

RIIO Team,
Network Price Controls,
The Office of Gas and Electricity Markets,
10 South Colonnade,
Canary Wharf,
London,
E14 4PU

RIIO2@ofgem.gov.uk

23 August 2019

By e-mail

Dear Sir / Madam,

RE: RIIO-2 TOOLS FOR COST ASSESSMENT CONSULTATION

I am writing on behalf of Western Power Distribution (South Wales) plc., Western Power Distribution (South West) plc., Western Power Distribution (East Midlands) plc. and Western Power Distribution (West Midlands) plc..

Thank you for the opportunity to respond to the RIIO-2 tools for cost assessment consultation. Ensuring that costs are incurred efficiently, whilst not compromising quality of service, is a commitment WPD strives to uphold in the interests of delivering value for money to our customers and stakeholders.

It is with this commitment in mind, that the following consultation response has been prepared. Whilst we acknowledge that this consultation is primarily focused on the tools for cost assessment informing the Gas Distribution, Transmission and ESO controls, WPD appreciates the potential benefits of early engagement for Electricity Distribution given that the tools discussed “*may be capable, in principle, of application to RIIO-ED2*”¹. None-the-less, we do not envisage this consultation being precedent setting for the RIIO-ED2 price control.

Ofgem’s consultation presents a number of new proposals for cost assessment in RIIO-2. Such new proposals mark a discontinuity from previous Ofgem communications that the general approach to RIIO-2 should build upon, rather than disregard, the cost assessment framework developed for RIIO-1. WPD has and continues to support evolution from RIIO-1².

Cost assessment models are only as good as the inputs and assumptions they are built on. The consultation launches straight into model development proposals and in doing so overlooks a number of key steps that are pre-requisites to good model development, for example cost driver selection and the setting of expectations³. Ensuring that candidate cost drivers are identified through a dual approach of statistical methods and engineering insight is imperative; it should also be acknowledged that the cost drivers set for RIIO-2 may well have evolved from those used at RIIO-1. The role of the Cost Assessment Working Group (CAWG) in leading this review and driving the pre-modelling agenda is crucial.

WPD regards the importance of regional factors in Ofgem’s RIIO-2 cost assessment approach to be undiminished from RIIO-1. There may, in fact, be a greater role for regional factors to play in RIIO-2, reflecting the increasing variations due to local policy implementation and the impact this has on observable cost differentials across networks. WPD considers that Ofgem has been premature in the ruling out of post-modelling adjustments, either for regional or special factors. Ofgem also needs to recognise that special case adjustments for DNOs may be required in the wider cost assessment framework, not just for those labelled as regional and special factors. Considering operational context through a qualitative assessment should be as important as quantitative methods in RIIO-2.

¹ Ofgem (2019) RIIO-2 tools for cost assessment Consultation, p.5

² As previously communicated in WPD (2019) Response to Ofgem’s RIIO-2 Sector Specific Methodology Consultation, p. 111

³ For example, with regard to the magnitude and sign of coefficients (i.e. the relationship between cost drivers and costs), economies of scale and input proportions, their substitutability and complementarity, amongst others. The setting of such expectations prior to commencing model development is important and reflects that regression analysis is an application of hypothesis testing; one must first develop hypotheses / expectations in order to assess and evaluate the strength of the models relative to expectations of the industry characteristics and the relationships between costs and cost drivers.

It is unclear how the proposed cost assessment framework set out in the consultation will be combined with the other building blocks of the emerging RIIO-2 price control, in particular the Business Plan Incentive (BPI). This is not discussed in this consultation. The interaction of cost assessment tools with the BPI needs more formal acknowledgement and we would request that Ofgem provides further information on the mechanics of how the two will interact in the RIIO-2 framework in order to provide transparency in this area of ambiguity. Understanding how Ofgem intends to assess the confidence they have in their own “*ability to independently set a baseline allowance*”⁴ and how the proposed cost assessment framework aligns with the assessment of low- and high-confidence baseline costs in stage three and four of the BPI is important in order that companies can fully appreciate the proposed incentive structure. This consideration is fundamental to ensuring that the balance of risks, rewards and incentives in the price control work in unison.

Whilst WPD is supportive of refining rather than overhauling the RIIO-1 framework, some further work will be required by Ofgem to account for dynamic changes in the sector that will otherwise be overlooked if the RIIO-1 framework is simply rolled forwards. Many of these emanate from evolving policy directions and in respect of the Electricity Distribution control in particular, are likely to include costs borne by the establishment of Distribution System Operators (DSOs), use of flexibility services, demand growth in electric vehicles and heat pumps, and changes to Street Works arrangements. Forward thinking of how the cost assessment tools might be tweaked to acknowledge the incurrence and evolution of these costs in RIIO-ED2 is important to ensure regulation and policy are aligned.

WPD looks forward to constructively contributing to the CAWG for RIIO-ED2 and discussing important issues specific to RIIO-ED2. WPD very much anticipates that active industry engagement will play an important role in development of a robust and fair cost assessment framework for RIIO-ED2, building upon the CAWG RIIO-1 remit. WPD therefore encourages Ofgem to commence the CAWG at the earliest available opportunity to commence this work.

