

RIO-2 Draft Determination

Summary of Our Response

4th September 2020

Cadent response to RII0-2 Draft Determination Contents

Summary of Our Response

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Executive Summary

When Cadent was established three and a half years ago our performance and efficiency was the worst in the gas distribution sector.

Since that time we have worked relentlessly to transform our business and put customers and communities at the heart of all we do. This could not be more important to us. With an uncompromising commitment and drive from the very top of our organisation, we are demonstrating our ability to lead the industry in setting new standards of customer service - and showing that we can match our customers' demanding expectations. We are on track to deliver over £120m of opex efficiencies p.a. by the end of RIIO-1 compared to the day the business was acquired, bringing our networks in line with industry benchmarks. We have a clear ambition and a strong leadership team with a track record of driving business change. We are committed to delivering the outputs set out in RIIO-1 and our customer performance has improved greatly as a result, reflected in our customer satisfaction and complaints handling scores.

Through engaging with our customers, we have set out a clear social purpose to decarbonise energy and develop pathways that will help the UK to achieve net zero. We take our role seriously in this. As a commitment to the communities we serve, we undertook to invest 1.25% of our post tax profits through the Cadent Foundation. We are a business that has listened to customers extensively and is propelled to transform experiences whilst delivering value now and long into the future.

Our customers and stakeholders have worked with us to set out an ambitious, but achievable plan, and we were very surprised by Ofgem's initial response to it as set out in the Draft Determination (DD). The cost challenge proposed in the Draft Determination is unachievable and unrealistic. The proposed £701m additional efficiency challenge, on top of the £505m of totex efficiencies contained in our plan is neither in customers' short, or long-term, interests.

We believe that the cost challenge proposed in the DD is a result of a significant number of material errors, including basic data and arithmetic errors – combined with the adoption of a benchmarking methodology that is not robust; a lack of allowance for regional factors; and errors in the calculation of ongoing efficiency.

The result of these errors and lack of consistency across networks presents us with an unworkable and unfinanceable plan whilst also funding other networks more than their requirements to the clear detriment of all customers.

In its current form, **the Draft Determination from Ofgem does not enable Cadent to finance the services we are delivering for our customers and the activities we are obligated to deliver under the licence and our statutory requirements.**

We have several concerns with the proposals which can be categorised in the following way:

1. Cost Assessment:

Ofgem have presented a **cost assessment proposal which has material errors in both the data and application and is based on a methodology that is not robust. This leads to allowances which do not adequately finance our activities and does not,**

contrary to Ofgem's objectives, deliver a robust or fair efficiency benchmark. Combined with several errors in the application of Ofgem's ongoing efficiency assumption, and further errors in the assumption itself. This leads to costs allowances that are unjustified and implausible. Much of our representation on the DD is in this critical area as without this being addressed we simply do not have a workable plan. For example, an implied 40% reduction in emergency and repair costs is equivalent to an entire networks' spend and therefore fails to achieve Ofgem's stated aim of ensuring a price control that enables the maintenance and resilience of the network.

Our own detailed benchmarking analysis, based on the same underlying data, indicates that Cadent's networks should have been setting the benchmark level. This is supported by the economic consultants NERA who we have commissioned to review Ofgem's methodology - and they conclude that the cost assessment methodology proposed in the DD is unreliable and materially underfunds Cadent. This supports our conclusion that there should have been no catch-up efficiency gap for Cadent and this was the expectation from the Cadent Board when approving our plan - and reaffirms our own analysis of our relativity to the other GDN plans.

The 'efficiency gap' that Ofgem have estimated arises from four principal areas which we set out below. We have included estimates for the scale of change based on our own top-down modelling as we have been unable to fully replicate the DD models. This gives an indicative range and estimates are a function of the order in which changes are made:

- **data and arithmetic errors in the modelling** – we have identified several material errors in the modelling such as the use of incorrect scale variables and a range of formula errors. When corrected we believe these errors will make a material change to the efficiency benchmark derived under the stated methodology the relativity of all the networks to it and the overall allowances proposed of the order of hundreds of millions of pounds. For example, correcting just one of the spreadsheet errors we have estimated would change Cadent's allowances by £100m. Correcting for these errors we estimate will account for c. £300m of the efficiency gap (within a range of around £250m to £350m).
- **a benchmarking approach that is not robust, complete or consistent with best practice** - The DD proposals have used a single totex model which fails key statistical tests indicating it has poor explanatory power which is then compounded by the selection of the 85th percentile as the efficiency benchmark. The approach is not consistent with best practice which would point to the need to use multiple models. Indeed, Ofgem have proposed to use multiple models in the ED2 review. The approach has also been incorrectly implemented through omitting significant elements of totex (e.g., IT capex, repex stubs, shrinkage and LTs capex for example) undermining the stated intent to apply a totex approach. There has also been insufficient consideration given to other key elements of the model such as the Composite Scale Variable (CSV) and time series. In totality these errors materially underfund Cadent whilst over funding other networks at their customers' expense. Correcting for these errors we estimate will account for c. £200m of the efficiency gap (within a range of £150m-£250m).

- **a failure to recognise and appropriately adjust for regional factors** - the methodology applied does not appropriately take account of differences in GDN's cost bases as it fails to reflect, for example, the specific challenges and cost of operating our London network. This is evidenced by the large gap of 17% vs the benchmark and 13% difference between our other networks despite us operating similar processes and support services. This implied efficiency gap does not reflect reality and is a result of a mis-specified model and the rejection of several specific regional differences we effectively demonstrated in our plan, which also impacts on our East of England network (which includes elements of outer London including Tottenham). Correcting for these errors we estimate will account for c. £115m of the efficiency gap (within a range of £80m to £150m).
- **several errors in the application and assumptions used in calculating ongoing efficiency** – the ongoing efficiency adjustments are based on a proposed weighted average target of 1.3% with an adjustment against the average industry embedded efficiency. There are several errors in the calculation of the average embedded efficiency and in the calculation of the proposed range. The approach proposed also contradicts the recommendations of CEPA in selecting the target. In aggregate these errors would result in a negative efficiency for Cadent (i.e. an addition to our plan) that would recognise that our plan was significantly stretching with assumed 0.94% embedded efficiencies in RIIO-2. Correcting for these errors we estimate will account for c. £175m of the efficiency gap (within a range of £150m-£200m).

In combination, correcting for these errors will remove the whole of the catch up efficiency gap and would in fact place Cadent as setting the efficiency frontier - and result in our plan being rewarded rather than penalised.

The DD has also failed to provide any funding for our highest risk mains which we are of course obligated to maintain in a safe and sound manner under the Pipeline Safety Regulations. Replacement or maintenance and repair funding needs to be provided for these assets to enable us to meet our statutory obligations. This needs a fundamental review and reassessment to achieve a robust and fair efficiency outcome for Final Determinations and meet Ofgem's stated objectives of maintaining a safe and resilient network.

2. Financeability and the balance of risk and reward:

The overall price control framework being proposed does not provide an appropriate balance of risk and reward for investors in network companies. The overall package is not financeable. Risk has materially increased with additional mechanisms above those already set out in the Sector Specific Methodology Decision, which further constrain upside performance potential and increase both complexity and the risk of *ex post* regulatory clawbacks. Alongside this, the DD makes clear the risk of asset stranding within the gas sector. These factors combine with the proposed minimal base cost of equity and assumed outperformance wedge to create a regime which will not give the opportunity to attract capital into these businesses. This has undermined investors' confidence in Ofgem's ability to strike the right balance between the interests of consumers and the

network businesses. This is particularly important considering **the need to encourage investment to support the UK's green recovery post COVID and achieve the Net Zero challenge in a post Brexit world.** In this climate investors are faced with a significant increase in currency risk and will be discouraged from investing in the UK when more attractive opportunities are offered in Europe and elsewhere.

To achieve the right balance, the interlinkages and framework needs to be reassessed and refined to encourage the appropriate level of reward for delivering good outcomes for customers. **We have highlighted some of the specific mechanisms Ofgem could change to deliver a more proportionate balance** such as the granularity of the price control deliverables; the definition of the output delivery incentives; the design of uncertainty mechanisms; cost of capital parameter setting; and the removal of the outperformance wedge.

3. Reflecting the needs of customers now and in a net zero future

The DD proposals appear to have taken very little account of the views and preferences of our customers from the comprehensive engagement processes we have run over the last two years. We are unable to see where this had been factored into Ofgem's assessment of bespoke output proposals and indeed how the views of our Customer Engagement Group have been considered in Ofgem's assessment. Because of this we believe **Ofgem has missed an opportunity to set new standards in the services we provide to our customers (particularly those in vulnerable situations).** Our customers have said they are willing to pay for and go beyond the boundaries of what we do today on cross-sector issues such as fuel poverty and whole system thinking. The fact that our entire Consumer Value Proposition of £537m has been rejected demonstrates this missed opportunity. We have sought views again from customers at this point in the process and overall acceptability of our plan would drop by 16% to 73% if the DD proposals were to be progressed (despite the reduction in bill compared to our December plan).

We welcome Ofgem's focus on the need for flexibility and agility on the Net Zero agenda, however we believe that the proposed mechanisms need significant work to ensure they achieve this and are agile enough to support timely action and investment in both regional and national priorities. We are concerned that given the overall balance of the proposals the UK will fail to attract the much-needed investment to achieve net zero.

4. COVID19:

The DD proposals were assessed prior to the COVID-19 outbreak and hence it will be **important for Ofgem to properly calibrate the Final Determinations to ensure the short and long- term impacts of the pandemic are addressed.** We have provided robust evidence on the factors that Ofgem should consider and have proposed ways in which this could be accommodated for example by recognising the dampening impact this will have on productivity and efficiency expectations. We have taken a leading position in the industry through the pandemic, working collaboratively with Government, the HSE and the wider industry to minimise the impact of customer commitments and investment delivery. We believe this will be clear when assessing the impact on RIIO-1 year eight outputs.

5. Process challenges:

The process surrounding the Draft Determination has been materially impacted by the **significant number of errors that we have found with the DD proposals** (most notably with Ofgem's cost assessment) and substantial delays in receiving all the information we needed to fully assess the proposals. The DD documentation was incomplete and Ofgem has been slow to respond to our questions. The DD also contained several new proposals that had not been previously consulted upon through Ofgem's stakeholder engagement process, which has made understanding and assessment difficult. We are keen to work with Ofgem to establish a transparent and collaborative process moving forward to allow resolution of the issues we have identified.

We believe there is a **considerable amount of work to do to resolve the issues we have raised to deliver a robust, fair and proportionate set of proposals in Final Determinations**. Given the scale of change needed on the cost assessment, Ofgem should consider an interim process to engage and consult on a revised cost assessment methodology prior to Final Determinations. We also believe Ofgem should consider delaying the Final Determinations. **It is critical that these issues are addressed for our customers and indeed for all customers across the UK**. I am keen to offer every assistance we can to help Ofgem achieve this and remain committed to working constructively for the benefit of customers.

Steve Fraser
CEO, Cadent



1. Introduction

Cadent is transforming. Our business is focussed on a clear objective to put customers and communities at the heart of all we do and we are pleased with the progress we have made since becoming Cadent three and a half years ago. We have begun to demonstrate our ability to lead the industry, set new standards of service and match frontier levels of efficiency across the sector. Our new leadership team have a track record of driving business change and are committed to deliver for customers. We are now on track to deliver over £120m of opex efficiencies p.a. by the end of RIIO1, bringing Cadent Networks in line with industry benchmark levels of efficiency. We have transformed our customer satisfaction scores and complaints handling and have focussed intently on our investment programme to ensure we deliver the outputs set out in RIIO-1. We continue to transform the experience of customers in high rise buildings. Our purpose in decarbonising energy is clear and we are serious about developing pathways to net zero. We have established the Cadent Foundation that is investing 1.25% of our post tax profits into the communities we serve. This context is important as we are a business transforming performance to ensure that we are well placed to set the benchmark for others in RIIO-2.

Over the past 18 months we have been on a journey to transform our operations, ensuring that customers are central to everything we do – an approach that is at the heart of our RIIO-2 business plan. As part of this transformation around 250 colleagues left the business through a voluntary redundancy programme and a further 1000 colleagues have been through a consultation and re-structure programme to build capability within the new regional network teams. This transformation effort is driving more efficient delivery and ensuring Cadent will be in line with upper quartile performance at the end of the current regulatory period.

Our focus is to take decision-making as close as possible to the customer and asset, improving our speed of response. To support this, we are investing in regional capability and have introduced a “commitment-based management” approach to support improved ways of working and local accountability and increase innovation and entrepreneurship locally. This drive has already led to productivity improvements across our emergency and response workforce of around 15-20%, with further improvements targeted through the sharing of best practice and focused training for Area Managers. Regional accountability for all customer driven connections and alteration work is in place, having completed the transfer of around 400 colleagues, both office and field staff, from the Strategic Partnerships contracts. In both these areas there are clearly improving customer performance trends with latest year to date Customer Satisfaction at 9.20 vs 8.89 in 18/19 (as measured by the Customer Satisfaction Survey).

