Cadent

Your Gas Network

RIIO-3 Draft Determinations

Our response to Ofgem Cadent Document

August 2025

Navigating our response

Cadent's response to Ofgem's RIIO-3 Draft Determinations is structured as follows.

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Ofgem Question Reference	Annex Reference	Annex Title
CADQ14	A	[redacted]
CADQ14	B	[redacted]
CADQ14	C	EJP04-DD-SE-Governors
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CADQ14	D	[redacted]
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CADQ14	F	EJP17-DD-SE-Pressure Reduction on Offtakes & PRS
CADQ14	F	[redacted]
CADQ14	G	EJP05-DD-SE-Services Not Associated with Mains Replacement
CADQ14	H	EJP07-DD-SE-Mains Diversions
CADQ14	I	EJP09-DD Update-Mains CBA
CADQ14	I	EJP09-DD-SE-Mains CBA
CADQ14	I	[redacted]
CADQ14	J	EJP10-DD-SE-MOBs Risers & EJP11-PE Risers
CADQ14	K	EJP12-DD-SE-Pipeline Integrity
CADQ14	L	EJP13-DD-SE-Pipeline Isolation Valves
CADQ14	M	EJP14-DD-SE-Pipeline Monitoring & Protection
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CADQ14	O	[redacted]
CADQ14	P	MJP08-DD-SE-West Winch

About this document

This document covers our responses to the questions in the Cadent document of the Draft Determinations. To support our response, we have also provided annexes with key evidence and analysis such as additional engineering information.

Contents

CADQ1. Do you agree with our proposed design of Cadent's FWACV Compliance PCD?

We agree with the use of an evaluative PCD with the proposed allowance reflecting our original proposed value of [redacted]. We also believe this project should be technically assessed by Ofgem in respect of costs and not included within its comparative regression benchmarking (further information on this can be found in our response to GDQ36). Both the use of an evaluative PCD and technical assessment of costs are a continuation of the approach used in RIIO-2, and as we proposed in our business plan.

We have raised an SQ to seek clarification on the intent of the Technical Report requirements detailed and proposed a method of doing so that we feel meets the requirements. We recommend that a dedicated table, similar to that of the London Medium Pressure PCD table 10.05, is produced as part of RRP, which is then subject to both internal assurance and a separate independent engineering assurance activity. All independent assurance would be aligned with the Annual RRP. This is a rolling programme of work and does not lend itself well to assurance at specific project stage-gates.

Funding allocation between RIIO-2 & RIIO-3

In response to Ofgem's draft determination for FWACV, specifically Section 2.9, we wish to clarify our approach to enabling work. [redacted]. This reflects our forward-looking investment strategy and aligns with discussions held at the bilateral meeting on 22nd July.

Cost Reporting in the EJP and BPDT

Regulatory Period	EJP Spend (£m)	Description	BPDT Spend (£m)
RIIO-2	[redacted]	[redacted]	[redacted]
RIIO-3	[redacted]	[redacted]	[redacted]
RIIO-4	[redacted]	[redacted]	[redacted]
TOTAL	[redacted]	[redacted]	[redacted]

Explanation of Spend Apportionment

- The EJP Summary Table has been completed in accordance with the Ofgem EJP template, identifying a [redacted] for the RIIO-3 work plan.
- [redacted], including detailed design and procurement of long lead items. While mobilisation has begun and works are underway, the [redacted].
- In the BPDT, the entire [redacted] is allocated to RIIO-3, reflective of our expenditure in RIIO-3 and is consistent with total programme spend detailed in the EJP.

At our bilateral meeting with Ofgem Engineering on 22nd July, we explained [redacted], (specifically detailed design and procurement of long lead items) to enable full delivery in RIIO-3. While these activities are underway, [redacted]. Ofgem was broadly supportive of this approach, recognising the importance of enabling work where it is clearly justified and linked to programme outcomes.

CADQ2. Do you agree with the proposed design of Cadent's London Medium Pressure PCD?

We support the proposal regarding the London Medium Pressure project as a bespoke Price Control Deliverable (PCD), with the proposed allowance of [redacted] which aligns to Ofgem's econometric model outputs. We agree at high level with the proposed PCD design but have comments on the timing and detail of this activity.

We recommend that a dedicated LMP PCD table is produced as part of RRP, which is then subject to both internal assurance and a separate independent engineering assurance activity. All independent assurance is aligned with the Annual RRP. This is a rolling programme of work and does not lend itself well to assurance at specific project stage-gates.

During RIIO-2, we have been generating a Table 10.05, to evidence work-volumes delivered for LMP, with associated delivery costs. We propose to continue to generate this data table to support this assurance exercise.

CADQ3. Do you agree with our proposed design of the PCD for Cadent's Grays Medium Pressure project?

We support the proposal regarding the Grays Medium Pressure Project as a bespoke Price Control Deliverable (PCD), with the proposed allowance reflecting our original proposed value of [redacted].

We agree at a high level with the proposed PCD design but have comments on the timing and detail of this activity. We recommend that a dedicated Grays MP PCD table is produced as part of RRP, which is then subject to both internal assurance and a separate independent engineering assurance activity. We propose that all independent assurance is aligned with the Annual RRP. This is a rolling programme of work and does not lend itself well to assurance at specific project stage-gates. We have raised Cadent-DDQ027 on 16/07/25 to seek clarification on the intent of the Technical Report requirements detailed and we proposed a method of meeting them based on the approach agreed for reporting on our London Medium Pressure project in RIIO-2.

CADQ4. Do you agree with our proposed design of the PCD for the Tinsley Viaduct Diversion project?

We support the proposal regarding the Tinsley Viaduct Diversion project as a bespoke Price Control Deliverable (PCD), with the proposed allowance reflecting our original proposed value of [redacted].

We agree at high level with the proposed PCD design but have comments on the timing and detail of this activity. We recommend that a dedicated Tinsley Viaduct PCD table is produced as part of RRP, which is then subject to both internal assurance and a separate independent engineering assurance activity. We propose that all independent assurance is aligned with the Annual RRP. This is a rolling programme of work and does not lend itself well to assurance at specific project stage-gates. We raised Cadent-DDQ027 on 16/07/25 to seek clarification on the intent of the Technical Report requirements detailed and have proposed a method of meeting them based on the approach agreed for reporting on our London Medium Pressure project in RIIO-2.

CADQ5. Do you have any views on our proposal to reject Cadent's Advanced Leakage Intervention programme and fund its non-mandatory repex programme based on the RIIO-GD2 approach?

We do not support the proposal in the DD and believe it should be reconsidered. The ALIP is a strategically aligned, evidence-based, and operationally mature programme that supports RIIO-3 objectives and delivers measurable benefits to customers, the environment, and asset health. We have presented five credible, robust and scaled options, choosing the option that delivers the most value to customers whilst returning the investment required with the 11-year timeframe specified by Ofgem.

Following engagement through the Draft Determination process with Ofgem's Engineering and Policy teams, we have provided an updated version of EJP09 to clarify the drivers for our proposed investment to address the areas of concern. The key areas where the Draft Determinations challenged our proposals were:

1. DPLA and ALD are not intended to drive additional workload
2. In developing a programme that goes beyond safety we are stretching the 'mandate' of the gas network
3. Concerns over deliverability and affordability
4. The strength of the benefits case

We have looked to address many of these challenges through the updated EJP through providing additional detail or clarity and summarise our main responses below.

DPLA & ALD Driving Additional Workload

The Draft Determination suggests that the Digital Platform for Leakage Analytics (DPLA) and the associated Advanced Leakage Management approach (ALD) appear to be a mechanism for driving additional workload. The DPLA business case does not factor in any additional volumes, it was designed to focus first on prioritisation of work based on actual measured leakage. Advanced Leak Detection technologies are part of this DPLA business case and included in this analysis. These initiatives have their own clear business case that stands alone. The technologies however will provide Cadent with a much richer data set and clarity over actual leakage on the network. Our ALIP programme is looking specifically at the additional benefits and justification for expanding our Cost Benefit mains programme.

Leveraging leakage rates observed from 10,000km of RIIO-2 surveys, we've developed a Hybrid Leakage Model (HLM). This model offers a granular view of emissions at the individual pipe level, revealing that certain pipes leak more, and others less than anticipated by the Shrinkage Leakage Model (SLM). Initial surveys on a portion of the North London network show that while the SLM targets 2.5% of the network length for interventions to achieve a 40% emissions reduction, the HLM identifies only 1.6% of the network length for the same reduction. This demonstrates that the HLM would direct interventions to a different set of pipes than the SLM. Crucially, the HLM allows us to more accurately pinpoint pipes with the highest risk of failure, and consequently the greatest safety and leakage concerns, compared to the theoretical SLM. This applies to our existing work stack (i.e., IMRRP and our wider mains programme) and also to any additional work which we have proposed to tackle our leakiest assets.

ALIP leverages the sophisticated data collected using ALD to precisely target CBA interventions on the highest-risk and most emission-intensive assets. It is about ensuring that any investment is directed to where it will deliver the greatest value and emissions reduction. It follows therefore that the refinement of the ALD data to reprofile the expected leakage rate from our assets and targeted nature

of our approach improves the payback period for each programme (mandated and non-mandated work).

The mandate of the Gas Network in environmental Improvement & customer expectation

The Draft Determination response overlooks the critical role the gas network can and will play in supporting Ofgem delivering on its net zero duties and the material impact targeted investment to reduce methane emissions can have towards the Environment Agencies methane emissions targets, part of the UK's commitments to global pledges. Ofgem has recognised this importance in previous price controls with the implementation of material financial incentives to reduce leakage in RIIO-1 and RIIO-2.

Leakage from our mains and services accounts for a substantial portion of our Scope 1 and 2 emissions (78% of our Scope 1 and 2 emissions are attributed to leakage). Our ambition is to achieve a 43% reduction in baseline emissions by 2036, a goal that ALIP is specifically designed to accelerate. This is directly in line with government policy and the UK's net-zero commitments.

Our customer research, including the Willingness to Pay (WTP) analysis, consistently shows strong customer support for environmental action. 87% of respondents support reducing gas leaks now for future system improvement, and 81% believe the gas sector should proactively adopt lessons on leakage from the water industry rather than delay necessary changes. This clearly indicates customer preference for proactive environmental initiatives.

Therefore, there are material benefits and customer support for the programme. We have prepared our business case in accordance with Ofgem's cost benefit template and it demonstrates a material payback. This indicates that it is a good investment decision and that all other things being equal it is a sensible decision to invest. As gas networks we set out to deliver a safe, reliable and efficient network and this work programme is entirely within that remit.

Deliverability & Affordability:

We understand the importance of ensuring our proposed workload is both deliverable and affordable, and ALIP has been developed with these considerations at its core. Since submission, our T2a mains intervention volumes have changed due to a planned, cross GDN risk coefficient update driven by a refresh of the core data used and methodology refinements. Further information can be found in EJP19, covering our T2a programme. To accommodate the increase in workload for this mandated workload, we have reduced the ALIP to accommodate this within the 750km deliverability threshold determined through our deliverability testing processes (this was resubmitted to Ofgem as requested separately).

We have rigorously tested the deliverability of our proposed programme options. This involved extensive engagement with our supply chain to calibrate market capability, capacity and unit cost estimates. Our plans consider workforce requirements and leverage our "Workforce and Supply Chain Resilience Strategy", which was received well by Ofgem. From this process, we set a 750km deliverability threshold for mains REPEX activity outside of IMRRP. Furthermore, the workload is profiled to "ramp up" smoothly over the RIIO-3 period, building on our operational experience and track record. Annex D of our supplementary evidence in EJP09 details our comprehensive deliverability review.

The chosen ALIP scenario represents a modest average increase of [redacted] per household per year across RIIO-3. [redacted] is well below the [redacted] per year that 56% of customers supported paying when we tested what they are willing to pay to reduce gas leaks. We have retested this with a survey of customers, and this confirms the same conclusion. Moreover, all scenarios presented in EJP09 demonstrate a payback within the 11-year requirement specified by Ofgem.

We recognise that affordability is not a black and white assessment and understand that Ofgem have a duty to balance a number of priorities. The programme we proposed considered this and deliverability. Our proposed options provide a range whole-life net benefit from [redacted] to [redacted] by 2050 compared to "No Proactive Mains Replacement" approach and between [redacted]

to [redacted] more than the 'RIIO-2 strategy'. This demonstrates clear value for money for our customers across all options.

Strength of our business case: Investment Return and Intervention Options

We note Ofgem's proposed 11-year payback period for non-mandatory workloads. We recognise the significant economic challenges currently facing customers, the energy sector, and the wider regulatory environment. We understand and agree that affordability and value for money must remain central to all investment decisions. The ALIP has been developed with these pressures in mind—balancing ambition with deliverability, feasibility and impact on our customers. In fact, we applied our own hurdle rate when assessing the programme to ensure it paid back within 11 years in our BP submission.

As a result, the ALIP clearly demonstrates substantial consumer benefits exceeding the costs within the required 11-year payback period. In our EJP09 submission, we present options that all achieve payback within this timeframe with varying levels of environmental, asset health and risk reduction benefits. Please refer to the tables below which summarise the options and the impact each investment will have on the critical performance metrics for these assets. This includes how the programme aims to manage asset deterioration, reduce supply interruptions, reduce leakage and deliver an overall net benefit to customers within 11 years.

The following table summarises the costs, workload and performance of the proposed DD option (continue RIIO-2 approach and deliver 230km in RIIO-3).

Option	NPV, 2037 (£m)[1]	NPV, 2050 (£m)	RIIO-3 Repex (£m)	Avg RIIO3 Bill impact £/HH/y	Start to end of RIIO-3 performance trend			
					Contribution to leakage reductions	Gas escapes	GIBs	Supply interruptions
Option 2: 230km in RIIO-3	[redacted]	[redacted]	[redacted]	[redacted]	↑ +6.8%.	↑ +3%	↑ +4%	↔ -1%

[1] NPV is relative to the baseline option (of continue to reactively repair) and carry out no proactive replacement.

The next table then compares the alternative programme options relative to the proposed DD option (Option 2: Continue with RIIO2 approach: 230km in RIIO3) to demonstrate the incremental costs, benefits and workload of each alternative option considered.

