Reference
Cadent Third Party Submission to the Water PR24 price redeterminations

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Cadent Gas Limited
Pilot Way Ansty Park
Coventry CV7 9JU
United Kingdom
cadentgas.com

Regulatory Appeals team
Competition and Markets Authority
The Cabot,
25 Cabot Square,
London
E14 4QZ

Email: waterPR24references@cma.gov.uk

Dear Water PR24 Reference team,

Water PR24 price redeterminations – Cadent Third Party Submission

I am writing on behalf of Cadent in response to the Competition and Markets Authority (CMA) invitation to provide information relevant to key issues raised within the Ofwat References and the Statements of Case for the five appellants to Ofwat's PR24 price control Final Determinations, covering the period 1 April 2025 to 31 March 2030.

Cadent owns and operates four of the eight gas distribution networks in Great Britain. As the CMA will be aware, we are regulated by Ofgem under the RIIO price control framework and are currently going through the RIIO-3 price control setting process covering the period (1 April 2026 to 31 March 2031). The price control framework we are regulated by is set and operated in a very similar way to that developed by Ofwat and being set at PR24, with many key issues being shared as they commonly affect regional utility networks. We are making a submission to the CMA as due to this, any decisions reached by the CMA in redetermining PR24 could impact future regulatory decisions made at future gas distribution price controls.

We have reviewed the Ofwat References and Statements of Case of the appellants to PR24 and noted that all appellants raised issues with Ofwat's approach to setting cost allowances and the cost of capital, which are also being addressed within the RIIO-3 process. Specifically:

1. **Ofwat's lack of sufficient recognition of exogenous cost pressures within its cost assessment, particularly impacting companies serving customers in and around the London region.** While we accept that the inclusion of density drivers in econometric modelling can help to control for the unique cost pressures facing utilities operating in densely populated areas like London, we are concerned that Ofwat has not separately controlled for the higher labour costs facing all utilities operating in the South East of England. A failure to fully account for the real cost differences arising purely as a result of geographical locations will impact the cost benchmark set and inevitably result in some licensees being systematically underfunded and struggling to, or being unable to, efficiently deliver their regulatory obligations. Such an outcome is not in the best interests of customers and will not encourage the necessary investment in these critical utilities. Cadent is therefore keen to assist the CMA in its approach to addressing regional cost differences in its PR24 redetermination.
2. **Ofwat's setting of the 'Ongoing Efficiency challenge' (also known as Frontier Shift) – at 1% per annum**. All appellants note that this level of challenge implies erroneously that regulated utilities: (i) are able to consistently outperform productivity growth in the wider UK economy and (ii) will be able to outperform productivity forecasts moving forward (despite continued stagnant productivity growth in the UK since the financial crisis of 2008). Ofwat's use of a 1% productivity target represents the continuation of a trend across sector regulators, justified mainly on precedent from past price controls, but entirely unsupported by economic evidence and continues to be unachievable in the current economic environment. This area is currently being assessed by Ofgem, but all gas distribution networks have similar concerns to the appellants so we believe it is important the CMA take a fresh principles-based assessment of the evidence, which independent

expert analysis utilised for our business plans shows justifies an ongoing efficiency challenge significantly *below* 1% per annum.

3. **Ofwat's approach to setting the cost of equity results in an insufficient base return which has significant implications on investability**. All appellants make a variety of arguments in relation to the cost of equity set by Ofwat and the misalignment they feel is present with the risks faced by equity holders for the inadequate size of base returns. For utility networks to be investable, shareholders need to have sufficient confidence that equity that is retained or injected into the business will be remunerated in accordance with the risks that it faces both now and in the future. Retaining quality investment over a long-term horizon is critical in ensuring the safety and reliability of network company assets, which is in customers' interest. It is important that in redetermining the cost of equity, therefore, that the CMA reflects this in the individual parameters used for the CAPM and takes account of relevant cross checks such that returns adequately reflect the risks faced.

