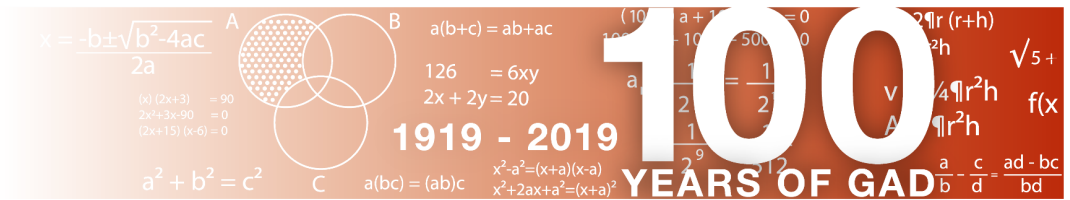




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Ofgem – Specified Street Works Costs Reopener assessment

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Author

Nick Clitheroe FIA



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1 Executive Summary

This section provides a brief introduction and sets out the main findings of the GAD review.

This report has been prepared by GAD at the request of the Office of Gas and Electricity Markets (Ofgem). Ofgem have requested that GAD provide a high level review of the methodology that Ofgem propose to use to assess submissions received in the RIIO-ED1 Specified Street Works Costs (SSWC) reopener, to identify any issues with the approach and suggest areas for improvement. The report was commissioned and written during the 4 month window that Ofgem has to assess SSWC submissions.

The reopener allows distribution network operators (DNOs) to apply for an adjustment to their expenditure allowances in relation to certain costs that have been incurred, or are expected to be incurred associated with permit schemes, and other street works legislation.

This review focuses on the calculations and method. Ofgem set out in their consultation, and clarified in our meeting with them, that they also considered any justifications provided in DNOs' submissions regarding submitted costs. Where Ofgem has considered and accepted such a justification, we have not provided an opinion, as we do not have expert knowledge of street works costs or processes.

Overall methodology

The overall method of deriving a benchmark unit cost and applying this to future volumes is an approach that is frequently used in projecting future costs and in general terms would appear to be an appropriate method to use for these calculations. However, the validity of the method is crucially dependent on the assumptions that are used and potential issues with these are addressed in the relevant sections of this report.

Use of a benchmark

Ofgem have used a benchmark approach in order to try to derive a view of what is an efficient cost per permit. They state in the consultation documents that this is considered appropriate because, unless otherwise justified in the submissions, it is expected that unit costs would be comparable across years and across licensees. There are a number of reasons why this assumption may not be appropriate and examples of these are provided in the main body of the report. In electing to use a benchmark approach Ofgem must be aware of the limitations that such factors could have on the assumption that expected costs per permit would be comparable between years and licensees.

Selection of data for benchmark calculation

Ofgem use 2 sources of data in assessing the benchmark unit cost, The Regulatory Reporting Pack ('RRP' data) and 'Submission' data. In view of the fact that this data covers the same costs and volumes (albeit counted and presented differently) there does not appear to be any justification for using both sets of data. We recommend that only one source of data is used for the benchmark calculation.

The RRP data is not provided in a method of classification and recording that is entirely consistent with the approach to be used for projecting future volumes. Consistency between the data used to derive the benchmark and the way it will be used is of considerable importance. Unless these inconsistencies can be removed it may be more appropriate to use the Submission data only in calculating the benchmark unit costs.

The Submission data has only been received in respect of 5 companies and following analysis the data from 2 of the companies has been excluded. The use of the RRP data would enable more companies' data to be considered and hence provide a more robust approach. If the inconsistencies in the RRP data could be removed then this may be a more appropriate set of data to use.

Cleansing of data for benchmark calculation

In reviewing the data in respect of the submissions we agree that the 2 DNOs that have been excluded from the calculation of the benchmark have submitted considerably different costs from the 3 selected. They also show very different average costs depending on whether RRP or submission data is used. We agree that including the data in respect of these companies would result in a benchmark that would not be appropriate as representing the expected costs.

Exclusion of permit variations

In deriving the benchmark unit cost Ofgem have excluded permit variations in the count of the number of permits issued. The alternative approach would be to include permit variations and also to allow for these when projecting future volumes. Within this report we have illustrated that the choice of method makes no difference where the relative amount of variations per permit is unchanged in future. We have also shown that there are risks in using a method where permit variation numbers are included. Our opinion is that excluding permit variations from the calculations is the more appropriate approach.