The enclosed annex sets out WPD’s response to the specific questions raised in the consultation. Our response focuses on methodological principles which may be capable, in principle, of being applied to the RIIO-ED2 control.

Finally, as Ofgem considers the wider process, it is also worth thinking about how the price control will keep in check companies’ actual delivery against allowances. The process at RIIO-1 missed the development of a fundamental reference point; that is development of a post-cost assessment version of licensees’ business plans that have Ofgem’s adjustments embedded. As a result, there is no definite reference of the agreed deliverables, volumes and associated costs which makes monitoring of cost assessment performance, both by Ofgem and licensees, difficult. WPD therefore recommends Ofgem considers the development of post-Final Determination cost assessment packs in the RIIO-2 delivery framework.

Please do not hesitate to get in touch should you require further information or wish to discuss any of the matters raised.

Yours faithfully,



Paul Branston

Regulatory and Government Affairs Manager
Western Power Distribution

0117 933 2203
pbranston@westernpower.co.uk

Enclosed: Annex 1 – WPD Response: RIIO-2 Tools for Cost Assessment Consultation

⁴ Ofgem (2019) [Open Letter Consultation on approach to setting the next electricity distribution price control \(RIIO-ED2\)](#), p. 26

Annex 1 – WPD Response: RIIO-2 Tools for Cost Assessment Consultation

Approach to Econometric Analysis

Question 1: What model estimation options should be considered for our cost assessment and why?

Model estimation options should be considered on the basis of both the characteristics of the panel data set and evaluation of modelling results⁵, with appropriate evaluation of different model estimation options, all other factors remaining equal.

Whilst WPD provides no comment on the characteristics of the GD/GT panel data set, the following high level considerations are offered from a theoretical perspective.

A disadvantage of Ordinary Least Squares (OLS) is the inability of the model estimation process to distinguish between inefficiency and noise. This drawback is significant when unobserved / unmeasurable differences⁶ are incorrectly labelled 'inefficiency', which can lead to model robustness issues and also to an artificially inflated efficiency challenge being inferred and subsequently applied to company's cost allowances. Whilst typically the former can be controlled for by using statistical methods and the latter through, for example, application of a less than frontier benchmark, the modelling approach, by being unable to identify and quantify true '(in)efficiency', is not supportive of helping companies or indeed the regulator to understand efficiency in absolute terms with confidence⁷. On this basis Random Effects (RE) or Stochastic Frontier Analysis (SFA) offer benefits over OLS, despite OLS often being resorted to by economic regulators as a convenient and default estimation option.

Ofgem may choose to look again at RE and SFA model estimation options, in addition to OLS and consider the relative merits and drawbacks of each in light of the additional years of historical data which are now available. Using actuals from DPCR5 and ED1 to date will significantly extend and enrich the data series available for RIIO-2 modelling.

Question 2: Do you agree with our proposed criteria for developing potential cost pools? If not, what additional criteria do you propose and why?

The broad principles of considering complementarity of cost drivers, cost trade-offs and cost boundary complexity seem intuitive criteria; although it would be expected that such considerations are standard practice as part of the pre-model development phases (see also WPD's response to Question 4) and in determining the appropriate suite of models along the aggregate-to-disaggregate spectrum to inform the cost assessment. The appropriateness of the "risk of inaccurate/biased models"⁸ criteria is not however clear; all models at the development stage carry the risk of being inaccurate or biased; only running them can shed light otherwise. This criteria, by suggesting that certain groups of costs and corresponding cost drivers can be included / excluded from the assessment simply on the basis that they may produce inaccurate and biased models, would, in extreme application, leave Ofgem having no candidate models to consider at all. Ofgem might wish to consider removing this criteria from their assessments, including those concerning 'cost pools'.

WPD would recommend the inclusion of an additional criterion that would ensure comprehensive coverage of costs at any one level of aggregation. This recommendation is based on observations of Ofwat's recent PR19 approach to cost assessment and their development of 'cost pool' based models, albeit not explicitly labelled as such. Ofwat's approach morphed from the initial consideration of mid-aggregation models consistent with mid-aggregation activities⁹ to a pic'n'mix approach of models of different levels of aggregation covering different groupings of cost activities. This resulted in an imbalance of cost pools representing some part of business activities to a mediocre level and others not at all; with three levels of aggregation being used across five models¹⁰ leading to an uneven coverage. This proposed additional criteria, would also ensure comprehensive capture of trade-offs and cost boundary complexities across activities and costs at any one level of aggregation.

⁵ i.e. intuitive coefficients that are of the expected sign and magnitude and that are statistically significant; models that develop consistent results and which pass diagnostic tests to pre-determined levels of confidence, etc.

⁶ Unobservable cost driver that are specific to a company, which are present/stable in all time periods but different for each company and which are exogenous (i.e. beyond management control). RE, FE and SFA estimation methods, compared to OLS, make more formal acknowledgement of unidentifiable / unmeasurable cost drivers / genuine differences in operational practices between companies that drive differences in costs

⁷ Or indeed, the extent to which adopting a UQ (or other benchmark) is actually challenging

⁸ Ofgem (2019) *RIIO-2 tools for cost assessment Consultation*, p.15

⁹ Water resources, Network Plus, Residential Retail

¹⁰ At Initial Assessment of Plans stage

If cost pools (or put more simply the identification of cost types and corresponding cost drivers at a consistent and appropriate level of aggregation)¹¹ are to be pursued at all, it would be most advantageous as a joint industry and regulator based activity, which could for example, be organised through the CAWG. This reflects our view to active industry engagement as set out in our response to Question 3 and 4.