In the Appendix to this letter we have summarised key evidence presented in our RIIO-3 Business Plan submission to Ofgem relating to cost assessment topics (i.e. issues 1 and 2 above), setting out its relevance to the appellants' grounds for appeal and the CMA's PR24 redetermination. The Appendix also contains a third section summarising additional features of Ofgem's approach to cost assessment, which we believe are relevant to the CMA in supporting a more robust assessment of costs in its PR24 redetermination.

In relation to the cost of equity, I would like to draw your attention to the joint response we are submitting with other gas networks via Future Energy Networks (FEN). This response provides further evidence relevant to the CMA's PR24 redeterminations on this topic – specifically discussing investability, dividends and CAPM parameters and highlights the expert reports that FEN commissioned as part of collective gas network RIIO-3 business plan submissions. The FEN response also references Ofwat's ongoing efficiency challenge, making points consistent with those detailed in this response.

For the avoidance of doubt, the enclosed evidence and documents referenced in the Appendix to this letter are all publicly available (some in a redacted form), with relevant references detailed below.

We consent to our submission being published and would be happy to assist further, should the CMA have any questions regarding our submission.

Yours faithfully

Dr. Tony Ballance
Chief Strategy and Regulation Officer

By email

Appendix: Submission of evidence relevant to cost assessment issues

Introduction:

The approach taken by Ofwat at PR24 to set cost allowances for water companies is analogous in several respects to that employed by Ofgem in setting the current RIIO-2 price control for gas distribution networks, and expected to be employed for the RIIO-3 control too. In particular:

- **The use of comparative benchmarking to set cost allowances and the need to account for exogenous regional cost drivers in doing so** – for PR24 Ofwat comparatively benchmarks the vast majority of costs between companies within the sector using econometric benchmarking models to determine a 'catch-up efficiency challenge'. This challenge is applied to companies' submitted costs so that each company is incentivised to reduce their costs within the PR24 period and 'catch-up' to a benchmark level of costs.[1] The models utilised (alongside off-model adjustments) to determine this challenge, need to robustly account for exogenous factors which influence the costs companies face to operate, but which are outside of their control and typically result from the particular locality served (often referred to as Regional Factors). Controlling for such differences ensures the catch-up challenge is not set at a level above or below the efficient costs that companies can realistically achieve; and

- **The application of an Ongoing Efficiency challenge (also called Frontier Shift)** – for PR24, having already applied the catch-up efficiency challenge. Ongoing Efficiency represents the improvement in productivity (as measured by the outputs achievable per unit of inputs) over time that is believed all companies should be able to achieve, including those it assesses to be the most efficient in the industry.

Some companies (for example, Southern Water and South East Water) have submitted evidence in their respective Statements of Case to show that cost allowances should be redetermined due to exogenous factors related to their operating region. For example, utilities operating in and around London face higher labour costs and other unique regional cost pressures which have not been robustly, or sufficiently, controlled for by Ofwat in setting cost allowances.

Cadent operates the North London and Eastern gas distribution networks, which both serve customers in and around London. Our RIIO-3 business plan sets out robust and detailed evidence to show the impact of these factors on our operations and costs, which build on the existing precedent set by Ofgem in previous price controls. As these factors are exogenous to our networks, and because of the similarities between operating gas and water networks, they also apply to water and wastewater companies who serve the same areas. In Section 1 below we summarise relevant evidence from our business plan and that is already embedded in the RIIO framework for the CMA to consider on this issue. Further detail can also be found in Appendix 3 to our Business Plan submission – Cost Assessment and Benchmarking Approach, Sections 4 and 5.[2]

All appellants have submitted evidence in their Statements of Case to justify why the Ongoing Efficiency challenge set by Ofwat of 1% per annum has been set at an unachievable level, unjustified by macroeconomic evidence, with all proposing a reduced target. Our RIIO-3 business plan, and that of all other gas distribution networks, provide robust evidence to demonstrate similarly that a 0.5% per annum assumption is appropriate for gas networks. Part of our justification for this is evidence that previous OE targets have been set too high by sector regulators, which is also relevant to the PR24 redetermination process. This evidence is summarised in Section 2 below. Further detail can be found in Appendix 3 to our Business Plan – Cost Assessment and Benchmarking Approach, Section 6, and the jointly commissioned reports from Economic Insight that are referenced throughout our submission.[3][4]

In addition to providing evidence in relation to these issues, the third section below summarises additional features of Ofgem's approach to cost assessment which we believe are relevant to the CMA in supporting a more robust assessment of costs in its redetermination for water companies.