Simple v weighted average

Ofgem have calculated the average cost across all DNOs using a simple average of their individual figures. This introduces a risk of bias where a DNO with a relatively low number of permits has a higher or lower unit cost than the rest of the group. We recommend the use of a weighted average.

Selection of lower volume projection

An argument could be made that if Ofgem has assessed a view on the reasonable future volumes of permits and has derived a benchmark unit cost then it would be appropriate to allow any claimed costs up to the product of these 2 figures. At present this is not the case with the lower of the volumes provided by the DNOs and the volumes from Ofgem's assessment being used. This means that if the permit volume provided by a DNO is lower than Ofgem's assessment the allowable claimed costs could be lower than both the DNO and Ofgem had assessed. It is therefore important that any justifications for the figures provided by the DNO have been considered.

There is an additional danger of the approach used in that it could provide an incentive for DNOs to increase the volume component of their submission (whilst leaving total claimed costs unchanged) in order to increase the amount they can obtain. An example of this is included in section 2 of this report.

Splitting out component parts of costs

At present Ofgem calculate the benchmark and perform comparisons for the different types of costs separately. There is a risk that different DNOs may classify data differently. We recommend that the benchmarking exercise is carried out for all types of cost combined.

Allowance for variations and trends in data

We recommend that in selecting the final benchmark unit cost Ofgem should consider any submissions from the DNOs making a case for the actual costs having varied over the data period or reasons for future variations. We also recommend that the year on year unit costs are reviewed to look for any trends in the base data. If such trends are observed it may be appropriate to place additional weight on the latest years of data rather than the average of all 4 years.

Calculation of number of permit schemes per DNO

We are satisfied that in general the method used by Ofgem to project the number of permit schemes is appropriate. We recommend that if it is possible to obtain the actual percentage of each highway authority network covered by permits then this data should be used rather than the 50% currently used for partial schemes.

Average permits per scheme

The method used to calculate permits per scheme implicitly assumes that the number of future permits will be the same as the past average for each DNO. We have identified several points that should be reflected upon in considering if this is an appropriate assumption. In some cases we believe that the existing data does cast some doubt on the validity of using the average of all past years. We also believe that it is important to consider any observable trends and to consider the information provided by DNOs in support of their projected volumes.

2 Introduction

Purpose of report

This report has been prepared by GAD at the request of the Office of Gas and Electricity Markets (Ofgem). Ofgem have requested that GAD provide a high level review of the methodology that Ofgem propose to use to assess submissions received in the RIIO-ED1 Specified Street Works Costs (SSWC) reopener, to identify any issues with the approach and suggest areas for improvement.

The report was commissioned and written during the 4 month window that Ofgem has to assess SSWC submissions.

Background of the Specified Street Works Costs reopener

This reopener mechanism relates to additional costs associated with permit schemes, and other street works legislation not included as part of the RIIO-ED1¹ ex ante allowance. The reopener allows distribution network operators (DNOs) to apply for an adjustment to their expenditure allowances in relation to certain costs that have been incurred, or are expected to be incurred, by the licensee in complying with their obligations under the Traffic Management Act (TMA) 2004 (in England and Wales) and the Transport (Scotland) Act 2005, or under any street works legislation that applies to the licensee.

Permit schemes first came into operation in 2010 and give Highway Authorities (HAs) the ability to impose charges on utility companies for undertaking work on the highway (e.g. removing, replacing and repairing cables). The purpose of such schemes is to provide HAs with the ability to proactively manage street works as a way to reduce and control the associated disruption. This increased control is achieved by requiring all utility companies to seek permission before undertaking works, and for those companies to comply with certain conditions when undertaking these works.

As part of setting ex ante allowances for RIIO-ED1, efficient street works costs were allowed where Highway Authorities (HAs) could provide 12 months of cost data relating to the street works legislation. This was to enable Ofgem to compare these costs against those of other operators. At the start of RIIO-ED1, there was minimal uptake of permit schemes by the HAs in England. Due to uncertainty on the level of uptake of these schemes throughout the ED1 period, and the potential additional costs that could be incurred by DNOs, this reopener mechanism was put in place.