Overall, WPD does not disagree with the development of cost pools, only that they be considered as part of a balanced examination of models at all levels across the aggregate-to-disaggregate spectrum. To discount disaggregate models without investigation would be premature and ill-evidenced. Indeed, as per our response to Question 5, cost drivers that are statistically significant at a disaggregate model level may not be statistically significant at a more aggregate level and vice versa and therefore a suite of models with an even spread across different levels of aggregation has appeal.

Ofgem's consideration of cost pools marks a move away from their prior communicated intention to build upon, as oppose to disregard, the RIIO-1 framework. As WPD set out in our response to the RIIO-2 Sector Specific Methodology Consultation in March 2019 "*Starting again with a new approach [i.e. cost pools] potentially introduces new issues and errors. The cost assessment techniques adopted for RIIO-1 have evolved over time and therefore represent the collective knowledge of Ofgem, licensees and others that have contributed to working groups. It is important that the embedded knowledge and development of the existing cost assessment techniques is not lost*"¹². WPD recommend that consideration of the relevant suite of RIIO-2 cost drivers and how these might have evolved from the RIIO-1 models (see also our response to Question 23) should take precedence over any potential development of cost pools.

In ED, there is a strong history of disaggregated reporting supported by established definitions. These have evolved over time to provide comparability of costs. The establishment of aggregated costs pools needs to consider whether the aggregation achieves better comparators than assessments at a more disaggregated level.

Question 3: Should we continue to use the Cobb-Douglas functional form? If not, why?

Function form selection should be determined on the basis of theoretical and practice-based economic and engineering understanding of the relationships between cost drivers and costs prevailing in the sector (see also WPD's response to Question 4). Expectations of returns to scale¹³, cost elasticity of drivers¹⁴, cost driver interactions and input ratios across different output levels should firstly be set and this information then used as a test to evaluate the most appropriate functional form and models to use for the sector amongst a shortlist. If expectations are broadly aligned with those set for RIIO-1, Ofgem may choose to continue to use the Cobb Douglas functional form, consistent with Ofgem's overarching approach for RIIO-2 to build on RIIO-1.

Whilst WPD does not wish to comment on the appropriate functional form to use in the cost assessment models of RIIO-GD2, setting expectations of the sector characteristics, as per the above, is a pre-requisite to informing the selection of the most appropriate functional form in all controls.

Question 4: Do you agree with the proposed model selection criteria and model development phases?

Model Selection Criteria

WPD broadly agrees with the proposed model selection methodology. However, the proposals set out in the consultation are more akin to principles than criteria and it is therefore suggested that measurable tests or thresholds, ideally quantitative, be attached to each principle in order to facilitate transparency of application and decisions reached. Furthermore, it is suggested that a sequential, hurdle based approach be used to apply the selection criteria to candidate models as per the below order:

1. Economic / technical rationale
2. Transparency
3. Robustness

¹¹ WPD would be grateful if Ofgem or their consultants could clarify if this interpretation is accurate by providing a definition of what is meant by the concept 'cost pool'

¹² WPD (2019) *Response to Ofgem's RIIO-2 Sector Specific Methodology Consultation*, p. 111

¹³ For individual companies, the industry as a whole and how the two compare

¹⁴ responsiveness of cost to 1 unit / 1 per cent change in cost driver

Examples of the types and phrasing of robustness criteria could include:

- R^2 must be greater than 80 per cent
- Explanatory variables included in regression must have a statistically significant impact on costs at the 5 per cent level

WPD recommends that failure of a candidate model to fulfil the criteria should lead to the dismissal / re-specification of the model, with the selection criteria then reapplied in an iterative fashion until all criteria are fulfilled.

With regard to transparency criteria proposed, please see WPD's commentary regarding use of the CSV variable in response to Question 5.

Model Development Phases

WPD expects to see that raw data analysis of the panel data set be a fundamental part of the initial pre-model development phases. Understanding pairwise correlations between candidate cost drivers and also between cost drivers and costs, variance analysis across companies, and trend analysis are all simple but highly informative exercises that are pre-requisites to commencing model development. The results of such analysis can inform the setting of expectations which are then tested in the actual model development phases. The importance of both stages should not be overlooked. Setting expectations, for example with regard to the likely magnitude and sign of coefficients, provides an important sense check when it comes to evaluating the strengths of the models developed.

There is a striking absence of industry involvement in the model development phases proposed in the consultation. Industry engagement should be the first and foremost step in identifying suitable cost drivers, providing an opportunity to cross check the expectations informed by raw data analysis (see above) with the practical experiences of engineering and operational staff. Industry involvement does not preclude Ofgem from making the final decision on approaches; it does however ensure that Ofgem is better informed to make the correct judgement. WPD is supportive of greater industry involvement to ensure that the cost assessment process is both robust and fair.