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[1] At PR24 this is the Upper Quartile level of estimated efficiency, at RIIO-2 this was a glidepath between the 75th and 85th percentile between gas distr bution networks. It is yet to be determined for RIIO-3.

[2] Cadent (2024) "RIIO-3 Business Plan Submission, Appendix 3: Cost Assessment and Benchmarking Approach", Sections 4-5, See here: Appendix 3: Cost Assessment and Benchmarking Approach

[3] IDIB, Section 6

[4] Economic Insight Reports which supported RIIO-3 GDN Ongoing Efficiency submissions are Annexes 3A and 3B to Appendix 3: Cost Assessment and Benchmarking Approach of our RIIO-3 Business Plan, submission and can be found here respectively: Annex 3A: Economic Insight Report 1: Ongoing Efficiency at RIIO-3, Annex 3B: Economic Insight Report 2: Further Evidence on OE for Gas Networks at RIIO-3

Section 1: The need to sufficiently account for exogenous cost pressures impacting London-based utilities in comparative efficiency benchmarking

A key part of Ofwat's PR24 cost assessment approach is to comparatively assess water companies' costs using econometric modelling techniques to establish a 'benchmark' level of efficiency. Such an approach has been commonplace in UK water and energy price controls for decades. The ability for econometric models, however, to control for cost differences driven by different operating environments is limited. A failure to fully account for the real cost differences of operating in different geographical locations will inevitably result in some licensees being systematically underfunded and struggling to, or being unable to, efficiently deliver their regulatory obligations. Such an outcome is not in the best interests of customers and will not encourage the necessary investment in these critical industries.

Approaches for controlling for regional differences between utilities' efficient costs

Regulators have attempted to control for differences in utilities' operating environments when undertaking a cost assessment through: (i) the inclusion of explanatory variables in regression equations (often including a measure of population or network density); and/or (ii) using pre-modelling adjustments (referred to as Regional and Company-Specific factors by Ofgem and Cost Adjustment Claims – CACs – by Ofwat) to control for the remaining differences.

When considering the use of pre-modelling adjustments, it is necessary to acknowledge the challenges of identifying and accurately quantifying all exogenously driven cost pressures affecting operations that are outside of company control as well as their compounding interactive effect on one another. This means that pre-modelling adjustments are almost always conservative in size. Furthermore, it also needs to be acknowledged that here is no economic incentive on a company to reveal the reasons why they have lower costs than their peers for reasons beyond their control. These observations together mean that should valid pre-modeling adjustments to costs not be made (which are not accounted for elsewhere in the cost assessment), this will introduce a bias in the efficiency assessment against companies who operate in high-cost regions.

Our evidence shows significant exogenous regional cost pressures impacting our London-based networks using both alternative approaches

At RIIO-1 and RIIO-2 when assessing the efficiency of gas distribution network costs Ofgem relied exclusively on pre-modelling adjustments (ii above) to control for differences in utilities' operating environments. Our RIIO-3 Business Plan includes a number of regional and company-specific factors to be applied to our costs before Ofgem undertakes comparative benchmarking. These adjustments are intended to try to capture differences in the efficient cost incurred by our networks that we do not expect will be captured by the modelling used for comparative benchmarking by Ofgem – akin to CACs under Ofwat's PR24 framework. As we own and operate the North London and Eastern networks, which together serve the majority of London, our regional and company-specific claims relate to the costs facing utilities operating in the uniquely dense operating environment in London, and the wage pressures we face from operating in and around London.