The reopener is designed to protect against:

- the timing of the introduction of costs related to street works legislation
- the level of fees set by the relevant HA
- efficient one-off set up costs associated with schemes (over and above those that are funded at the time of the price control or previously funded)
- additional costs arising from the introduction of permit conditions

¹ The RIIO-ED1 price control set the outputs that the 14 electricity Distribution Network Operators (DNOs) need to deliver for their consumers and the associated revenues they are allowed to collect for the eight-year period from 1 April 2015 to 31 March 2023.

- efficient additional administration costs associated with permitting

The reopener is not designed to protect against:

- volumes of activity (except for load-related expenditure and new connections), i.e. the number of works
- the proportion of notices or permits that are subject to penalties.

The reopener covers:

- **Permit Fee costs** – The fee paid to the HA by the DNO to permit them to undertake work on a specified section of highway over an agreed period. It is worth noting that only certain specified HA areas are covered by a permit scheme.
- **Lane Rental costs** – The fee paid to the HA by the DNO to permit them to undertake work on a specified section of a busy road at peak time over an agreed period. It is worth noting that only certain specified areas can be covered by a lane rental scheme.
- **Administrative costs arising from the introduction of a permit scheme or lane rental scheme** - These are costs relating to administration and management work required to support street works undertaken in areas covered by a permit scheme.
- **Permit condition costs (also known as productivity costs)** - The increase in costs driven by additional requirements / conditions specified in the permit to work in the highway.
- **One-off set-up costs associated with the relevant scheme(s)**

The review undertaken by GAD only considers permit fee costs, administrative costs and permit condition costs. Lane rental costs have not been considered in this review because, as set out in Ofgem's SSWC consultation, the requirement on DNOs to provide 12 months of cost data was not met. In addition, one-off set-up costs associated with relevant schemes have not been considered in this review. As set out in the SSWC consultation, Ofgem did not include one-off set-up costs in their benchmarking exercise due to the fact that they did not have data with which to benchmark those costs, and where licensees requested additional funding for one-off set-up costs, these were assessed separately and on a case by case basis.

Scope

The agreed scope for this project was that GAD would provide a report which covers:

- the overall methodology used for the calculations;
 - (i) Does the overall methodology follow a clear and rational logic?
- accuracy of the calculations in the model;
 - (ii) Are there any errors in the calculation steps?
 - (iii) If so, what is the material impact of these?
- the modelling approach
 - (iv) Is the approach taken to cleansing the data suitable?
 - (v) Are the assumptions used in the modelling approach suitable?
 - (vi) Is the approach taken to arriving at a view of an efficient unit cost suitable?
 - (vii) Is the approach taken to arriving at a view of reasonable volumes suitable?

- suggested actions for improvement on all of the areas above.

This review is not a full audit of the calculations and methodology used by Ofgem. In particular we have not checked that the data in the model is consistent with the data files supplied to Ofgem by the DNOs. It was agreed as part of the scope that we would assume that the data within the model is correct.

Ofgem have recently conducted a consultation² on the approach to be used and the 'minded to' amounts that they propose to allow for each DNO. This GAD review is in effect an independent review of the material provided as part of the consultation with the focus on the calculations and method rather than any knowledge of the street works processes.

GAD's review is limited to assessing the model and methodological approach taken by Ofgem in its SSWC consultation. GAD understands there may be more up to date information being obtained by Ofgem during the period of consultation on which GAD cannot provide an opinion.

GAD are not able to comment on the materiality of the issues covered by this report when considered within the wider price control. Ofgem should consider how material the points raised are when reviewing our findings.

This review focuses on the calculations and method. Ofgem set out in their consultation, and clarified in our meeting with them, that they do consider qualitative justification of costs claimed/data provided. Where Ofgem has considered/accepted qualitative justification, we have not provided an opinion, as we do not have expert knowledge of street works costs/processes.

Our review is on the basis that a benchmark exercise is to take place in accordance with the relevant regulatory guidelines as set out in Ofgem's Strategy Decision for Uncertainty Mechanisms. We have not considered other options that could be used. Where appropriate we have considered any limitations to the use of a benchmark exercise and identified situations where this may not be appropriate.