In a similar vein to our response to the model selection criteria, it would be useful if the method for identifying preferred models in Phase 1 follow a predefined order with measurable tests or thresholds, ideally quantitative. Given the similarity of criteria informing Phase 1 of the model development process to the model selection criteria, clarity on the overall order of proposed proceedings would be beneficial.

The inclusion of RE robustness testing in Phase 2 of the model development would appear to suggest that Ofgem has already landed on a model estimation approach other than RE for use in the price control and that therefore the opportunity for stakeholders to contribute thoughts to what model estimation options should be considered for Ofgem's cost assessment approach in Question 1 of this consultation would appear limited.

Aggregate Econometric Analysis

Question 5: Should the cost driver of the totex regression model be determined by the cost drivers of the 'bottom-up' models, or should the totex regression model account for different explanatory variables? Why?

WPD considers that the cost driver of the totex regression model does not necessarily need to be determined by the cost drivers of the bottom-up models or that a single Composite Scale Variable (CSV) is the only appropriate driver of totex for aggregate modelling. WPD raises concerns regarding the transparency of CSVs and therefore recommends that Ofgem further considers if they are fit for purpose.

Whilst WPD broadly agrees with the general approach of building upon, rather than disregarding, the cost assessment framework developed for RIIO-1, we believe further work would be beneficial in the form of developing a robust, reproducible and transparent method for cost driver and model selection. In RIIO-1, Ofgem discarded the generally accepted and widely practiced general-to-specific approach to model selection in favour of an invented, so-called "*disaggregated to aggregated approach*"¹⁵ comprised of totex models informed by disaggregate drivers, in what was a less than transparent short-cut.

Ofgem may choose to consider the development of models independently of one another. This stems from the view that there is no guarantee that statistically significant drivers of disaggregate cost categories are statistically significant drivers of totex (or more aggregate cost categories) and vice versa. Disaggregate modelling seeks to identify cost drivers that are effective in explaining the variation in costs across companies for a particular

¹⁵ Ofgem (2019) RIIO-2 tools for cost assessment Consultation, p.68

disaggregate cost category. As any given disaggregate cost category represents only a part of totex, those disaggregate cost drivers may not be as effective in explaining variation in costs across companies at an aggregate level. Therefore if Ofgem intends to pursue both aggregate and disaggregate level modelling for use in the price control assessment (as has been done for RIIO-1 and also for PR19), Ofgem may wish to consider separate approaches to determining the cost drivers which influence the respective models. WPD consider there is no reason why totex regression models must necessarily be pre-determined or pre-defined by the cost drivers of the bottom-up models.

Furthermore, Ofgem may choose to further consider the use of a composite scale variable (bottom-up, top-down¹⁶ or other) as the driver of totex regression or indeed any models. This is because a CSV, by bundling up cost drivers into a single variable does not allow for easy interpretation of the implied relationship between the component cost drivers and costs. For example, in a standard Cobb Douglas function, the coefficients are interpreted as the driver elasticity of costs; that is to say a one per cent increase in the cost driver can be expected to increase costs by a percentage equal to the modelling coefficient on that given driver. This insight is incredibly powerful. However, when the cost driver is in fact made up of a number of cost drivers with weights attached, the clarity of the relationship between individual cost drivers and costs is lost and little meaningful insight can then be interpreted from the CSV coefficient. In accordance with Ofgem's proposed model selection criteria of "*Transparency...of the results and ease of interpretation for stakeholders*"¹⁷, WPD recommends that Ofgem further considers the appropriateness of using a CSV throughout the cost assessment process and that separately identifiable cost drivers of totex may present an alternative approach as per the above.

To improve the robustness and transparency of the non-conventional "*disaggregated to aggregated*"¹⁸ model selection approach adopted at RIIO-1, WPD recommends the use of the general-to-specific model selection process¹⁹ for each modelled cost area or alternatively (and more favourably) a more sophisticated method based on a statistical Monte Carlo assessment of candidate cost drivers. To expand on this recommendation, whilst the general-to-specific model selection process offers a well-established and 'formulaic' approach to model selection, it involves judgement to determine which variables to include and exclude from models. Using a Monte Carlo approach removes reliance on such judgements; for example by employing a statistical method to identify cost drivers which jointly, on average, are most likely to produce statistically significant coefficients and which have a high explanatory power²⁰, when included in regression models. Furthermore, where multicollinearity between cost drivers exists (which can often lead to counterintuitive coefficient estimates) the general-to-specific approach provides no guidance to the modeller on which cost driver(s) it is appropriate to omit from the group of closely correlated variables. Considering such a Monte Carlo method could also enable presentation of a more balanced, industry-level perspective of what good models could look like (without the bias of mirroring pre-conceived regulator or company specific views of what the models should be)²¹. This could be a highly rewarding opportunity to refine the RIIO-1 cost assessment framework.

Question 6: What could be appropriate cost drivers in middle-up models for opex, capex and repex? Why?

No response provided in reference to Gas Distribution and other sectors; however, in reference to the Electricity Distribution control WPD would be happy to discuss this through the ED CAWG.