Our plan also explains that the sole reliance on pre-modelling adjustments can only be effective where it is possible to fully and completely identify and quantify these factors and the impact of the interactions between them. Where this is not possible, a different approach is needed to ensure that regional factors are properly controlled for. Additional 'density' explanatory variables in the regression (i above) allows the model to estimate the relationship between density and efficient costs. This creates a robust, objective, and consistent way of controlling for differences between regions. We have considered a range of density metrics and used statistical testing to determine the most appropriate one to utilise in analysis – an approach we believe is critical for regulators to use in assessing the usefulness of density models. Our approach also accounts separately for factors which result in differences in efficient costs between companies that are not captured by density variables, including regional wage cost differences, and ensures that there is no 'double counting' in any adjustments made.

Costs incurred by utilities serving areas in and around London are not wholly explained by the consequential impacts of the density of their service areas

Utilities operating in and around London (including the broader South East region) face higher labour costs for work which must be undertaken where the assets are located, as compared to utilities operating elsewhere in Great Britain. This is exhibited in both:

- the long standing practice Ofgem has applied in previous gas distribution price controls of adjusting costs before comparative benchmarking for regional wages *and* some of the impacts of high population and network density (for example, reduced productivity in delivering mains replacement and capital works – known as Ofgem's 'urbanity productivity' adjustment); and
- our RIIO-3 business plan through the proposal of a "Labour Costs" pre-modelling adjustment. This builds on Ofgem's RIIO-2 regional wage adjustment so that this accounts more accurately for the geography impacted by London's labour market and accounts for differences driven by employer National Insurance Contributions and we propose should be made even within a model specification that includes a density driver.

At PR24, Ofwat argued that the inclusion of a density variable within the model specification obviated the need to control for regional wage differences. However, Ofwat's position on this is plainly wrong. As shown within our RIIO-3 plan, and consistent with evidence presented by South East Water[5] and Southern Water,[6] density and regional wages are only weakly correlated at a Local Authority Level, and as a result, an adjustment is required to account for regional wage differences, even in a model which accounts for density via an additional explanatory variable. Whilst Southern Water proposes the inclusion of a median wage variable in the model specification, and our RIIO-3 business plan proposes a pre-modelling Labour Costs adjustment, we agree with the principle that it is important to control for regional wage differences, even if density is already controlled for within the model (the methods put forward are just different approaches to doing so). Failing to account for regional wage differences, even in models which include density variables, systematically understates the cost of utilities, which operate in high wage regions. Within the water sector this would particularly impact those utilities serving the area in and around London, with largest impact being on Thames Water.

Similarly, utilities may face other unique regional cost pressures which are not correlated with density. To accurately reflect such cost pressures in modelling, pre-modelling adjustments are required even if density variables are used in econometric models. For example, we note that Southern Water has submitted a CAC for additional sludge treatment costs, owing to the unique complexity of sludge treatment that the company faces as a result of operating between London and the coast.[7] Including a density variable as an explanatory variable in modelling will not capture these additional costs that Southern Water faces compared to the rest of the industry, as there is no significant difference between the population density of the company's operating area and the industry average population density.[8] Rather, these costs arise purely from the company's proximity to London.

When density variables are used, statistical testing should be used to choose between alternative hypotheses – informed by technical or economic reasoning – on the shape of the functional relationship between costs and density drivers

Whilst we support the use of density modelling to capture the relationship between the density of an operating region of a utility and the efficient level of costs, it is critical that in using density models unevidenced a priori assumptions are *not* imposed on the 'shape' of that relationship between density and costs or used as a rationale for not utilising density modelling in the first place. Rather:

- any a priori expectation on the shape of the relationship should reflect clear and observed economic and engineering evidence that can then be tested through modelling and statistical testing; or
- in the absence of this evidence (or there being no clear consensus on the shape of the relationship from evidence), statistical testing should determine the appropriate functional relationship.

At PR24 Ofwat did not include a quadratic density driver within the wastewater sewage collection model specifications, stating that it "*did not view there to be a strong engineering rationale for including a quadratic population density term*".[9] However, there was a lack of evidence to corroborate this expectation. In contrast Thames Water's Draft Determination response set out a clear engineering rationale for why the impact of density on sewerage collection costs varied across the level of density (i.e. it is quadratic) and showed that the estimated coefficient on a quadratic density term within these models is in fact statistically significant.[10]

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[5] South East Water (21 March 2025), PR24 Redetermination Statement of Case, P. 37

[6] Southern Water (21 March 2025), Southern Water PR24 Redetermination Statement of Case, Error 4

[7] Southern Water (21 March 2025), Southern Water PR24 Redetermination Statement of Case, Error 3.