We have not expressed a view on the individual decisions made by Ofgem in respect of DNOs as we believe that this requires specific knowledge of street works costs.

We note that although Ofgem applied the same benchmarking assessment approach to all DNOs, a different unit cost was set by Ofgem in calculating the allowable costs in respect of one DNO (Northern Powergrid). The reason provided is that the submission contained information that was not capable of being verified as efficiently incurred expenditure and hence there was low confidence in the figures. We are not in a position to comment on this decision and hence have not considered this within our report. Similarly we are not able to express an opinion on instances where Ofgem have ruled that an application for an adjustment has not complied with the requirements under the licence or the RIIO-ED1 Price Control Financial Handbook.

GAD approach

We met with the Ofgem team responsible for the SSWC reopener and they gave a presentation on the methods that were being used to assess the submissions received from DNOs. As part of this

² <https://www.ofgem.gov.uk/publications-and-updates/consultation-riio-ed1-price-control-reopeners-may-2019>

presentation we were able to challenge the approach used and clarify the reasons behind certain decisions that had been made.

Following the presentation we were provided with a copy of the model that was used for the calculations. We have performed a desk top review of the model to consider the approach used and also to verify the accuracy of the calculations within the model. This review has been carried out independently by 2 members of the team to provide additional reliance on the result.

We have also been provided with a description of the proposed Ofgem approach which is contained within the consultation documents. This was provided to all DNOs as part of the consultation. We were also provided with copies of the replies received from the DNOs to the consultation; however, in order to maintain an independent and unbiased view as requested by Ofgem we have not used these responses in performing our review.

Data used for GAD review

The following information has been used for the GAD review:

- i) Presentation of proposed methodology from Ofgem to GAD – this report effectively provides a record of this presentation.
- ii) Excel spreadsheet ‘Supporting analysis file to SSW Costs – for GAD not published’.
- iii) Published Ofgem document ‘RIIO – EDI Reopener Consultation – Specified Street Works Costs’³

³ https://www.ofgem.gov.uk/system/files/docs/2019/09/riio-ed1_reopener_consultation_-_specified_street_works_costs.pdf

3 Overall method

Description of method

The overall approach adopted by Ofgem within their spreadsheet model is to calculate a benchmark unit cost for each Permit Fee, Permit Condition and Administration costs. These are added together to provide an overall benchmark unit cost per permit. All calculations used a base year of 2012/2013 with all monetary amounts converted to base year values.

For historical years, Ofgem have accepted the actual volumes reported by the DNOs within their submissions. For future years Ofgem have assessed their view of the reasonable volumes of permits that each DNO will require. These assessed volumes have been compared to the projected volumes provided by the DNOs and Ofgem have allowed either the DNO's own forecast, or Ofgem's view of a reasonable volume, whichever is lower. Ofgem said they did this to reflect the uncertainty of forecast volumes for HAs that have yet to implement a permit scheme.

The volumes and benchmark unit costs are then multiplied together to calculate a view of the reasonable costs that should be allowable for each DNO. Ofgem also apply a 3% per annum efficiency reduction for all future (projected) years.

The overall method of deriving a benchmark unit cost and applying this to future volumes is an approach that is frequently used in projecting future costs and in general terms would appear to be an appropriate method to use for these calculations. However, the validity of the method is crucially dependent on the assumptions that are used and potential issues with these are addressed in the relevant sections of this report.

The lower of the 2 volumes is selected and applied to the benchmark unit cost as calculated by Ofgem. This total projected cost is compared with the total costs requested by the DNO and the lower value is selected. In the majority of cases this will result in the lower value for each of costs and volumes being used but this is not always the case.

Use of a benchmark

Ofgem have used a benchmark approach in order to try to derive a view of what is an efficient cost per permit. They state in the consultation document that this is considered appropriate because, unless otherwise justified in the submissions, it is expected that unit costs would be comparable across years and across licensees. Whilst we are not experts in this field it is important to recognise that there are a number of reasons why this assumption may not be appropriate. The following points provide some examples but this is not an exhaustive list:

- i) Each DNO has to deal with a different set of HAs. Since each HA is able to set their own charge for permits it may not be appropriate to assume that each DNO will incur the same costs. Ofgem did clarify, however, that HAs can only set permit charges up to the national maximum allowed permit fee. They noted that some HAs may charge lower than the maximum and some may give discounts for early payment and other efficiency activities set out in schemes.
- ii) Different HAs may have different requirements in respect of conditions for permits (e.g. number of traffic lights in use). Where there are such differences the level of costs incurred may vary between different DNOs making the use of a benchmark less valid.