Across Cadent’s construction works, in particular mains replacement activities, a new Construction Management model is being implemented with four new multiyear contracts now agreed following a successful trial within the North West network. Under the new arrangements Cadent will directly design mains replacement work and drive increased local competition through holding direct relationships with the local delivery teams. Cadent will be supported in the management of these teams by the construction management and programme capability provided by the new Construction Management Partners. The introduction of the new working arrangements is already having an impact, with an increase in the output from the current trial supporting in year delivery and mitigating some of the impact of COVID on the overall programme and we believe this is establishing a market leading model. Customer Satisfaction scores in the trial areas have shown positive improvement and are supporting an improving trend for Cadent overall.

This context is important in terms of understanding the practical implications of the Draft Determination (**DD**) proposals against the RIIO-2 business plan we submitted. Our plan was very stretching on both cost and quality and hence efficiency assessments should be viewed in that context.

The structure of the remainder of this Response Overview is as set out in the Table of Contents above. We start with our feedback on the process which has hindered our ability to understand and therefore respond fully and meaningfully to the consultation. We then set out several material errors across all areas which are significant, both individually and in combination, leading to a material mis-calibration of the DD's.

We believe it is important that Ofgem consult with Cadent (and the wider industry) to ensure the Final Determination represents an accurate and robust set of proposals. It is our intention to continue to work constructively with Ofgem to resolve the issues we outline and reach an appropriate conclusion for all our stakeholders. We return to this in the overview section below.

2. Process challenges

We believe that Ofgem's consultation process has not been effective. We have been hindered by a significant number of errors in the DD proposals, compounded by delays in information being made available to us. This has significantly impacted our ability to respond effectively to the DD.

There was little consultation on critical proposals prior to the publication of the DD. For example, Ofgem had not shared its thoughts on the cost assessment methodology they have proposed through the Cost Assessment Working Group (**CAWG**) nor utilised the time to act on information they requested to test input data to its benchmarking (which is the norm). In addition, several new proposals for price control deliverables have appeared in the DD with no prior discussion such as a fundamental change to the Network Asset Risk Methodology (**NARM**), changes to the repex Price Control Deliverable (PCD) and a new capex PCD (see section 4).

The result is that the DD is the first time key proposals have been consulted upon and there are a number of areas where we are highlighting that it does not appear Ofgem have understood the interlinkages between the proposals they have made across the DD. Given the constrained consultation period for the DD (eight weeks instead of the recommended twelve), this puts significant pressure on our ability to understand and assess Ofgem's proposals and appropriately respond. For example, the proposed cost assessment methodology departs significantly from previous Ofgem benchmarking methodology and the way that Ofwat approached cost benchmarking for the last water price control review (PR19) and was not one of the options that had been put forward or discussed at the CAWG (see section 3 below).

In addition, there are substantial gaps and material errors in the published information which has made it difficult to understand and respond to Ofgem's proposals, in particular, for the cost assessment, the errors made in how Ofgem has applied its stated methodology distort the efficiency benchmark Ofgem has set out and the relative position of the networks – which makes it impossible to respond meaningfully and fully until these errors are corrected. We have been unable to replicate Ofgem's modelling and lack the data to do so. We had proposed to Ofgem in our response to Ofgem's "*Tools for Cost Assessment consultation*" that it undertakes an initial thoughts consultation process to review the modelling results and approach with the GDNs prior to publication so that we could iron out problems before publication, but this was not pursued for reasons that were not explained. This has significantly impacted the challenge to address these issues in this constrained consultation period.

Given the scale and nature of the errors we have identified (inconsistencies with the stated methodology, spreadsheet formula cells typed over/incorrect referencing, inputs which do not reflect data changes made elsewhere in the control), it is difficult to have any confidence that the modelling presented reflects the methodology Ofgem has set out. The scale and impact of the errors raises concerns that Ofgem may make similar errors at the Final Determination (FD) stage hence we believe that as a minimum Ofgem should consult with the networks to validate error corrections (see section 3 below).

There is also little evidence that Ofgem has considered in its proposals the views of our customers, including the insights we gained from our extensive engagement activities or the views of our Customer Engagement Group. Ofgem placed a large emphasis on the pivotal role of customer engagement and asked the CEG to rightly challenge and assess the company plans. Many of our bespoke output delivery incentives and our entire Customer

Value Proposition have been rejected by Ofgem, despite these having been previously challenged and amended because of both customer engagement and CEG input. This does not appear to be an outcome that is in the interest of customers and suggests Ofgem have not followed a robust and consistent process. This approach is brought into further question by the inconsistency in how Ofgem has assessed the plans under the Business Plan Quality Incentive where Ofgem has rewarded NGN for a proposal on repair times performance that not only is currently reported through the Regulatory Reporting Pack (RRP) but is at a level that Cadent has been delivering over RIIO-1. It is not credible to say this is innovative and beyond BAU (see section 6 below).

The lack of a timely and effective process within Ofgem to respond to queries and questions of clarification on the DD has made it difficult for us to effectively respond. No process was put in place for when the DD was published despite this being requested through the ENA Gas Regulation Group meetings Ofgem had attended prior to DD. A process was put in place but this was only established half way through the consultation period. Responses to straightforward queries have taken two working weeks on average. Critical additional information such as the models the cost assessment has been based upon were not available until later in the process (e.g. the global control file for the benchmarking regression was only received in week 5 of the consultation). These process failures have left us (i) unable to fully check Ofgem's modelling; (ii) in a continual state of identifying more and more errors until late into the consultation process as more information became available (although a lot remains outstanding); and (iii) unable to complete this exercise across the entire DD as Ofgem were unable to answer all our queries in the time available.

Accordingly, we believe there will need to be a process to (a) continue to provide information following this consultation process; and (b) allow for meaningful consultation on corrected modelling output prior to FD (see section 8 below).

3. Cost Assessment

The proposed cost assessment has material errors in both the data and application and is based on an unreliable methodology that leads to allowances which do not adequately finance our activities and do not, contrary to Ofgem's objectives, deliver a robust or fair efficiency benchmark.

The DD proposals do not provide sufficient allowances for us to deliver our obligations to our customers (and deliver our obligations under the Pipeline safety regulations). If implemented, they would constitute a failure by Ofgem to carry out its functions in a way that furthers its principal objective, which the legislation explicitly recognises the need to secure that 'a licensee is able to finance its regulated activities'. We accept it is appropriate for Ofgem to set challenging targets, however the ones proposed in the DD are clearly unachievable and do not cover our efficient costs.

In addition, the proposed DD allowances do not achieve Ofgem's stated objectives of enabling GDNs to maintain a safe and resilient network (which Ofgem describes as "paramount") and support the delivery of an environmentally sustainable network.

We deal in turn below with the Efficiency Assessment (sub-section 3.1) and Workload Disallowances (sub-section 3.2). We then summarise the changes that need to be made in sub-section 3.3.

While there is significant work needed to establish a robust efficiency benchmark and relative network efficiencies and ongoing efficiency targets, not least in correcting for data errors and inconsistencies, this could be possible in the available time frame. We are willing to work with Ofgem and its advisers to address the issues identified, summarised here and set out in the detail in the individual responses. To aid transparency and strengthen the legitimacy of the Final Determination an interim consultation in October on cost assessment would be helpful.

3.1 The efficiency assessment

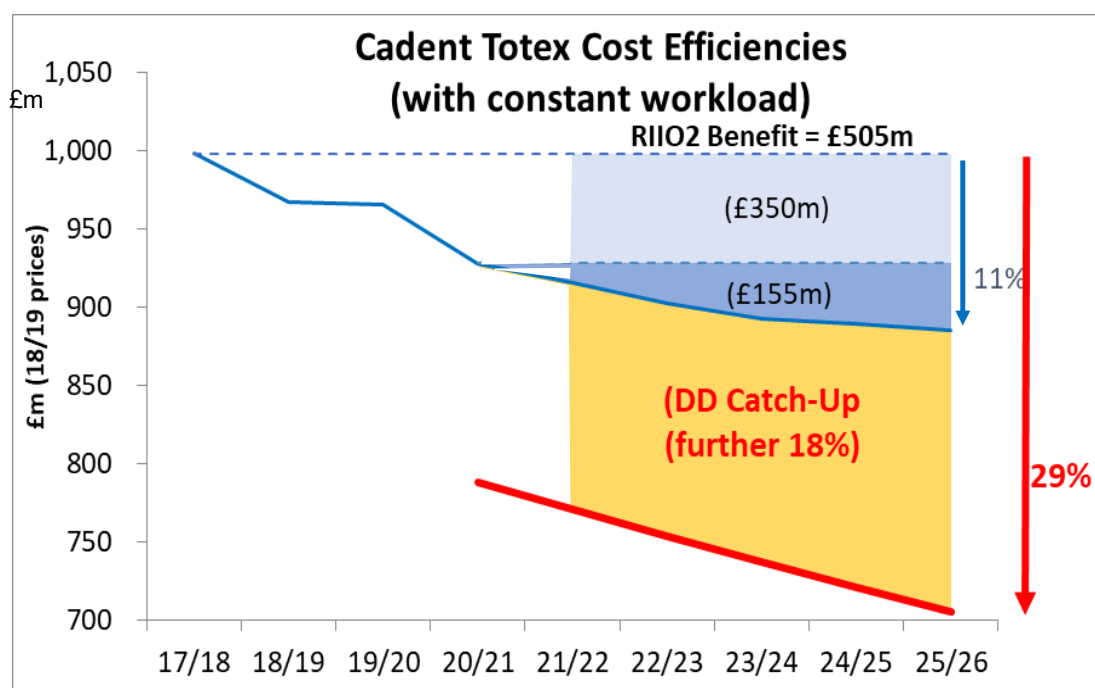
The cost assessment approach contains a large volume of material computational errors which means it is unreliable in establishing an efficiency benchmark for the industry.

In addition, the methodologies proposed to calculate the modelled efficiency benchmark, the approach to assessing regional factors and the proposed methodology for applying an ongoing efficiency adjustment are not robust and fail to deliver Ofgem's intent of setting baseline totex at an efficient level. Instead, they combine to create an efficiency benchmark that lacks robustness and over-penalises some networks, whilst over-rewarding others, in both cases to their respective customers' detriment.

Assessing the practical implications of the proposed DD efficiency challenge

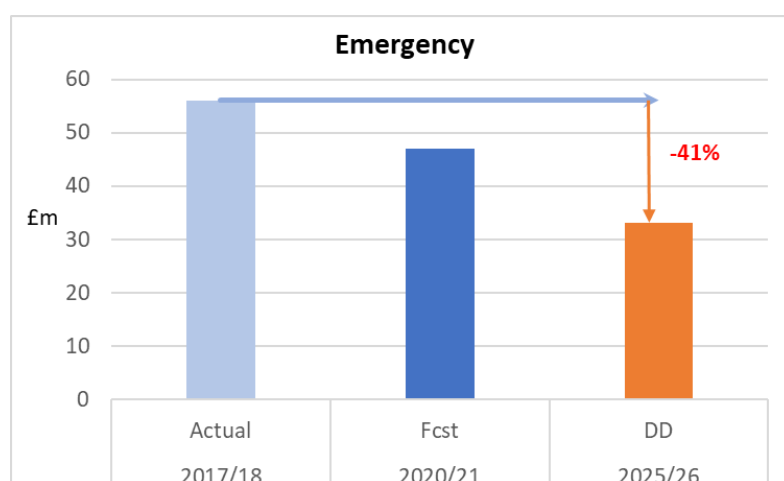
The benchmarking methodology in the DD combines to create an efficiency challenge which is not robust and does not reflect the underlying efficiency of our network leading to allowances that are unworkable. They present a required efficiency challenge of 29% from our 2017/18 cost base which equates to an additional 150% on top of the efficiencies targeted in our transformation plan.

Figure 1: Cadent Totex Cost Efficiencies



To put this into context, the assumed efficiency translates into a 41% proposed reduction in emergency response and repair costs from 2017/18 and a 25% reduction from our plan costs this year which are on a par with the rest of the industry (see figure 2 below). With these proposals we would not be able to stand up an emergency response and repair rota across our networks to meet our primary PSR obligations. We also note that this outcome would also not meet one of Ofgem's stated objectives for the DD, which is to maintain a safe and resilient network (stating that this is "paramount").

Figure 2: Assumed Emergency costs



This cross check further confirms our analysis that the cost assessment methodology does not deliver a robust efficient benchmark level of costs and it is therefore contrary to Ofgem's stated aim of determining the efficient level of expenditure required to operate a network.

Errors in the efficiency assessment

We believe there are seven areas where there are errors in Ofgem's efficiency assessment that we discuss below:

- i. Data and arithmetic errors in the modelling.
- ii. Incompleteness of the totex regression methodology, omitting significant costs necessary to ensure absolute and relative robustness.
- iii. A reliance on a single model which is very sensitive to input assumptions and regression driver choices and fails key statistical tests.
- iv. An approach to benchmark at the 85th percentile which does not reflect the risk of error in the underlying single regression methodology it is reliant upon.
- v. Failure to appropriately reflect network differences, resulting in incorrect assessment for London and East of England networks.
- vi. Errors in data, methodology application and assessment for ongoing efficiency.
- vii. The need to consider the impact of Covid on productivity and ongoing efficiency.

The combination of all the above factors produces an efficiency catch up that is calculated incorrectly and is unachievable - and will result in Cadent being unable to meet its obligations.

These errors are explained in more detail below.

i. Errors of fact and in application of the data and methodology to calculate the modelled efficiency benchmark using the methodology set out in the DD

We have found a significant number of material errors in the application of Ofgem's stated cost assessment methodology relating to input data errors, spreadsheet errors and computational errors. Given that regression analysis was Ofgem's "main tool for assessment for modelled costs comprising 84% of forecast controllable costs" this undermines much of the published information to date.