[8] Southern Water (21 March 2025), Southern Water PR24 Redetermination Statement of Case, P. 384.

[9] Ofwat (December 2024), PR24 Final Determinations, Expenditure Allowances – base cost modelling decision appendix, P. 35

[10] Thames Water PR24 DD Response – Cost Efficiency, P. 3, P. 17-20

In our view, to robustly develop a model specification which includes a density variable, in the absence of evidence to corroborate an a priori expectation, it is important to allow the model to estimate the extent to which density affects efficiently incurred costs, and allow statistical tests to inform the correct functional form of this relationship. Ofwat's PR24 Final Determination approach to sewage collection costs does not follow this approach, but rather, made unjustified a priori assumptions on the shape of the relationship. Ofgem made a similar presumption at RIIO-2, in rejecting the use of density models as the estimated relationship exhibited – what it asserted was – a counterintuitive functional 'shape'.[11] However, this was only based on an expectation, with lack of evidence.

In our view, costs will likely rise with higher levels of density, but the rate at which density affects costs may rise or fall at higher levels of density and evidence in our business plan shows that based on the economic literature a range of 'shapes' of functional form are possible depending on context and the precise dataset used. Furthermore, the precise observed shape also depends on the ability for a model to identify non-linear functional forms in the data, which is particularly difficult in small samples as used to set water and energy price controls.

Section 2: The need to re-examine the evidence on Ongoing Efficiency (Frontier Shift) as a continued 1% per annum

Similar to Ofgem at RIIO-2 (following the Energy Licence Modifications Appeals 2021), Ofwat has set an average 1% per annum Ongoing Efficiency (OE) challenge for PR24. Retaining an OE challenge at or around 1% for the next water price control period prolongs a broader trend across UK economic regulators at recent price control reviews of setting OE targets above the rate of productivity growth observed in the wider economy (as shown in the chart below, which reproduces Figure 28 in Appendix 3 to our Business Plan: Cost Assessment and Benchmarking Approach). Setting OE targets in excess of productivity growth in the wider economy implicitly assumes that regulated utilities can consistently outperform the UK economy's level of productivity growth. This assumption is unfounded.

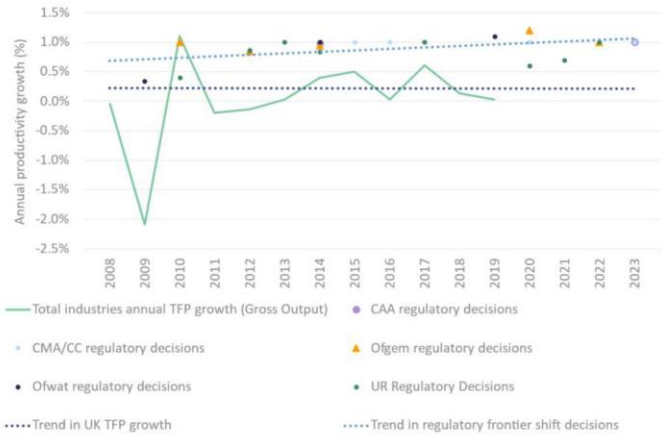

Figure 1: Annual UK productivity growth post 2008 and Network Regulation OE Targets (source: Economic Insight (2024) "Ongoing efficiency for gas networks at RIIO-3", P.8)

The continued setting of OE targets in excess of overall UK productivity growth calls into serious doubt the underpinning assumptions used to set OE targets by regulators. Analysis presented in our RIIO-3 business plan, which is relevant to the PR24 redetermination, suggests the causes of this disparity between wider economy productivity and OE targets include:

1. an over-reliance on older pre-crisis productivity data in quantitative benchmarking analysis, underpinned by over optimistic forecasts for future productivity growth; and
2. incorrectly using qualitative judgements to choose OE challenges at the upper end, or beyond, benchmarked quantitative productivity ranges and forecasts.