Option	NPV, 2037 (£m)[2]	NPV, 2050 (£m)	RIIO-3 Repex (£m)	Avg RIIO3 Bill impact £/HH/y	Additional performance achieved compared to Option 2			
					Contribution to leakage reductions	Gas escapes	GIBs	Supply interruptions
Option 1: 640km in RIIO-3	[redacted]	[redacted]	[redacted]	[redacted]	↑ +3.2%	↓ -7.1%	↓ -8.7%	↓ -7.7%
Option 3: 390km in RIIO-3	[redacted]	[redacted]	[redacted]	[redacted]	↑ +1.4%	↓ -3.5%	↓ -4.9%	↓ -3.8%
Option 4: 480km in RIIO-3	[redacted]	[redacted]	[redacted]	[redacted]	↑ +2.4%	↓ -5.0%	↓ -6.7%	↓ -5.4%

[2] NPV is relative to the baseline option (of continue to reactively repair) and carry out no proactive replacement.

The proposed DD option is the only scenario that does not hold or improve asset deterioration. All of the alternate options address the deterioration in performance of these assets, with clear additional benefits to asset performance and therefore risk. We believe that options 1, 3 and 4 are all credible strategies to manage risk and deliver material benefits. Our chosen option 1 delivers the highest overall benefit.

Summary

In summary, the evidence we have submitted to support the Advanced Leakage Intervention Programme demonstrates how it meets Ofgem's stated assessment criteria and delivers the most benefits to customers and society. It therefore should not be classified as unjustified in this assessment or in any Stage C Business Plan Quality Assessment (see our response to CADQ11). We recognise that Ofgem needs to assess the affordability of all justified proposals and that this may be a consideration in terms of the ALIP but we stress that by not supporting increased interventions beyond the RIIO-2 levels proposed in the DD, significant benefits are being lost for current and future consumers on safety and resilience as well as losing the opportunity to further target the leakiest assets and avoid harmful emissions into the atmosphere at the earliest opportunity. We therefore encourage the DD position to be reassessed and a larger programme which delivers these benefits to be supported at Final Determinations.

CADQ6. Do you agree with our proposal to reject Cadent's Net Zero Transition Planning proposal?

We do not agree that these costs should be excluded from our baseline funding, as the associated resourcing is critical to enabling a safe and efficient transition at pace to a net zero energy system, with all our customers and stakeholders effectively supported. We should be funded to support and advise all our transitioning customers, including industries and businesses vital to economic growth, that all know that doing nothing is not an option, if we are to transition to net zero.

Whilst we have started to ramp up our activities in this space in RIIO-2, due to limited funding this has been targeted and largely linked to hydrogen project development; with funding through the NZARD UIOLI. As these activities inevitably need to ramp up driven by our customers and stakeholders increasing engagement in net zero, we believe these costs should now be treated as baseline. They are unquestionably long term in nature and require funding certainty so that effective longer term resourcing strategies can be confidently deployed. These areas are not short term on-off activities which would be more appropriate for an Uncertainty Mechanism.

In our Business Plan we carefully set out clear discrete incremental net zero transitional costs relating to:

- **Engineering policy development and assurance**

The future role of the gas network will require additional engineering expertise to guide policy decisions and then to develop and implement new engineering policies before any physical work can commence. These skilled resources must be recruited and trained requiring before they can be deployed to support transitional activities such as decommissioning, mothballing, or asset re-purposing.

- **Network modelling**

To inform high level policy development as well as local regional strategy our stakeholders will need detailed modelling outputs to inform their decision making. Such modelling is also critical to enable proactive and informed engagement with customers and stakeholders, including in the development of local area energy plans.

- **Market Framework development**

Similar to engineering policy, the market framework will need to change to support the transition to net zero. Incremental resourcing is required to support Government, Regulators and Code Managers in the development, and to ensure new emerging policy is well informed and implemented effectively. As our customers consider how to transition to a net zero future, the market framework and contractual arrangements will all be a key consideration and without resourcing, would become a barrier to change.

- **Customer and stakeholder support.**

Our customers and stakeholders will increasingly need our trusted support and guidance as they begin their own journeys to net zero, and grapple with the difficult and complex choices they are being presented with. We must be resourced to provide an effective, high quality, well informed and responsive service that meets and adapts to their needs.

The costs for all these activities should be included within baseline funding, due to their enduring nature and the need to plan and resource accordingly. We also noted that should Ofgem reject the baseline funding, then the scope of the NZARD UIOLI should be amended to confirm their inclusion and the allowances appropriately adjusted.

In Ofgem's response to our EAP in the Cadent Annex (2.38-2.40), our net zero transitional cost inclusion was dismissed on the grounds that RESP accountabilities sat with the NESO, and that support and data provision to the RESP/NESO was not incremental. We do not agree with this analysis, as only a minor subset of the requested resourcing costs were RESP related, and we believe

it is reasonable and appropriate, with or without RESP, to factor in a step change in customer and stakeholder engagement going forward. A considerable level of funding has been provided for customer and stakeholder engagement for the Electricity DNOs, however **all** Cadent's customers and stakeholders will be impacted by the net zero transition, and will require increasing levels of support and guidance. We do not believe it is putting customers at the heart of the energy transition if no incremental baseline funding is provided to support gas customers, who will need and expect increasingly enhanced levels of interaction. This engagement will all need to be informed and guided by modelling and analysis and will need to be reflected and communicated within the emerging technical and regulatory framework. We understand that the NESO will be setting out in its response to the DD the importance of gas networks being funded to resource work that helps regional planning and supporting the strategic energy plans.

We note as well that a large element of the incremental cost relates to enabling the new engineering policy and market framework developments that we know will be required as the gas network transitions away from fossil gas. We note as well that Government has stated its intent to conclude its review of the future of the gas system before the start of RIIO-4, which will require considerable input from the gas networks.

We need to build the capacity and expertise now to enable these critical roles to be effectively resourced. Without such funding in place, this gap in net zero enabling capability will create a barrier to the transition to net zero.

We do welcome the growing recognition of these issues and that Ofgem have confirmed in a recent Working Group discussion (CSWG – 29 July 2025) that they will now consider baseline funding, including where this would protect critical tasks from the consequences of exhausted UIOLI allowances. We have therefore revisited our net zero transitional costs to consider baseline and UIOLI funding and removed £6.591m of costs across our networks, from our baseline where we believe these have a greater degree of uncertainty and can therefore be funded through the UIOLI mechanism. Given this movement, we would expect the size of the NZARD UIOLI to be adjusted upwards by this amount from £24.7m to £31.3m.[1]

Should Ofgem determine that the residual baseline costs are recoverable but not for baseline funding, then we would call on Cadent's NZARD UIOLI allowance to be further increased. We continue to reiterate the view that these costs are long term not one-off, and if not, baseline funded in RIIO-3, will inevitably need to become baseline funded in a future price control period.

[1] We have provided an updated view of these costs and their allocation into the NZARD UIOLI also in DDQ67 which we have submitted to Ofgem alongside this response for incorporation into its Final Determination.

CADQ7. Do you agree with our proposal to reject Cadent's Capacity Upgrades PCD?

We support Ofgem's proposal to integrate capacity upgrades within the Network Asset Risk Metric (NARM) framework, subject to certain clarifications and conditions that ensure fair and effective implementation. Our understanding is that NARM will encompass only the mechanical components of capacity upgrade works. Other capital expenditure (CAPEX) elements—such as those not directly linked to mechanical risk mitigation—will require allocation in non-NARM areas with associated volume and cost increases.

The table below summarises the proposed allocation of [redacted] within the capacity paper when split into NARM and Non-NARM categories:

[table redated]

The funding for capacity upgrades must be treated as additional to base funding for asset interventions already included in our RIIO-2 NARM methodology (reflected in the table above), not reallocated from existing asset health allowances. This will ensure this workload is appropriately funded.

To conclude, we support the inclusion of capacity upgrades within the NARM framework, provided that the associated funding is additional and not absorbed into existing asset health allowances. We request that Ofgem provide clarification on the treatment of the capacity upgrades investment case and consider the implications outlined above before proceeding with any reallocation of workload into the NARM mechanism.

CADQ8. Do you agree with our proposal to reject Cadent's West Winch Pipeline PCD?

We disagree with the DD's proposal to reject the West Winch PCD. The proposed feasibility and design study is a critical and proportionate step in identifying the most cost-effective, risk-optimised solution for managing the integrity of this [redacted.]

Rejecting the PCD would undermine our ability to fully assess intervention options and deliver a robust investment case for RIIO4.

We believe the current assessment has misunderstood our asset management approach, interpreting the proposed RIIO3 activity as an unsubstantiated continuation of RIIO2 feasibility. In reality, the initial feasibility study was focused on full pipeline replacement and did not explore the broader range of asset management strategies now required. Our proposed RIIO3 activity represents a critical next phase through a structured, risk-based programme of feasibility, conceptual design, and targeted remediation to identify the most cost-effective, compliant, and customer focused long-term solution.

To ensure transparency and accountability, we have proposed a Price Control Deliverable (PCD) that enables clear delivery outputs, reporting, and the return of any unspent allowances to customers. The following supplementary information sets out the justification for this approach, including deliverables, cost apportionment, expanded feasibility rationale, and alignment with previous precedents such as Tinsley Viaduct.

We provided a detailed clarification document under [redacted] following discussion with the Ofgem engineering team on the 22/07/24. A summary of this document is provided below. We have also included this in our response to CADQ14 for completeness.

Introduction

We are adopting a phased, risk-based, and transparent strategy to manage the integrity of the 43km West Winch high-pressure (HP) pipeline. This summary outlines the rationale for expanding the RIIO2 feasibility study for the West Winch high-pressure (HP) pipeline and our approach to manage asset risk through RIIO3 before any construction work commences in RIIO4.

Summary of RIIO3 and RIIO4 Deliverables

RIIO3: Feasibility, Design, and Targeted Remediation

Activity	Deliverable
Feasibility Study	Feasibility Study Report for the full 43km West Winch HP pipeline to assess condition, failure modes, and intervention options
Conceptual Design	Conceptual Design Report for the highest-risk sections [redacted], informed by inspection and survey data
Remediation	Pre-emptive remediation of defects identified during feasibility and inspection, ensuring compliance with PSR (1996) and PSSR (2000)
Major Justification Paper	Compile and submit an MJP in the RIIO4 Business Plan submission for funding of the preferred intervention strategy

The table above demonstrates that through survey and feasibility in RIIO3 we will determine the asset condition that will enable the development of a long-list and short-list of intervention options. This will culminate in conceptual design with costed options inclusive of construction risk.

RIIO-4: Detailed Design and Construction

RIIO4 will focus on delivery of detailed design and construction of selected intervention based on the RIIO3 feasibility outcomes. We will execute delivery of our long-term asset management strategy which potentially will include partial replacement, refurbishment, or network reconfiguration.

Why expand the initial feasibility study?

The initial feasibility study for the West Winch pipeline was not included in our RIIO2 submission but was commissioned by Cadent and delivered by [redacted] to explore full pipeline replacement options in response to [redacted]. The study was initiated to assess technically and commercially viable rebuild scenarios that could support future resilience and accommodate increased demand for West Winch Offtake. During early stakeholder workshops, it was agreed by the Project Team, that the study would focus exclusively on full replacement options, with repair and blended remediation approaches explicitly excluded from scope. This decision was based on the volume and nature of historic failures (particularly at fittings and legacy features such as dip points and threaded connections) which had raised concerns about the long-term viability of the existing asset.

As such, the initial feasibility study was never intended to define a comprehensive asset management strategy, but rather to establish a baseline understanding of full rebuild options and their implications. It provided valuable insight into constructability, routing, Offtake modifications, and cost estimates for various replacement scenarios. The current RIIO3 proposal builds on this foundation by expanding the scope to include detailed asset investigation and optioneering of alternative strategies, such as partial refurbishment, localised diversion, and blended remediation, to ensure a holistic, proportionate, and cost-effective long-term approach is applied to manage the integrity of this critical pipeline. The study will inform an evidence-based investment decision for RIIO4, ensuring compliance with PSR (1996) and PSSR (2000), while minimising customer cost and risk.

The case for optioneering blended remediation

Blended remediation options offer a flexible and cost-effective approach to managing the integrity of the West Winch pipeline. Rather than relying solely on full-scale replacement, it allows for targeted interventions that address specific defects and risk factors. The key techniques include, but are not limited to:

- Shell Repairs: Steel shells can be clamped around damaged or corroded areas to restore structural integrity without removing the pipe.
- Wrap Systems: Composite wrap technologies reinforce pipeline sections with external corrosion or minor defects, extending asset life.
- Coating Refurbishment: Recoating exposed or degraded pipeline surfaces helps prevent further corrosion and environmental degradation.
- Cut-Out and Replacement: Severely affected pipeline segments can be removed and replaced with new pipework, restoring full functionality.
- Localised Diversion: Short reroutes can be implemented to bypass areas with persistent access, depth of cover, or proximity issues.

[redacted]

The proposed feasibility and design study for RIIO-3 will assess the suitability of these blended options and develop a tailored intervention strategy for each section.

RIIO-3 Funding Apportionment and Outcomes

The table below provides cost per RIIO3 deliverable and its overall contribution to the submitted PCD allowance.

[redacted]

Feasibility and Design ([redacted]) will deliver:

- Ground-penetrating radar, trial pits, and overland surveys
- Identification of pipeline fittings and ground conditions
- [redacted]

Remediation ([redacted]) will enable:

- Targeted interventions on defects forecasted in RIIO-3
- Compliance with safety regulations
- Avoidance of reactive repair costs and supply disruptions in the event of asset failure

The table below provides a cost breakdown of feasibility and design studies for the RIIO3 deliverable and each activity's overall contribution to the submitted PCD allowance.

[table redacted]

Note: All costs are in 2023/24 price base and reflect market-tested rates from Cadent's capital delivery programme.

Alignment with [redacted] Approaches

The approach for West Winch mirrors our strategy for the [redacted] which is an aged, sole-feed pipeline with constrained access and high consequence of failure. Feasibility and conceptual design preceded intervention planning.

Key similarities between the West Winch and [redacted] projects:

- Sole-feed pipelines with high customer impact
- Non-piggable assets requiring bespoke inspection and remediation
- Phased investment to ensure right interventions at the right time
- Transparent engagement with Ofgem to justify investment and manage risk

This response reinforces our commitment to transparency, regulatory compliance, and customer value, ensuring that interventions are timely, justified, and proportionate. We have also included this in our response to CADQ14 for completeness.