It is difficult to estimate the precise impact as we are unable to fully replicate the Ofgem models due to Ofgem not having provided in full the necessary information in response to our questions. However, we are confident that correcting the errors will have a significant impact on the efficiency assessment against the methodology set out both in the benchmark set and the relative catch up efficiency to it for networks.

We have estimated that this will close the DD stated **£543m** benchmarking efficiency gap for Cadent by around **c.£300m** (within a range of £250m-£350m). In addition, we estimate from our top down modelling that this would make a material difference to the ranking of networks in relation to the benchmark and change the benchmark company (currently proposed as the second network from SGN's Scotland) to our North West network, as set out in Figure 3 below.

Figure 3 – NERA estimated network ranking before and after correction of data errors

<i>Model ref</i>	Ofgem DD (0)	Ofgem DD model with errors corrected (1)
EoE	7	5
Lon	8	8
NW	6	2
WM	5	6
NGN	1	1
Sc	2	3
So	3	7
WWU	4	4

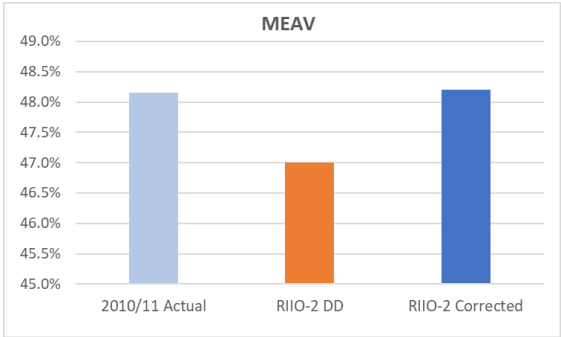
Notes:

(1). Cost and Driver data corrected for: i) all errors identified in Table 3.1 of NERA's report, (ii) Ofgem's incorrect application of the time trend, and (iii), Ofgem's incorrect use of workload-adjusted cost drivers and error in applying workload adjustment in its modelling files.

For example, some of the most material errors are set out in Table 1 below:

Table 1 – Illustrative material factual, data and methodology application errors

Error	Details of mistake(s) made
SGN repex services volumes overstated in the regression CSV due to a spreadsheet formula error.	100 rows have been summed instead of the intended 10 for SGN Southern network leading to a massive overstatement of the workload size in the CSV hence impacting the relative efficiency on repex.
CSVs include inconsistent treatment of costs and workload that has been disallowed hence distorting the relative efficiency.	Numerous examples of inconsistencies such as Cadent electric vehicle costs being included in the totex regression despite being taken out and technically assessed. Disallowed workload being left in the regression without the cost.

<p>Emergency CSV error.</p>	<p>East of England Emergency CSV data (Public Reported Escapes (PREs) and customer numbers) has been incorrectly used for <i>all</i> networks and this makes the smaller networks look more efficient than they should relatively as costs are assessed against a larger volume of external condition reports and customer numbers than actual.</p>								
<p>Errors in the MEAV input data to the composite scale variable CSV (key regression parameter which gives relative size of networks).</p> <p>These combine to incorrectly undersize Cadent's network relative to the other networks by a material amount (estimated 1.6% in MEAV terms)</p> <p><i>Figure 4 Cadent MEAV values</i></p>  <table border="1"> <caption>Figure 4 Cadent MEAV values</caption> <thead> <tr> <th>Category</th> <th>MEAV Value (%)</th> </tr> </thead> <tbody> <tr> <td>2010/11 Actual</td> <td>~48.1</td> </tr> <tr> <td>RIIO-2 DD</td> <td>~47.0</td> </tr> <tr> <td>RIIO-2 Corrected</td> <td>~48.2</td> </tr> </tbody> </table>	Category	MEAV Value (%)	2010/11 Actual	~48.1	RIIO-2 DD	~47.0	RIIO-2 Corrected	~48.2	<p>NGN overstated storage assets</p> <p>WWU overstated large diameter pipe growth and understated MOBS assets</p> <p>SGN – overstated MOBS assets</p> <p>MOB assets omitted from the MEAV data despite stated as being included in the methodology</p> <p>Incorrect calculation of SGN service volumes as part of MEAV (overstated by 38%)</p> <p>Connections and reinforcements allowed in the Cadent baseline have not been added to the CSV hence mismatch between costs and volumes used in the regression</p> <p>Incorrect data has been used to derive the throughput adjusted unit costs for the Pressure Reduction assets of NTS Offtakes, Pressure Reduction Stations, and District Governors which requires updating</p>
Category	MEAV Value (%)								
2010/11 Actual	~48.1								
RIIO-2 DD	~47.0								
RIIO-2 Corrected	~48.2								

There are several other factual and application errors that we have identified with the DD which we have summarised in our detailed response. A large number of these have already been provided to Ofgem's cost assessment team as part of the DD query process.

ii. A totex methodology that is incomplete as it omits significant costs which are necessary to establish a robust relative and absolute totex efficiency assessment

The DD proposes to estimate an efficient benchmark level for totex across all GDNs hence it is important to ensure that there is consistency in the costs being assessed and that trade-offs that look to optimise at a total cost level are reflected. We think Ofgem needs to correct some of the data going into the totex regression to meet this aim.

The single model used is described as a ‘totex model’ when it omits a significant proportion of total costs which are instead assessed through technical assessment. The approach might best be described as a “partex” (partial totex), as opposed to a “totex” model. Some of the omissions are not consistent with Ofgem’s stated intent (in 3.139 of the Gas Distribution Annex) to only technically assess costs which are discrete in nature, being uncommon across networks, lacking historical comparisons or having highly unique characteristics.

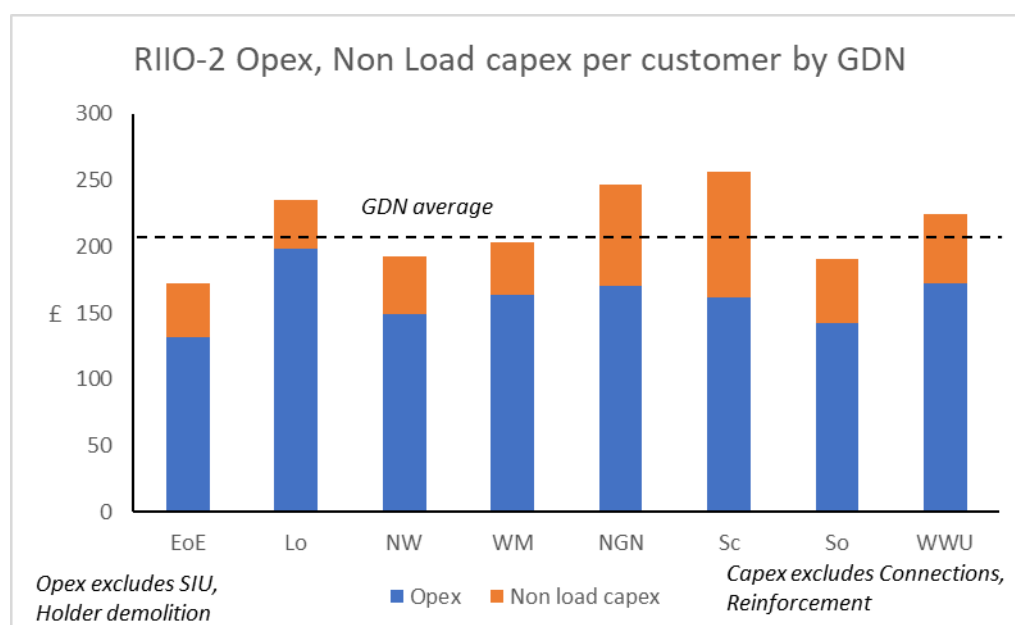
Ofgem has excluded Information Services capex costs from the regression and technically assessed them despite (i) these underpinning delivery of the core services across the GDNs which are part of the totex regression such as repex and emergency response and repair; and (ii) there being significant historical benchmarking data. These costs lead themselves to being modelled and benchmarked. In addition, there are several trade-offs between capex and opex which mean that modelling them together in the regression will allow a valid network comparison to be made. Hence, we believe they should be reinstated into the totex regression.

The exclusion of these costs from the totex regression biases the analysis significantly against (and disproportionately impacts) Cadent in addition to reducing the reliability of the benchmarking and overstates the efficiency of NGN and SGN as Cadent is significantly more efficient in areas of the technically assessed costs than NGN (such as IS and LTS Other capex spend). In this case, the DD proposes to over reward NGN for its IS capex at a level 17% more than we proposed in our plan.

The DD proposals also contain inconsistencies between networks of costs excluded of technical assessment and modelled through the regression. Ofgem have excluded other companies’ LTS projects but not Cadent’s from the regression creating a material distortion to the modelled totex in the regression to the detriment of Cadent and contributing further to an incorrectly calculated efficiency gap.

For example, the chart below shows an overall comparison of relative opex and non-load related capex costs per customer by GDN (we have excluded repex as this naturally varies across networks dependent on remaining iron pipe populations). This shows that the two most expensive networks are the two which are deemed to be setting the efficiency frontier in Ofgem’s benchmarking methodology and one of the networks with the biggest proposed catch-up efficiency East of England is the cheapest. This shows the distortions that the proposed methodology delivers.

Figure 5 - Proposed opex and non-load capex comparative cost per customer



The same totex-approach logic applies to the treatment of iron stubs (short lengths of mains that form part of the HSE Iron Mains Risk Removal Programme (IMRRP)) which are part of GDN's normal repex costs and hence should be included in the regression, but they have been excluded for NGN and SGN who have asked for these to be covered in an uncertainty mechanism (which should not automatically preclude their inclusion in the totex regression – see footnote 125 of the Gas Distribution Annex). It is not logical to exclude these costs from the comparative regression as all gas distribution networks have the same statutory obligations and omitting them creates inconsistencies in the relative assessment, which further undermines the robustness of the regression modelling.

Furthermore, to ensure consistency and a fair and robust totex assessment, we believe Ofgem should also include shrinkage costs in the regression as these are part of the overall totex and trade-offs and optimisation.

- iii. A methodology that relies on a single model which is very sensitive to the input assumptions and regression driver choices and fails key statistical tests - which would suggest it is weak at explaining network differences and is therefore unreliable.**

The DD proposals depart significantly from previous Ofgem methodology and best practice by other regulators (and the CMA) on cost efficiency benchmarking. We would highlight the following key points:

- The proposals are based on a single model whereas precedent suggests regulators should develop a rich picture and use results from (and triangulate) multiple models with different weights and drivers given the ability of models to reflect differences in relative data. This is also what Ofgem is proposing for the upcoming RIIO-ED2 price control. See Table 2 below.

Table 2: Reliance on multiple models in other past and future proposed regulatory reviews

Regulatory review	Modelling approach applied
GDPCR1	A blend of top-down and bottom-up models
RIIO-GD1	A blend of top-down and bottom-up models
PR14	A blend of top-down and bottom-up models
CMA Bristol Water	A blend of top-down and bottom-up models
PR19	A blend of top-down and bottom-up models
RIIO-GD2	A single model
Proposal for RIIO-ED2	A blend of top-down and bottom-up models

- The model fails the key statistical test (the Reset Test) which should raise significant concern over its robustness and reliability, and whether differences in the results from the model reflect efficiency and not other factors.
- The model does not reflect the fact that the bottom up benchmarking models had a poor statistical fit which ought to have led to the conclusion that the benchmarking drivers that were taken from this bottom up assessment and used in the top down assessment are unreliable and did not fully reflect efficiency.
- The modelling has not properly considered evidence such as that provided through the CAWG meeting in March 2020 relating to a better CSV driver for emergency which better reflects network differences in public reported escapes per customer across networks. This disproportionately and materially penalises our London network.
- The results create network differences that do not look plausible. For example, there is a marked difference in modelled efficiency between Cadent's London and East of England networks and North West and West Midlands networks, whilst they are operated with the same processes and access the same support services – see Table 3 below. As these two networks are clear outliers, this would suggest further checks should have been applied resulting in a review of the models used.

Table 3: Cadent GDN's efficiency scores as set out in the RIIO-GD2 DDs

GDNs' efficiency scores (RIIO-GD2 period)

GDN	Efficiency Score
EoE	1.10
Lon	1.17
NW	1.04
WM	1.04

The move to a single model (and the change to what was considered as included in modelled totex) was not one of the methodologies discussed at any stage in the CAWG. This was a surprise and together with the other computational errors in the models and challenges in understanding how the regression model and other assessments have linked together, it has

been difficult to respond effectively to what has been proposed. In any event, as set out above, we believe Ofgem should aim to include costs in the totex regression as much as possible to improve the model's ability to reflect overall totex efficiency and use multiple models to recognise the limitations of the approach to reflect all network differences in making other decisions in the cost assessment approach as referenced below.

iv. An approach to benchmark at the 85th percentile which does not reflect the risk of error in its underlying single regression methodology it is reliant upon.

The DD proposes to set the efficiency benchmark at the 85th percentile. Given the unreliability of the underlying data and methodology it is reliant upon such an assumption is very difficult to defend – and is inconsistent with the approach other regulators and the CMA have taken.

