

NGGT Asset Health Review

Faithful+Gould Assessment of OFGEM Analysis

2 July 2020

BC/OFGEM/Final Issued

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Introduction

Ofgem have completed a comprehensive review of the data presented by National Grid Gas Transmission (NGGT) and Faithful+Gould have been engaged to provide assurance on the methodology, appropriateness of proposed adjustments and to provide further guidance or areas of concern in preparation for the draft determination.

Executive Summary

Scope of Work – Intervention Types Reviewed

The review covered the following areas:

- A qualitative review of the NGGT data submission excluding detailed review of submitted SAP data.
- Review of the Ofgem assessment for clarity, completeness, consistency and appropriateness.
- Findings and recommendations for each paper with the objective of improving the transparency and quality of the overall assessment.
- A summary of the overall assessment for each intervention type.

Where SAP data forms the fundamental basis of unit cost analysis it is assumed that NGGT have provided data in conjunction with a robust governance process and that information provided is an accurate record of spend for each intervention.

The following unit cost papers were reviewed: -

- *A22.10 - Compressors*
- *A22.14 - Valves*
- *A22.16 - Pipelines*
- *A22.18 – Civils*
- *A22.20 – Electrical*

Each intervention review covered Faithful+Gould's view whether the: -

- justification provided by NGGT was relevant to the asset type
- asset type was suitable to be measured on the specific unit cost basis
- Ofgem adjustments were appropriate and supported by Faithful+Gould

The report for each intervention contains key findings and recommendations.

Quality of base data provided by NGGT

Across all intervention types NGGT have provided a mixture of outturn, tendered and estimated data in support of the justification papers.

Based on the review Faithful+Gould believe NGGT base data could more comprehensive and should have been able to provide a greater proportion of outturn data from the RIIO-T1 period.

Across several adjustments OFGEM have highlighted errors in scope, volume and data itself there is a concern over the NGGT governance in producing and issuing these justification papers.

The unit cost calculations vary considerably across asset type and often the granularity of these may be too wide. E.g. the application of unit cost at a site level for fences and gates appears disproportional, the use of a unit cost for LV switchboards which range in size and complexity from site to site. Also, at the component level unit costs e.g. valves, pipelines etc could easily be defined at a diameter/size level to better support a representative baseline.

Across the intervention types the use of weighted averages has often been submitted but considered to varied to support its application unless sufficient base data supported the appropriateness. Where those parameters have been met the weighted average has been considered appropriate.

Key Findings and Recommendations

Faithful+Gould principally support Ofgem's approach and adjustments made to NGGT unit cost submissions. Fundamentally, in our experience, more and better-quality cost data from RIIO-T1 could/should have supported justification papers.

Following conclusion of the draft determination process OFGEM may wish to consider further analysis of the base data and/or produce clear instruction regarding NGGT future data gathering requirements across all interventions to improve the process of validation and confidence in data points in the future.

Further consideration may be given to periodic audits of NGGT data recording and management.

1. Compressors

Scope of Work

Quality Assurance review of Ofgem's assessment of the supporting data provided by NGGT for their proposed unit cost allowances contained within their Engineering Justification Paper A22.10. – Compressors. Specifically, unit cost justification papers:

- **A22.10.2.1 – Avon / RB211 Fuel Gas Conditioning Skid Installation**
- **A22.10.2.2 - Compressor Breakdowns**
- **A22.10.2.3 - Gas Generator Overhaul – LM2500**
- **A22.10.2.4 – Gas Generator Overhauls – Rolls- Royce Avon's**
- **A22.10.2.6 - Gas Generator Overhaul – Siemens**
- **A22.10.2.12 - Power Turbine Overhauls GE HSPT**
- **A22.10.3.14- Mopac Motor Compressor Replacement**

The review covers the following areas:

- A qualitative review of the NGGT data submission excluding detailed review of submitted SAP data.
- Review of the Ofgem assessment for clarity, completeness, consistency and appropriateness.
- Findings and recommendations for each paper with the objective of improving the transparency and quality of the overall assessment.
- A summary of the overall assessment

Unit Cost Paper - A22. 10.2.1 – Avon / RB211 Fuel Gas Conditioning Skid Installation

Review of NGGT unit cost submission

Based on the NGGT submission Faithful+Gould confirm the following aspects: -

- Scope of work relevant to UID.
- Relevant Work Breakdown Structure elements identified for UID
- The base data is a single point quotation.
- Quotation converted to 2018/19 price base using RPI adjustment.