These observations are relevant to the CMA for its PR24 redeterminations. We consider that the OE challenge applied to the water and wastewater companies:

- if set based on benchmarked productivity analysis, should use the most up-to-date data representative of the macroeconomy moving into the next regulatory period; and
- if it uses judgment applied to choose the OE challenge from benchmarked data or forecast ranges, this should be justified by a thorough evidence base, rather than purely qualitative assertion.

[11] CMA (28 October 2021), Final Determination Volume 3: Individual Grounds, para. 10.249

Over-reliance on pre-crisis data in previous quantitative productivity benchmarking underpinned by over optimistic forecasts of future productivity growth

Alongside other gas networks, for RIIO-3 we commissioned Economic Insight (EI) to undertake a principles-based benchmarking analysis to identify the range of OE potential for RIIO-3. EI has undertaken an analogous approach to that adopted by sector regulators, including Ofwat, by benchmarking Total Factor Productivity (TFP) growth across competitive comparator sectors to gas networks. Of the methodological decisions made, we believe the one of significant importance, and relevance to the CMAs PR24 redetermination, is the time period selected to be representative for the upcoming price control period.

It is an established empirical fact that there has clearly been a structural break in productivity, before and after 2008, with much lower levels of observed productivity after the period of the financial crisis than before. At RIIO-2 Ofgem based its TFP benchmarking analysis on observed data largely from *before* the financial crisis, extending decades backward when productivity growth was much higher than since 2008. This implied, and Ofgem argued that, for the RIIO-2 period there would be an extent of 'reversion' to pre-crisis trends. However, as has been seen since, and as detailed further in our RIIO-3 business plan submission – productivity has remained subdued and not reverted to pre-crisis trends. Whilst there is always some uncertainty about whether this will change and productivity will improve in the near future, based on current economic forecasts from reputable sources including the Bank of England and HM Treasury, as well as an independent survey of 26 of the UK's leading experts on productivity, EI concluded that there is no strong basis to assume that economic performance of the UK economy and productivity in particular will improve materially in the coming years.[12] As a result, more weight must be placed on the post 2008 period in any benchmarking analysis.

Based on their analysis for gas networks the range of OE that EI recommend from its analysis is between 0.2%-0.8% per annum (0.2% assuming no reversion to pre-crisis levels, using data only after the financial crisis and 0.8% when EI assume a partial reversion to pre-crisis levels of productivity, using data including before 2008). In addition, EI also updated Ofgem's previously used RIIO-2 approach with the most recent data available and find an upper bound estimate based on this of 0.5% per annum.

This analysis clearly shows that should the OE challenge be based on benchmarked TFP data, it must utilise the latest available data to represent the scope for productivity improvement during future price control periods. Amongst other reasons, higher levels of OE have previously been set because of too much weight being placed on older, pre-financial crisis data. Placing more weight on a view that future productivity growth may be higher than historical/prevailing levels must be underpinned by strong, objective and observed evidence in the data that the improvements will be realised otherwise the OE challenge will be set too high. This latter point is particularly relevant to the CMA's PR24 redeterminations, given Ofwat's highly speculative assertions that AI, Big Data and Robotics justify higher productivity growth forecasts for water companies without sufficient evidence to show why this is the case.[13]

Using qualitative judgements to inform OE challenges at the top or beyond benchmarked ranges

OE challenges at the upper end of any benchmarked TFP range, or above this, have also been justified by sector regulators historically based on uncertain qualitative judgements. As part of the work gas networks commissioned from EI to inform our RIIO-3 business plans they also considered the merit and evidence base (quantitative and qualitative) underpinning qualitative arguments previously cited to justify higher targets. Specifically asking:

- **Whether gas networks are insulated from lower TFP growth in the post crisis period?** EI concludes that the causes of lower productivity post crisis are economy wide and regulated industries are impacted by the same factors, suggesting that regulated companies are not insulated from lower productivity growth. This applies to water companies as well as gas networks.