The benchmarking assessment relies on a single 'partex' model (not a robust reflection of totex) that fails a number of key statistical tests and has poor explanatory power as discussed in points ii and iii above. The guidance from CMA precedent is clear that the percentile applied in benchmarking must reflect the level of confidence in the modelling. In the Bristol Water appeal in 2015 the CMA noted the importance of choosing a benchmark that reflected the robustness of the models and data being used (in this case they used seven and cross checked against further sources of data):

"regulatory precedent from Ofgem and the CC has also recognised that a less demanding benchmark than upper quartile may be appropriate in cases where there was less confidence in the modelling results. The effect of modelling error and limitations will tend to mean that an upper quartile benchmark will require levels of efficiency that are, in practice, greater than the upper quartile." - Bristol Water Final Determination 2015¹, paragraph 4.222

The level of confidence in the approach Ofgem have adopted in the DD is low, compounded by both the use of a single model; one that has numerous data errors; omits significant components of totex and is subject to statistical test failure as set out above. Given those limitations (and statistical deterioration of the modelling as compared to RIIO-GD1), the evidence suggests that the DD proposals should have moved to a lower percentile than the Upper Quartile approach used in RIIO-1 rather than adopting a higher percentile. Indeed, with CMA advising the use of multiple models and suggesting that the benchmark should be set at the average company, a single model approach would suggest that using the median level would be more consistent.

The use of a high percentile is exacerbated by the removal of the IQI and its inherent glide path and the reduction in totex incentives. Consequently, the choice of benchmark is not coherent and balanced with the other changes made by Ofgem to the modelling methodology.

The move is out of line with both past regulatory precedent and Ofgem's own plans for RIIO-ED2 as set out in Table 4 below. As discussed in point ii above such regulatory precedent is based on a robust consideration of how the modelling and efficiency assumptions interact.

1

https://assets.publishing.service.gov.uk/media/56279924ed915d194b000001/Bristol_Water_plc_fin_al_determination.pdf

Table 4: Approach to setting the benchmark level of performance in other past and future proposed regulatory reviews

Regulatory review	Benchmark performance level
GDPGR1	Upper Quartile
RIIO-GD1	Upper Quartile
PR14	Upper Quartile
CMA Bristol Water	Average
PR19	81 st (4 th of 17 th) subject to appeal
RIIO-GD2	85th percentile
Proposal for RIIO-ED2	Upper Quartile

Ofgem state that the proposed approach is intended to avoid outperformance seen in RIIO-1 which used an upper quartile benchmark. In doing so it ignores other relevant factors and changes it is proposing to make in the rest of the RIIO-2 framework. The level of performance in previous periods is not an appropriate basis for setting a forward-looking benchmark. It fails to recognise that investment requirements of the future are not the same as the past – particularly relevant given the Net-Zero requirements of RIIO-2. It is contrary to Ofgem’s stated objectives that cost assessment will not anticipate sector-wide under or outperformance. It relies on an out of date view of what outperformance has been seen in RIIO-1 (where cost increases have been seen in asset health and mains replacement programmes have materially reduced the outperformance) and it is based on the incorrect assumption that GDNs have been funded to deliver efficiency improvements to this level.

Considering all the factors set out above, it seems implausible to move beyond an upper quartile approach. The evidence therefore suggests Ofgem should revise its 85th percentile approach accordingly in the FD. NERA have suggested that given the level of reliability of the models, a median approach is likely to be the most robust for the Gas Distribution sector.

v. A failure to appropriately reflect network differences that are not captured in the regression approach which delivers an erroneous efficiency assessment for our London and East of England networks

Ofgem has only accepted 57% of our proposed regional factors (London and East of England) and £115m of the costs we have put forward to explain network differences on efficient costs have been disallowed.

This is particularly concerning given the extremely high level of efficiency benchmark. In the Bristol Water reference, the CMA concluded that if it were to apply a higher benchmark than the average company, it would have also been appropriate to (a) adjust for known company-specific factors for all 18 water companies, and (b) produce estimated levels of expenditure for each of the 18 water companies from each of its seven preferred models.

Ofgem has made several errors in properly considering the evidence we have provided on regional factors:

- On London pay the SOC code weightings and selection of time series are incorrect, ignoring the most recent year. This should be revisited.
- The approach does not recognise that multiple 'low materiality' external factors are all contributing to a significant regional challenge. Ofgem has applied an arbitrary materiality cut off which biases against London as it is the only network which has made regional factor claims and hence is impacted by this more than any other network.
- Ofgem should assess these factors as one claim for urbanity factors and apply the materiality threshold to the total not the individual items
- Guaranteed Standards of Service Payments (**GSOP**) – an efficient level should be included in Totex for GSOP as costs are not completely avoidable and London faces a materially different cost to other networks driven by a material exogenous factor outside of our control (i.e. the relative number of Multi Occupancy Buildings on the network) which drives the most significant component of GSOS payments (those relating to GSOP1 >24hr interruptions). This network difference is recognised in the proposed treatment of MOB's interruptions targets elsewhere in the DD proposals and hence should consistently be recognised in reaching an efficient cost level under these targets.
- RPEs – the calculation of the RPE allowances do not adjust for London factors instead using a normalised network which materially underestimates the costs that London will incur (c. £5m pa). This should be corrected

In totality this leads to outcomes which are difficult to explain and could have averted with application of a few simple sense checks. Similarly, Figure 6 below shows that the DD proposals suggest that the unit for mains and services replacement is lower for London than for Scotland and Southern even though it is acknowledged that there are costs factors that have been allowed for urbanity and regional pay. This clearly suggests something is wrong with the assessment and how the allowances have been calculated. Hence this further supports the need to address the issues we have raised above. A failure to do so would mean that the model failed to compare costs on a like-for-like basis and is therefore unreliable.

Figure 6: Mains & services Plan and DD



- vi. *Errors in data and application of the proposed methodology set out for the level of ongoing efficiency that need to be corrected as well as an error on the level that could reasonably be expected.***

Data and application errors

The DD proposes an ongoing efficiency incentive adjustment of 1.4% per annum for opex and 1.2% p.a. for capex and repex. The benchmark efficiency costs (used to determine allowances) have subsequently been adjusted by the difference between these numbers and the average ongoing efficiency included in the GDN plans (DD calculates this as 0.6% hence the implied differences are 0.8% for opex and 0.6% for capex and repex and 0.7% as an average)

There are errors in both the:

- calculation of the embedded efficiency assumption of the GDNs, which is understated; and
- estimation of the ongoing efficiency challenge which is overstated.

Combined, these errors materially overstate the ongoing efficiency challenge applied to Cadent.

The industry average has been calculated in error

- First, there are two data errors; Ofgem have treated NGN's embedded efficiency of 0.5% p.a. as a one-off single 0.5% rather than a compounding effect (hence it's underestimated) and secondly Ofgem have used an incorrect embedded efficiency profile for the ongoing efficiency for Cadent.
- Second, there are three formulae errors; taking the wrong base year, so dividing a four-year change by five and failing to use a seven-year forecast period embedded value as the adjustments have been made to apply from a 2018//19 base. And lastly the proposals assume a simple linear movement, but the GDN plans are front loaded, so the average embedded is higher in the plans than has been used in the calculation.

Correcting for these errors would produce an embedded industry average efficiency of 0.97% p.a.

Inconsistent application of the delta to the benchmark

The DD methodology is also inconsistent as the initial benchmark has been set by using the 85th percentile network, which in the presented analysis is Scotland (which had an embedded ongoing efficiency assumption of 1.0% within it). To be consistent with the rest of the proposed methodology, adjustments should be applied from the 1% p.a., though once the industry average is calculated correctly as set out above, this would give a similar adjustment.

Combining the correction of all these computational errors would **reduce the delta adjustments that has been applied to the plans from 0.8% p.a. to c.0.4 p.a. for opex and from 0.6% to 0.2% p.a. for capex and repex in line with the methodology**

outlined in DD. These errors are hence material, and amount to increasing the proposed allowances by over £100m for Cadent.

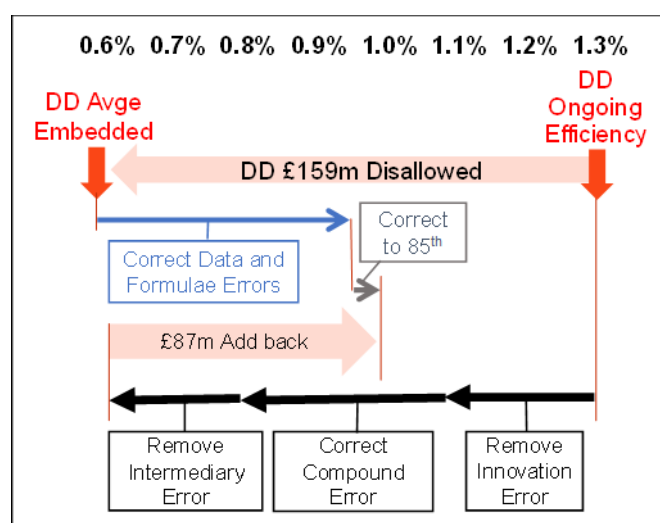
The methodology used overstates the ongoing efficiency potential

Furthermore, we do not agree with the proposed methodology to create the ongoing efficiency estimate.

- Ofgem appear to have ‘cherry-picked’ estimates within CEPA’s analysis which they warn against to create an extreme estimate for ongoing efficiency (which is unlikely to be achievable). The main argument for choosing the top of the range appears to be RIIO-1 outperformance but this is not a valid reason as the submitted RIIO-2 plans reflect the efficiencies achieved in RIIO-1 and embed efficiencies beyond that and hence RIIO-1 performance is not a valid reason to choose a more extreme estimate.
- For example, Ofgem have added an innovation stretch to the top of the CEPA proposed base range when related innovation will be present in the EU KLEMS industry data which the range is based upon and despite GDNs innovation over RIIO-1 being less than comparator groups used in the EU-KLEMS benchmark. Hence there is a double count of this effect, overstating the target efficiency by over 0.2%.
- The DD proposals are applying the Value Added productivity factor to totex, but by definition it should not be applied to intermediaries, e.g. materials, which make up 24% of Totex. Alternatively Ofgem could have used the Gross Output value (which is lower than the Value Added derived factor). This overstates the target efficiency by a further 0.2%.
- The CEPA figures used in the DD calculation appear to be quoting the simple arithmetic average of 12-month productivity growth rates and is inconsistent with the way in which Ofgem is applying productivity growth rates in its base RIIO-2 totex calculations – i.e. Ofgem is using compound productivity growth to rebase 2018/19 efficient expenditure through to 2025/26. This overstates the estimate by up to 0.3%.
- The proposal to use of a simple average for combining different market benchmarks which underweights the main market that we work in, construction, which leads to a c.0.2%-0.3% over-statement of the ongoing efficiency potential.
- By taking a mix of two business cycle periods, the CEPA values used in the DD proposal are placing too high a weight on the pre-2009 recession which results in a level of ongoing efficiency at a rate far higher than current (excluding Covid impact) UK expectations through to 2021/22, this overstates potential efficiency by the level by c0.1%-0.2%.

We do not believe that Ofgem should simply combine all the adjustments from these methodological errors together. Using a more robust methodology built from the underlying evidence, we consider that a reasonable target for ongoing efficiency should be an average 0.6% p.a. across opex, capex and repex - not the 1.3%p.a. proposed in the DD as shown in the diagram below.

Figure 7 Adjustments required to the ongoing efficiency estimate



In conclusion, **we believe there is no robust evidence to apply an additional adjustment to ongoing efficiency beyond that contained in our business plan (0.94%p.a.) or indeed the RIIO-1 assumed level of 0.83% p.a..** The evidence and CEPA's analysis points to our plan being more stretching on ongoing efficiency than where a reasonable expectation might be. In other words, applying the DD methodology correctly would result in an addition to the baseline allowance of c. £87m rather than the proposed catch-up efficiency challenge. This demonstrates that we provided an ambitious plan and one which we believed would set a new standard and move us to the efficiency frontier.

vii. The DD proposals were assessed pre-COVID and the impact on unit costs and ongoing efficiency also needs to be considered for Final Determination

We have provided analysis with this response which demonstrates that COVID is likely to have a downward pressure and delay on productivity and efficiency due to the overall economic impacts and the ongoing changes to working practices that have resulted from the need for social distancing. We have provided analysis by Complete Strategy that demonstrates that *"Ofgem's assumptions for long-term productivity growth should be reduced by between 0.3% p.a. to 0.9% p.a. to take account of the potential impact of COVID-19 on the ability of gas distribution businesses to secure ongoing productivity gains"*.

If Ofgem does not amend expectations in response to a worldwide pandemic, this would amount to stating that productivity is immune from any factor and therefore exists in a vacuum.

Combining both the correction of computation and methodological errors in point vi above and this COVID impact, **we believe Ofgem should be applying an additional negative ongoing efficiency adjustment to our plans (i.e. adding to the plan rather than subtracting)** to reflect that Cadent's ongoing efficiency assumptions in its plan are too stretching given we had not factored in the impacts of COVID.

3.2 Proposed workload disallowances

The DD proposals fail to provide any funding for managing critical steel and iron assets (not part of the HSE's Iron Mains Risk Replacement Programme).