Conclusion

Our overall approach to managing the West Winch HP pipeline is a phased, risk-based strategy that prioritises safety, compliance, and long-term value for customers. In RIIO-3, we are undertaking a comprehensive feasibility study, and a conceptual design for the highest-risk sections of the 43km non-piggable pipeline, alongside targeted remediation to address known defects. This will enable us to identify the most cost-effective and risk-optimised intervention strategy (whether full replacement, refurbishment, or blended remediation) for implementation in RIIO-4.

A PCD has been proposed to ensure full transparency with Ofgem, provide clear accountability for deliverables, and allow any unspent remediation allowances to be returned to customers, reinforcing our commitment to making the right interventions at the right time.

CADQ9. Do you agree with our view that Cadent passed all of the minimum requirements and as such are considered to have passed Stage A of the BPI?

Yes.

Cadent worked diligently through the development of its business plan to understand the minimum requirements that Ofgem expected of the company's business plan submission. Through this work, we also sought to clarify minimum requirements that we considered to be open to different determinations. As we developed our business plan and the supporting documents, we undertook arms-length checks to ensure all the minimum requirements were met. We are confident that we have addressed fully all the minimum requirements and therefore agree with Ofgem that we passed all of the minimum requirements and Stage A of the BPI.

CADQ10. Do you agree with our assessment results for Cadent against Stage B of the BPI?

As context, Ofgem's Draft Determination states that stage B of the Business Plan Incentive (BPI) is intended to assess "*whether the costs submitted as part of the business plan are adequately justified and efficient*".[2] Specifically, the BPI stage B BPI reward / penalty is calculated as the weighted average of two components:

- a component to measure the efficiency of "comparatively assessed costs", comprising
    - costs which are assessed via econometric benchmarking ("regressed costs"); and
    - costs which are assessed via non-regression approaches ("non-regressed costs"); and
- a component to measure the efficiency of "bespoke costs", comprising costs that are assessed based on the outcomes of the technical assessment of the costs submitted.

Whilst we broadly agree with Ofgem's methodology used for stage B of the BPI, we do not agree with Ofgem's implementation of the methodology and the assessment's results.

Regressed costs

We have identified significant errors which impact the stage B assessment, particularly for the regressed costs component. These errors must be remedied for the Final Determination. In the subsections that follow we set out these errors in respect of the assessment of regressed costs, and required remedies, in further detail.

Furthermore, as a result of correcting the errors in Ofgem's cost model suite (as described in our response to GDQ32), it is clear that there is a close clustering of networks which collectively set the efficiency benchmark at 75th and 85th percentiles (i.e. the difference between ranking 1st to 3rd in the benchmarking is very small), meaning all are estimated to have essentially the same efficiency scores and benchmarking outcomes. However, the marginally first network receives a 40 bps rewards, the second a marginal reward (relative to the 85th percentile) and the third a penalty, which is demonstrably unfair and not proportionate. We therefore **propose that Ofgem's shares the total reward for BPI stage B regressed costs available between the three networks which together set the benchmark for RIIO-3**, should this clustering persist in Final Determination modelling. We also discuss this further in the subsections below.

Non-regressed costs

With respect to the **non-regressed costs, we also have concerns with further errors clear in the implementation of Ofgem's approach**. We have engaged with Ofgem to review and verify the calculations underpinning the 'ratio benchmarking' it undertakes to inform its comparative assessment. In this regard, we received a response to Cadent-DDQ060 from Ofgem on the 19th August which provided further details on how some of the calculations for non-regressed costs were undertaken and were fed into the BPI assessment. However, the information provided was insufficient to fully assess the approach taken and it is clear that there are further calculation errors in Ofgem's workings. For example, in relation to multi-occupancy buildings (MOBs), both NGN and WWU are shown to have allowances higher than their original business plan submissions – materially and erroneously making them appear relatively more efficient than other networks. In addition, given that within the information provided there are many pieces of input data with no backing information provided we are unable to verify its correctness. Furthermore, we expect there may be further errors underpinning these inputs. For example: for Streetworks for the majority of networks, the "submitted costs" referenced in the calculations do not reconcile to actual submissions from GDNs.

Given the lateness by which we have been provided with this information we have not yet been able to raise these issues with Ofgem, but we will seek to engage further with Ofgem post our response to

[2] Ofgem (2025), "RIIO-3 Draft Determinations Gas Distribution Annex", para. 5.331

further understand these calculations and their input data to seek to remedy errors and ensure they are reflective of our performance in non-regression cost assessment.

With respect to Ofgem's assessment of **bespoke costs**, **we have reviewed the calculations and detail provided by Ofgem and have verified that these are consistent with the outcomes of the Draft Determination** assessment of our bespoke costs. In doing so we are pleased the assessment recognises the efficiency of our costs in these areas.

Further detail on the errors and remedies required for Stage B – regressed costs

Ofgem's calculation of Stage B of the BPI for regressed costs uses incorrect GDN efficiency scores

To calculate the BPI stage B reward/penalty for regressed costs, Ofgem states that "*efficiency scores for totex are estimated based on the outputs of our econometric benchmarking*"[3]. Efficiency scores for each GDN are calculated as the ratio between (i) a GDNs' normalised submitted costs, and (ii) its modelled costs as per Ofgem's regression outputs. However, the Stage B BPI efficiency scores reported for each GDN (in the company specific annexes to the Draft Determination) have been calculated incorrectly (and are not the same as the efficiency scores which inform GDNs' allowances) in two ways:

- First, the efficiency scores which Ofgem has used in its Draft Determination to calculate scores for Stage B of the BPI are based on RIIO-GD2 costs. The efficiency scores compare GDNs' submitted (or, for the first three years of the RIIO-2 period, actual outturn) RIIO-GD2 costs against modelled costs for RIIO-GD2, rather than the submitted / modelled costs for RIIO-GD3.[4] Were this to be correct, Ofgem's incentive for GDNs' to submit efficient business plans would not actually be assessing the efficiency of the GDNs' business plan forecasts, but instead their historically incurred (or, in the case of the final two years of the RIIO-2 period, forecast) costs. As a result, this is clearly an error.

- Second, Ofgem calculates the efficiency scores that inform the BPI stage B assessment using a smoothed totex variable and a smoothed totex CSV.[5] However, the efficiency scores which Ofgem uses to derive GDNs' allowances are based on *unsmoothed* costs and drivers. Ofgem smooths both costs and drivers when conducting its regression modelling to ensure that the "lumpy" nature of these costs does not bias the econometric results. However, Ofgem then uses unsmoothed costs and drivers to calculate modelled costs and efficiency scores, which ultimately informs the GDNs' expenditure allowances. Ofgem changed its approach between Draft and Final Determinations at RIIO-GD2 expressly to use unsmoothed costs and drivers to calculate modelled costs and efficiency scores, acknowledging that it was not appropriate to base GDNs' RIIO-GD2 allowances on the value of drivers observed historically over the past seven years rather than reflecting the workloads required in RIIO-GD2, as noted in our GD2 Draft Determination response.[6] Again, the reversion in the RIIO-GD3 Draft Determinations to the use of smoothed costs and drivers for the BPI stage B assessment is clearly an error.

Below, we refer to these two errors as the "BPI-specific" errors.

As a result of these two errors (using the wrong time period, and using smoothed drivers rather than unsmoothed drivers), Ofgem significantly misreports GDNs' efficiency scores for the purpose of the BPI stage B assessment and miscalculates their BPI stage B BPI rewards and penalties. In addition to these errors specific to the BPI, Ofgem's Draft Determination modelling files contained a number of calculation errors, as discussed in response to GDQ32, and detailed in Annex GDQ32-1. Table 1

[3] Ofgem (2025), "RIIO-3 Draft Determinations Gas Distribution Annex", para. 5.334
[4] Ofgem's modelling infrastructure calculates two sets of efficiency scores. The first set of efficiency scores are calculated within STATA DO file "Final_Determinations-RIIO-GD3_totex_model.do". These efficiency scores inform the stage B BPI. The second set of efficiency scores are calculated within "GD3_CostAssessment_File.xlsx" and feed into the calculation of GDNs' allowances. Therefore, the efficiency scores which inform the stage B BPI are different from those which inform GDNs' allowances.
[5] Smoothed totex and smoothed totex CSV are variables which smooth capex costs and drivers over a 7-year rolling period.
[6] NERA (2020), "Review of Ofgem's GD2 Draft Determination Cost Assessment, Prepared for Cadent Gas", pg.37

below sets out three different sets of efficiency scores (used to inform the stage B) BPI, and the resulting stage B BPI reward/penalty for Cadent:

1. The efficiency scores and BPI reward/penalty reported in Ofgem's Draft Determination, whereby the efficiency scores are calculated based on the incorrect time-period and using the smoothed variable (as discussed above), and the benchmarking model containing material calculation errors.

2. The efficiency scores and BPI reward/penalty based on Ofgem's Draft Determination model, but correcting the BPI-specific errors, relating to the time period and the use of smoothed variables. These model results still do not correct for the material calculation errors within the Draft Determination model.

3. The efficiency scores and BPI reward/penalty, correcting for the BPI-specific errors, and correcting the calculation errors identified within the Draft Determination model – consistent with our Cadent 'Error-Corrected' Model.

Table 1: Corrected BPI Stage B results

		Ofgem reported in DD (inc. BPI-specific errors)	Correction of BPI-specific errors only	Correction of BPI-specific errors and use of Cadent Error-Corrected Model
Efficiency Score	EoE	1.03	0.97	0.96
	Lon	1.07	1.02	1.04
	NW	0.98	1.03	1.01
	WM	0.90	0.94	0.94
	NGN	0.84	0.91	0.96
	Sc	0.99	1.01	0.96
	So	1.06	1.04	1.03
	WWU	1.01	1.15	1.15
	Stage B Total BPI reward/penalty (% RORE)	-0.04%	-0.01%	0.06%
	Stage B Total BPI reward/penalty (£m)	**-10.21**	**-2.30**	**14.70**

Source: Cadent Analysis

As shown for Cadent, our outcome of the stage B of the BPI set out in the Draft Determination when corrected for errors results in an estimated £14.7m reward, as opposed to the erroneous £10.2m penalty set out in the Draft Determinations.

We note that Ofgem has accepted that stage B of the BPI should be based on RIIO-GD3 efficiency scores (via the errata process) and should use unsmoothed variables in response to a Draft Determination Question (DDQ) raised by Cadent (the BPI-specific errors). We also note that based on Ofgem's 'issue corrected' model run (discussed in GDQ32), and having amended the BPI-specific errors, the resulting reward for would be £13.7m. The difference amounting to computational errors that have not been corrected in Ofgem's model run or corrections that have been incorrectly implemented.

Stage B of the BPI should use the glide path, not the 85th percentile

Ofgem proposes in its Draft Determination to set BPI stage B rewards and penalties by comparing each GDN's actual efficiency score with the 85th percentile of all GDNs' efficiency scores. However, this is an error and not in line with its Business Plan Guidance, which explicitly states that rewards and penalties will be determined by companies' efficiency scores relative to "*the efficient benchmark*".[7] In the Draft Determination, the efficient benchmark is not the 85th percentile, but a glidepath from the 75th to the 85th percentile. The percentile values of this glide path are shown in Table 2 below.

Table 2: Percentage values for efficiency benchmark glide path

	Y1	Y2	Y3	Y4	Y5	5-year average
Percentile	75%	78%	82%	85%	85%	81%

Source: Cadent analysis

So Ofgem follows its own guidance, this glidepath, therefore, should be used to calculate scores for Stage B of the BPI. This also makes sense as it would not be logical for a GDN to be penalised to a greater extent under the BPI assessment than it is under the comparative benchmarking. There are two ways Ofgem could do this in practice:

1. Ofgem could calculate a BPI reward / penalty for each GDN in each year, using a different catch-up efficiency percentile for each year (e.g., 75th percentile in the first year of the RIIOGD3 price control period, the 78th percentile in the second year of GD3, and so on); or
2. Ofgem could use the average catch-up efficiency percentile over the five-year period (81st percentile).

Either of the above approaches would yield similar BPI stage B results. Ofgem will need to make this correction to its BPI methodology to maintain consistency between its approach to setting allowances and its approach to setting the BPI, to adhere to its own guidance and in order to comply with its statutory duties to adhere to the regulatory principle of consistency and drive the right GDN behaviours in the interests of consumers.

Stage B rewards for regressed costs should be shared between all three networks setting the efficient benchmark if there is close clustering of efficiency scores

As the efficiency benchmark used in the Draft Determination is defined by a glidepath from the 75th to 85th percentile, this will be determined by the efficiency scores of the top three networks. Where these networks have very similar efficiency scores they will receive similar outcomes form benchmarking in respect of allowances. However, outcomes of the BPI assessment are materially different depending on if you finish first, second or third in the benchmarking:

- 1st place receives a 40bps reward.
- 2nd place receives a marginal reward (very marginal compared to the 85th percentile).
- 3rd place receives a penalty.

This is the case even when the error noted above is remedied and the BPI is based on the glidepath as opposed to the 85th percentile only.

Such an outcome is clearly illogical as a GDN would be penalised to a significantly greater extent under the BPI assessment than it is under the comparative benchmarking. Furthermore, to an objective observer this outcome would also be demonstrably unfair and not proportionate. Furthermore, we note that with such fine margins it is very likely the case that the resulting small differences are not actually likely to reflect *actual* small efficiency differences in networks and may

[7] Ofgem (2024), "RIIO-3 Business Plan Guidance", paras. 9.25 -9.29

amount to statistical noise within the modelling. Ofgem has itself acknowledged the imperfection of its statistical models as a reason for setting the benchmark at a lower level than the 100% percentile (at RIIO-GD1 for instance the 75th percentile): [8]

> *"We defined efficient costs equal to the upper quartile (UQ) GDNs' costs rather than the frontier allowing for other factors that may influence the companies' costs. We also assumed that GDNs would close only 75 per cent of the assessed gap between their forecasts and the UQ. The use of the UQ is identical to previous price reviews (e.g. GDPCR1, and more recently the electricity distribution price review, DPCR5). Our proposed approach to closing the gap and the use of the UQ rather than the frontier acknowledges that a part of the difference in costs across the GDNs relates to factors other than GDNs' relative efficiency (e.g. statistical errors)."*

As a result, this means in reality it is likely that GDNs achieving such efficiency scores so close to one another means that per Ofgem's modelling they are essentially as efficient as one another. Given this we propose that the total reward offered by BPI stage B is shared equally between the top three networks, should this clustering persist in Final Determination modelling. Such an approach would be fair, proportionate and ensure the outcomes of the BPI assessment are reflective of the cost assessment. It would also ensure that the total amount of reward available to networks remains the same as when networks have more disparate efficiency rankings.