Question 7: For which opex activities are there trade-offs that support the rationale for testing 'totex and opex plus' modelling?

No response provided in reference to Gas Distribution and other sectors; however, in reference to the Electricity Distribution control WPD would be happy to discuss this through the ED CAWG.

Question 8: Are there other particular costs that we should aggregate and test in our analysis?

No response provided in reference to Gas Distribution and other sectors; however, in reference to the Electricity Distribution control WPD would be happy to discuss this through the ED CAWG.

¹⁶ Called 'MACRO-CSV' in Ofgem's RIIO-ED1 regression models

¹⁷ Ofgem (2019) RIIO-2 tools for cost assessment Consultation, p.18

¹⁸ Ofgem (2019) RIIO-2 tools for cost assessment Consultation, p.68

¹⁹ generally accepted and widely practiced in both academic and regulatory fields

²⁰ i.e. that variation in the cost driver across companies / time is able to explain a high proportion of the variation in costs observed across companies / time

²¹ Further details of what a Monte Carlo approach to cost driver selection could look like are provided in an approach used by NERA to support Bristol Water in their development of a view of cost efficiency for PR19, which was recommended to Ofwat: NERA (2017) [Comparative Benchmarking Assessment to Support Preparation of Bristol Water's AMP7 Business Plan](#); Bristol Water (2018) [Cover Letter to Consultation on econometric cost models for PR19: proposed cost models](#)

Disaggregated econometric analysis

Question 9: Are there trade-offs between opex and capex activities that support the rationale for considering 'opex plus' modelling?

No response provided in reference to Gas Distribution and other sectors; however, in reference to the Electricity Distribution control WPD would be happy to discuss this through the ED CAWG.

Question 10: Which cost areas should be assessed using workload drivers as opposed to other cost drivers? Why?

No response provided in reference to Gas Distribution and other sectors; however, in reference to the Electricity Distribution control WPD would be happy to discuss this through the ED CAWG.

Question 11: Should repex (or some categories of repex) be excluded from our regression analysis and assessed using other techniques?

No response provided in reference to Gas Distribution and other sectors.

Question 12: Are there other approaches to disaggregated benchmarking that we should consider?

No response provided in reference to Gas Distribution and other sectors; however, in reference to the Electricity Distribution control WPD would be happy to discuss this through the ED CAWG.

Non-econometric analysis

Question 13: Should we assess business support costs at a group level in order to address cost allocations across companies within groups?

WPD agrees that Ofgem should assess business support costs at a group level, as was the approach at RIIO-1. By definition these are business support costs, not individual GDN/DNO support costs. Cost allocations are often within management control; different companies will and do have different cost allocation approaches and therefore to assess costs at a group level will reflect more appropriately the organisational level at which the costs are borne and mitigate any need to enforce consistency in the cost allocation approaches / normalise the allocations adopted by GDNs/DNOs during benchmarking exercises. Organisations, by centralising business support costs, can reap scale cost efficiencies not attainable at a more subsidiary level. Assessing business support costs at a group level is the appropriate approach in order to promote the appropriate incentives.

Furthermore, Ofgem should consider the need for some form of scale cost driver to support their assessment of business support costs at a group level. As an example illustration, a company with more DNOs will have more staff than a company with a single DNO, therefore HR costs will be higher due to having to manage more staff records.

Question 14: Which types of business support costs should be benchmarked, and how should they be benchmarked?

In respect of ED2, WPD would caution against progressing comparators from outside the network sectors. This approach was explored in RIIO-1 and not progressed. This experience is comparably observed in the water sector: Ofwat in the PR19 Final Methodology priorities²² (2017) committed to benchmark water companies against other sectors; however in the Initial Assessment of Plans²³ (2019) no reference was made to looking beyond the water sector to inform any aspect of their cost assessment. On this basis, WPD does not think there are sufficient reasons to re-open this approach again. Furthermore, re-opening this approach would not be consistent with Ofgem's intention to evolve the RIIO-1 approach, as oppose to establishing a whole new methodology²⁴.

We agree with the use of expert review, particularly for IT&T and Property Management costs. As discussed by Ofgem, it can be difficult to adequately benchmark these costs, especially due to different delivery models of network companies (i.e. where some may insource more). For these types of costs, business support costs should also be assessed alongside the capex element of these costs (Non-Operational Capex and Operational IT&T in ED).

Ofgem also highlight the appropriateness of expert review where there is reason to believe that the cost environment

²² Ofwat (2017) [UK Government priorities and our 2019 price review final methodology](#), p. 11

²³ Ofwat (2019) [Initial Assessment of Plans \(IAP\) - Technical appendix 2: Securing cost efficiency](#)

²⁴ Ofgem (2019) RIIO-2 tools for cost assessment Consultation, p.5-6

for these activities may significantly change in the future. In ED, this could be especially true for IT costs, as the development of a DSO model progresses.

We would also agree with reviewing the assessment of Insurance costs, as we concur there are likely differences in risk appetites that could occur across companies.

As per our response to Question 5, WPD would caution against using a composite business support cost driver (on grounds similar to those set out in aggregate econometric benchmarking).