GDNs have a duty to ensure that our networks are maintained in an efficient state, in efficient working order and in good repair. This obligation is not limited to areas covered by HSE enforcement or improvement notices

We believe therefore that the DD needs to be reviewed carefully as it provides no funding for managing critical steel and iron assets that fall outside of the Iron Mains Risk Replacement Programme (this is contrary to the intent set out in paragraph 1.11 of the Gas Distribution Annex). This means the proposals fail to enable GDNs to finance their regulated activities.

i. Steel Mains and Pipes Above a Safety Threshold (Tier 2B and 3)

The DD proposes to reject all investment in steel mains (>2") and a portion of Tier 2 and 3 Mains above a safety threshold despite a large proportion of these investments having paybacks less than 16 years, an inconsistency with Ofgem's proposed methodology. The DD also provides no alternative funding in the absence of replacement to manage the asset risk such as maintenance and repair costs. These are both errors that need correcting.

We have provided a clearer breakdown of the investments which pass Ofgem's cost benefit test and hence should be funded as well as evidence on the maintenance and repair costs for those that do not.

ii. Reduced depth of cover

The DD proposals have not provided any funding to address the emerging risk of reduced depth of cover on our pipeline assets in our East of England network due to soil erosion. We have provided further expert evidence that this is an issue specific to the East of England and that this work is needed to ensure we can continue to deliver a safe and reliable supply to our customers and meet our statutory obligations to protect the public.

These errors should be corrected to allow us to fulfil our statutory obligations

iii. Technical Assessments and the Partex Model

The DD has removed the **IS project capex** from baseline funding and proposes to deal with them through an uncertainty mechanism. In addition, these costs have been removed from the top down benchmarking assessment and treated as a technically assessed cost which is a significant change from RIIO-1 for which no rationale is provided.

We do not believe this is the appropriate treatment for Gas Distribution. Unlike the transmission networks which can have large IS projects which are driven at specific outcomes, Gas Distribution IS spend is typified by smaller projects and underpins the delivery of all the core outputs which are homogenous across the networks. Hence the costs should be treated as part of totex and benchmarked alongside the operational costs to ensure that overall efficiency is properly assessed. To separate them as Ofgem propose in DD undermines the robustness of the overall benchmarking and distorting the overall efficiency assessment.

Likewise, some **LTS and Other Capex** has been treated via Technical Assessment. Like IS, there are known and accepted Totex trade-offs and as such, in a top down methodology as that proposed in the DD, it is invalid to separate these costs. In proposing to do this it introduces bias to the analysis and effectively 'cherry-picking' is introduced.

The following table demonstrates the bias introduced by this methodology. The DD proposed methodology was not tested via the CAWG.

Table 5 – Comparative average spend on non-regressed costs

RIIO-2 Average GDN spend			
IT Projects	Cadent £26m	vs	NGN £40m
LTS/Other Capex Projects	Cadent £24m	vs	SGN £94m

Ofgem had assessed the IS plans in the DD inconsistently. We note that NGN has been given baseline funding despite Ofgem's consultants saying their data submission was weak and given that their proposed costs were considerably higher than those provided in Cadent's plan, which had a complimentary statement from the consultants. This does not look like fair treatment of the network companies and indeed is potentially detrimental of NGN customers, who are paying more than they should.

As stated earlier, we believe Ofgem needs to include IS capex and LTS/Other capex costs as part of the top-down totex benchmarking rather than the project by project approach taken in DD to ensure the policy intent of identifying an efficient benchmark for total costs is reached.

3.3 Independent Assessment from economic consultants NERA

We asked the economic consultancy NERA to undertake an independent assessment of the DD methodology and to challenge our views on what would constitute a robust methodology. Their independent report is attached as an annex in our response.

They conclude in their report that:

- *Ofgem's DD cost assessment make several errors which disadvantage Cadent*
- *Ofgem's approach to CSV weightings materially disadvantages Cadent*
- *Ofgem regression is mis specified*
- *Ofgem use of the econometric modelling fails to recognise its limitations*
- *Ofgem's London productivity adjustment fails to control sufficiently for London costs*
- *The reliability of Ofgem's modelling does not warrant a more demanding efficiency threshold*
- *Ofgem has made errors in applying its efficiency target to set allowances*

NERA also provide sensitivity analysis of applying different modelling approaches to the same dataset. These demonstrate a significant shift in the relative efficiency rankings in the DD and a significant improvement in the relative assessment of Cadent's networks.

Figure 8 – Summary of NERA sensitivity analysis

Summary of models - rankings						
Model ref	Ofgem DD (0)	Ofgem DD model with errors corrected (1)	Error Corrected DD model with density drivers added (2)	Error Corrected DD model with disag-weighted CSV weights (3)	Error Corrected DD model with company weights in CSV (4)	Error Corrected DD model with elasticities and company weights in CSV (5)
EoE	7	5	3	3	5	4
Lon	8	8	1	8	2	2
NW	6	2	2	2	3	3
WM	5	6	5	6	1	1
NGN	1	1	4	1	4	5
Sc	2	3	7	5	6	6
So	3	7	8	7	8	8
WWU	4	4	6	4	7	7
Adjusted R2	0.86	0.90	0.98	0.91	0.56	0.60
RESET test	FAIL	FAIL	FAIL	FAIL	PASS	PASS

The results show that:

- GDN rankings are very different across the five plausible models. Model 5 shows Cadent as ranking 1,2,3,4 as opposed to the DD which showed our GDNs as ranking 5,6,7,8.
- The most statistically robust model are Models 4 and 5 because they pass the RESET test – all other models failing. However, these models also have the worst fit of the data, as measured by the Adjusted R².
- The model that fits the data best is Model 2 with the density driver, under which London ranks top.

The NERA analysis supports our views set out above in particular:

- The data errors are material to the efficiency assessment.
- That a rich picture approach comprising a number of pieces of analysis should be used in setting the efficiency benchmark in line with what was undertaken for RIIO-1 and is being proposed for RIIO-ED2.
- Given that an individual GDN can be anywhere between the most efficient and the least efficient, it further highlights the risks of setting a benchmark at the 85th percentile
- That the pre-modelling adjustments for London's Regional Factors in the DD are inadequate. For example, Model 2 with the density drivers, has the best fit of any model, with density drivers which are statistically significant at the 99% level, and would result in a cost allowance for London that is £131m more than Model 1, the error corrected DD.

3.4 Summary and next steps

Significant change is required to the DD cost assessment proposals to make them fair and robust and to ensure that Ofgem is providing allowances that enable Cadent to finance its activities and statutory obligations.

We recognise the scale of work required to correct the errors and weaknesses of the overall methodology. We would suggest that Ofgem should reassess its modelling and consult again on a revised methodology and corrected models in October well in advance of Final Determination such that the problems encountered with the DD proposals are avoided. A summary of the steps we believe they should take are shown below:

1. Correct the errors in the underlying data and application of their methodology ensuring consistency in treatment.
2. Revisit the regression benchmarking methodology ensuring common costs are included in totex (such as IS, iron stubs and shrinkage) removing the partex approach.
3. Use multiple models to create a richer picture of comparative efficiency using more robust CSVs, different weightings and time periods.
4. Revise the level for setting the benchmark percentile down from the 85th. Using a single model methodology would suggest a median approach would be more applicable.
5. Correct the errors and reassess the application of the materiality threshold on the assessment of regional factors.
6. Correct the errors in the application of ongoing efficiency methodology and the underlying methodology itself.
7. Assess the further changes needed on ongoing efficiency and productivity in to account for the impacts of Covid.
8. Ensure there is adequate funding to manage the risk of our highest risk assets.

4. Outputs and Incentives Framework

The output framework needs some recalibration and refinement to provide a proportionate balance of risk and reward

We are concerned that the Draft Determination does not meet the stated intent of the RIIO principles in that the current proposals place a much greater reliance on *ex-post* assessment rather than *ex-ante* incentives and does not currently provide a balance of risk between consumers and network companies in how the framework is calibrated.

In particular, we believe Ofgem need to address four areas in its proposals:

- a) Removing some of the over-granularity of Price Control Deliverables to encourage innovation, not overly constrain positive incentivisation and reduce regulatory burden.
- b) Refining the common output delivery incentive proposals to ensure they are calibrated appropriately and reward networks for delivering better service to their customers.
- c) Embracing the evidence we have provided for new bespoke incentives
- d) Refining the calibration of uncertainty mechanisms by reducing the default materiality threshold, aligning reopener windows and ensuring cashflow timings issues are reflected in the financeability assessment.

In addition, we believe Ofgem should remove the proposed outperformance wedge given the interaction between the proposals across the package (this is covered under section 4).

a) Price Control Deliverables (PCDs)

DDs have introduced much greater granularity in Price Control Deliverables than anticipated.

NARMS

The DD propose to introduce a fundamental change in the NARMS methodology (which was not referenced in the main consultation document but contained within the NARMS annex and not previously discussed at the stakeholder working group through the RIIO-2 development process). This effectively renders it as a Price Control deliverable at a project by project level for all asset health spend, with an ex post efficiency review instead of relying on the totex incentive mechanism. The DDs propose that the incentive to trade monetised risk across asset classes is all but removed, with networks only able to keep 2.5% of any benefits delivered.

Ofgem has **departed significantly from the intent of monetised risk and being able to trade risk** and instead moved the focus onto the inputs and cost. This fundamentally shifts the focus of the mechanism and in effect, what is proposed is a hugely complicated PCD which is simply measuring whether the stated plan has been delivered through an *ex post* assessment. The outcome of this is that the incentive to innovate to find more effective methods of delivering outputs is removed and there is little or no incentive to optimise overall risk at lowest cost.

Additionally, Ofgem have been unable to provide details of the interactions of NARMS, other PCDs (such as repex), the totex incentive mechanism and the benchmarking allowance setting. For example, the NARMS proposals define a volume for a network to deliver, but this volume is not included in the benchmarking CSV driver and hence might be creating inconsistencies in relative costs if asset health work deviates across networks.

Repex PCD

The DD proposes additional complexity to the repex PCD to define abandon lengths rather than lay, which runs the risk of being based on unreliable data given no networks capture and report abandon cost data currently (and indeed the contractor market does not quote for jobs on this basis hence the new approach will require expensive changes to our reporting systems). In addition, the repex PCD has introduced a complex set of rules for over and under delivery, which introduces thresholds for mains and services and then links to the NARMS methodology. Further consideration should be given to how these mechanisms interact and we would propose that they are kept separate to avoid unintended consequences, increase transparency and reduce regulatory burden.

In addition, there is a disconnect between the methodology used to set an overall totex allowance (the 85th percentile company) and the proposed repex PCD unit costs which are based on average. Ofgem should ensure that the disaggregated costs to be used for PCDs are consistent with the way the overall allowances have been set.

Capex PCD

A new capex PCD has been introduced which has not previously discussed to cover all projects outside of NARMS some of which have materiality <£1m p.a.. We do believe that monitoring delivery at this level of granularity is proportionate or that the regulatory burden is in customers' interests.

Proposals to remove the excessive constraints

The combination of the DD proposals above mean that all workload (other than opex) is essentially subject to a PCD. Whilst this meets the intent to ensure that outputs are delivered for companies to be able to earn the allowance, the granular nature of all these PCDs means that incentives to drive efficiency and innovate to deliver the outcomes in a different way (a major cornerstone of the RIIO regulatory principles) has been lost.

Each element of the proposals seems to seek to lock down inputs as much as possible damaging incentives to innovate. In addition, the risk balance has been materially altered with the introduction of *ex-post* efficiency tests. Furthermore, the DD proposes that partial non-delivery of the outputs in PCD's could result in the complete loss of allowances for the activity which is not proportionate.

We believe Ofgem should reduce the granularity of the mechanisms to enable more innovation and ease the regulatory burden. For example

- i. rely on the totex incentive mechanism for NARMS and revert to the RIIO-1 methodology;
- ii. keep the repex PCD based on lay rather than abandon and separate from NARMS;
- iii. introduce a materiality threshold for the capex PCD to only include projects above 1% of annual revenue (£16m); and
- iv. review the logic of the rules for non-delivery to be proportionate.

b) Common Output Delivery Incentives (ODIs)

The common output delivery incentive framework can be enhanced

We have set out our proposals for how the DD proposals for the common output delivery incentives can be enhanced to deliver Ofgem's policy intent and to ensure a fair and robust set of targets which meet Ofgem's criteria for the assessment of financial ODIs set out in the Business Plan guidelines.

Specifically, our views on what Ofgem should address with regards to the common output delivery incentives are:

Leakage incentive – As the incentive has been constrained to isolate actions from pressure management and gas condition, Ofgem should ensure that the impact of exogenous factors on these is mitigated such as weather. We have proposed a several options which would achieve this. If these options are not acceptable then Ofgem should revert to the RIIO-1 incentive formulation or remove the financial incentive entirely to avoid performance being driven by exogenous factors rather than networks actions.

Customer Satisfaction Incentive – We have set out that for Ofgem to meet their policy intent that there should be no penalty to networks for performance above the RIIO-1 maximum reward position, the target at which penalties should apply should be set to 9.0 for the Emergency and Repair survey, 8.5 for planned work and 8.4 for connections. We have also set out proposals for how the statistically significant difference in response by survey type can be adjusted for in the mechanism (based on evidence seen in the trial). This will appropriately incentivise networks to seek to use their customers' preferred channel and not be unduly incentivised to push them to respond by phone which statistically gets the highest scores. In addition, we have set out evidence from several industries of why the targets for London need to be adjusted to reflect the statistically significant difference in customer expectations for that network.

