860
Variance	No.	-199,168	-199,051	-198,931	-198,808	-198,680	-994,639
	£m	-170	-169	-169	-169	-169	-846

The volume of disconnections is impacted by many external factors and is extremely uncertain; the divergence between the two forecasts in the table above demonstrates this. For this reason, we reiterate our position from our SSMC response that a Volume Driver mechanism would provide protection for both GDN and consumer in this area.

A principle of networks' connection policy is that existing customers should not subsidise new connections driven by Gas Act section 9 (1), if this approach is applied to disconnections, then there is an issue to address. Therefore, while a volume driver is a short-term solution for RIIO-GD3, given the expected increase in disconnections from current low levels, further thought is required for future price controls.

8.6. Other areas of uncertainty

8.6.1. Ongoing discussions on the HSE decision on the IMRRP

The HSE's initial view on the IMRRP has come late in the business planning process, providing little time for GDNs to assess the operational and therefore financial impact across the plan. This has also limited the time available from all stakeholders (Ofgem and GDNs) to seek clarification over uncertain aspects.

We presented our initial concerns within joint GDN, HSE and Ofgem working groups[124] . In particular, we find there to be two areas of specific uncertainty:

- The impact of changing the risk assessment methodology on Tier 2 mains.
- The impact of Advanced Leak Detection on operational totex

On Tier 2 mains, our plan does not include any Tier 2a mains replacement (requiring replacement due to high risk), as no pipes reach the current risk threshold; this is similar to RIIO-GD2 where we had very little work. Whilst there is a volume driver mechanism in place in RIIO-GD2, the unit cost is not representative of the cost of the works. We have reviewed 32km of our remaining highest risk Tier 2 pipes, those most likely to become in scope for Tier 2a, and have individually costed each scheme. This shows that on average Tier 2a mains are double the unit cost per metre of tier 2b mains (selected based on Cost Benefit Analysis), which is comparable to the few previous Tier2a schemes completed. This cost difference is a position that all GDNs confirmed on the recent working groups.

We ask Ofgem to be aware of this cost differential when selecting an appropriate uncertainty mechanism. Whilst we consider a reopener to be most suitable, if a volume driver is maintained for Tier2a, the unit cost must be set based on the specific pipes in scope.

On Advanced Leak Detection, whilst we have included the cost of car-based ALD, we currently do not have enough data to sufficiently determine if there is a material operational impact from deploying this technology on our network. As such, we have not included any cost associated with additional leak or repair costs, nor any aggravation to a replacement programme.

We intend to deploy ALD onto our network before Draft Determinations and would welcome the opportunity to assess that data and feedback to Ofgem the results.

8.6.2. RIIO-GD2 reopeners that span price controls

We are assuming that re-opener spend approved as part of a RIIO-GD2 re-opener but which cannot be spent by 31st March 2026 due to reasons beyond our control, for example third party land issues, will be allowed to be spent in RIIO-GD3. For this reason such spend has not been included in our RIIO-GD3 business plan because it is difficult to forecast at this stage.

An example is our physical Security control room build programme - this spans evenly across the control periods. Whilst we include in our Business Plan base totex our best estimate of spend in RIIO-GD3, there is a risk that we spend less in RIIO-GD2 and then require that funding in RIIO-GD3 in excess of our Business Plan submission.

We ask Ofgem to be pragmatic here at RIIO-GD2 close out, allowing GDNs to reconcile allowances in both price controls and retain adequate allowances to cover the efficient costs for the programme.

[124] Cost Assessment Working Group "CAWG14 Repex" 29 October 2024, and "proposed IMRRP Enforcement Policy Revisions" 6th November

8.6.3. Code Manager costs

The Code reform process that will see the Uniform Network Code (UNC) combined with the IGT UNC and one code manager appointed for the combined gas wholesale code is underway. In our SSMC response we proposed that code manager costs should be made pass through when the code manager is appointed. This was not taken up by Ofgem so our submitted costs for the code administrator role (which are included in 4.00 Opex Cost Matrix (Audit, Finance & Regulation) include our estimates for the work required ahead of the code manager being appointed and the costs of a code manager once appointed.

8.7. Excluded from our plan

8.7.1. Hydrogen

Ofgem has been clear that hydrogen investment is not to be included within this plan. Even with more certainty on Government policy, Ofgem does not foresee significant investment requirements in the RIIO-GD3 period 2026 - 2031.