This asset type is not suitable to be measured on a unit cost basis as this asset type can vary from site to site and therefore there may be significant variance in unit cost.

Review of Ofgem Unit cost analysis

Ofgem's assessment is clearly presented and understandable. Adjustments to unit cost are clearly outlined defining observations and calculations in support of those.

Ofgem made adjustments to: -

- The use of a single point quotation to reflect efficiency if competitively tendered.

Key Findings and Recommendations

Faithful+Gould support Ofgem's assessment and adjustment factor applied.

In summary the findings of Faithful+Gould are: -

- the single base sample does not reflect sufficient and reflective data for future spend.
- more analysis/consideration is suggested to define the likely variance in unit cost.

Unit Cost Paper - A22. 10.2.2 - Compressor Breakdowns

Review of NGGT unit cost submission

Based on the NGGT submission Faithful+Gould confirm the following aspects:-

- Scope of work relevant to UID.
- Relevant Work Breakdown Structure elements identified for UID
- Spend converted to 2018/19 price base using RPI adjustment.
- Unit cost calculated by dividing total outturn costs by actual volume.

Review of Ofgem Unit cost analysis

Ofgem have made no adjustments to unit cost in this element.

Key Findings and Recommendations

Faithful+Gould consider Ofgem's assessment should further define the specific level of unit cost.

In summary the findings of Faithful+Gould are: -

- Whether the base sample represents sufficient and reflective data of future spend.
- More analysis/consideration relating to the activities associated with compressor breakdowns.
- Ofgem may wish to explore a further categorisation of breakdowns to allow a more detailed and accurate financial assessment and application of future volume.

Unit Cost Paper - A22. 10.2.3 - Gas Generator Overhaul – LM2500

Review of NGGT unit cost submission

Based on the NGGT submission Faithful+Gould confirm the following aspects: -

- Scope of work relevant to UID.
- Relevant Work Breakdown Structure elements identified for UID
- The base data is a single point quotation.
- Quotation converted to 2018/19 price base using RPI adjustment.

This asset type as detailed in the quotation as a standard unit therefore suitable to be measured on a unit cost basis.

Review of Ofgem Unit cost analysis

Ofgem's assessment is clearly presented and understandable. Adjustments to unit cost are clearly outlined defining observations and calculations in support of those.

Ofgem made adjustments to: -

- The quotation to reflect 18/19 price.

Key Findings and Recommendations

Faithful+Gould support Ofgem's assessment and adjustment factor applied.

In summary the findings of Faithful+Gould are: -

- The quotation includes process for [Redacted] locations and based on NGGT methodology have applied a weighted average. In this instance the weighted average results in a lower than total average value which in this instance is not considered appropriate.

Unit Cost Paper - A22. 10.2.4 – Gas Generator Overhauls – Rolls- Royce Avon's

Review of NGGT unit cost submission

In summary Faithful+Gould confirm the following aspects: -

- Scope of work relevant to UID.
- Relevant Work Breakdown Structure elements identified for UID
- The base data is 9 projects with corresponding SAP data
- Data points converted to 2018/19 price base using RPI adjustment.

This asset type is suitable to be measured on a unit cost basis.

Review of Ofgem Unit cost analysis

Ofgem's assessment is clearly presented and understandable. Adjustments to unit cost are clearly outlined defining observations and calculations in support of those.

Ofgem made adjustments to: -

- Elements of "unallocated cost" were removed as there was insufficient justification provided to include.

Key Findings and Recommendations

Faithful+Gould support Ofgem's assessment and adjustment factor applied.

In summary the findings of Faithful+Gould are: -

- the base data included prices for 9 locations and NGGT have applied a weighted average. In this instance the weighted average results in a higher than total average value which, given the sample, is considered appropriate in this instance.

Unit Cost Paper - A22. 10.2.6 - Gas Generator Overhaul – Siemens

Review of NGGT unit cost submission

In summary Faithful+Gould confirm the following aspects: -

- Scope of work relevant to UID.
- Relevant Work Breakdown Structure elements identified for UID
- The base data is a single point quotation.
- Quotation converted to 2018/19 price base using RPI adjustment.

This asset type as detailed in the quotation as a standard unit therefore suitable to be measured on a unit cost basis.

Review of Ofgem Unit cost analysis

Ofgem have made no adjustments to unit cost in this element.

Key Findings and Recommendations

Faithful+Gould support Ofgem's assessment.

In summary the findings of Faithful+Gould are: -

- The quotation includes quotation for 1 location only therefore not considered a sufficient base data sample for future volume spend.