Complaints handling incentive - we support the proposed methodology

Interruptions incentive - To ensure a robust methodology, Ofgem should set targets where all networks are 'allowed' 4 major incidents or remove major incidents from the measure. Ofgem should explicitly recognise and acknowledge the limitations of relying on average duration and not reflecting avoidance of interruptions.

c) Bespoke ODIs

We believe Ofgem should incorporate additional bespoke incentives

The DDs propose to reject the vast majority of our proposed bespoke output delivery incentives and we believe the significant customer evidence we provided has not been appropriately considered. We would particularly like to draw Ofgem's attention to the areas below where our customers and stakeholders continue to tell us these are high priority areas.

Coordinated Streetworks incentive

In line with guidance set out in the DD, we have been working closely with SGN and the Greater London Authority and have set out our proposal for a new bespoke

output delivery incentive on coordinated streetworks. We are proposing an upside only incentive with a cap of 0.5% of annual revenue to encourage collaboration to reduce the disruption on streetworks and reflecting the social value of disruption to gas consumers (there are several wider benefits that this activity will generate but these are not proposed to be rewarded in the initial design of this incentive). We are proposing a mid-period reassessment of the incentive as more evidence has been gathered from collaborative projects to test the social value and consider how to treat other benefits. The proposal includes information dissemination by the GLA to other stakeholders so that learning can be shared, and we hope that this incentive serves as a blueprint for similar incentives to be developed for RIIO-ED2 and in other sectors such as water and telecoms.

Whole System innovation incentive

In addition, we have set out further evidence of why we believe Ofgem should support an incentive on whole system innovation. This is a critical area in the road to meeting the UK's challenge of Net Zero at the lowest cost and least disruption to the end consumer and hence positive incentivisation in this area can play a valuable role. Ofgem have asked that we better articulate why our original proposal of a dedicated stakeholder engagement incentive on whole system thinking goes beyond business as usual. We have refined our evidence and proposal to show that there is a wide range of current practice on whole systems thinking at present. Given the critical role this has in delivering the Net Zero challenge, our proposal seeks to provide a positive incentive to innovate and find new best practice in engaging with customers and stakeholders to create new BAU benchmarks. Our proposal is supported by the Customer Engagement Group and influential regional stakeholders such as the Greater London Authority and the Greater Manchester Combined Authority.

Theft of Gas

We support the DD proposal to include theft of gas recovery in totex as this delivers the intent of the financial output delivery incentive that we put forward in our plan and is simpler and has less regulatory burden.

d) Uncertainty Mechanism design

The calibration of uncertainty mechanism design should be refined

There is an important interlinkage between how baselines are set for the uncertainty mechanisms (do they function around a base assumption of funding in the plan or are from a zero start point), the materiality threshold, the timing of windows and when costs will be recovered and hence the consequent cashflow and revenue impacts feeding the financeability assessment. It is important that these interlinkages are recognised and that the framework is consistent. We see little evidence in the DD proposals on how Ofgem have considered these interlinkages in their proposals. We set out our thoughts on the most material aspects of the proposed framework for UMs and then set out the impacts on financeability in section 5.

Baseline setting

Where possible, given the tightness of the financeability metrics at the proposed rates of return, a non-zero baseline should be explored for items where material cashflows are probable (i.e. the uncertainty is over the overall level and timing of the cashflow, rather than over whether the cashflow will occur at all). We support the proposals in the DD to establish

a baseline of funding for connections and reinforcement from which the uncertainty mechanism operates.

As stated in section 3, we do not believe the IT operational and capital spend should be in an uncertainty mechanism but should be considered and included as part of the totex benchmarking. We also suggest that a baseline level of funding is established for the London Medium Pressure replacement programme and any UM operating around this.

Materiality threshold

Ofgem should reconsider the evidence we have provided with regards to the materiality threshold. The DD proposal to set a materiality threshold of 1% of revenues post sharing does not meet the policy intent of keeping the threshold at a similar level to RIIO-1. We do not believe Ofgem have properly considered the evidence we provided that the RIIO-2 control is three years shorter than RIIO-1, the materiality threshold for costs per annum is higher and the sharing factor has moved to 50% from 64% for Cadent which means a higher level of costs is required before the threshold is reached post sharing. Taking account of these factors, we believe Ofgem should reduce the threshold to 0.5% of revenues post sharing to get a broad equivalence to the financial risks for networks and consumers to RIIO-1 as set out in Ofgem's policy intent.

Our financeability modelling was presented with a 0.5% threshold so we have analysed the impact of the DD proposal and discuss this in the financeability response in section 5.

We support the consideration of aggregation of smaller claims which would exceed the materiality threshold but would like to understand how this would work in practice in terms of timings and how the individual materiality thresholds would work.

We note the proposal to create the ability for Ofgem to initiate any of the UMs at the prescribed windows. We believe this would be reasonable provided the scope, conditions and rules are applied equally to networks triggering.

Reopener window timing

We believe the DD presents an overly complex set of different application windows for different uncertainty mechanisms. We propose that networks should be able to apply for a re-opener under any relevant UM in any given year of RIIO-2. However, networks should only have a maximum of two opportunities to make a submission for each given re-opener over the length of the price control period.

Timing within a given year

We are supportive of Ofgem's proposals to bring forward application windows from May to January in the relevant year, to support decisions being made in time for that year's Annual Iteration process (AIP). In line with our suggested amendments above, we propose network companies must signal their intention to apply for a re-opener no later than three calendar months before the relevant January window opens to support Ofgem's resource planning.

Need for development funding and admin costs

With particular regard to the Net Zero related UMs (but also relevant for other large asset related UMs), we believe there is a gap in the mechanisms proposed on how pre-construction and planning work is funded. We note that the Transmission Price Controls have mechanisms such as Pre-construction spending pots and closely associated indirect spend which provide ongoing funding for development of schemes which may result in assets that would be covered under UMs. We believe Ofgem should consider implementing

a mechanism to cover this risk to enable timely development of local area regional energy plans and feasibility and engineering and consenting studies. We have proposed an approach to set up a Net Zero Planning allowance or to modify the Network Innovation Allowance criteria to achieve the same aim and would welcome further dialogue with Ofgem on this idea.

The most material points on the UMs proposed

We set out our views on the Net Zero related mechanisms in section 5 below

We do not support the **Repex Tier 1 Iron stubs UM** – these costs should not be covered in an UM and instead be considered as part of the totex benchmarking as they are part of the mains replacement programme and not unique to any network. Hence, they should not be separately funded.

We support the proposal to have a mechanism which captures reinforcement required to deal with new load which has been put under the RIIO-1 UM title of “**New large load**”. However, given this is aimed at a broader set of new loads relating to smaller peaking power generation, compressed natural gas fillings stations and large scale new housing growth, the licence definitions will need careful consideration and the aggregation of different loads will need to be accommodated in terms of the materiality thresholds. In addition, the overall materiality threshold should be reduced as discussed earlier.

5. Financeability and risk/reward balance

The overall price control package as proposed is not financeable and does not meet the needs of investors to support the day to day business operations and will not deliver the required investment in UK energy over the next decade to deliver Net Zero. Within this is a financeability assessment that is undermined by errors in the draft determination cost assessment and the wider financing methodology. The consequence is that networks would be unable to finance their activities to deliver for consumers and the stated intent of ensuring networks maintain a solid investment grade rating.

5.1 Aiming down on Cost of Equity to the detriment of Net Zero

Ofgem have set out its aim to *'ensure that the price controls provide sufficient funding to the networks and the ESO to enable a wide range of Net Zero trajectories throughout the next decade'*. The current cost of equity assumptions in the Draft Determination does not do this and instead introduces a systematic downward bias that cherry picks low spot estimates at every opportunity and therefore will fail to attract the much-needed investment in the UK energy system over the next decade. Not only does this threaten Net Zero delivery but also endangers the credit rating and financial health of the networks within the current scope of their operations.

The level of base return proposed as part of the RIIO-2 package is below levels that infrastructure funds use to raise capital calling into question the ability to raise the necessary equity capital to fund net zero. We acknowledge Ofgem is looking to implement a more dynamic price control and allow flexibility for financing net zero. Ofgem needs to consider the timing and return levels available to secure new capital into the sector.

Our investors have given careful consideration to the RIIO-2 package that Ofgem has proposed in the DDs. They have concluded that the package is less attractive than alternative investment opportunities as Ofgem's proposals work to increase risk and dilute returns and highlight the following reasons:

- Reductions in the allowed cost of equity, combined with a less generous incentive regime, places a strain on the ability of investors to secure acceptable returns;
- The introduction of an unjustified concept of an assumed 'outperformance' wedge which serves to just reduce expected returns
- The proposed modifications to the incentive framework shifts gas network regulation from an ex-ante basis to an inherently more risky, ex-post basis;
- The requirement to undertake cost benefit analysis with a 16-year time horizon, prompts concerns that some gas distribution assets might become stranded;
- The increasing and disproportionate complexity of the RIIO-2 framework makes it difficult for companies and their investors to understand the regime and predict the financial outcomes; again, this adds to risks; whilst
- The uncertainty created by Brexit adds a premium to the return sought from investments in the UK.

Furthermore, Ofgem's estimated range of Return on Regulatory Equity (RoRE) is not consistent with the rest of the proposals set out in the DD and does not represent a credible range. For example, the +/- 10% range shown for totex incentive performance is not credible given the assumption that a baseline cost is being proposed £700m below our plan and on top of £500m efficiency already embedded and required to meet the plan. In

addition, the range does not reflect the significant risk of *ex-post* assessments meaning costs incurred are typically not fully recovered as well as reopeners requiring pre-funding of material proportions of expenditure. This introduces additional stress to the baseline level of return and investor expectations and sentiment around the draft determinations.

We have set out in our response evidence around the individual parameters with additional evidence in the form of external independent reports. The table below summarises several of the areas on cost of equity where the DDs demonstrate a downward bias.

Table 6 – Downward bias on CAPM parameters

Parameter	Ofgem	Oxera (Mid)	Downward bias
Risk free rate (i)	-1.48%	-1.0%	Convenience premium for using government bonds. There is a gap between corporate and sovereign risk-free rate that is not acknowledged
TMR (ii)	6.5%	7.25%	Downward bias on inflation adjustment and historic averaging methodology impact the DD results that do not cross check to dividend discount models.
Asset Beta (Risk) (iii)	0.37	0.4	CAPM systematically underestimates Beta for political and regulatory risk; and Ofgem's expanded sample of European comparators suffer downward bias due to illiquidity of stocks in the sample.
Debt Beta	0.13	0.05	Not capturing risks over and above credit risks e.g. interest rate risk; results in omitted variable bias
Cost of Equity	4.3%	6%-7%	

The impact of this downward bias is compounded by the Step 2 cross checks that further reduce the CAPM values by 0.1% and below the midpoint of Ofgem's range that has already (as demonstrated above) taken a low estimate. The strength of evidence does not exist to adjust the cost of capital. These are not precise comparisons and, given the proximity to the midpoint of the Ofgem range, offer little confidence that any further downward adjustment is required. When combined with a further downward adjustment for the allowed vs expected return (discussed below), this leads to an overall outcome that will fail to give investors the confidence to fund the investment needed to deliver the UK's Net Zero targets or provide investment grade ratings for licencees.

5.2 The impact of the CMA water referrals and the relative risk of Gas Distribution

We recognise that the CMA's forthcoming determination on PR19 referrals on the appropriate cost of capital for the water sector will give Ofgem a further data point to consider in setting the appropriate cost of capital for the Gas Distribution sector. Areas of

focus include the CMA decision on Total Market Returns and risk-free rate. We also agree with appellants concerns around the lack of funding for efficient financing decisions such as swapping nominal to index linked debt.

We recognise there are similarities between the risks that investors in UK regulated utility networks bear within the confines of a regulatory period. Gas distribution, transmission, electricity distribution and water and sewerage companies are all nowadays regulated under a broadly similar regulatory framework.

However, within the gas industry the risk to public safety of failure of our assets is one that is closely managed by networks and monitored by the HSE. In our assessment, the most material factor that currently distinguishes the regulated networks is the risk that investors currently perceive to long-term revenue recovery in the gas industry. The government's 2050 "net zero" commitment inescapably means that there will have to be changes in society's use of natural gas, particularly with regards to the country's heating systems. We firmly believe that the gas network will play a fundamental role moving forward. However, we note that Ofgem itself acknowledged in its draft determination that there are FES2019 scenarios in which gas volumes might fall to such a degree as to mean that the RAV becomes less viable at each price control review. Ofgem also cautiously applied a CBA payback cut-off of 2037 to all mains repex in the draft determinations to minimise the risk of future asset stranding.

We also have first-hand experiences that make it clear that investors are increasingly becoming aware of the risks and that this is colouring their views about required returns. Indeed, during our latest bond issuance specific investors declined to participate for precisely these reasons.

Hence, our conclusion is that the gas distribution sector is higher risk than water. We therefore believe Ofgem should consider this in both its underlying CAPM decision and through the step 2 cross checks.

5.3 Outperformance wedge and allowed vs expected returns

We strongly disagree with the concept of adjusting for expected outperformance in principle. Including this concept would be an error and we believe Ofgem's drive to promote legitimacy comes at a cost and risks future investment in UK infrastructure. This adjustment has been noted by Moody's as credit negative and investors are seriously concerned about the impact of the outperformance wedge on the perception of regulatory risk and on their ability to source funding in support of net zero.