However, we need to act now to ensure the UK reaches the 2050 Net Zero target. This includes exploring the opportunities for hydrogen and the repurposing of the existing gas distribution networks to achieve the best long term legally enforceable government target of Net Zero by 2050. It also includes preparatory work to enable delivery beyond the RIIO-GD3 period, to ensure this can happen at the required pace under a range of different scenarios.

The use of agile re-openers is critical to enable the investment required in energy transition, to service industry and power generation and to support positive decisions on hydrogen for heat in the government 2026 heat policy. The reopeners should reflect the potential levels of investment required and an ease to make this happen. We agree that it is likely that a mixture of both Heat Policy reopeners and Net Zero Uncertainty Mechanisms will be needed in this space given the range of potential outcomes of heat policy decisions, and uncertainty on what activities may be required for delivery within RIIO-3 or in preparation for activity beyond RIIO-GD3.

We also agree that it is likely that further evidence around repurposing or decommissioning will be required beyond the UK government's hydrogen heating policy decision expected in 2026. The combination of appropriately calibrated reopeners and Uncertainty Mechanisms will be required to fund this, subject to adequate allowances and appropriate governance.

8.7.2. Proposed changes within the Autumn 2024 Budget

As agreed between Ofgem and GDNs, announcements relating to the Autumn 2024 Budget were too late for GDNs to incorporate into their Business Plan Submissions. Most notably, the amendments proposed to Employers National Insurance are the most material to GDNs, and our internal operating model. We expect Ofgem to adjust Totex submissions for the changes proposed and reflect this within the Cost assessment outcomes. We quantify the impact within 'M8.14 BUS' BPDT table.

9. Real Price Effects (RPEs)

Real Price Effects (RPEs) capture the difference between input price inflation and consumer price inflation. Network companies' costs are subject to input price inflation, but changes in these input prices may differ from the consumer price inflation index used to index their revenues. This gives rise to a wedge, or RPE, in terms of the trajectory of prices.

Overall, the current framework is a reasonable basis to start from – both the structure and timing of the way in which this mechanism works. We set out below areas that require adjustment given the experience of RIIO-GD2 which has been turbulent given price movements and price inflation over the last 3 years.

9.1. External work commissioned

In 2024, Gas Distribution and Gas Transmission companies jointly commissioned KPMG to assess the potential scope for improvements in the framework for Real Price Effect (RPEs). This work was facilitated through the Energy Networks Association (ENA).

The report [125] sets out:

- Background, scope and objective - the background on why RPE allowances are important and recent regulatory precedent for RPE frameworks, the objective and scope of the report.

- Approach - covering four elements of the RPE framework:
  (i) input category selection;
  (ii) index selection;
  (iii) weighting of indices and input categories;
  (iv) index forecast assumptions.

- Analysis of the RPE framework - for each of the four elements of the RPE framework, the review is conducted in line with the approach outlined above, on which further detail can be found within the report.

- Indices of interest in RIIO-3 - applies a revised, simplified index selection framework to a longlist of indices to create a shortlist of possible indices of interest in RIIO-3.

- Summary of the analysis and implications - Sets out the report's conclusions.

Our overview on the conclusions of this report is below, but we recommend Ofgem read the KPMG report in full given the detail included within it.

9.2. Principles that should remain unchanged for RIIO-GD3

The following areas of the RPE framework are effective and should remain largely unchanged:

- Index linking of cost categories – this principle should remain, and the cost categories that are index linked in RIIO-GD2 should continue; they are the highest value and most volatile costs and thus continuing to apply RPEs to these categories minimises risk to customer and company.

[125] Document 60H - KPMG (2024), 'RPE framework at RIIO-3', June

- Forecast true up mechanism – the forecast true-up mechanism introduced in RIIO-GD2 should continue. It should remain as once a year, in November, in order to reflect any adjustments in the following annual price setting process (i.e. November 2025 to capture movements when setting the 2026/27 prices). However, a small improvement would be for Ofgem to provide an accurate reforecast in June of each year that each GDN must adopt in their RRP reporting submission – this would provide consistency and clarity across GDNs, and make it easier in allowances vs. cost analysis in the RRP reporting. This is currently an informal process which is inconsistently applied across GDNs.

9.3. Proposed changes

The following are areas of the RPE framework that Ofgem should consider changing in the RIIO-GD3 framework:

- Move away from the use of materiality thresholds [126] – these thresholds have been perceived to be arbitrary and potentially subjective in terms of cost categorisation and risk allocation. Other sectors and jurisdictions in the UK (such as Ofwat and Northern Ireland Water) have avoided using materiality thresholds for this reason. Instead, Ofgem should consider either linking all input categories to an identified price index or linking any input category with high likelihood of volatility to a suitable index.