- No adjustment applied for a single quotation given that the overhaul in this case has to be undertaken by the original installer hence agreed no adjustment should be applied.

Unit Cost Paper - A22. 10.2.12 - Power Turbine Overhauls GE HSPT

Review of NGGT unit cost submission

Based on the NGGT submission Faithful+Gould confirm the following aspects: -

- Scope of work relevant to UID.
- Relevant Work Breakdown Structure elements identified for UID
- Spend converted to 2018/19 price base using RPI adjustment.
- Unit cost supported by actual volume data from PAC.

Review of Ofgem Unit cost analysis

Ofgem have discounted the PAC data and assessed using Service Contract rates as part of determination reflecting that this basis represents a more efficient method of delivery also supported by NGGT plan to adopt service contract for RIIO-T2.

Key Findings and Recommendations

Faithful+Gould support Ofgem's assessment given both NGGT and Ofgem accept that a service contract represents future spend better than the previous outturn data.

Unit Cost Paper - A22. 10.3.14- Mopic Motor Compressor Replacement

Review of NGGT unit cost submission

In summary Faithful+Gould confirm the following aspects: -

- Scope of work relevant to UID.
- Relevant Work Breakdown Structure elements identified for UID
- The base data is a from a supplier quotation
- The quotation is submitted in EURO
- Quotation converted to 2018/19 price base using RPI adjustment.

This asset type as detailed in the supplier quotation is not suitable to be measured on a unit cost basis. Given the proposed volume in RIIO-T2 is only [Redacted] we would not feel that a unit cost approach would be required.

Review of Ofgem Unit cost analysis

Ofgem's assessment is clearly presented and understandable. Adjustments to unit cost are clearly outlined defining observations and calculations in support of those.

Ofgem made adjustments to: -

- The potential efficiency in supplying a second unit.

Key Findings and Recommendations

Faithful+Gould does not support Ofgem's assessment as the quotation relates to one location and as there are only [Redacted] future planned asset types a project budget may be considered more appropriate approach.

Summary /Conclusion - Compressors

Ofgem's overall approach associated with NGGT reviews in calculating the unit-cost matrix are in Faithful+Gould opinion consistent in their methodology in calculating their costs based on the data submitted by NGGT.

We would recommend that Ofgem look for NGGT to improve the quality and issue of their Data / breakdowns in a more unified and logical way providing a summary table of costs to pinpoint size and scale of base data points.

It is important for Ofgem to know the relevance/reflectiveness of the base data in relation to the proposed forward volume and the more base data in support the more confident Ofgem can be in the unit cost information. Data based on a larger sample, with appropriate internal governance supports a better basis for review.

In conclusion we would address the overall method of how NGGT both collect and ultimately submit their Engineering Justification Papers, their approach we consider could and should be improved providing more and better detail.

2. Valves

Scope of Work

Quality Assurance review of Ofgem's assessment of the supporting data provided by NGGT for their proposed unit cost allowances contained within their Engineering Justification Paper A14.14 – Valves. Specifically, unit cost justification papers:

- A22.14.1.5 - Locally Actuated Valve Replacement
- A22.14.1.8 - Vent & Sealant Line Replacement
- A22.14.1.10 - Non-Return Valve Major Overhaul

The review covers the following areas:

- A qualitative review of the NGGT data submission excluding detailed review of submitted SAP data.
- Review of the Ofgem assessment for clarity, completeness, consistency and appropriateness.
- Findings and recommendations for each paper with the objective of improving the transparency and quality of the overall assessment.
- A summary of the overall assessment

Unit Cost Paper - A22.14.1.5 Locally Actuated Valve Replacement

Based on the NGGT submission Faithful+Gould confirm the following aspects: -

- Scope of work relevant to UID.
- Relevant Work Breakdown Structure elements identified for UID
- PAC spend in each year converted to 2018/19 price base using RPI adjustment.
- Unit cost calculated by dividing total outturn costs for each PAC by actual volume of valve replacements completed.

- Application of a weighted average on all outturn data points. (The basis of weighted average in this instance has a higher impact than utilising a simple average unit cost).

This asset type is suitable to be measured on a unit cost basis given the component level.

Review of Ofgem Unit cost analysis

Ofgem's assessment is clearly presented and understandable. Adjustments to unit cost are clearly outlined defining observations and calculations in support of those.

Ofgem made adjustments to: -

- Data points with multiple areas of concern or known factors have been excluded from the unit cost analysis
- Elements deemed not to be standard as included e.g. pig traps have been adjusted
- Data relating to other elements with separate funding requests

In consideration to the cost data provided with a varying range of individual PAC costs it is unclear whether the weighted average would reflect the proposed mix of valve arrangements for future volume.