In order to avoid the possible outcome that disaggregate level benchmarking result in business support cost allowances being set at an 'above benchmark' level that is not achievable, WPD recommends that Ofgem should use expert review to assess these costs at a disaggregate level as per the above recommendation. Benchmarking business support costs at an aggregate level can then be used as a cross check to the expert review. If the two methods are agreeable and robust, the aggregate and disaggregate assessments could be combined.

Question 15: Which types of business support costs should be excluded from benchmarking?

Please see also the response to Question 14.

No further response provided specifically in reference to the Gas Distribution and other sectors; however, in reference to the Electricity Distribution control WPD would be happy to discuss this through the ED CAWG.

Regional factors and company-specific effects

Question 16: How should we estimate and model the impact of regional factors?

Distinction needs to be made between regional factors, which apply to all companies (albeit in different directions and magnitudes) and company-specific factors, which may be relevant to one or a few companies only. Whilst both, in order to be justifiable drivers of cost, need to be demonstrably beyond management control, estimating and modelling the impact of regional and company-specific factors requires separate consideration given the difference in coverage set out.

Where a suitable cost driver exists, regional factors lend themselves more appropriately to being assessed as a with-model adjustment; that is including a cost driver in Ofgem's regression models whereby variations in the regional cost driver between companies provides a statistically significant explanation of differences in costs between companies. In contrast, company specific-factors do not lend themselves as well to being assessed using an in-model adjustment: the fact that by definition these factors are company-specific and may only be relevant to one or a few companies suggests that they are unlikely to offer significant explanatory power of differences between companies costs in general if included in regression analysis. This is, however, not to say that they are not significant cost drivers pertaining to the one or few companies and therefore should not be overlooked. WPD therefore suggests that a pre- or post-model adjustment for company-specific factors may be appropriate. Pre-modelling adjustments may be more favourable than post-model adjustments insofar as the company-specific effect is controlled for prior to the running of regression analysis²⁵ and is therefore accounted for in the determination of efficient costs (which affects all companies, not just those with special factors); however pre-modelling adjustments can often be data intensive. On this basis Ofgem should reconsider their dismissal of post-modelling adjustments in the consultation on the basis that in the absence of sufficient, high quality data to perform pre-modelling adjustments in particular respect of company-specific factors a post-modelling adjustment may be the only feasible approach to accommodating such factors in the cost assessment framework.

The above argument exemplifies our more general view expressed to Ofgem in our RIIO-2 Sector Specific Methodology Consultation response that, "*lower unit costs (influenced by company specific factors) should be normalised out of any cost comparisons before being considered as being used for references for efficient expenditure levels. Retaining such bias within benchmarks leads to undervalued efficient costs*"²⁶. The inverse is equivalently true.

Building on the above, further clarity on Ofgem's intended approach for regional factors and how this differs to special factors would be helpful.

²⁵ i.e. the company-specific factor is not wrongly interpreted as inefficiency (or more accurately as an omitted variable which then enters into the error term and is therefore wrongly interpreted as inefficiency)

²⁶ WPD (2019) *Response to Ofgem's RIIO-2 Sector Specific Methodology Consultation*, p. 112

The consultation chapter on regional factors focuses almost entirely on labour and urbanity / sparsity and gives little consideration to other factors or indeed the possibility of other factors. Ofgem's consultation proposals appear the same as those used by Ofwat in PR19 with negligible consideration to the transferability of analysis. WPD would caution against over-reliance on the conclusions reached by Ofwat, be that reaching seemingly pre-determined views of which regional factors are relevant or their in-model validity. To refute the notion of variations in labour costs across England and Wales as an explanatory factor of variations in network companies costs goes against economic theory, established analysis and demonstrates a disregard for any form of expectation setting (see WPD's response to Questions 3 and 4) as a means of evaluating models. It is important that Ofgem engages in conversation with the industry to establish what the candidate regional and special factors are likely to be before reaching conclusions as to the appropriate approach to their assessment as a pre, during or post model adjustment. This decision may well depend on the availability and 'confidence' in the data.

WPD regards the importance of regional factors in Ofgem's RIIO-2 cost assessment approach to be undiminished from RIIO-1. Rather, there may be a greater role for regional factors to play in RIIO-2, reflecting the increasing variations due to local policy implementation and the impact this has on observable cost differentials across networks. Ofgem's cost assessment framework needs to acknowledge that differences in company's costs may be driven by exogenous differences in factors, the coverage of which varies regionally; and it needs to acknowledge that different costs / regional factors may be relevant at RIIO-2 compared to RIIO-1. The de-centralisation of policy implementation continues to gain traction and with this, regional factors may be more relevant in RIIO-2 than RIIO-1.

An example is street works. The design and implementation of street work schemes, such as permits and lane rental, are carried by local Highway Authorities with regard to roads in their area. As a result, the prevailing fees charged and conditions imposed vary Highway Authority to Highway Authority and thus the costs efficiently borne by network companies will vary due to the localised roll-out of such street work schemes.

Finally, considering the cost assessment framework more broadly than just special and regional factors, Ofgem also needs to recognise that special cases will exist, and therefore there has to be a recognition that qualitative adjustment may be necessary. For example legacy circumstances may dictate that non-standard situations exist which lead to abnormally high (or abnormally low) unit costs. Assuming that all situations tend to an average will adversely affect the cost allowances associated with justifiable situations. There has to be scope within the cost assessment process for special cases to be separately assessed outside of cost assessment models.