- iii) There is an implicit assumption in this approach that the past is a guide to the future. There may be reasons why future costs will differ to those incurred in the past. If DNOs are aware of any valid reason at the date of calculation these should be considered in the method used.
- iv) The actual values for unit costs for the DNOs are different (in some cases considerably different) from year to year. This may cast some doubt over the validity of this assumption.

In electing to use a benchmark approach, Ofgem must be aware of the limitations that the effect of the above factors place on the model output where it relies on the overall assumption that expected costs would be comparable between years and licensees. To the extent that this assumption does not apply then it is important that Ofgem also considers the impact of this. We have been advised by Ofgem that, once they have established the benchmark unit cost, they considered information provided in the DNOs' submissions, in order to determine whether submitted costs are justifiably different from the benchmark.

Selection of lower volume projection

An argument could be made that if Ofgem has assessed a view on the reasonable future volumes of permits and has derived a benchmark unit cost then it would be appropriate to allow any claimed costs up to the product of these 2 figures. At present this is not the case with the lower of the 2 volumes (the volumes provided by the DNOs and the volumes from Ofgem's assessment) being used. Example 1 illustrates why this could be an issue.

Example 1

The following is a simplified example to illustrate a point rather than using actual numbers.

Assume a DNO has assessed a future volume of 200 units with a unit cost of 5 per unit.

Ofgem has assessed the reasonable volume to be 250 units with a benchmark cost of 4 per unit.

In each case the total projected costs are 1000.

Under the methodology adopted the lower volume (200) and the benchmark cost (4) would be used to assess a total allowable cost of 800.

In this example it is possible that whilst both Ofgem and the DNO believe that the reasonable costs are 1000 only 800 would be allowed due to a difference in the methodology by which the DNO derived their assumptions. This could appear to be unduly harsh on the DNO and hence it is important that any justifications provided by the DNO for its figures have been considered.

There is a danger that the actual method used could provide an incentive for DNOs to adjust the components of their submissions. Example 2 illustrates a scenario where this could occur.

Example 2

If we assume Ofgem has assessed a volume of 250 units and a benchmark cost of 4 then the total cost is 1000

If the DNO also has a view of 1000 with the total cost based on 200 units and 5 per unit then as in example 1 they will only be able to claim 800.

If the DNO changed their submission to a volume of 250 units and a cost of 4 per unit they would now be entitled to the full £1000 claim

Example 2 shows that there is an incentive for the DNO to submit a higher volume with an unchanged total cost in order to increase the total amount they will be allowed. In general terms we would recommend a method where there was no such incentive for the DNOs to manipulate their figures. This would be achieved by allowing the DNO to claim the full amount as assessed by both elements of the Ofgem calculation.

Efficiency assumption

As detailed above Ofgem have applied a 3% efficiency reduction for all future years. Whilst we are happy to agree that it may be appropriate apply reductions to the future unit costs, we do not feel that we have sufficient knowledge of the specifics surrounding street costs and permits to be able to make any judgement as to the appropriateness of the 3% figure selected in this case.

Application of benchmark unit cost to DNOs not included in the calculation

Section 4 of this report considers the appropriateness of the data used to derive the benchmark unit cost. Ofgem have only considered the data from 3 of the 5 DNOs who have submitted in setting the benchmark unit cost. This leads to a question as to whether or not it is appropriate to use the benchmark cost for the other 2 DNOs whose data has been excluded.

As detailed within the scope section of this report in the case of one DNO Ofgem have used a different approach due to concerns over the information provided and we are unable to express a view on this decision.

The submission of one other DNO suggested they have experienced very different actuals costs to the remaining 3 DNOs. If it can be shown that the DNOs concerned do actually exhibit different cost levels (perhaps due to the specific HAs they work with) then they should be considered separately and not be part of the benchmark exercise. If this is not the case and there is no valid reason for a big difference in costs then it may be appropriate to use the benchmark values of the 3 selected DNOs. We understand that further work has taken place to investigate this issue and Ofgem will publish this information alongside their decision.