Further analysis to a specific size range may better support the use of a weighted average.

It is uncertain what proportion the 9 submitted data points make to the total completed in RIIO-T1 and whether a sufficient and reflective sample.

Key Findings and Recommendations

Faithful+Gould support Ofgem's assessment and adjustment factors applied as clear data points should not have been included in the submitted supporting data.

In summary the findings of Faithful+Gould are: -

- the use of a weighted average is not the most appropriate method to be adopted
- the base data does not reflect a sufficient and reflective sample
- consideration should be given to a more detailed unit cost analysis at a valve size level

Unit Cost Paper - A22.14.1.8 Vent & Sealant Line Replacement

Review of NGGT unit cost submission

Based on the NGGT submission Faithful+Gould confirm the following aspects: -

- Scope of work relevant to UID.
- Relevant Work Breakdown Structure elements identified for UID
- PAC spend in each year converted to 2018/19 price base using RPI adjustment.
- Unit cost calculated by dividing total outturn costs for each PAC by actual volume applied across a mix.

This asset type is suitable to be measured on a unit cost basis given the component level.

Review of Ofgem Unit cost analysis

Ofgem's assessment is clearly presented and understandable. Adjustments to unit cost are clearly outlined defining observations and calculations in support of those.

Ofgem made adjustment to: -

- Submitted base data as scope definition included stem seal replacement which was not deemed to be included with this asset type.

In consideration to the cost data provided with a varying range of individual PAC costs it is unclear whether the weighted average would reflect the proposed mix of valve arrangements for future volume.

Further analysis to a specific size range may better support the use of a weighted average.

It is uncertain what proportion the 16 submitted data points make to the total completed in RIIO-T1 and whether a sufficient and reflective sample.

Key Findings and Recommendations

Faithful+Gould support Ofgem's assessment and adjustment factor applied.

In summary the findings of Faithful+Gould are: -

- the use of a weighted average is not the most appropriate method to be adopted
- the base data does not reflect a sufficient and reflective sample
- More analysis/consideration to a detailed unit cost analysis at a size and complexity level given the wide range of individual PAC unit rates.
- It is unclear the amount of excavation work undertaken with each base data point which should be quantified as part of the base data submission.

Unit Cost Paper - A22.14.1.10 Non-Return Valve Major Overhaul

Review of NGGT unit cost submission

Based on the NGGT submission Faithful+Gould confirm the following aspects: -

- Scope of work relevant to UID.
- Relevant Work Breakdown Structure elements identified for UID
- Converted unit cost data to 2018/19 price base using RPI adjustment
- The total outturn costs for UID divided by delivered volume of work to derive unit cost
- NRV valve size (36") confirmed by Site Operational staff

This asset type is suitable to be measured on a unit cost basis.

Review of Ofgem Unit cost analysis

Ofgem's assessment is clearly presented and understandable. Adjustments to unit cost are clearly outlined defining observations and calculations in support of those.

Ofgem made adjustments to: -

- Data points with areas of concern which have been excluded from the unit cost analysis
- The base data as it included 9 replacements and given the volume in RIIO-T2 anticipates no replacements.

Further clarity and detail could have allowed a specific size range of unit costs that may better support the quality of the base data i.e. 36" stated.

The base data PAC reflects a sufficient sample of information relating to the volume in RIIO-T1 however the PAC includes replacements which are not envisaged/planned in RIIO-T2.

Key Findings and Recommendations

Faithful+Gould support Ofgem's assessment and adjustment factors applied.

In summary the findings of Faithful+Gould are: -

- More analysis/consideration to a detailed unit cost analysis at a size and complexity level.

Summary /Conclusion - Valves

Ofgem's overall approach associated with NGGT reviews in calculating the unit-cost matrix are in Faithful+Gould opinion consistent in their methodology in calculating their costs based on the data submitted by NGGT.

We would recommend that Ofgem look for NGGT to improve the quality and issue their Data / breakdowns in a more unified and logical way providing a summary table of costs to pinpoint size and scale of base data points.

It is important for Ofgem to know the relevance/reflectiveness of the base data in relation to the proposed forward volume and the more base data in support the more confident Ofgem can be in the unit cost information. Data based on a larger sample, with appropriate internal governance supports a better basis for review.

In conclusion we would address the overall method of how NGGT both collect and ultimately submit their Engineering Justification Papers, their approach we consider could and should be improved providing more and better detail.