- A wider index selection should be considered [127] – in resetting the basket to be used, a broad range of indices should be considered in the longlist before narrowing down, to avoid missing relevant indices.

- Utilise company specific cost split to assign weighting to each cost category [128] – each GDNs cost base will be impacted differently given the variations in workload. For instance, our plan includes a significant length and cost for LTS steel pipelines, a unique feature of the Wales network with the UK; other GDNs cost base are therefore less likely to be as exposed to the price of steel in their plan. The RPE methodology could be refined to be specific to each GDN.

- Reflect on material movements in RIIO-GD2 – there is clear evidence that areas of cost, such as transport and plant, have encountered large variations that were not accounted for within the setting of RIIO-GD2 RPE framework. Ofgem should consider historic variability when identifying changes that will impact GDNs in RIIO-GD3.

- Focused review on the indices for labour [129] – the supply and demand factors of the construction labour market suggest that wage pressures are material.[130] The pressures will also be material relative to overall economy wide changes if the construction sector has limited ability to attract labour from other sectors. The ability of labour to shift between sectors, and the attractiveness of the gas sector relative to other infrastructure sectors, are issues that require further consideration.

[126] Document 60H - KPMG (2024), 'RPE framework at RIIO-3', June, p.36-p.37
[127] Document 60H - KPMG (2024), 'RPE framework at RIIO-3', June, p.37
[128] Document 60H - KPMG (2024), 'RPE framework at RIIO-3', June, p.38
[129] Document 60H - KPMG (2024), 'RPE framework at RIIO-3', June, p.39-p40
[130] Document 60H - KPMG (2024), 'RPE framework at RIIO-3', June, p31

9.4. Conclusion

Whilst the existing framework has provided a reasonable basis to start from, we think it can be calibrated ahead of RIIO-GD3. A summary of analysis and implications is set out on p.45-p.46 of the KPMG report for further details.

10. Acronym Key

Acronym Key

ALD	Advanced Leak Detection	EU KLEMS	EU level analysis of Capital, Labour, Energy, Materials and Service Inputs	IT	Information Technology
ASHE	Annual Survey of Hours and Earnings	EV	Electric Vehicle	IT&T	IT and Telecoms
B&R	Build and Repair	FCO	First Call Operative	LA	Local Authority
BAU	Business As Usual	FD	Final Determinations	LTS	Local Transmission System
CAF	Cyber Assessment Framework	FES	Future Energy Scenarios	MEAV	Modern Equivalent Asset Value
Capex	Capital Expenditure	FTE	Full Time Equivalent Employee	NACE	Statistical classification of economic activities in the European Community
CAWG	Cost Assessment Working Group	GD	Gas Distribution	NCSC	National Cyber Security Centre
CBA	Cost Benefit Analysis	GDN	Gas Distribution Network	NESO	Network System Operator
CEO	Chief Executive Officer	GDP	Gross Domestic Product	NGGD	National Grid Gas Distribution
CEPA	Cambridge Economic Policy Associates	GEMA	Gas and Electricity Market Authority	NGN	Northern Gas Network
CMA	Competition and Markets Authority	HR	Human Resources	NIA	Network Innovation Allowance
CNI	Critical National Infrastructure	HSE	Health and Safety Executive	NIS	Network and Information Systems
EI	Economic Insight	IMRRP	Iron Mains Risk Reduction Programme	OE	Ongoing Efficiency

Acronym Key

Ofgem	Office of Gas and Electricity Networks	RPE	Real Price Effect	TFP	Total Factor Productivity
Ofwat	Water services regulation authority	RRP	Regulatory Reporting Pack	Totex	Total Expenditure
ONS	Office for National Statistics	SIC	Standard Industrial Classification	UIOLI	Use IT Or Lose It
Opex	Operational Expenditure	SIF	Strategic Innovation Fund	UQ	Upper Quartile
PCD	Price Control Deliverable	SIU	Statutory Independent Undertakings	WWU	Wales and West Utilities
PQQ	Pre-Qualification Questionnaire	SOC	Standard Occupational Classification	ZEV	Zero Emission Vehicle
RAV	Regulatory Asset Value	SSMC	Sector Specific Methodology Consultation		
RESP	Regional Energy System Planner	SSMD	Sector Specific Methodology Decision		