To implement this having conducted its regression assessment Ofgem would need to:

1. Calculate the total 'reward pot' available based on its current method (i.e. the 40-bps available for 1st and the reward available for 2nd); and
2. Divide this amount by three – giving each of the top three networks this same reward (which for the benchmark of the 85th percentile – applicable for the final two years of RIIO-3 only, per above – would equate to roughly 13.33 bps each).

[8] Ofgem (2012), "RIIO-GD1: Final Proposals – Supporting Document – Cost Efficiency", p. 7.

CADQ11. Do you agree with our assessment results for Cadent against Stage C of the BPI?

We welcome Ofgem's acknowledgement in its Draft Determinations of the clarity and coherence of our business plan in the first part of stage C of the Business Plan Incentive assessment.

However, Ofgem's stated justifications for marking down the quality of our business plan commitments in the second part of stage C of the BPI assessment are inconsistent, and not reflective of the evidence we have provided and ultimately not conducive to driving GDN behaviours in the interests of consumers.

The outcome of the proposed 'penalties' embedded within the assessment of the three outcome categories is that the DD's overall assessment of the quality of the commitments in Cadent's plan is merely 'acceptable' leading to a close to zero reward against the 0.13% of RORE available.

We believe Ofgem should remove the embedded penalties and correct the part 2 Stage C BPI assessment across all three of the outputs categories for Final Determination. We believe this would make a material overall difference to the rating of the quality of our commitments well beyond just 'acceptable'. This position would be more reflective of the quality of the commitments we have proposed for the RIIO-3 price control period (against the baseline of the industry leadership and innovation we are already demonstrating in the RIIO-2 period) in all these areas.

We have summarised the key areas of the assessment we believe should be reassessed for the Final Determination in the sections below.

1.Despite our demonstrating clear consumer value and providing detailed supporting information for our innovative Advanced Leakage Intervention Programme (ALIP), Ofgem is proposing to score our "new company proposals" on "secure and resilient supplies" as "poor" by reference to the ALIP

Under Ofgem's RIIO-3 Business Plan Guidance, "new company proposals" business plan commitments are to be assessed by reference to consumer value and sufficiency of supporting information. Our plans on advanced leakage management are praised elsewhere in the Draft Determinations as sector-leading innovation, so applying a BPI penalty in this regard is internally inconsistent. Further, we have presented detailed information showing that all of the options within our ALIP deliver a positive benefit to customers within the DD's stated payback constraint of 11 years (2037) using Ofgem's own defined cost benefit analysis model, so our ALIP cannot rationally be assessed as insufficiently evidenced or not providing consumer value. Consequently, the penalty applied in Ofgem's 'Secure and resilient supplies' assessment is not justified against Ofgem's scoring criteria and is clearly incorrect based on the evidence provided.

2.Despite our Advanced Leakage Management Approach facilitating very ambitious reductions in leakage, Ofgem's stated reason for scoring our business plan commitments for "infrastructure fit for a low-cost transition to net zero" as "acceptable" (rather than "outstanding") is that our shrinkage targets are *"not… particularly stretching"*

Ofgem's RIIO-3 Business Plan Guidance provides that the extent to which targets will be considered "stretching" is to be assessed by comparison with equivalent targets for RIIO-2.

Our plan for RIIO-3 include our sector transforming innovation to use technology and digital analytics to deliver advanced leakage management using best practice from around the world. Our plan's proposed rollout of advanced leakage detection, development and implementation of the digital platform for leakage analytics will enable us to proactively manage leakage through a more targeted intervention plan on the leakiest assets both within our Iron Mains Risk Reduction Programme (Tier 1 and Tier 2A iron) and for the metallic assets that fall outside that programme (such as Tier 2 and 3 iron and steel and Tier 1 iron and steel assets outside of IMRRP . We have estimated that application of this Advanced Leakage Management Approach could potentially deliver up to twice as much actual leakage reduction as that estimated in the SLM based figures in the Business Plan Data tables as shown in the table below.

Potential leakage reduction estimates over RIIO-3 IMRRP and ALIP combined				
	ktCO2e reduction		GWH reduction	
	Units	%	Units	%
Shrinkage & leakage model	-203	-18%	-164	-17%
Advanced Leakage observed	-339	-35%	-245	-35%

We did not reflect this in the data table as the Business Plan Guidelines required estimates to be based on the shrinkage and leakage model for comparison hence it does not reflect the full extent of our plan's ambition and that Cadent will be utilising observed data to drive additional leakage reductions ahead of the rest of the industry.

The commitments we proposed in our business plan have the largest ambition for reduction in leakage of any GDN (with leakage being the overwhelmingly key contributor to shrinkage). Hence, the assessment in the BPI stage C assessment that there is a lack of ambition in Cadent's shrinkage targets is plainly wrong, and the evidence suggests our business plan should be scored as "outstanding" against the "Infrastructure fit for allow-cost transition to net zero" category.

3.Ofgem is using self-funded initiatives as reasons to score our "new company proposals" on "high quality of service from regulated firms" as "poor"

As noted above, Ofgem's Business Plan Guidance provides that "new company proposals" are to be assessed by reference to value for consumers. We have proposed to conduct certain trials to establish the extent to which consumers might benefit from certain customer service initiatives (being our proposed Services Beyond the Meter blueprint and worst-served customer enhancements to customer satisfaction surveys). Ofgem has pointed to these initiatives as justifying imposing a "poor" score for our "new company proposals" on "high quality of service from regulated firms". This is clearly inconsistent with Ofgem's own scorecard, given these initiatives will be self-funded and hence will not represent any additional cost to consumers.

Further, Ofgem states in its Draft Determinations that we have not provided sufficient evidence of the benefit to consumers of these proposals. It is inherent in the nature of the proposed initiatives as trials that the extent of the consumer benefit will be established through progressing the initiative. The proposals are supported by our customers and our Customer Challenge Group. We have provided clear evidence as to the rationale for these initiatives:

- Our Services Beyond the Meter proposal comes from our customer insight from working on supporting customers in vulnerable situations and from safety concerns highlighted by the events surrounding the unprecedented volume of calls to the National Gas Emergency call centre in December 2022.
- Our proposal to investigate potential enhancements to customer satisfaction surveys to focus on worst-served customers is an innovative suggestion to think of how customer satisfaction improvement might evolve into future price controls (since we have reached such high levels of performance for the average customer experience, as exemplified by the CSAT financial output delivery incentive targets that Ofgem has proposed in its Draft Determinations of greater than 9 out of 10 across all surveys).

On this basis, using our Services Beyond the Meter and CSAT enhancement proposals as reasons to score our new company proposals on quality of service as "poor" is evidently not aligned with Ofgem's own scoring criteria in its Business Plan Guidance, and clearly does not take account of the relevant evidence provided.

4.Ofgem is also pointing to our proposal to extend the geographical scope of the Collaborative Streetworks ODI-F as a further reason for scoring our "new company proposals" on "high quality of service from regulated firms" as "poor", despite actually proposing to adopt the initiative

While Ofgem indicates in its Draft Determinations that it will adopt our proposal to expand the Collaborative Streetworks financial output delivery incentive from Greater London networks to the whole of GB, Ofgem asserts that we did not provide sufficient justification for this expansion. In particular, Ofgem states that we did not provide:

- sufficient evidence of interest from local authorities. However, we made clear that, as a direct result of our stakeholder engagement, where we used webinars, face-to-face meetings and sharing learning from the Greater London Authority's experience, we have galvanised other authorities to support the scheme.
- details on how the incentive would work. However, Ofgem's Sector-Specific Methodology Decision explicitly stated that Ofgem would *"work with the GLA and GDNs to assess whether the project eligibility criteria need to be updated"*, implying that Ofgem was not looking to GDNs themselves to put forward this kind of detail.

Ofgem should acknowledge the value to consumers of our Collaborative Streetworks ODI-F extension proposal, given that it has indicated it will take it forward. We expected that the proposal would be viewed in the BPI stage C assessment as outstanding, as we have enabled and driven an incentive that benefits all GB customers. It is on a similar basis, for example, that Ofgem has proposed to reward NGN's proposal in relation to the repair response incentive.

On this basis, using our Collaborative Streetworks ODI-F extension proposal as a reason to score our new company proposals on quality of service as "poor" is demonstrably inconsistent both with Ofgem's own scoring criteria in its Business Plan Guidance and with the approach Ofgem has taken in other assessments.

In light of these factors, Ofgem's proposal to score our "new company proposals" on "high quality of service from regulated firms" as "poor" is clearly wrong. Correcting both the self-funded activities and collaborative streetworks assessment, we believe should result in Cadent being scored at the maximum of the outstanding rating for 'High Quality of service".

CADQ12 Do you agree with our proposed design of Cadent's London Subways and Tunnel Re-opener?

We **support the proposed introduction of a bespoke re-opener mechanism** to adjust allowances in our London network to enable delivery of Tier 1 mains replacement work in subways and tunnels. We are currently carrying out a feasibility study to determine the best approach and the expected costs of carrying out work to replace approximately 3.7km of Tier 1 iron within London subways before the end of the IMRRP programme. This will provide greater clarity on costs and timings to inform decisions around allowances within the RIIO-3 period.

However, **we do not support the proposed design of the re-opener**. In Draft Determinations Ofgem proposes to adjust the Tier 1 PCD allowance for our London network for any successful applications under the London Subways and Tunnel re-opener but does not provide details on how this adjustment would work in practice.

We believe a better solution would be achieved by **drafting the Subways and Tunnels re-opener licence condition with the option to add PCDs.** This would avoid any additional complexity in the Tier 1 PCD. For example, the Tier 1 PCD licence draft could enable evaluative deliverables to be added following any successful re-opener application. However, this approach may create additional complexity in licence drafting due to the requirement for additional defined terms in the licence formulae and additional formulae being required. The option to create new PCDs in the Subways and Tunnels reopener licence drafting would avoid this.

To explain this rationale, the feasibility study could identify a wide range of delivery solutions. Therefore, to implement the reopener via the existing mechanistic Tier 1 PCD would require additional unit cost categories for London (i.e., specific Subways and Tunnels categories) beyond the existing 4 diameter band-based categories. This could make the Tier 1 PCD unwieldy. A separate PCD mechanism would be more proportionate and easier to implement and avoid any inadvertent knock-on impacts to the wider IMRRP programme,

This is a similar approach that Ofgem took to the Diversions reopener in RIIO-2 where PCDs were established through the reopener process.

Therefore, we suggest that the optimal approach would be to draft the Subways and Tunnels re-opener licence condition with the option to add PCDs to enable this flexibility and avoid any unintended consequences on the Tier 1 PCDs.

CADQ13. Do you agree with our approach to cost exclusions and technical assessment for Cadent?

We have detailed views on Ofgem's approach to cost exclusions and the resulting non-regression and technical assessment of the costs in our responses to other consultation questions. For brevity we do not include these here, for further information on our views in respect of:

- Cost exclusions – please see our response to GDQ36;
- Non-regression assessment – please see our response to GDQ41; and
- Technical Assessment outcomes please see our response to GDQ36 and GDQ44.

CADQ14. Do you agree with our engineering assessment of Cadent's RIIO-3 Business Plan?

We have engaged with the Ofgem Engineering team through multiple bilateral meetings during 2024 and 2025 to ensure that our submissions provide Ofgem with the information needed to inform its draft and final determination position. The Overview table contains a breakdown of our view on Ofgem's engineering assessment for each of the Engineering Justification Papers (EJP's) submitted.

At our most recent bilaterial with Ofgem's Engineering team (on the 22nd July 2025), all papers that were either partially or wholly disallowed by Ofgem at DD were discussed and actions agreed to provide further information. We have submitted a significant amount of additional data early (in advance of the 26 August deadline for the formal DD response), to support the Engineering team's review ahead of FD. In producing this information, we have actively considered feedback, reviewed all of our proposals and the associated optioneering, making amendments where appropriate. This additional data, which was previously submitted via the draft-determination questions process between 6th and 13th August 2025, have been included in the CADQ14 Annexes for completeness.

In summary, we have provided the following additional information to support investment decisions set out in our engineering justification papers.

- **Mechanical Assets**: Presented a comprehensive set of global asset data for our governors, preheat, filters and pressure reduction systems. [redacted] We have also provided further asset health data for each chosen programme option.
- **Clarified our investment methodologies**: Provided more detailed explanations on how we have derived our workload and costs in areas such as reinforcements, diversions, pipeline monitoring and protection (sleeves), pipeline integrity, pipeline isolation valves and MOBs. We have also provided further information on long-list options where requested.
- **Category 3 Security Upgrades**: Provided site level detail on scope, costs and risks, based on latest design studies.[9]
- **West Winch**: We have provided further explanation to justify the deliverables and scope of work proposed during RIIO-3. The workload comprises the development of a comprehensive investment strategy (site investigations and feasibility optioneering), building from study-work in RIIO-2 assessing pipeline replacement-only options. This work will be delivered alongside critical maintenance activities.
- **Mains CBA EJP09:** We have restated and updated our EJP09, to align with the latest Tier 2A workloads and address Ofgem's concerns around workload, deliverability and asset health performance.

For completeness, we have included references to other relevant questions and responses impacting each engineering investment case in the summary of each in this response. Please refer to each DD Investment Case Document in the Annex for full details.

[9] Where appropriate we have updated information on unit costs or volumes, where more-current information is available. Some minor data discrepancies have also been corrected. As part of this we have also provided this data to Ofgem in DDQ67 which we have submitted alongside this response for incorporation into its Final Determination.