Question 17: Do you agree with the proposed criteria for justifying regional cost factors that we have outlined?

WPD broadly agrees with the proposed criteria for justifying regional cost factors. As per our response to Question 16, distinction in approach to the difference in treatment between regional and company-specific cost factors is omitted from the consultation, but is something Ofgem needs to consider further and communicate to the industry and stakeholders.

Real Price Effects and ongoing efficiency

Question 18: What RPEs should we account for, how should we gauge materiality, and what criteria should we use for index selection?

WPD's view is that all RPEs that are measurable should be accounted for. Materiality should be gauged on the dual basis of the materiality of individual input costs as a proportion of total costs (i.e. taking into account both the input price and the volume of inputs used) and that the majority of the cost base has been accounted for.

WPD reiterate our response to Ofgem's RIIO-2 Sector Specific Methodology Consultation with regard to the appropriate selection of RPE indices, namely that RPE indexation requires more development before it can be proposed. Mirroring our response, any indices chosen must be relevant, accurate and exogenous.

"RPE indexation has been proposed without any evidence of clear analysis and thinking on how this would be undertaken and the potential implications of such a change. As RIIO-1 has demonstrated some form of RPE indexation is required, but it should only be introduced if sufficiently accurate (and exogenous) indices can be found. This is not an easy task. Taking the labour cost index as an example, energy networks have more unionised labour forces than the economy as a whole, where labour costs are typically more rigid in respect to wide labour market trends. However, narrowing the index down to say, public utilities, endangers the exogeneity of the index since energy network employees will begin to make up a material component of the index.

RPE indexation is, therefore, in principle a helpful innovation for RIIO-2 provided that the indices are relevant (i.e.

relevant to unionised energy network labour forces), accurate, and exogenous (i.e. not dominated by the energy networks themselves). Consulting on the introduction of such an approach should only occur once these questions have been examined and the viability of the proposal ascertained²⁷.

Question 19: What common input and expenditure categories are appropriate for structuring RPEs?

No response has been provided on the basis of input and expenditure categories relating to GD and other sectors, however the following response has been provided in relation to the structuring of RPEs and application of a notional cost structure, which may be equally relevant to the Electricity Distribution control as it is for the gas distribution and other sector controls.

Firstly, WPD reiterates our view presented in our response to Ofgem's RIIO-2 Sector Specific Methodology Consultation that, "Through the RIIO-2 work to date, Ofgem has stated the industry is going through a period of significant change. As such the use of notional cost structures in RIIO-ED2 may well be less relevant with companies taking different approaches to in-sourcing and outsourcing for example, along with more significant changes with networks taking different solutions to network problems for example DSOs implementing different capex/opex solutions to constraint issues. As such the use of notional cost structures can only be considered after Ofgem has published its strategy decision for particular sectors and companies have proposed solutions for delivery"²⁸.

Secondly, it is not clear why Ofgem intends to "base the assumed proportions of each expenditure category (eg opex and capex) on the average (notional) cost structures" considering input and expenditure categories, given:

- The existence of a totex framework; and
- The choice of input proportions is within management control. That is companies can reallocate resources to maximise outputs²⁹ and in doing so seeks to achieve allocative efficiency. Whilst the likely rationale for Ofgem's proposed approach is to avoid rewarding potentially inefficient structures, it also stifles any incentive for companies to achieve efficient structures by taking the average (notional cost structure) as oppose to the company's own.

In adopting this approach Ofgem appears to be overlooking an important component of overall efficiency, being allocative efficiency and concentrating primarily on productive (i.e. unit cost) and dynamic (innovation driven) efficiency.

Question 20: How should we identify an appropriate ongoing efficiency assumption?

WPD would be grateful if Ofgem could expand on their "aim to explore the many interactions that ongoing efficiency has with the rest of the price control. In doing so, we [Ofgem] will seek to identify the various drivers of ongoing efficiency, including any residual efficiency benefits from legacy actions."

If by legacy actions, Ofgem means not only considering ongoing efficiency as has been made possible through economy- and industry-wide innovations (a widely acknowledged source of ongoing efficiency), but also one-off efficiency improvements from regulated companies making greater use of the totex and outcomes framework (see Ofwat PR19 approach), then the following response is applicable:

WPD raises concern regarding Ofgem adopting a cherry-picking approach of trying to find new and additional measures to inform a composite / triangulated view of ongoing efficiency (as has recently been attempted by Ofwat at PR19) on the basis that the EU KLEMS implied efficiency challenge is disappointing from a regulatory perspective of setting a challenging efficiency target. Present analysis by reputed organisations clearly sets out that ongoing efficiency is disappointing and this reflects the general state of the economy, prevailing political climate and the impacts that economic / political events since the 2008 recession have had on R&D investment as well as the propensity of private and equivalently public sector organisations across the economy, whom in the face of the aforementioned events have no doubt reduced their risk appetite, to embracing new technologies and innovations.