It is important that this mechanism is removed by Final Determination.

Evidence why the outperformance wedge is not required

We acknowledge that Ofgem has listened to previous feedback and made efforts to create an analytical framework using historical data to size the adjustment. However, Ofgem's analysis does not identify systematic and sustained outperformance in any direct way and does not adequately recognise the policy changes already applied in the RIIO-2 framework. The evidence does not exist to support the assumption with no direct link between the analysis presented and assumption taken forward (0.25%).

Ofgem have already proposed a significant number of interventions which materially reduce the scope for outperformance and to address the potential risks from information asymmetry. Table 27 in the DD finance annex outlines several considerations regarding expected

outperformance that Ofgem have reviewed in assessing their approach. The analysis in this Table 27 hugely understates the significant changes to Ofgem policies in the DD and the resulting impact on expected outperformance. For example:

- Impact of the loss of efficiency glidepath within the Information Quality Incentive.
- Reduction in the scope efficiency opportunity because of widespread introduction of PCDs across all capital and repex works.
- Significant increase in the use of uncertainty mechanisms with an increased materiality threshold with greater risk of non-recovery.
- Fundamental changes to the benchmarking methodology (such as using the 85th percentile).
- The Business Plan Incentive introducing extensive minimum requirements with significant penalty mechanisms for failure with zero proposed rewards for quality across the sector.
- Requirement for additional scrutiny by company and Ofgem customer challenge groups on draft plans and reports.
- A shorter price control explicitly to reduce risk and impact of miscalibration.
- No unbounded Output Delivery Incentives with effective cap on rewards available and overall RAMs capping overall potential rewards.

Furthermore, the DDs identify alternative policies to address the perceived systematic and sustained outperformance. These alternative policies are all rejected in favour of the outperformance wedge whereas the four proposed alternatives have also been introduced to some extent in the DD proposals.

The table below demonstrate this assumption is inconsistent with the wider framework proposed in the DD and is expanded upon in the Economic Insight report provided alongside our response.

Table 7 – Policy Alternatives to outperformance wedge in DD

Policy Alternatives to Outperformance Wedge	Implementation in draft Determinations (illustrative not exhaustive list)
Set neutral cost and performance targets	Cost challenge set at the extreme end of all parameters with 85 percentile benchmark and at the top end of ongoing efficiency range, introduction of RPE indexation
Lower Incentive strengths	Zero reward for business plan incentive, removal of stakeholder incentive, reduction in strength of shrinkage, removal of exit capacity and lower totex sharing factors
Asymmetric incentives or incentive strengths	Downside only incentive on interruptions, dead band on CSAT to achieve reward but not for penalty, GSOP unfunded in RII02 (downside only), Streetworks fines and penalties unfunded, BPI increased minimum requirements with penalty and increased scrutiny from customer challenge groups, CVP majority discarded
Competed, fixed or zero pot for incentives	All output incentives capped creating a fixed pot for funding, RAMS mechanism to constrain overall returns

Economic Insight have independently assessed the proposed DD measures that are explicitly aimed at reducing expected outperformance. They summarise their findings as:

“We start from Ofgem’s assessment that firms are expected to outperform at RIIO-2, and so, the regulator believes, this needs to be adjusted for. Whilst Ofgem’s policy position is to directly address this through the application of an adjustment to the allowed cost of equity of -0.25%, in practice we find that Ofgem has, in fact, also made numerous changes across the price control framework, which together more than offset the regulator’s view of what the expected outperformance would otherwise be. Although there is some uncertainty, we conservatively estimate that Ofgem has tightened the price control by the equivalent of -1.38% RoRE. There are also further changes explicitly introduced to remove areas that Ofgem perceive to have driven outperformance in RIIO-1. If these are included, the total impact of Ofgem’s changes at RIIO-2 increases to -2.50%, compared to RIIO-1. In light of Ofgem’s proposed adjustment of -0.25% for expected outperformance, its Draft Determination position therefore represents a material ‘overcorrection’. In turn, this will result in an efficient firm facing an expected return well below its allowed return. Furthermore, in our view, at present the appropriate evidence to establish either the need for, or size of, any adjustment for expected outperformance remains absent.”

Hence, Economic Insight’s conclusions provide further evidence that the proposed framework already significantly constrains expected performance *before* the introduction of the outperformance wedge.

Indeed, Ofgem have recognised the limitations of the outperformance wedge in the DD by introducing an approach to adjusting allowances *ex-post* if the expected outperformance does not materialise. However the proposed *ex-post* approach is not consistent with Ofgem’s duty to individual networks as it would only apply at a sector level not a company level (this issue was recognised in RAMS where this is now proposed to be applied at a company level).

All of the above evidence clearly demonstrates the degree of over correction for information asymmetry and reinforces the **need to remove the wedge concept as well as reassessing the multiple overlapping controls that have been implemented across all aspects of the control** as illustrated in earlier sections of this summary.

5.4 Cost of debt

We continue to support full indexation of debt allowances, continuing the benefits seen by consumers in RIIO-GD1. The segmentation of Cadent from National Grid has a material impact on Cadent and GD sector cost of debt and this exceptional circumstance we welcome that this has been acknowledged and adjusted for by Ofgem in the DD.

We support the use of a trailing average for the Cost of Debt allowance, however the use of a 10-14yr trailing average does not reflect the tenor of the debt issued by the sector. While we recognise that either the iBoxx Utilities 10yr+ or A/BBB non-financial 10yr+ indices contains bonds that represent a reasonable match in terms of the tenor of sector debt, we see little justification to change from the current index. More importantly, a shorter index of 10-14 years trailing average does not capture the period in which c. 45% of sector debt was priced, which was issued prior to 2010. Not including these dates in the trailing average fails to capture the economic conditions under which almost half of the sector’s debt was priced. This also may encourage shorter debt tenors as company’s look to manage risk in line with the regulatory framework increasing refinancing risk for the sector. We therefore recommend a longer trailing average would be the most appropriate index to use.

Deflation risk

We recognise the challenges associated with deflating the iBoxx given the absence of CPIH-linked Gilts and agree with Ofgem that trying to use the RIIO-1 methodology of break-even RPI inflation and a wedge between RPI and CPIH is not the ideal solution.

However, the risk of value leakage from the transition to CPIH inflation post COVID-19 has increased placing another asymmetric downside risk to network returns. Steps could be taken to neutralise this risk by using outturn inflation to deflate the nominal index guaranteeing networks their nominal allowed return. COVID-19 presents a downside risk to inflation and introduces increase volatility as is demonstrated by current inflation levels. This represents further asymmetric downside risk for networks to manage.

Given the expected volatility, we believe it prudent to deflate the index using outturn inflation to match the inflation used to inflate the RAV, guaranteeing neutrality on cashflows, rather than forecast inflation from the nominal index that is highly variable.

Efficient use of derivatives

While we can understand that certain types of derivatives would not be appropriate to include in the calibration of the index, inflation linked debt (which is often more efficiently achieved via a swap) is assumed to exist in the notional company, improves interest cover metrics and support company risk management. As such, we believe these costs should be included in the calibration.

Cadent's swaps are used to efficiently raise debt in the available markets at the best pricing, swapping these to the desired currency or interest type; and this is often the most efficient way of raising debt. This is not a company risk management decision (as stated in 2.55, finance annex) as the notional company assumes 30% of debt is inflation-linked, and inconsistencies between the notional company financing assumptions and allowed income increases business risk.

Inflation-linked swaps, where the cashflows remain in the same period as if the debt had been raised as directly inflation-linked, should therefore be included in the calibration of the index as a feature of an efficient financing policy.

Recognising transaction costs

We support the inclusion of additional costs of borrowing being separately and transparently added to the index. However, we see significantly higher costs than we are being compensated for which need to be considered in light of the tightening of the control. These include:

- The cost of carry where we are holding significant cash balances in readiness for RIIO-2 refinancing activity and to cover cash risks associated with COVID-19. These are under-estimated by Ofgem by using end of year balances (not average cash balances) and untested judgements around the operations of group treasury functions.
- A basis risk from the transition to CPIH inflation. This risk is not being compensated for via additional costs of borrowing, however, there is a c. 15 bps premium for issuing in CPI linked format across our index linked portfolio. This internal inconsistency between actual transaction costs and the assumptions used in Ofgem's financeability assessment undermine the robustness of the financeability test.

- A new issue premium (reverse halo) effect of c. 9 bps and we ask Ofgem to review NERA's analysis of spreads that have adjusted for duration and a more reliable data set prior to the Final Determinations.

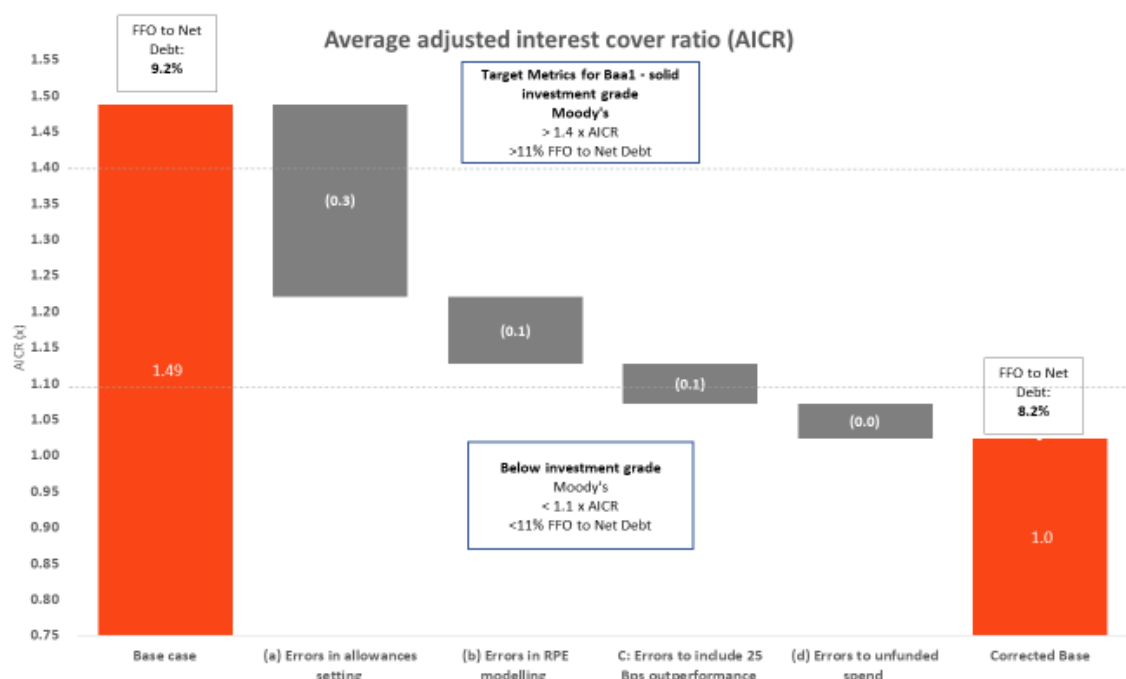
5.5 The DD fails to achieve Ofgem's duties and policy objectives on financeability

As stated in the DD (Finance Annex, 5.1, page 94) 'Ofgem has a duty to have regard to the need to secure that network companies are able to finance their activities which are the subject of obligations imposed by or under the relevant legislation'. The draft determinations also set out the view that Ofgem agreed with network proposals of targeting two notches above investment grade, that is BBB+/Baa1 rating. This allows networks to maintain a solid investment grade and be able to sustain credible downside risks.

The proposals as set out fail to meet both of these criteria and are undermined by an erroneous benchmarking methodology, the error of the outperformance wedge concept and errors in the methodology of aiming down and over corrections on all aspects of the price control.

Our assessment does not support the notional company maintaining a Baa1 rating in RIIO2 and in fact shows serious risk of downgrades below investment grade which would mean Ofgem fail in their financeability duties. Our analysis demonstrates that Ofgem's 4.2% base assumption for the cost of equity does not provide sufficient financeability headroom because of the errors across the rest of the package. The table below illustrates the impact of these errors to Cadent's Adjusted Interest Cover Ratio (AICR) and FFO to Net Debt moving from solid investment grade to below investment grade.

Figure 9 – Sensitivity analysis on AICR



In addition, to ensure the modelling of cashflows and analysis of rating impacts is consistent and robust, Ofgem need to ensure the following in considering this further for Final Determinations.

i. Correction of totex benchmarking position

As discussed in section 3 the quantum of errors in totex allowances means that the settlement is not financeable.

The financeability analysis is incorrect as it assumes the average notional company can deliver within the allowed totex. Due to the quantum of errors in the base case totex modelling, the base (and stress) tests completed by Ofgem do not reflect reality.