Overview Table

Investment	Allowance	Cadent Response
EJP01 – Civil Interventions	Accepted	We agree with Ofgem's engineering assessment.
EJP02 – Electrical, Instrumentation & Telemetry on Offtakes & PRS	Accepted	We agree with Ofgem's engineering assessment.
EJP03 – Filters on Offtakes & PRS	Disallowed	We don't agree with Ofgem's engineering assessment and have provided further information in: Annex EJP03-DD-SE-filters, Annex EJP03-DD-DATA-Filters.
EJP04 – Below 7bar Governors	Disallowed	We don't agree with Ofgem's engineering assessment and have provided further information in Annex EJP04-DD-SE-Governors, Annex EJP04-DD-DATA-District Governors and Service Governors.
EJP05 – Services not associated with mains replacement	Partially Accepted	We don't agree with Ofgem's engineering assessment and have provided further information in Annex EJP05-DD-SE-Services Not Associated with Mains Replacement. We have restated RIIO-2 data, which demonstrates appropriate RIIO-2 / 3 trends in workload
EJP06 – Housing Interventions	Accepted	We agree with Ofgem's engineering assessment.
EJP07 – Mains Diversions	Disallowed	We don't agree with Ofgem's engineering assessment and have provided further information in EJP07-DD-SE-Mains Diversions. We have included further justification to explain RIIO-3 methodology for workload forecasting. We accept the proposal to utilise a reopener for this work subject to review of the proposed license drafting.
EJP08 – Mains IMRRP	Partially Accepted	We agree with Ofgem's engineering assessment. We have responded separately to GDQ8, which asks "Do you agree with the proposed design of the Tier 1 Iron Stubs PCD".
EJP09 – Mains CBA	Partially Accepted	We don't agree with Ofgem's engineering assessment and have provided further information in an updated EJP09 and associated supplementary evidence file. Refer to CADQ5 for our response to Ofgem's proposal to reject our advanced leakage intervention programme. Our options have changed due to the recent coefficient update for Tier 2A mains, resulting in our preferred option reducing to [redacted] vs [redacted] previously.
EJP10 – MOBs	Partially Accepted	We don't agree with Ofgem's engineering assessment and have provided further information in our response to GDQ5 and Annex EJP10-DD-SE-MOBs Risers & EJP11-PE Risers. We have provided clarification on the risk action threshold and asset health risk scores throughout RIIO-3

Investment	Allowance	Cadent Response
EJP11 – PE Risers	Partially Accepted	We don't agree with Ofgem's engineering assessment and have provided further information in Annex EJP10-DD-SE-MOBs Risers & EJP11-PE Risers. We have removed 63 MRB due to up-to-date information, marginally reducing the overall costs by [redacted].
EJP12 – Pipeline Integrity	Disallowed	We don't agree with Ofgem's engineering assessment and have provided further information in Annex EJP12-DD-SE-Pipeline Integrity. We have clarified the methodology and provided granular volumes and costs.
EJP13 – Pipeline Isolation Valves	Partially Accepted	We don't agree with Ofgem's engineering assessment and have provided further information in Annex EJP13-DD-SE-Pipeline Isolation Valves. Further options and costs provided for HP and I&C valves.
EJP14 – Pipeline Monitoring & Protection	Partially Accepted	We don't agree with Ofgem's engineering assessment and have provided further information in Annex EJP14-DD-SE-Pipeline Monitoring & Protection. We have provided updated data on pipeline sleeves (volumes and costs) which has reduced our chosen option from [redacted] to [redacted].
EJP15 – Preheat	Partially Accepted	We don't agree with Ofgem's engineering assessment and have provided further information in Annex EJP15-DD-SE-Preheat, Annex EJP15-DD-DATA-Preheat. We have also provided further evidence justifying the chosen option.
EJP16 – PMAC	Accepted	We agree with Ofgem's engineering assessment.
EJP17 – Pressure Reduction on Offtakes & PRS	Disallowed	We don't agree with Ofgem's engineering assessment and have provided further information in Annex EJP17-DD-SE-Pressure Reduction on Offtakes & PRS. We have also provided further evidence justifying the chosen option.
EJP18 – Reinforcements Below 7bar	Partially Accepted	We don't agree with Ofgem's engineering assessment and have provided further information to justify the RIIO-3 workload in EJP18-DD-SE-Reinforcements Below 7bar. Our response to GDQ26 discusses Ofgem's proposal to include general reinforcements in the proposed design of the New Large Load Connections re opener. We accept the proposal to utilise a reopener for work outside of those related to IMRRP enablement subject to review of the proposed license drafting.
MJP01 – Capacity Upgrades	Partially Accepted	We have responded to Ofgem's engineering assessment and the proposal to reject Cadent's Capacity Upgrades PCD and include the workload with NARM, under the response for CADQ7.
MJP02 – Mandated Cat 3 Security	Disallowed	We don't agree with Ofgem's engineering assessment, we have provided additional site level detail on scope and costs to respond to Ofgem's concerns. A meeting is planned on the 28th August to further present evidence to support the needs case and costs.

Investment	Allowance	Cadent Response
MJP03 – FWACV	Accepted	We agree with Ofgem's engineering assessment. We have provided an explanation in this response to a query raised by Ofgem at the Bilateral meeting relating to RIIO-2 / 3 spend apportionment. Refer to CADQ1 for our response to Ofgem's proposed PCD design.
MJP04 – LMP	Accepted	We agree with Ofgem's engineering assessment. Refer to CADQ2 for our response to Ofgem's proposed PCD design.
MJP05 – Tinsley	Accepted	We agree with Ofgem's engineering assessment. Refer to CADQ4 for our response to Ofgem's proposed PCD design.
MJP06 – West Winch	Disallowed	We don't agree with Ofgem's engineering assessment, refer to response to CADQ8. We have provided a detailed scope of work and cost breakdown to justify the costs presented.
MJP07 – Gray's Medium Pressure	Accepted	We agree with Ofgem's engineering assessment. Refer to CADQ3 for our response to Ofgem's proposed PCD design.

Supporting Evidence

Provided as Annex Files to this response

Ref.	Document Name
Annex A	[redacted]
Annex B	[redacted]
Annex C	EJP04-DD-SE-Governors*
Annex D	EJP03-DD-SE-Filters*
Annex E	EJP15-DD-SE-Preheat on Offtakes & PRS*
Annex F	EJP17-DD-SE-Pressure Reduction on Offtakes & PRS*
Annex G	EJP05-DD-SE-Services Not Associated with Mains Replacement*
Annex H	EJP07-DD-SE-Mains Diversions*
Annex I	EJP09-DD Update-Mains CBA
Annex J	EJP10-DD-SE-MOBs Risers & EJP11-PE Risers*
Annex K	EJP12-DD-SE-Pipeline Integrity*
Annex L	EJP13-DD-SE-Pipeline Isolation Valves*
Annex M	EJP14-DD-SE-Pipeline Monitoring & Protection*
Annex N	EJP18-DD-SE-Reinforcements Below 7bar*
Annex O	[redacted]
Annex P	MJP08-DD-SE-West Winch*

**Provided prior to DD submission through DDQ process.*

By Investment Overview

EJP01 – Civil Interventions

Ofgem Feedback Received

DD Position: Accepted

Cadent Response

We agree with Ofgem's engineering assessment of EJP01.

EJP02 – Electrical, Instrumentation & Telemetry on Offtakes & PRS

Ofgem Feedback Received

DD Position: Accepted

Cadent Response

We agree with Ofgem's engineering assessment of EJP02.

EJP03 – Filters on Offtakes & PRS

Ofgem Feedback Received

DD Position: Disallowed

Cadent did not provide the requested global repository asset health data, therefore we were unable to undertake a detailed engineering analysis of the investments proposed in the EJP, to determine if optioneering, scope and costs are justified. Multiple options were proposed, 3 of which would remove all 4-5 health scoring assets. The chosen investment case and accompanying narrative to support proposed optioneering. option had the highest capex, but there was insufficient justification as to why this option is the optimal solution. To allow for a complete assessment of the investment to be undertaken, we would expect to see the following global asset data as a minimum: installation date, NARM score, health condition score beginning of price control, health condition score at the end of price control, intervention mode, date of inspection, size of filter, historical investment, NDT inspection to justify the investment case and accompanying narrative to support proposed optioneering.

During the bilateral meeting on the 22nd July 2025, it was agreed that we would provide:

- *Information on LTR (long term risk) definitions*
- *Average condition scores and stacked bar charts for programme options*

Cadent Response

We do not agree with the engineering assessment for EJP03.

We have created several annexes to address Ofgem's concerns:

- **Annex D EJP03-DD-SE-Filters:** This annex provides:
    - Further information to aid the comparison of all programme options considered, including the condition scores and stacked bar charts showing asset performance. We have included further justification on why our chosen option is optimal.

- An overall explanation on how to interpret the global asset data submitted.

- **Annex D EJP03-DD-DATA-Filters**. Provides the global asset data for filters on offtakes and PRS. This file also contains the long-term risk definitions.

  [redacted]

The above information provides additional justification and details to support the selection of option 8. Our preferred option, is therefore unchanged from our December 2024 submission, delivering [redacted] filter replacements ([redacted] offtake filters, and [redacted] PRS filters) for a proposed [redacted].

EJP04 – Below 7bar Governors

Ofgem Feedback Received

DD Position: Disallowed

The EJP narrative justifies the need for investment through NARM. Limited supporting information was provided on the specific assets to be intervened on or their health condition. No unit costs were provided for the proposed work. The paper did not allow easy comparison with RIIO-2 volumes. To allow for a complete assessment of the investment to be undertaken, we would expect to see more detailed data including governor type, location and associated health score.

During the bilateral meeting on the 22nd July, it was agreed that we would provide:

- *Information on LTR (long term risk) definitions*
- *Average condition scores and stacked bar charts for programme options*

Cadent Response

We do not agree with the engineering assessment for EJP04.

We have created several annexes to address Ofgem's concerns:

- **Annex C EJP04-DD_DE_Governor Interventions:** This annex provides:
  - Clarification on the difference between the RIIO-2 and RIIO-3 volumes to support better comparison of workloads.
  - Re-stated governor unit costs
  - Clarification on how asset health scores have been derived and how they have been used in our modelling.
  - An overall explanation on how to interpret the global asset data submitted.
  - Further information to aid the comparison of all programme options considered, including the condition scores and stacked bar charts showing asset performance. We have included further justification on why our chosen option is optimal.
- **Annex C EJP04-DD-DATA-Service Governors & EJP04-DD-DATA-District Governors**. Provides the global asset data for Service and District governors. This file also contains the long-term risk definitions.
- **[redacted]**

The above information provides additional justification and details to support the selection of our preferred option 2. Our preferred option, is therefore unchanged from our December 2024 submission, delivering [redacted] governor replacements ([redacted] district governor systems and [redacted] service governor systems) for a proposed [redacted].

EJP05 – Services not associated with mains replacement

Ofgem Feedback Received

DD Position: Partially accepted

Bulk Steel Service Relays *- Cadent state volumes will be based on RIIO-2 run rates plus additional volumes due to steel tails. No analysis or data on deterioration or fault rates has been provided to justify the proposed increase in steel tail volumes. Therefore, we consider the additional volumes of bulk steel service relays proposed above RIIO-2 levels to be unjustified. We have accepted the needs case for workloads in line with RIIO-2 average volumes.*

Service Alterations *- this is customer triggered reactive work based on historic volumes. No evidence has been provided to support increase in volumes relative to RIIO-GD2 or their delivery.*

Other services *volumes are reactive interventions and the volumes pertaining to each category in the scope of this work is not known. There is a volume reduction from RIIO-2 but a significant cost increase, which has not been explained.*

During the bilateral meeting on the 22nd July, it was agreed that:

- *There was misalignment of workload volumes in RIIO-2 and RIIO-3 between the EJP and the BPDTs*
- *This misrepresentation of volumes and costs subsequently changed the perceived trend between RIIO-2 and 3 workload and costs.*
- *Cadent would provide corrected workload as part of DD submission*
- *Cadent would provide narrative on service alteration volume increases*

Cadent Response

We do not agree with the engineering assessment for EJP05.

Our EJP included interim RIIO-2 and RIIO-3 data, that was not aligned with the data used in our BPDT submission on final submission. In our clarification document contained within the Annex of this document we have restated our RIIO-2 workloads and costs, also shown in the table below.

Volume	Restated RIIO-2 Volume	Difference from our BPDT data	Restated RIIO-3 Volume	Difference from our BPDT data	Commentary
Bulk Steel Service Relays	[redacted]	[redacted]	[redacted]	[redacted]	Unvalidated RIIO-2 volumes
Service Relay after gas escape	[redacted]	[redacted]	[redacted]	[redacted]	Unvalidated RIIO-2 volumes
Service alterations	[redacted]	[redacted]	[redacted]	[redacted]	Unvalidated RIIO-2 volumes
Other Service relay	[redacted]	[redacted]	[redacted]	[redacted]	Unvalidated RIIO-2 volumes, incorrect RIIO-3 volume
Total	[redacted]	[redacted]	[redacted]	[redacted]	

As a result of these updated volumes, the costs for RIIO-2 have been updated, which provides an appropriate trend between RIIO-2 and 3 costs and volumes.

Cost (£m)	Restated RIIO-2 Cost	Difference from our BPDT data	Restated RIIO-3 Cost	Difference from our BPDT data	Commentary on RIIO-2 to 3 trend.
Bulk Steel Service Relays	[redacted]	[redacted]	[redacted]	[redacted]	Increasing due to changes (more proactive) to management of built over assets.
Service Relay after gas escape	[redacted]	[redacted]	[redacted]	[redacted]	Reducing trend due to increasing asset population of PE services.
Service alterations	[redacted]	[redacted]	[redacted]	[redacted]	Increasing due to changes to management of built over assets.
Other Service relay	[redacted]	[redacted]	[redacted]	[redacted]	Stable workload and costs.
Total	[redacted]	[redacted]	[redacted]	[redacted]	

EJP06 – Housing Interventions

Ofgem Feedback Received

DD Position: Accepted

Cadent Response

We agree with Ofgem's engineering assessment of EJP06.

EJP07 – Mains Diversions

Ofgem Feedback Received

DD Position: Disallowed

Reopener, there is significant uncertainty around volumes required to be delivered in RIIO-GD3. We do not consider the proposed optioneering to support the proposed workloads. We think there was a lack of alternative approaches considered. We would like to see more robust optioneering ahead of Final Determinations to support the justification for baseline funding. An uncertainty mechanism may be more appropriate, given volume uncertainty.