In light of the above, Ofgem should be mindful of the historical time period used to inform their view of ongoing efficiency and how altering the time series (e.g. of the EU KLEMS) dataset could influence the implied efficiency challenge. Ensuring that any trends are interpreted in the context of the economic conditions that prevailed at the time is imperative. If Ofgem do adopt an approach which goes beyond the standard regulatory practice to setting an ongoing efficiency assumption, Ofgem should be mindful that this may be inconsistent with their previously communicated view that RIIO-2 should build upon, not mark a step change from, RIIO-1.

²⁷ WPD (2019) Response to Ofgem's RIIO-2 Sector Specific Methodology Consultation, p. 21

²⁸ WPD (2019) Response to Ofgem's RIIO-2 Sector Specific Methodology Consultation, p. 63

²⁹ For example, in response to change in relative input prices

In support of identifying an appropriate ongoing efficiency assumption, WPD does not fully agree with Ofgem's view *"that ongoing efficiency improvements are largely within a sector's control"*. WPD agrees that efficiency improvements can come from within as well as beyond the sector, however consider that Ofgem's judgement is overly strong. Firstly, many ongoing efficiency improvements that have benefitted regulated network companies have been in the space of non-core activities, for example, the adoption and subsequent developments in information technology, a development which came from beyond the sector. Secondly, many ongoing efficiency improvements come from supplier and related markets beyond the sector seeking to sell new solutions to regulated network problems. Third and finally, a significant amount of work (valued added) by regulated network companies is contracted out to companies operating in other sectors; whilst efficiencies generated in their respective sectors of operation, are hopefully through efficient contracts and competitive tendering passed on; that is to not to say that the efficiencies are within the regulated network sector's control. The above demonstrate that not all efficiencies are generated within the sector; this is not to say however that efficiencies derived from innovations, such as those supported by the Network Innovation Allowance (NIA), the Network Innovation Competition (NIC) and the Innovation Roll-out Mechanism (IRM), are non-existent, only that they are not the only source of efficiency improvements. WPD has an extensive and successful innovation programme.

Question 21: How should we determine frontier shift?

Frontier shift, as defined in the consultation is *"ongoing efficiency net of RPEs"*³⁰. Therefore, please see responses to Questions 18-20.

Combining the elements of our cost assessment

Question 22: Should we set the efficiency benchmark at the upper quartile level?

WPD reiterates our view set out in our response to Ofgem's RIIO-2 Sector Specific Methodology Consultation:

*"It may not always be appropriate to choose upper quartile cost as being efficient. The approach adopted should be dependent about the comparability of the underlying data. Where there is potential for variance in work content, it may be appropriate to take a median or average value"*³¹. Whilst the upper quartile was used at RIIO-1, blanket application of the same efficiency challenge across all cost assessment areas may not be appropriate or desirable in RIIO-2.

Question 23: Are there types of expenditure that we should model using only historical or forecast data?

No response has been provided with regard to expenditure types that relate to GD other sectors; however, WPD considers that this discussion may most appropriately be addressed through the ED CAWG.

In reference to the Electricity Distribution control, the following view was provided in our response to Ofgem's RIIO-2 Sector Specific Methodology Consultation:

*"An appropriate balance between future and historic costs needs to be considered. Future forecasts may include additional efficiency assumptions and therefore should be the main reference points for analysis. However the validity and achievability of these should be considered in the context of historic costs"*³².

As a general consideration cost assessment should place greatest weight on forecast costs and the most recent past as these present the best view of the world for the future price control. The further back Ofgem relies upon historical data the less informative it is likely to be in informing future costs and the more likely it will overlook efficiency gains realised by the company / sector in the interim. However, this is a general consideration and a full assessment can only be reached in reference to the specific data set in question.

In terms of using econometric analysis to inform cost assessment; whilst there is great appeal in using a long data series, changes over time may well alter the explanatory power of a cost driver on costs (and the statistical validity of the relationship). Furthermore, new drivers, previously not relevant or even considered, may now be relevant and should be considered. Acknowledging that the suite of cost drivers, much like the sector, is evolving is imperative to having a cost assessment framework that is fit for purpose and one which looks to the future as much as it does rely on simply rolling forward the past. Electric vehicles and the impact they will have on costs and cost efficiency is just one example. Further exploration of the dynamism of cost drivers should be a task examined by the CAWG and to

³⁰ Ofgem (2019) RIIO-2 tools for cost assessment Consultation, p.66

³¹ WPD (2019) Response to Ofgem's RIIO-2 Sector Specific Methodology Consultation, p. 111

³² WPD (2019) Response to Ofgem's RIIO-2 Sector Specific Methodology Consultation, p. 111

this end WPD recommends that the CAWG for the RIIO-ED2 control commence at the earliest available opportunity. Identifying, defining and measuring the cost drivers that will affect the future cost base of companies and the industry is no small task, and as a pre-modelling requirement, sets the urgency for this to be commenced sooner rather than later.

Question 24: If we use a combination of aggregated and disaggregated modelling approaches, how should we determine the weight we apply to each?

No response provided in reference to the Gas Distribution and other sectors; however, in reference to the Electricity Distribution control WPD look forward to discussing this through the ED CAWG.