- **Whether aspects of the specific regulatory framework applying to gas networks mean that an adjustment to the benchmarked TFP range is needed (upwards or downwards)?** EI's analysis suggests, if anything, the true potential for OE potentially

[12] Detail on the evidence cited to support this conclusion can be found in Annexes 3A and 3B to Appendix 3: Cost Assessment and Benchmarking Approach for our RIIO-3 Business Plan, and can be found here respectively: Annex 3A: Economic Insight Report 1: Ongoing Efficiency at RIIO-3, Annex 3B: Economic Insight Report 2: Further Evidence on OE for Gas Networks at RIIO-3

[13] Further arguments related to this element of Ofwat's justification can be found in the Appellant's Statement of Cases

lies below the top of the benchmarked TFP range as a result of the applicable RIIO framework for gas networks. This may also be the case for water companies under Ofwat's similar regulatory framework.

- **Whether other economic factors impact the benchmarked TFP range (including embodied and disembodied technical change and economies of scale)?** EI finds that whilst there is a theoretical possibility that embodied technical change and gains from economies of scale may affect TFP estimates, due to comparator selection, the size and required direction of any adjustment is uncertain. As such it recommends no adjustment to the benchmark range is made to account for these factors. This also should be considered as part of benchmarking TFP for redetermining OE for water companies.

As a result, qualitative factors previously put forward to justify OE challenges towards the upper end or beyond benchmarked ranges lack a robust evidence base. Moving forward, it is important that when considering where to set the OE challenge for the PR24 redetermination within any benchmark range there is a thorough evidence base to justify the position chosen. This is particularly relevant when considering the robustness and applicability of other qualitative arguments on technical matters raised by Ofwat and its advisors to justify its chosen assumption, which are addressed by the appellants in their Statement of Cases.

Section 3: Additional features of Ofgem's approach to cost assessment which we believe are relevant to the CMA's redetermination of PR24

As well as the particular issues we have addressed above, we believe there are relevant lessons from the energy price control framework applying to gas distribution networks that may help the CMA in redetermining water sector allowances for PR24.

For a utility to finance its regulatory obligations, it must be able to attract investment. Doing so requires a regulatory decision-making process that gives investors' confidence that the company will be able to recover sufficient funds from customers over time. With this objective in mind, certain features of the price control regime adopted by Ofgem in relation to the recent RIIO-GD1 and RIIO-GD2 price controls may be helpful to the CMA, as it seeks to redetermine the PR24 Final Determination from Ofwat:

- **Use of historic and forecast costs in estimating econometric benchmarking models** – utilising both allows for the model to account for step-changes in industry expenditure requirements over time. This stands in contrast to Ofwat, which estimates benchmarking models using only historical data and 'rolls' this estimated relationship forward. This will tend to understate efficient cost allowances in circumstances where costs are rising over time, and where capital maintenance varies over time.[14]

- **Use of 'synthetic workload variables' in benchmarking models** – in the RIIO-2 benchmarking for gas distribution networks, Ofgem constructs 'synthetic workload variables' by multiplying the volume of a type of workload by a unit cost for that workload (calculated based on industry average unit costs) and summing across types of workload. It then includes the synthetic workload variables within the comparative benchmarking regression to capture differences in workload volume between companies and over time. As a result, workload differences between companies are not conflated with differences in efficiency.[15] This, together with requiring companies to prepare business plans on a common basis and meeting common objectives (e.g. iron mains replacement objectives and meeting common performance standards in responding to gas escapes) also supports alignment of service delivery requirements with allowances provided through the cost assessment methodology.

We believe assessing the impact of applying these approaches, where possible, in the context of PR24 redeterminations should be considered by the CMA to ensure sufficient funding is provided to water companies to discharge their regulatory obligations.

[14] Ofwat (December 2024), PR24 Final Determinations: Expenditure Allowances, pg. 25-27

[15] We note that Ofwat uses "load" as a measure of company scale for its two sewage treatment (SWT), and two wastewater network plus (WWNP) models. Load measures the volume of sludge treated at treated at sewage treatment works, and therefore proxies workload.