Proposed outcome: Unjustified. We propose alternative optioneering or re-opener funding may be more appropriate.

During the bilateral meeting on the 22nd July, it was agreed that we would provide:

- *Sensitivity around chosen options.*
- *Known workload volumes or potential diversion workload*
- *FES24 High vs Low-year impact on RIIO-3 options*
- *Narrative on Min / Max options.*

Cadent Response

We do not agree with Ofgem's engineering assessment of EJP07. We have created Annex H EJP07-DD-SE-Diversions to address Ofgem's concerns. This annex provides:

- **Information on historical levels of diversions**, and how we have used this to **inform a forecast for RIIO-3 diversions** (our preferred option)
- **Further Explanation of the alternative options**, and how these have been derived. We have set out our approach to deriving our max, min and 80% minimum options.
- **Discussion on the FES24 scenarios and their impact on the RIIO-3 options**, and specifically sensitivity around the chosen option. Our strong opinion is that the demand for diversions is not directly proportional to the reduction in gas-demand, and therefore we are confident that our chosen option (based on average historic diversion workload) is still optimum for RIIO-3 and have not reduced our diversion volumes as a result.

Note: Ofgem have proposed a Diversions and Loss of Development Claims re-opener for this investment, refer to our response on our position within GDQ24. The breadth of the re-opener may be impacted by Ofgem's view of our additional engineering justification submitted in Annex H EJP07-DD-SE-Diversions.

EJP08 – Mains IMRRP

Ofgem Feedback Received

DD Position: Partially Accepted

Cadent Response

We agree with Ofgem's engineering assessment of EJP08. We have responded separately to GDQ8, which asks "Do you agree with the proposed design of the Tier 1 Iron Stubs PCD".

EJP09 – Mains CBA

Ofgem Feedback Received

DD Response: Partially Accepted

Cadent intends to use DPLA to prioritise workload to target Repex investments which is not included in the mandatory IMRRP programme due to leakage. We understand the intent of DPLA is not to increase intervention volumes but to strategically target "leakiest" pipelines. Volumes proposed in RIIO-3 have increased [redacted]*% from RIIO-2 and Cadent's SQ response does not fully justify why this is required and how the workforce will be obtained to deliver additional volumes. Cadent have not provided sufficient evidence to support successful delivery of additional volumes and more options could have been explored to justify need for intervention volumes. Continuing with the strategy utilised in RIIO-2, which limits the workload volume in each region, allows Cadent to continue cost beneficial Repex work alongside utilising the benefits of DPLA.*

Cadent Response

We do not agree with Ofgem's engineering assessment of EJP09. Please refer to our response to **CADQ5**, which includes a high-level response to the question "Do you have any views on our proposal to reject Cadent's Advanced Leakage Intervention programme and fund its non-mandatory Repex programme based on the RIIO-GD2 approach"

We have provided an updated **EJP09_Cost beneficial mains replacement** document and the associated supplementary evidence: **EJP09-SE-Cost beneficial mains replacement**, to support our position.

This updated engineering justification paper sets out to answer Ofgem's primary concerns, which are summarised below.

- The preferred mains replacement programme focusses predominantly on reducing leakage, with less focus on asset performance (safety and asset health) which is seen as the primary driver for investment.
- The workloads within the chosen option are not deliverable. Insufficient evidence has been presented to provide confidence that the workloads are deliverable and will not have an adverse impact on cross-industry mains-laying activities (cost increases) or subcontract availability.
- The proposed active leakage detection and advanced leakage management approach (informed by the digital platform for leakage analytics) appears to be a mechanism for driving additional workload.

To address these points our justification paper has provided:

- Additional detail for each option assessed within Section 8 and 9 of the paper. We have provided data on asset performance, costs, NPV, risk and workload.

- Further information on the deliverability testing undertaken in preparation for the business plan submission last year. Our workload volumes are profiled to result in a gradual increase in work in relation to our RIIO-2 volumes. All options are deliverable, confirmed by our supply chain. This is discussed in Section 8 and Annex D of the supplementary evidence document.
- Further information on how our observed leakage data has been used to inform our decision making. This explains that our Hybrid Leakage Model allows us to optimise planned workload, rather than necessarily increasing the size of that workload. Our Hybrid Leakage Model selects different pipes for intervention due to more targeted information on asset health and leakage. This doesn't drive additional volume, this is determined by the benefits case, Ofgem's CBA criteria and the feedback from our customers. Refer to Section 2: Introduction.
  We have included Annex E in our supplementary evidence document, to explain our advanced leakage management approach, and how we use our leakage data to target proactive mains replacements.

The following option table summarises the workload, costs and performance of all options assessed.

Option name	[redacted]	[redacted]	[redacted]	[redacted]	Start to end of RIIO-3 performance trend			
					Contribution to leakage reductions	Gas escapes	GIBs	Supply interruptions
Option 1: 640km in RIIO-3	[redacted]	[redacted]	[redacted]	[redacted]	+10%	-4%	-5%	-9%
Option 2: 230km in RIIO-3	[redacted]	[redacted]	[redacted]	[redacted]	+6.8%	+3%	+4%	-1%
Option 3: 390km in RIIO-3	[redacted]	[redacted]	[redacted]	[redacted]	+8.3%	0%	-1%	-5%
Option 4: 480km in RIIO-3	[redacted]	[redacted]	[redacted]	[redacted]	+9.2%	-2%	-3%	-7%

[1] NPV is relative to the baseline option (of continue to reactively repair) and carry out no proactive replacement.

The next table then compares the alternative programme options relative to the proposed DD option (Option 2: Continue with RIIO2 approach: 230km in RIIO3) to demonstrate the incremental costs, benefits and workload of each alternative option considered.

Option	[redacted]	[redacted]	[redacted]	[redacted]	Performance achieved compared to Option 2			
					Contribution to leakage reductions	Gas escapes	GIBs	Supply interruptions
Option 1: 640km in RIIO-3	[redacted]	[redacted]	[redacted]	[redacted]	↑ +3.2%	↓ -7.1%	↓ -8.7%	↓ -7.7%
Option 3: 390km in RIIO-3	[redacted]	[redacted]	[redacted]	[redacted]	↑ +1.4%	↓ -3.5%	↓ -4.9%	↓ -3.8%
Option 4: 480km in RIIO-3	[redacted]	[redacted]	[redacted]	[redacted]	↑ +2.4%	↓ -5.0%	↓ -6.7%	↓ -5.4%

[2] NPV is relative Option 2 (Continue RIIO-2 approach)

All of these options effectively manage asset performance and deliver safety and environmental benefits by differing amounts. All options are viable and deliverable. All options except Option 2, hold asset health stable or improve asset health, with our Option 1 performing best. All options also deliver a positive net benefit relative to our baseline reactive only option, with Option 1 performing best across almost all years from 2027 to 2050.

Our chosen option (option 1: 640km of mains replacement) will see an investment of [redacted] in our network to replacement 598.35km of metallic mains, remediate 49.25km of iron mains through innovative robotic interventions, and replace circa 31,000 services. This option delivers the best, slightly improving asset health performance, which aligns to our customers' highest priority, and also delivers 10% reduction in leakage against Cadent's scope 1 & 2 targets, a key contribution to our Environmental Action Plans. This option will increase average bills by [redacted] / household over the RIIO-3 period, relative to continuing with our RIIO-2 approach. 89% of our customers agree it is important to prevent gas leaks, especially now, so more of the gas produced can be used in homes and businesses and 65% agree that [redacted] per household per year is value for money.

Please refer to our response to **GDQ8:** This discusses our response to Ofgem's proposed PCD for iron tier 1 stubs and provides further information on the impact on stubs volumes and costs relative to the chosen CBA mains option. A reduced volume of CBA mains replacement reduces our opportunities to remove stubs as part of this work, increasing stubs-only work.

EJP10 – MOBS & EJP 11 – PE Risers

Ofgem Feedback Received

DD Response: Partially Accepted

MOBs: *The data provided to support justification of the needs case should clearly detail which assets require intervention, the intervention type, an asset health condition score for each asset alongside the risk score. We also need to understand what risk threshold has been applied in establishing intervention need and the associated justification. We do not think the data currently provided meets*

these requirements. Additional data is required to support the proposed scope and overall needs case for their preferred option.

At the bilateral meeting on the 22nd July, we agreed to provide:

- *A clearer more comprehensive global data repository that clarifies asset health conditions at the start and end of RIIO-3.*
- *Clarity on risk action threshold*

PE Risers: *We do not consider there to be anything in current building regulations that requires retrospective action to replace PE risers in use on buildings above 18 metres in height (i.e. high-rise buildings, HBRs). Therefore, we propose to remove* [redacted] *HRBs. We would expect the need for intervention to be justified on risk and asset health score.* [redacted] *medium-rise buildings (MRBs) have no supporting fault data, although risk scores are reported as being >10000. This suggests potentially erroneous data inputs. Therefore, we have reduced MRBs volumes by* [redacted]. *It would be helpful to see full PE riser repository data, rather than data just for proposed interventions, to provide context for the required workloads across this asset class in RIIO-GD3.*

At the bilateral meeting on the 22nd July, we agreed to provide:

- *Provide data on the missing* [redacted] *MRB PE risers*
- *Clarify risk position for HRB PE and provide risk assessment in line with MRB*

Cadent Response

We do not agree with the engineering assessment for EJP10 and 11.

We have created the following Annex J EJP10-DD-SE-MOBs Risers & EJP11-PE Risers, to address Ofgem's concerns. The annex provides the following information:

- The building safety scoring methodology.
- Granular asset-level data and risk thresholds.
- Annexes with riser lists and updated survey data.

The annex restates and clarifies the proposed intervention programme for EJP10 MOBs. This has not driven a change in MOBS RIIO-3 costs and workload. There are three components to the MOBs workload:

- **Planned interventions:** For Metallic risers in RIIO-GD3, we apply a threshold of 88,000 to identify assets at risk, with interventions triggered above 100,000. Out of 114,000 risers, 25,885 exceed this threshold—[redacted].
- **IMRRP-associated interventions:** Risers are replaced during any iron mains replacement, if engineering deem it necessary. The proposed RIIO-3 workload is 1,994 riser replacements, based on proximity or engineering criteria. Based on RIIO-2, 39% of risers within 30m of IMRRP were replaced, we have used this assumption to inform our RIIO-3 workload.
- **Energy Exchange Programme:** We have identified 364 planned disconnections, where the buildings gas-usage is low, instead of carrying out interventions to manage risers in these buildings. This programme offers customers incentives to switch to alternative energy sources, and this aligns with decarbonisation goals.

For EJP11 PE Risers, Cadent has restated and clarified information for PE risers in both medium rise and high-risk buildings. A summary of the key points is below:

- **Medium rise buildings:** Cadent have resurveyed the [redacted] risers with missing data and updated their risk scores. These have been confirmed as below the risk threshold and thus

removed from the RIIO-3 workload. **We therefore accept that the** [redacted] **MRB risers in the Northwest at a cost of** [redacted] **are removed from the plan.**

- **High rise buildings:** Cadent has applied the same risk methodology as MRBs, all PE risers exceed the risk score of 5,000. Due to the legislative and safety context (Building Regulations and Grenfell inquiry) and the high fire risk of PE due to the low melting point, all risers above threshold are proposed for replacement. Non-replacement, mitigation options (GRP sleeves, PIVs) have been considered and discounted due to their technical limitations / limited effectiveness. The costs and workload for HRBs are unchanged. The cost of doing this is [redacted].

Please refer to our response to GDQ05 for further information.

EJP12 – Pipeline Integrity

Ofgem Feedback Received

DD Position: Disallowed

We consider there is too much cost uncertainty due to a lack of workload details. While the need for ongoing pipeline maintenance is explained in general, there is a lack of detail on the methodology for establishing workload volumes, resulting in uncertainty on the amount of maintenance required. As there are no defined deliverables, this submission is unjustified until further information is provided to support the proposed volume of maintenance activity in RIIO-GD3 for each intervention type to ensure the cost is reflective of the workloads completed.

At the bilateral meeting on the 22nd July, we explained how inspection data informs pipeline integrity interventions and how RIIO-2 delivery data supports unit cost forecasting. We agree to provide additional information:

- *Detailed methodology for how workload volumes have been calculated, aligned to the process flow presented. (acknowledging that the need for pipeline maintenance is clear)*
- *Volumes, deliverables and cost alignment across all pipeline integrity workload.*

Cadent Response

We do not agree with the engineering assessment for EJP12.

We have created the following Annex K EJP12-DD-SE-Pipeline Integrity, to address Ofgem's concerns. The annex provides the following information:

- **It clarifies how inspection data translates into interventions**, providing information on the different maintenance inspections (internal, overland, visual, NDT), how the faults are classified, and how the fault classification is used to derive defect rates and asset condition.
- **Sets out the planned inspection programme for RIIO-3;** with [redacted] inspections being planned across pipelines (internal and overland surveys), crossings (2 and 5-yearly) and pig traps (visual and non-destructive testing). This is a material increase to RIIO-2 inspection volumes.
- **Explains how the workload is forecast:** Provides a detailed asset class breakdown of the inspection to intervention ratios. In summary:
    - RIIO-3 inspections: [redacted] vs. [redacted] in RIIO-2.
    - RIIO-3 interventions: [redacted] vs. [redacted] in RIIO-2.

- **Clarifies and restates how the unit costs per intervention have been derived,** for pipelines, crossings and pig-traps**.**
- **Concludes that:**
    - the increase in forecast spend from RIIO-2 is driven by higher inspection volumes and a strategic focus on below 7 bar underwater river crossings.
    - The preferred option (Option 0) proposes [redacted] interventions at a cost of [redacted].

EJP13 – Pipeline Isolation Valves

Ofgem Feedback Received

DD Position: Partially Accepted

Volumes for all valve types (HP, IP, MP, I&C) have been provided. For IP and MP, data has been provided to support the proposed volumes. This data includes failure rates based on maintenance inspection, intervention type and unit cost. For I&C valves, data to support the proposed volumes is inadequate. The rate of failure is based on historical rates and costs are based on full replacement only. For HP valves, no data has been provided to support the proposed volumes. Rate of failure and costs are copied from RIIO2. Complete data for HP and I&C will be required to support proposed volumes and optioneering confidence.