4 Calculation of benchmark unit cost

Method overview

The benchmark unit cost is calculated by dividing the total costs incurred by the DNOs by the volumes of permits that they have required in carrying out the works. A figure is calculated for each of the past 4 years for which actual data is available.

Exclusion of permit variations

Permit variations are costs incurred in making changes to works. Ofgem are of the view that permit variations, and the associated costs are inefficient and therefore they propose to disallow funding for them. They expect all DNOs to avoid or minimise permit variation costs.

The actual method used does make an implicit allowance for permit variation costs. The total cost (including variations) is divided by the volume of permits issued (excluding variations). The resultant figure thus represents the total average cost per initial permit issued including permit variation costs (i.e. the cost per time they dig up the road). Since these benchmark costs are then applied to the projected volumes of initial permits issued there is an implicit allowance for the past level of variation costs included. We understand from Ofgem that the 3% efficiency improvement expected is in part to reflect the expected reduction in costs of permit variations in future.

If the total cost including variations are to be included in deriving the benchmark then if the relative number of variations per permit remains unchanged this would make no difference to the total allowable costs. Example 3 provides an illustration of how this works.

Example 3

If we assume the data used for a benchmark was based on the following:

Total cost = 1000 Volume = 200 (+ 50 permit variations)

The benchmark cost using the current approach is $1000/200 = 5$

The benchmark cost if permit variations were included is $1000/(200+50) = 4$

Now assume that a DNO is projecting for a future year

If their expected volumes are 300 (+75 permit variations) then the allowable cost using the current method is $300 * 5 = 1500$

The allowable cost if variation volumes are included would be $375 * 4 = 1500$

Now assume that the expected volumes are 300 (+80 permit variations) then the allowable cost using the existing method remains $300 * 5 = 1500$

The allowable cost if variation volumes are included would increase to $380 * 4 = 1520$

Finally assume that the expected volumes are 300 (+50 permit variations) then the allowable cost using the existing method remains $300 * 5 = 1500$

The allowable cost if variation volumes are included would reduce to $350 * 4 = 1400$

Example 3 shows that if the relative proportion of variations is unchanged it makes no difference to the calculations. If a DNO was seeking to improve efficiency and hence reduce the projected number of variations they would actually be in a worse position if the variation volumes were included in the calculations.

If the number of permit variations is included when calculating the benchmark unit cost then an implicit assumption is being made that the average cost of a permit variation is the same as the average cost of the initial permit being issued. This is unlikely to be true and hence this method is not recommended.

RRP data v Submission data

There are 2 sources of data used by Ofgem in assessing the benchmark unit cost. The 'Submission data' is data provided by the DNOs specifically for the purpose of this reopener. This data is in a format consistent with the approach that is to be used for projecting future volumes and costs.

The second source of data is referred to as 'RRP'. This is data from the regulatory reporting templates that DNOs are required to submit each year. There are 2 different types of this data. Type C (table M9c) data is the data in respect of costs and volumes associated with the permit schemes which are included within this reopener. Type B (table M9b) data is similar data but in respect of permit schemes that had previously been established and are not included within the reopener. Type B data will thus be in respect of older more established schemes where an ex-ante allowance has been included within the RIIO-ED1 price control settlement.

The method proposed by Ofgem calculates the average unit cost (for the 3 DNOs selected as suitable) using both submission data and the combined RRP data. In view of the fact that this data covers the same cost and volumes (albeit counted and presented differently) there does not appear to be any justification for using both sets of data. We recommend that only one source of data is used for the benchmark calculation.

The Submission data has only been received in respect of the 5 companies (8 licensees) who have requested a review of their allowable costs, and in particular for those parts of these DNOs where a review has been requested. In the case of UKPN they provide RRP data for 3 different areas but only one has requested participation in the reopener. Analysis of the submissions data has also resulted in 2 of the 5 DNOs data being excluded from benchmark calculations (as detailed below). There is thus a risk that the use of the submission data only could result in not considering the full extent of the data available being used in deriving the benchmark. Only using 3 DNOs data does not generally support a robust benchmark calculation representing the whole industry. Provided the data is relevant and consistent, the more data that can be used the more robust the approach. This would support the use of the RRP data for the calculations.