Our analysis shows a revised base case correcting for errors (but with Draft Determination allowances) with interest cover metrics below 1.1x (see figure 9 above) resulting in an effective targeting of Baa2 and are unable to withstand a downside scenario under stress test. The material and compounding errors in the Totex modelling undermine Ofgem's statutory duties and stated policy intent to target two notches above investment grade.

ii. Modelling treatment of the outperformance wedge

It is an error to assume a 4.2% base cost of equity in the assessment if that level is not guaranteed to every company. The proposal in DD to make an *ex-post* adjustment to the 25-bps wedge if the sector does not outperform will not guarantee this for an individual company and hence this would need to be changed to apply at a company level or the modelling should assume 3.95%. To do otherwise would be inconsistent with Ofgem's duty to enable us to finance our activities. Consideration of the timing of this recovery also needs to be made as it is currently described as a true-up at the end of the control so would only be realised in RIIO-3.

iii. Assessment the impact of Uncertainty Mechanisms

The increased use of uncertainty mechanisms puts pressure on cashflow and a greater requirement for shareholders to fund work upfront prior to receiving revenue. Given the minimal return levels proposed in the DD, this further increases the risks that equity investors face in their financing decisions. Hence, as discussed in section 3, it is important to avoid zero baseline uncertainty mechanisms where possible. The proposed treatment of IS cost and London Medium Pressure as UMs creates a c.£180m funding issue and hence is a further reason to agree a base funding for these costs. In addition, for the Net Zero related spend associated with uncertainty mechanisms, our proposal to create a pre-construction funding mechanism would mitigate risks from uncovered funding for these potentially large-scale projects. If these areas are not addressed then this will need to be recognised in the financeability assessment and associated cashflow modelling.

In addition, the modelling of cashflows needs to reflect policies on the timing and materiality thresholds for uncertainty mechanisms as they materially impact the timing of cost incidence and revenue recovery. We set out our proposals on these in section 4.

We provide further detail of our analysis of the DD proposals on financeability in the detailed response.

6. Reflecting customer needs now and in a Net Zero future

The DD proposals miss the opportunity to reflect the needs of our current and future customers

Reflecting our customer engagement

Our enhanced engagement programme received input from over 40,000 customers and expert stakeholders, which we combined with over 1m additional data points to inform the proposals that we built into our plan. Before submitting our plan we tested its acceptability based on its quality and affordability with 4,000 customers. Overall, 83% said that our plan was at least acceptable and only 2% unacceptable. Throughout our engagement programme, our independent Customer Engagement Group (CEG) provided robust and comprehensive challenge which we embraced and rose to. Indeed, Citizens Advice commented that “the Cadent CEG appeared to hold Cadent to the highest standards of practice not only within the energy industry but in comparison with other industries, such as the water sector”.

Through the six stages of engagement which included innovative approaches to willingness to pay and business options testing, we designed 23 bespoke ODIs, 9 bespoke PCDs and 33 items listed against our Consumer Value Proposition (CVP) representing a combined net social benefit value of £537m. Despite this, Ofgem’s draft determination rejected all bar one of our bespoke ODIs and all bespoke PCDs and CVP proposals.

Over the past 24 months we have fully embraced the requirement that Ofgem set businesses to develop and deliver an enhanced engagement programme that would ensure that proposals developed accurately reflected the views of customers and stakeholders. For us this was an opportunity to speak with and listen to thousands of our customers to not only develop a plan for them, but also to help to legitimise the industry we operate within and the role we play in it; to build a genuine trusted relationship based on listening to customer opinion and acting on it. We believe that the DD proposals have largely ignored the outputs of this process, not only failing to capitalise on the investment made in companies’ engagement programmes, but also reducing customer trust. Proposals have been significantly compromised which will have a profound negative impact on the standards of service that we can offer, especially to those customers in vulnerable situations, where we had proposed very ambitious and innovative customer propositions.

Following the submission of our plan, we retested its proposals and acceptance levels with expert stakeholder and informed customers in light of the impacts that COVID-19 has had on the economy and society as a whole. The result was that overall acceptability of our plan increased from 83% to 98%, with the main reasons being our proposed focus to support customers in vulnerable situations, including those living in fuel poverty. This evidence further supports the proposals that we have made and Ofgem have rejected. We have subsequently retested acceptability once again, this time factoring in the changes proposed by Ofgem through their draft determination. The impact has been a 19% reduction in our initial acceptability score related to the quality of our plan and a 0% change in their views on the acceptability of the plan from an affordability perspective. This illustrates that the DD proposals if not altered would fail meet Ofgem’s stated objective in para 1.11 of the GD annex to “meet the needs of consumers and network users, with a greater focus on supporting those in vulnerable situations”.

It is essential that the Final Determination represents the views of our customers and without a considerable shift from the DD this will not be the case.

We believe the following should be considered for the Final Determination:

- Ofgem should consider the response from our Customer Engagement Group on the areas where customer views have not been taken into account.
- We have provided further evidence around our proposals for personalised welfare services which goes beyond other networks' offerings. This output is fully supported by our customers willingness to pay and delivers a substantial social return on investment which should be recognised in the BPI quality incentive. Hence, we believe Ofgem should support this output in FD.
- We do not believe Ofgem has properly considered our evidence on the Consumer Value Proposition which had significant input and attention from our CEG. In addition, we do not think they have applied there assessment consistently (for example NGN appear to have been given a BPI quality reward for proposed repair service level that we have been delivering in RIIO-1). Ofgem should look at how it is comparing proposals across plans and using the feedback from the CEGs to inform its decisions.
- We have refined the evidence we presented, in light of the assessment methodology that Ofgem has set out in DD and we believe there is a strong case for a Consumer Value Proposition to be rewarded through the BPI. For example, our proposals for utilising the use it or lose fund on vulnerability will deliver significantly more social return on investment than other GDN plans.
- We do not agree with Ofgem's policy positions on fuel poverty and services beyond the meter and believe this stance unduly constrains innovation and misses the opportunity to encourage cross sector working and innovation to set new standards for customers. We will endeavour to progress our innovative plans through using the Cadent Foundation and hope that this will encourage Ofgem to reconsider its position for future price controls.

Delivering for future consumers and Net Zero

We welcome the focus on Net Zero and the intent to create flexible mechanisms, however we do not think the proposals achieve this aim as proposed in the Draft Determinations. We think Ofgem needs to address the following key areas:

- We have set out the imminent requirements to fund the next stage of the HyNet project (a FEED study) which is being part of the wider consortium bid into the Industrial Challenge Fund. We believe this would have been a prime candidate for use of the Net Zero re-opener but as this will not be in place in time, we are proposing this is added to the baseline funding. We would welcome further engagement with Ofgem to confirm they support this approach or propose an alternative urgently as the bid is being made into the IDC is being made in October 2020.

- To establish the Net Zero reopener and the Strategic Innovation Fund mechanisms as soon as possible such that they are ready from 1st April 2021 (and in particular to consider how asset-based funding will be enabled through these mechanisms. For example, for an industrial cluster project such as HyNet in our North West network).
- To establish a mechanism to fund pre-construction and bid preparation (through an explicit mechanism such as that set up in RIIO-1 for strategic wider works in the transmission controls). This could be a Net Zero Planning allowance use it or lose it fund.
- To ensure a balance of representation on the Net Zero Advisory Group such that knowledge and representation of gas consumers' interests is adequately represented and that there is adequate regional stakeholder input alongside national representation. This is particularly important given the important role that the Net Zero reopener mechanism will play in progressing local area energy plans. Ofgem should also consider how networks' expertise and input should be provided to the Advisory Group.
- We have set out our proposals for how we could accelerate our plans and adapt the RIIO-2 framework to support the green recovery. We have set out a potential to:
 - Accelerate creating a hydrogen ready network in the North West to leverage the benefits of the HyNet project to deliver greater benefits to domestic consumers.
 - To deliver anticipatory investment to stimulate hydrogen production, low carbon transport solutions and new power generation.
- Ofgem should consider the balance of the overall risk and reward of the proposed RIIO-2 package and ensure this incentivises investment in driving towards Net Zero as discussed in section 4.

We would welcome Ofgem's plans on how to take these areas forward between now and Final Determinations

7. COVID

As Ofgem acknowledge, the DD proposals were assessed prior to the COVID-19 outbreak. It will be important for Ofgem to properly calibrate the Final Determinations to ensure the short and long-term impacts of the pandemic are addressed.

COVID-19 has had a huge adverse impact on the UK and global economies. UK GDP is estimated by the ONS to have fallen around 20% in Q2 2020, due to large parts of the economy being on lockdown or operating under significant restrictions, due to social distancing requirements.

While much of this very large short term decline in activity will be reversed as lockdowns are eased, some social distancing requirements will remain for longer and there is an increasing consensus among leading UK and international forecasters that COVID-19 will have a longer term scarring effect on the economy that will cause the level of output and productivity to be permanently lower than expected before the COVID-19 pandemic. This reflects increased uncertainty and tighter credit conditions leading to lower investment in physical, human and other intangible capital, so reducing productivity growth. It also reflects potential disruptions to international supply chains, adding to potential problems when the UK leaves the EU transition regime at the end of 2020.

The gas distribution sector has not been protected from the many adverse effects of COVID-19. Since the pandemic, Cadent has needed to address the challenges of social distancing, local lockdowns and problems of accessing customer premises. We have been required to radically re-plan our work programme for this year, and management time has been diverted towards managing the crisis, and away from transformational efforts.

We consider that impact of COVID-19 is best addressed:

- though the RIIO-1 close out mechanism and RIIO-2 output baseline setting;
- by modifying the assumption on ongoing improvements in productivity and ongoing efficiency; and
- by recognising the additional strain that COVID-19 will place on financeability.

We believe it would be in customers and networks best interests to reflect Covid-impacts in the baseline allowances and through an ex ante framework and not rely on additional uncertainty mechanisms. This would enable networks to plan and manage cashflow impacts and to provide some bill certainty to customers. The only exception to this is we would propose that Ofgem maintain a general legislative reopener to cover the uncertainty that the UK Government imposes legislation which materially impacts ways of working or the price control assumptions.

RIIO-1 Close Out mechanism and RIIO-2 output baseline considerations

Given the impact of COVID on the 2020 repex programme, the amount of work planned to be completed has fallen and hence some of the assumptions we had made to inform baseline start points for RIIO-2 will need adjusting such as leakage baselines for RIIO-1 and start points for the proposed RIIO-2 reputational and financial incentive. We believe the impact on repex and asset health related work volumes can be dealt with through the RIIO-1 closeout process.

Impact on ongoing productivity and efficiency

We commissioned a report from Complete Strategy, who have assessed the way in which Ofgem's assumption on ongoing productivity improvements should be revised in light of the major new reports published since the DDs, namely by the OBR, Bank of England and the National Institute of Economic Social and Research (NIESR). Complete Strategy conclude that, relative to the pre-COVID forecasts, all of these sources anticipate reductions in projected UK labour productivity growth. On this basis, they consider that the evidence would support a downwards adjustment of 0.3% p.a. and 0.9% pa. to the previous range Ofgem have used to support their DD proposals to take account of the potential impact of COVID-19 on gas distribution businesses.

This would imply a robust ongoing productivity range is below the 0.94% p.a. assumption that underpinned Cadent's business plan.

Increased strain on financeability

COVID-19 is projected to create more volatility in inflation which creates further risks for networks to manage (and in particular for equity investors to bear). We have also seen an increasing need to support both the supply chain and the wider industry (through liquidity schemes) which may persist if the economic conditions do not improve or deteriorate. We believe Ofgem needs to ensure there is sufficient headroom for equity investors in assessing its finance parameters for FD in line with the considerations set out above.

8. Process going forward

There is a considerable amount of work to do in a constrained time to resolve the issues we have raised above. The errors we have identified need to be corrected, and we and the industry need adequate time to reflect on the Ofgem's policy and methodological proposals once the corrections have been made. This is key to delivering a robust, fair and proportionate set of proposals in Final Determinations that will deliver the needs of our customers and enable us to finance our activities effectively. We are keen to offer every assistance we can to help Ofgem achieve this.

We suggest that Ofgem undertakes a further consultation with the networks through the CAWG on an updated cost assessment approach which will address the errors of data/application and the logic well in advance of the FD such that the revised analysis can be validated and tested prior to the FD to avoid the challenges we have seen in DD. In addition, we believe Ofgem could give themselves more time to complete the Final Determination (potentially delaying until January).

We understand that Ofgem is considering contingency plans for the impact of COVID on its ability to conclude the Final Determinations in December and licence changes to take effect for April 1st, 2021. We have separately replied to the consultation on Ofgem's proposed licence change to create this flexibility. We do not believe that the single option presented is appropriate and workable and that Ofgem should consider the merits of a wider range of options. In considering the merits of different options, It is critical that the Final Determinations are robust and fair and that there is a fair opportunity and time for companies to consider them and keep their right of appeal.

We look forward to supporting Ofgem in every way we can to ensure the necessary changes to deliver a Final Determination that better meets the needs of our customers - and appropriately delivers the duty to appropriately finance our activities.

Cadent response to RIIO-2 Draft Determination Navigating our Response

The rest of our response is structured as per the table below.

- 1. Summary of Our Response**
- 2. Core Questions**
 - 2.1. Core Question 1 to 15, 17, 19 to 43**
 - 2.2. Core Question 16**
 - 2.3. Core Question 18**
- 3. Regulatory Finance Questions**
- 4. Gas Distribution Sector Questions**
 - 4.1. Gas Distribution Sector Questions 1 to 33 & 35 to 53**
 - 4.2. Gas Distribution Questions 34**
- 5. Cadent Questions**
 - 5.1. Cadent Question 1 to 4 & 6**
 - 5.2. Cadent Question 5**
- 6. NARMS Questions**
- 7. NGGT Questions**
- 8. Gas Transmission Questions**