At the bilateral meeting on the 22nd July, it was agreed that Cadent would provide:

- *A long list of intervention options with associated volumes.*
- *Additional commentary on proposed options.*

Cadent's Response

We do not agree with the engineering assessment for EJP13.

We have created the following Annex EJP13-DD-SE-Pipeline Isolation Valves, to address Ofgem's concerns. The annex provides the following information:

- Presents a **structured inspection-to-intervention methodology**, aligned with our pipeline integrity approach. Cadent follows a four-step process: inspection → fault identification → workload forecasting → unit cost application. Faults are prioritised based on remediation need.
- Provides **failure rate analysis** for HP, I&C, IP, and MP valves using historical inspection and intervention data, and how this has been applied to provide forecasts volumes. (Section 5)
    - **HP Valves**: volumes are forecast based on intervention per inspection; however, our fault data lacks granularity which prevents identification of intervention strategy as part of workload planning.
    - **I&C ECVs**: Faults are identified reactively via our customers, or through routine maintenance. There are limitations in fault data, we have used extrapolated volumes to inform an intervention to inspection ratio.
    - **IP and MP Valves**: High-quality fault data; proactive remediation strategy applied.
- Provides **forecast workload volumes** for all valve types (Section 6)
- Explains how we have derived **unit costs** [redacted], for each potential intervention-mode.

- Presents additional **optioneering scenarios** for each valve type, including capped and modelled volumes. (Section 8). The document sets out the full long list of options that were considered and discounted prior to the EJP publication. At the bilateral meeting, we committed to providing this set of long-list options for clarity.
- Re-confirms the **preferred workload volumes and costs for RIIO-3**, is unchanged from those submitted in December 2024.

EJP14 – Pipeline Monitoring & Protection

Ofgem Feedback Received

DD Position: Partially Accepted

Cadent have stated that the workstack for sleeves differs between RIIO-3 and RIIO-2, proposing to use significantly more nitrogen sleeves in RIIO-3. This is proposed without substantive supporting evidence or justification for the increase in submitted unit costs. We have recommended overall workload is funded assuming all work is construction sleeves, applying construction sleeve unit costs for RIIO-3. Further evidence is required to support the need for nitrogen sleeves, specific volumes and justification for proposed unit costs.

At the bilateral meeting on the 22nd July, the session focussed on explaining how inspection and UKOPA data informs pipeline sleeve interventions and how RIIO-2 delivery data supports unit cost forecasting. It was agreed that Cadent would provide:

- *Additional information is needed to support volumes, deliverables and cost alignment, specifically the split between nitrogen and construction sleeve volumes.*

Cadent Response

We do not agree with the engineering assessment for EJP14.

We have created the following Annex M EJP14-DD-SE-Pipeline Monitoring and Protection: sleeves, to address Ofgem's concerns. The annex:

- **Explains the inspection and fault categorisation process used for pipeline sleeves**: The document clarifies how the results of our rolling inspection programme on sleeves, is used as an input into the UKOPA model to generate an overall ranking / risk of failure for all sleeves. Our UKOPA database contains [redacted] high risk sleeves requiring intervention in RIIO-3.
- Explains how we have derived **the Nitrogen and Construction sleeve workload**.
- Sets out the **basis for our unit costs** for Nitrogen and Construction sleeve interventions, based on scale and complexity of work.
- **Provided clarification on the proposed option for sleeve interventions**: As a result of these updates, we are proposing to intervene on [redacted] high risk sleeves in RIIO-3, for a **revised forecast of** [redacted]**.** This change has been driven by our revised forecast number of nitrogen sleeves and more granular unit cost per intervention.

EJP15 – Preheat

Ofgem Feedback Received

DD Position: Partially Accepted

The additional data requested was not provided so unable, with any certainty, to corroborate intervention volumes or type. To allow for a complete assessment of the investment to be undertaken, we would expect to see asset data such as heater type, intervention mode, historical investment mode, asset health score at beginning of price control, asset health score at the end of price control, NARM score. This is required to demonstrate investment need and create scope confidence. We have proposed an alternative option to minimise investment to maintain stable risk score.

At the bilateral meeting on the 22nd of July, Ofgem requested:

- *Full global asset data in agreed format*
- *Information on LTR (long term risk) definitions*
- *Average condition scores and stacked bar charts for programme options*

Cadent response

We do not agree with the engineering assessment for EJP15.

We have created several annexes to address Ofgem's concerns:

- **Annex E EJP15-DD-SE-Preheat on Offtakes and PRS**: Provides further narrative and information on the asset risk and performance for each programme option assessed, to support our justification for Cadent's preferred option.
- **Annex E EJP15-DD-DATA-Preheat on Offtakes and PRS**. Provides the global asset data for Preheat.
- **[redacted]**

The above information presents more compelling justification and information to support the selection of our preferred option 2. Our preferred option, is therefore unchanged from our December 2024 submission, delivering [redacted] preheat system replacements or major refurbishments ([redacted] offtake preheat systems and [redacted] PRS preheat systems) for a proposed spend of [redacted].

EJP16 – PMAC

Ofgem Feedback Received

DD Position: Accepted

Cadent Response

We agree with Ofgem's engineering assessment of EJP16.

EJP17 – Pressure Reduction on Offtakes & PRS

Ofgem Feedback Received

DD Position: Disallowed

Cadent propose to invest in the highest risk pressure reduction systems based on condition. Cadent did not provide additional data when requested. The data provided is for risk score only and confirmation of investment. Asset health data and intervention proposed was not provided. This meant we could not complete a detailed engineering analysis. 11 sites have data which did not reconcile with other cost details provided in the EJP which created further uncertainty. The investment is considered unjustified, with further data required to support justification of the investment needs case.

At the bilateral meeting on the 22nd of July, Ofgem requested:

- *Full global asset data in agreed format*
- *Information on LTR (long term risk) definitions*
- *Average condition scores and stacked bar charts for programme options*
- *Provide further clarity on costs and how they align to the EJP*

Cadent Response

We do not agree with the engineering assessment for EJP17

We have created several annexes to address Ofgem's concerns:

- **Annex F EJP17-DD-SE-Pressure reduction on offtakes and PRS:** This annex provides:
    - Clarification on the workload discrepancy raised in SQ047. There are [redacted] pressure reduction systems across [redacted] sites.
    - The costing rules used in the modelling; more specifically how we have derived costs for 2, 3 and 4-stream systems for full system replacements and major and minor refurbishments.
    - An overall explanation on how to interpret the global asset data submitted.
    - Further information to aid the comparison of all programme options considered, including the condition scores and stacked bar charts showing asset performance. We have included further justification on why our chosen option is optimal.
- **Annex F EJP17-DD-DATA-Pressure reduction on offtakes & PRS**. Provides the global asset data for pressure reduction systems. This file also contains the long-term risk definitions.
- [redacted]

The above information presents more compelling justification and information to support the selection of our preferred option 8. Our preferred option, is therefore unchanged from our December 2024 submission, delivering [redacted] system replacements ([redacted] offtake systems and [redacted] PRS systems) for a proposed spend of [redacted].

EJP18 – Reinforcements Below 7bar

Ofgem Feedback Received

DD Position: Partially accepted

Costs and volumes are uncertain as the workload is reactive, often driven by third parties. The workload is split into three categories: general reinforcement, specific I&C reinforcements and IMRRP insertion enabling reinforcements. We consider insertion enablement to be well justified, and we agree with the proposed volumes. The needs case and scope for general reinforcement is considered poorly justified and we have concerns over scope confidence for specific I&C reinforcements. We consider both general reinforcements and specific I&C volumes to not be justified. We would expect more data to be provided to support the justification of the proposed volumes, dimensions and cost. Where sufficiently detailed data cannot be provided due to the uncertainty or need, a re-opener may be an option for funding additional volumes in-period

At the bilateral meeting on the 22nd of July, Ofgem requested for visibility of what Cadent already have in the plan, as an Annex.

Cadent Response

We do not agree with the engineering assessment for EJP18. We have created the following Annex N EJP18-DD-SE-Reinforcements below 7 bar, to address Ofgem's concerns. The annex:

- Explains there is no confirmed workload for RIIO-3 at this time. The historical workload has been shown to be stable, and a reasonable basis for estimating RIIO-3 workload.
- Recaps why forecasting general and specific reinforcement is not possible because it is customer driven. For this reason, we have derived our RIIO-3 forecast workload, by using our average RIIO-2 workload as a basis and have taken a conservative 5% year on year reduction to account for reduced customer and business demand.

Please refer to our response ref GDQ26 on the proposed design of the New Large Load Connections re opener, which would include general reinforcement projects in its scope.

MJP01 – Capacity Upgrades

Ofgem Feedback Received

DD Position: Partially accepted

Cadent Response

We have responded to Ofgem's engineering assessment and the proposal to reject Cadent's Capacity Upgrades PCD, under the response for CADQ7.

MJP02 – Mandated Cat 3 Security

Ofgem Feedback Received

DD Position: Disallowed

We agree with the overall needs case. However, the quality of the information on scope and cost confidence for the projects is poor. A full cost breakdown and project scope has not been provided. Further SQs were sent and Cadent were unable to provide the data requested. We require further information on scope, sites and costs before the proposed costs for this investment can be considered justified.

At the bilateral meeting on the 22nd of July, Cadent confirmed that Ofgem would be able to obtain the letter confirming the category 3 classification directly with DEZNZ and that contact details had been provided.

Cadent Response

We do not agree with the engineering assessment for MJP02. We have created the following Annex O MJP02-DD-SE-Category 3 Security, to address Ofgem's concerns. The annex provides the following information for each site in scope for intervention in RIIO-3:

- **Status**: progress through feasibility and detailed design, market testing and contract award for construction.
- **Site context** and complexities
- Detailed **scope of work**
- **Cost breakdown,** including the basis for costs.
- **Detailed risk register**, following completion of a quantitative risk assessment to inform the level of contingency required.

The paper also provides the same information for RIIO-2 sites, to aid comparison.

The level of information for each site has improved following completion of feasibility and detailed design. In the case of [redacted], we have either concluded tender events or have awarded design and build contracts for the work, this has significantly improved the certainty on scope and cost.

For [redacted], the feasibility design is still not complete, but we have completed further internal investigations to confirm the scope and derive a site-specific cost estimate.

The additional work completed has enabled us to refine the forecast total installed costs for each site ([redacted]). Most sites have seen a marginal change (circa + or – 5 to 15% change in total installed cost). [redacted] sites have had a larger increase in scope, complexity and cost. [redacted] The rationale for these changes is explained in detail in the annex.

MJP03 – FWACV

Ofgem Feedback Received

DD Position: Accepted, need to confirm baseline cost issues

At the bilateral meeting on the 22nd of July, our RIIO-2/ 3 spend apportionment within MJP03 was discussed due to an apparent discrepancy.

Cadent Response

We agree with the engineering assessment for MJP03. Please refer to CADQ1 for Cadent's response to Ofgem's proposed PCD design for this project.

Our response to CADQ1 also explains our RIIO2/3 spend apportionment, set out within MJP03 for clarity. The EJP summary table identifies a total installed cost of [redacted]. [redacted] of this has been spent in RIIO-2 to [redacted]. [redacted] will be spent in RIIO-3 delivering the remaining programme of work. The full [redacted] is the funding required for the proposed RIIO-3 programme of work.

MJP04 – London Medium Pressure

Ofgem Feedback Received

DD Position: Accepted

Cadent Response

We agree with the engineering assessment for MJP04. Please refer to CADQ2, for Cadent's response to Ofgem's proposed PCD design for this project.

MJP05 – Tinsley

Ofgem Feedback Received

DD Position: Accepted

Cadent Response

We agree with the engineering assessment for MJP05. Please refer to CADQ4, for Cadent's response to Ofgem's proposed PCD design for this project.

MJP06 – West Winch

Ofgem Feedback Received

DD Position: Disallowed

This project is to carry out a feasibility and design study, as part of a plan to replace the pipeline in RIIO-4. The optioneering described in the paper relates to the construction phase of the work and does not focus on the alternatives to doing the feasibility study so it is not relevant. We are not satisfied that the information provided details the expected outputs of feasibility study, and there is no breakdown of expected costs. Therefore, we consider this EJP to be unjustified. We require detail on the deliverables and anticipated costs of the feasibility and design study.

Cadent Response

We disagree with the engineering assessment for MJP06. We have created the following Annex **MJP08-DD-SE-West Winch**, to address Ofgem's concerns. Please also refer to our response to CADQ8, "Do you agree with our proposal to reject Cadent's West Winch Pipeline PCD".

Cadent disagrees with Ofgem's proposal to reject the West Winch Pipeline Price Control Deliverable (PCD). The proposed activity is not a continuation of RIIO-2 feasibility work but a critical next phase in

a structured, risk-based asset management strategy for a deteriorating, non-piggable [redacted] high-pressure pipeline.

Justification for the PCD

- The RIIO-3 proposal includes the development of a comprehensive **feasibility study**, **conceptual design**, and **targeted remediation** to assess the pipeline's condition and develop costed intervention options.
- This work is essential to inform a robust investment case for RIIO-4 and ensure compliance with the Pipeline Safety Regulations (1996) and Pressure Systems Safety Regulations (2000).
- The initial RIIO-2 feasibility study focused solely on full replacement options and excluded alternative strategies such as partial refurbishment or blended remediation.

RIIO-3 Deliverables and Costs

Cadent proposes a phased approach with the following RIIO-3 deliverables:

- **Feasibility Study** [redacted]: Full condition assessment and failure mode analysis.
- **Conceptual Design** [redacted]: Focused on high-risk sections (PL1648 and PL1653).
- **Remediation Works** [redacted]: Targeted interventions to address known defects.

Total RIIO-3 cost: [redacted] (2023/24 prices), with clear deliverables and a mechanism to return unspent allowances to customers.

Strategic and Regulatory Alignment

- The approach mirrors successful precedents like the **Tinsley Viaduct** project, using phased investment to manage risk and ensure value for money.
- Blended remediation techniques (e.g., shell repairs, composite wraps, localised diversions) offer a cost-effective alternative to full replacement.
- The proposal ensures transparency, regulatory compliance, and customer value, with a Major Justification Paper (MJP) to be submitted in RIIO-4.