There is a further complication in that the RRP data is not provided in a method of classification and recording that is entirely consistent with the approach to be used for projecting future volumes. We understand that some DNOs have made strong representations that the use of RRP data is not appropriate due to these differences. One specific difference is that the RRP data does

not enable the removal of permit variation volumes which is inconsistent with the method to project future volumes. Consistency between the data used to derive the benchmark and the way it will be used is of considerable importance. Unless these inconsistencies can be removed it may be more appropriate to use the submissions data only in calculating the benchmark unit costs.

We recommend that the calculations continue to be performed using the RRP data both for type B and type C combined and for Type C only as this provides additional useful information as described above. However, unless the RRP data is consistent with the approach to projecting volumes forward then the benchmark should only use Submission data.

In view of the value that additional data can provide, if a method could be found to make the RRP data compatible with the projection methods used, then using the additional company data in the actual calculation of the benchmark would be an improvement.

Cleansing of data for benchmark calculation

Ofgem have calculated the average unit costs for each of the DNOs based on the RRP data and submissions data. The description of the method (included as part of the consultation) describes a data cleansing exercise whereby inconsistencies (e.g. significant fluctuations in unit costs between years) were identified and any such values were removed from the data. Our understanding of this approach following our discussions with Ofgem is that where issues with the data were identified the data from that DNO was excluded completely from the calculation of the benchmark rather than excluding any individual parts of the data.

Only 3 DNOs data were actually included in the benchmark calculation with the other 2 DNOs data being excluded. This selection was made due to the relative consistency of the average of the 3 selected over the whole 4 years. These 3 DNOs also showed a reasonable consistency between their RRP and Submission data which provided added assurance to the validity of the data.

In reviewing the data in respect of the submissions we agree that the 2 DNOs that have been excluded from the calculation of the benchmark have submitted considerably different costs from the 3 selected. They also show very different average costs depending on whether RRP or submission data is used. We agree that including the data in respect of these companies would result in a benchmark that would not be appropriate as representing the expected costs.

Whilst we have concluded that excluding the data in respect of 2 of the DNOs appears justified on this basis it is worth reiterating the point above that if RRP data could be used then this would enable the experience of more DNOs to be considered.

We have noted that even within the 3 DNOs whose data has been used there is quite a lot of variation year on year and this should be considered in deciding upon the overall validity of the assumption that a benchmarking approach is valid.

Simple v weighted average

Ofgem have calculated the average cost experienced by each of the DNOs used over the years 2016 to 2019 for which actual figures are known. They have then used the average figure from the individual averages to derive the benchmark. This is a simple average calculation with no allowance for the relative number of permits each DNO has required.

Using a simple average introduces a risk of bias where a DNO with a relatively low number of permits has a higher or lower unit cost than the rest of the group. We therefore recommend that the use of a simple average should be replaced with the use of a weighted average.

Splitting out the component parts of costs

The method proposed by Ofgem calculates a separate benchmark unit cost for each of the 3 main types of cost considered. These calculations are then performed and an assessment made against the costs requested by each DNO for each type of cost separately. The overall cost is then calculated as the sum of the allowable amount for each type of cost.

Our discussions with Ofgem and feedback we have heard from the DNOs suggest that there is a risk that different DNOs may have a different approach to the way that data is classified and the method used for projecting future costs. Performing the assessment at an individual cost type level could result in a DNO being disadvantaged due to the classification of data rather than due to genuinely different costs being incurred.

We recommend that a benchmark unit cost is calculated for all types of cost combined and the comparison with requested amounts by DNOs is performed at total level.

If Ofgem were to conclude that some aspects of the costs were not consistent for all DNOs and hence could not be benchmarked then it may be preferable to continue to split out the components and review their costs separately.

Allowance for trends in data

The approach used by Ofgem is to calculate the benchmark cost based on the average rate observed over the previous 4 years. This approach may be appropriate where there is no reason to suspect that there may be variation from year to year. This may not be the case.

We recommend that in selecting the final benchmark unit cost Ofgem should consider any submissions from the DNOs making a case for the actual costs having varied over the data period or reasons for future variations. We also recommend that the year on year unit costs are reviewed to look for any trends in the base data. If such trends are observed it may be appropriate to place additional weight on the latest years of data rather than the average of all 4 years.