The proposed PCD is a proportionate, risk-based investment that enables informed decision-making for RIIO-4, avoids premature capital expenditure, and ensures safe, compliant operation of a critical pipeline asset.

MJP07 – Grays Medium Pressure

Ofgem Feedback Received

DD Position: Accepted

Cadent Response

We agree with the engineering assessment for MJP07. Please refer to CADQ4, for Cadent's response to Ofgem's proposed design of the PCD for this project.

CADQ15. Do you agree with the level of proposed NIA funding for Cadent?

We do not agree with the 13% reduction in our NIA funding proposals. In the Draft Determination Cadent Annex, Ofgem acknowledges that we have clearly set out our plans for NIA funding and its areas of focus.

On the qualitative feedback set out in Section 6.5 of the Cadent Annex we make the following observations on where there was an expectation of further detail.

Key areas of focus for NIA spending

As of July 2025, we have over 20 live NIA projects that commenced in 2025/26 and 14 further potential projects in consideration. This is a high volume of projects to manage, and some will 'carry-over' into RIIO-3. The detail on these have been shared through annual innovation reports.

We do not develop the same level of detail at this stage for future projects, and we believe we provided proportionate information on the potential projects and focus areas within our Innovation appendix, in particular in the summaries across pages 15-17 and on page 20 and in section 6.2 where we explained the background and rationale behind these areas.

We observe that opportunities and technology are accelerating and given the point in time when business plans were prepared was 18-months prior to the start of the 5-year period, we thought that we had provided the blend of specific projects and areas of focus appropriately.

It is also worth noting that typical lead-times for sources of new projects (e.g. Basecamp, events, direct contact via email or LinkedIn) are all relatively short. We think that agility is helpful and appropriate, and our submission and our strategy strike a balance between having a forward plan for activities and remaining open to new things.

Network collaboration to identify and deliver NIA projects

In section 6.9 of our innovation appendix, we set out how Cadent does and intends to collaborate on innovation projects. We noted industry forums, events and cross-network meetings as being key and explained that we believe the established channels are suited to the process, as they are known, accessible and participation in them is good. In response to the DD challenge on this, we note that we did not explicitly name these, and the table below provides further detail on the key items and some comments.

Collaboration tool	Comments
Gas innovation Governance Group	We attend participate fully in the GIGG forum, providing full input about our own projects and strategies, and feedback to other networks on theirs.
x-GDN Project Register	We summarise our projects and our feedback to other network companies in the project register, held by FEN. We believe our engagement with this tool is more balanced (we do challenge other companies where appropriate on projects' fit to criteria, and/or potential duplication) and more complete than our peers.
Gas Strategy Group	We fully participate at GSG and have taken a leadership position on several areas.
Basecamp	We use the basecamp process to engage with new innovators on challenge statements and feed back to them on our decisions and rationale.
Innovation Summit	We attend the summit and benefit from its breadth and strong participation from a wide range of stakeholders to keep in touch with lots of industry movements.
Industry events & conferences	We attend these and host stands at some. We find significant value from these events where wide-ranging conversations and ideas sharing occurs.

	We regularly follow up with individuals and organisations whose ideas or technology we learn about via conferences & events which has led to many trials and some full implementations.

Ensuring projects are not duplicative

Building on the above points and with reference to section 9.2 of our innovation appendix to our business plan, we follow the relevant governance processes and procedures to protect against duplicative projects.

The main projections against duplication, we think, exist through the process of cross network review with FEN and the proper use of the GDN project register, where each network comments on the proposals of others. We participate in these processes and have made a number of challenges where we think projects may be duplicative (which is rare) or where we think a project may not meet NIA criteria (which is occasionally our observation made to other network companies).

We are not aware of feedback about specific projects that have duplicated other work. If there are examples, especially any that relate to our projects, then we would like to review those and explore how duplication may have occurred to take lessons.

In our response to OVQ23, we support the principle of increased Ofgem oversight for NIA projects. Whilst we note a potential risk to project timelines through such a change, we support the proposal because: closer connections between innovation projects and Ofgem's policy work is an opportunity, and Ofgem engagement could help project delivery and the process to get successful projects from 'innovation' into 'implementation'. Our support for this proposed change is relevant as we think it would strengthen the existing processes.

Why innovation cannot be funded from the totex allowance

The feedback we received on our innovation plan said that we had explained this point at a portfolio level but not 'at a workstream level, as requested in BPG.' We cannot find the request for 'workstream' level detail about totex funding challenges. In section 6.6 and in figure 15 we provided information about our perspective and processes for exploring totex funding, and why NIA allowances are critical for many lower-TRL projects and those that do not lead to any commercial pay-back. Taking the key NIA-eligible workstreams in turn and explaining the challenges of totex funding:

Customers in vulnerable situations:

We are proud of the huge progress made across customer service metrics in RIIO-2. Our improved C-sat scores, our 'services beyond the meter', our centres for warmth and the activities of the Cadent Foundation all demonstrate action in relation to customer service. However, when it comes to innovation projects that are intended to support customers in vulnerable situations (CIVS) the case for totex spending is limited. There are two main reasons for this: they do not have any commercial return to Cadent, are often deployable only at very small scales due to some relating to some niche/ unusual disability characteristics.

Energy system transition:

These projects share the characteristic of having no commercial return to Cadent in short or medium time frames but also have other challenges when it comes to obtaining totex funding. The technology readiness of energy system transition projects can be particularly low, making the risk of failure/ under-delivery material. Projects that are justified under these criteria are also often not deployable for some time. The hydrogen work undertaken is a clear example of highly informative research that is valuable, but not immediately deployable.

We request that Ofgem reviews their assessment again and does not reduce our NIA funding request.

CADQ16. Do you agree with our proposed level of funding for Cadent's data and digitalisation investments?

We support the funding decision for 5 of our Digitalisation investments and acknowledge the positive feedback we have received on transparency and clarity of our DSAP.

We do not agree with the proposed level of funding for INV-50 as Ofgem's interpretation that the entirety of the investment overlaps with RESP is incorrect. Investment INV-50 addresses three distinct, but interconnected, digital solutions and the use cases of Future Energy Modelling, Climate Resilience and Network Asset Investment management. We are providing additional commentary and explanation below that addresses the comments provided within the Draft Determination.

Future Energy Modelling

The Future Energy Modelling capability is focused on understanding the gas network decarbonisation options and how they alter the network, to enable this information to be integrated into the Local Authorities Local Area Energy Plans and our network Asset Investment Plan.

The prototype of the solution developed within the RIIO-2 period has been used internally to outline and understand the range of future energy scenarios.

With the new RESP plans delivered during the next price control by NESO, these plans will need to be translated from 11 RESP areas (defined in the Ofgem RESP methodology and new licence conditions within Part D of Standard Special Condition of the Gas Transporters licence) to Cadent Local Delivery Zones (LDZs), which underpin the allocation of asset intervention workloads for our delivery teams. This will require geospatial analysis as the definition of 11 RESP areas do not overlap with Cadent LDZs, therefore the impact and consequences of executing RESP plans within our individual networks and the detailed impact on customers will need to be systematically addressed.

This means the Future Energy Modelling tool is complementary to NESO's RESP, rather than duplicating the capability and the RESP plans are treated as "facts" inputs to Future Energy Modelling tool, and the output of the solution is the workload plan scenarios for our networks at a gas asset level and aligned to our LDZs.

Future Energy Modelling capability is therefore digital support to both interpret the RESP outputs and align it with our asset base. This also will provide an opportunity to define the Future Energy Modelling outputs to be interoperable with inputs to Asset Management Investment Planning tool.

Climate Resilience

In the RIIO-3 SSMD, Ofgem introduced requirements for a dedicated Climate Resilience Strategy due to the increasing intensity and frequency of severe weather events caused by climate change, recognising their significant impact on network assets and the need to ensure secure and resilient supplies for consumers while accelerating the shift to net zero. Furthermore, in the Sector Specific Methodology Decision Ofgem mandated that Network Companies provide updates on progress in climate scenario planning, stress-testing for high-impact events, and adaptation pathways in annual reports, with forthcoming guidance and a licence obligation to formalise these requirements during the RIIO-3 period.

Consequently, we included a dedicated Climate Resilience Strategy in our RIIO-3 submission. This strategy outlines our commitment to transition from reactive responses to a proactive 'resilience by design' position, embedding climate resilience into our strategic asset management planning to optimise future investments.

In chapter 6 of our Climate Resilience Strategy, we referenced requirements for investment as part of our Digitisation Strategy, specifically "climate Resilience Modelling" within Investment INV_50, which is intended to introduce new Climate Resilience modelling tool.

Therefore, the Climate Resilience Modelling Tool will allow us to input a severe weather condition (for example: flood parameters, heat parameters, etc.) and execute scenarios simulating the impact of such climate event on Cadent network and asset base, allowing us to understand and identify the locations and asset requiring additional intervention to increase climate resilience.

To summarise this requirement, we are proposing to introduce new stress testing capabilities to enable us to quantify climate risks. The outcome of this stress testing will enable us to assess the impact of climate events on our services and subsequently develop appropriate adaptation plans.

Similarly to the interoperability assumption introduced in Future Energy Modelling tool, the outputs from Climate Resilience Modelling tool will be interoperable with inputs to Asset Management Investment Planning tool.

Asset Investment Portfolio Management

We outlined the intent to deploy an Asset Investment Portfolio Management (AIPM) software solution within our RIIO-3 Network Asset Management Strategy (NAMS) in section 4.1. and it is summarised below:

Our strategic intent is to modernise Cadent asset management capabilities, moving towards best-in-class asset stewardship. This will be achieved through a unified Asset Investment Portfolio Management (AIPM) software solution designed to enable dynamic scenario modelling and stress testing (critical risks on our assets), facilitate consistent risk-based decisions via a unified prioritisation framework, and support whole-life and Totex-based decision-making.

While Cadent currently uses the Asset Investment Manager (AIM) software and established deterioration models, challenges remain in quantifying value, ensuring investment consistency, and limited scenario planning.

Current capabilities allow us to determine appropriate scenarios by individual asset class but lacks the capability to compare and contrast the investment plans for multiple asset classes against each other and validate investment plans against additional parameters (inputs like decomposed RESP plan, or adaptation plans resulting from climate resilience modelling).

Our ambition is to achieve through the investment INV-50 a holistic scenario modelling capability, that allows us to integrate new requirements (RESP outcomes and climate adaptation plans) and mature our ability to optimise investments at a portfolio level.

Investing in a new AIPM system addresses these limitations by fostering cross-functional collaboration, and enabling more consistent, data-driven investment decisions. Ultimately, this will enhance the integrated optimisation of risk and financial performance, support our strategic goals of safety, reliability, efficiency, and sustainability, while maintaining ISO55001 certification.

Digital Personas and their business role

Digital Personas described as part of Investment INV-50 have been accounted for within our overarching TOTEX proposals (these should not be treated as investment specific additional resourcing requests). They are referenced within the digitalisation investment to illustrate the end users and their requirements through development of three digital solutions. Examples are provided below:

Future Energy Specialist – as a digital persona - is a business user who process through the solution the NESO RESP plan, performs geospatial analysis and translates these plans into a chosen workload plan scenario a gas asset level and aligned to Cadent LDZs. This persona also prepares appropriate inputs resulting from RESP plans to Asset Investment Portfolio Management (AIPM) solution.

Climate Resilience Specialist – as a digital persona – is a business user who prepares the climate scenario stress testing conditions and uses Climate resilience solution to geospatial analyse impact of severe climate factors on Cadent network. This persona also prepares the required adaptation pathways and required climate related inputs to be used within Asset Investment Portfolio Management (AIPM) solution.

Expected data inputs and outputs:

One of the main drivers of treating these individual solutions as part of the same programme of work is the importance of interoperability and partial overlap between the data underpinning all three solutions.

Asset Data Inputs:

- Precise location and physical characteristics (e.g., X-Y grid references, altitude, site boundaries for digitised sites like Offtakes, Above Ground Installations (AGIs), and district governors) for understanding hazard gradients, especially for risks like flooding.
- Asset attributes such as elevation, construction material, type, and critical failure thresholds (e.g., stress/strain, temperature limits) are necessary to understand vulnerability.
- Accurate 3D geospatial data provides critical input for high-quality climate risk assessment, enabling representative simulations.

Climate and Environmental Data Inputs:

- Forward-looking climate scenario datasets (e.g., from IPCC) are essential for assessing asset-level exposure to hazards like wind, heat, drought, flood, coastal flooding, and freeze/thaw across various time horizons (e.g., pre-industrial, 2030, 2050, 2100).
- High-resolution climate data (e.g., 30m x 30m) is needed for granular analysis of specific impacts like projected flood depths and asset failure levels.
- Third-party environmental data (e.g., Environment Agency flood risk data) to enhance existing resilience capabilities.

Operational and Financial Input Data for Risk Quantification:

- Financial classification necessary for accurate tracking of climate-triggered investments and resource allocation.
- Cost data (e.g., downtime, disruption, replacement, and repair costs) essential for calculating the "value-at-risk" for individual assets due to climate impacts.
- Development of robust climate resilience metrics allows for benchmarking and targeting of improvements, providing a consistent rationale for investment.
- Historical and forecast gas demand data supports overall demand forecasting and understanding climate's impact on supply/demand.

Interdependency Input Data:

- Information on interconnections and dependencies with other utility and asset operators (e.g., electricity networks, water networks, telecommunications, and road transport) required to understand potential cascading and escalating failures across critical national infrastructure due to climate events.

The intention is to allow for delivery of 3 dedicated user interfaces, each tailored to the needs of Digital Personas, to ensure the data driven scenario results can be fed into wider reports and discussions about LAEPs or Climate Resilience, and at the same time ensure that technically the solutions are underpinned by interoperable dataset forming a common data model ensuring integrity of the results and ability to easily compare various scenarios.

The AIPM solution is at the same time treated as a “central” decision making tool within the organisation accepting outputs from Future Energy Modelling and Climate Resilience as inputs (or “facts” sometimes also called “constraints” in optimisation solutions) while processing details financial and operational data to produce optimised asset invest plans that are incorporating NESO RESP direction and have built in climate resilience considerations.

Therefore, we believe it is important to consider all the elements of this package together to deliver the targeted benefits and ask that Ofgem reassesses INV50 in Final Determinations.