5 Derivation of projected volumes

Method overview

Ofgem have derived their view of what a reasonable volume of permits is going to be for future years for each of the DNOs. This volume has been compared with the volume submitted by the DNO and the lower of these 2 values used. The validity of selecting the lower volume is discussed in section 3 of this report.

The first stage in assessing the volume of permits is to project the number of permit schemes that each DNO will have in each future year. Ofgem also calculate the average number of permits per scheme that the DNO has experienced over the past 4 years and apply this average to the number of schemes in each future year to derive the volume of permits.

Calculation of number of permit schemes per DNO

This calculation uses the actual number of known schemes for past years and adds any future permit schemes that are due to start over the following 4 years. Where a scheme is due to start part way through a reporting year appropriate allowance has been made for the actual dates that will apply.

In some cases a single HA may be covered by more than one DNO. Where this is the case each DNO has been asked to provide details of the percentage of the HA's road network that they cover. In a few cases this does not sum to 100% and Ofgem have scaled the assumed percentages to obtain a total of 100%. In most cases this will make very little difference but there are 4 HAs where the total share provided is more than 10% larger or smaller than the HA. In the absence of more accurate information we believe Ofgem have used an appropriate method. If the HAs were able to provide a more accurate percentage then we would recommend this was used.

In some cases the HA may use a partial permit scheme rather than a full scheme. In this case Ofgem have assumed that 50% of the HA is covered by a permit scheme. We understand from our discussions with Ofgem that it is possible to obtain the actual percentage of the HA network that is covered by permits and we recommend that this data is used in the calculations.

Subject to the observations we have reviewed the calculations performed by Ofgem and we are satisfied that the calculations are correct and that this is an appropriate method to project the number of permit schemes each DNO will be subject to.

Average permits per scheme

We have verified that the calculation of the average number of permits per scheme for each DNO is correct. One minor error in the calculations was identified and reported to Ofgem who have advised that this has now been amended. This error only relates to one DNO.

The method implicitly assumes that the number of future permits per scheme will be the same as the past average for each DNO. We think that the following points should be considered when considering if this is an appropriate assumption.

- i) Some DNOs are seeing an increase in the number of permit schemes in the future. We are not certain that it is reasonable to assume that the number of permits for these new schemes will be the same as for the existing schemes. A specific example is where a metropolitan area scheme is being added to a DNO which has mainly comprised more rural areas in the past.
- ii) Looking at the actual past volume data for the DNOs show that there has been quite a lot of year on year variation in the number of permits required. This casts some doubt on the validity of using an average figure for future years.
- iii) For some schemes there is evidence of an upward trend in the number of permits per scheme. It is possible that this trend could continue, especially if it reflects different requirements for the new schemes added to the DNOs portfolio. In this case we believe that Ofgem should give consideration to the reasons for these increases and consider placing additional weight on the more recent years.
- iv) The average number of permits per scheme varies considerably between DNOs with a lowest figure of 585 and a highest figure of 1460. This supports the view that there is a big difference in the number of permits required in different areas.

Each DNO has provided Ofgem with their own view of the number of permits that will be required in future years. This is split between planned works (specific known projects) and unplanned works (repairs). It is appropriate that Ofgem should check the validity of the volumes submitted by the DNOs but especially in respect of planned works a strong argument could be made that the DNO will have a fairly robust idea of the number of permits required. We recommend that in coming to a final conclusion on the volumes to use Ofgem should give consideration to the information provided by the DNOs.

6 Limitations

GAD does not have expertise in gas and electricity markets or in the costs of associated street works. The advice is restricted to the accuracy of calculations and the appropriateness of the methods used in assessing and applying a benchmark unit cost.

In preparing this report, GAD has relied on data and other information supplied by Ofgem as described in the report. Any checks that GAD has made on this information are limited to those described in the report, including any checks on the overall reasonableness and consistency of the data. These checks do not represent a full independent audit of the data supplied. In particular, GAD has relied on the general completeness and accuracy of the information supplied without independent verification.

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This report is covered by letter of engagement between GAD and The Gas and Electricity Markets Authority dated 10th September 2019.



Nick Clitheroe
Fellow of the Institute and Faculty of Actuaries
02 October 2019