3. Pipelines

Scope of Work

Quality Assurance review of Ofgem's assessment of the supporting data provided by NGGT for their proposed unit cost allowances contained within their Engineering Justification Paper A22.16. – Pipelines. Specifically, unit cost justification papers:

- A22.16.1.11 – Cathodic Protection Remote Monitoring
- A22.16.2.1 – Nitrogen Sleeve - Minor

- A22.16.2.2 – Nitrogen Sleeve – Grouting
- A22.16.4 1 – Cathodic Protection (CIPS) Digs
- A22.16.4.5 – ILI (in line inspections)

The review covers the following areas:

- A qualitative review of the NGGT data submission excluding detailed review of submitted SAP data.
- Review of the Ofgem assessment for clarity, completeness, consistency and appropriateness.
- Findings and recommendations for each paper with the objective of improving the transparency and quality of the overall assessment.
- A summary of the overall assessment

Unit Cost Paper - A22. 16.2.1 – Nitrogen Sleeve - Minor

Review of NGGT unit cost submission

Based on the NGGT submission Faithful+Gould confirm the following aspects: -

- Scope of work relevant to UID.
- Relevant Work Breakdown Structure elements identified for UID
- PMC quotation converted to 2018/19 price base using RPI adjustment.
- Unit cost provided in quotation as a price range.

Review of Ofgem Unit cost analysis

Ofgem's assessment is clearly presented and understandable. Adjustments to unit cost are clearly outlined defining observations and calculations in support of those.

Ofgem made adjustment to: -

- Single source quotation and potential efficiency by competitively tendering.
- Area ops cost reduced from 5% to 3.6% in terms of consistency across NGGT submission.

Further clarity and detail could have allowed a specific size range of unit costs that may better support the use of a weighted average.

It is uncertain whether the submitted quotation reflects the specific scope as there are references referring to inclusions/exclusions listed. e.g. one element suggests that the quotation includes for the provision of temporary access roads which may then inflate the base quotation. It would be prudent to clarify that the elements listed justifiably apply to the basis of unit cost in this instance.

Key Findings and Recommendations

Faithful+Gould support Ofgem's assessment and adjustment factor applied.

In summary the findings of Faithful+Gould are: -

- a single quotation does not represent sufficient base data
- inclusions/exclusions listed on the quotation may not match the scope of the valve overhaul. E.g. the quotation states that it includes for the provision of temporary access road which is not quantified and the question of whether should be part of the unit cost.

Unit Cost Paper - A22. 16.2.2 – Nitrogen Sleeve – Grouting

Review of NGGT unit cost submission

In summary Faithful+Gould confirm the following aspects: -

- Scope of work relevant to UID.
- Relevant Work Breakdown Structure elements identified for UID
- Quotation converted to 2018/19 price base using RPI adjustment.

This asset type is suitable to be measured on a unit cost basis.

Review of Ofgem Unit cost analysis

Ofgem have made no adjustments to unit cost in this element.

Key Findings and Recommendations

Faithful+Gould do not support Ofgem's assessment on the basis that no adjustment has been applied associated with a consistent approach to potential efficiency associated with competitive tendering

In summary the findings of Faithful+Gould are: -

- Whether there is only one supplier able to complete this scope
- Allowing a value associated with risk.
- The base quotation used is not consistent in size and scale with the grouting lengths significantly varying which are being used as the average base unit cost. We do not consider the base quotation as a sound base on which to make assessment. NGGT need to provide a consistent base for assessment.

Unit Cost Paper - A22. 16.4 1 – Cathodic Protection (CIPS) Digs

Review of NGGT unit cost submission

Based on the NGGT submission Faithful+Gould confirm the following aspects: -

- Scope of work relevant to UID.
- Relevant Work Breakdown Structure elements identified for UID
- PAC spend in each year converted to 2018/19 price base using RPI adjustment.
- Unit cost calculated by dividing total outturn costs for PAC by actual volume completed.

This asset type is suitable to be measured on a unit cost basis.

Review of Ofgem Unit cost analysis

Ofgem's assessment is clearly presented and understandable. Adjustments to unit cost are clearly outlined defining observations and calculations in support of those.

Ofgem made adjustment to: -

- Additional volume identified on PAC resulting in a different unit cost variance.

Key Findings and Recommendations

Faithful+Gould support Ofgem's assessment and adjustment factor applied.

In summary the findings of Faithful+Gould are: -

- More analysis/review to determine whether the completed PAC data aligns with the requirements of this element of work and therefore whether the unit rate applied to future spend would be appropriate. We recommend NGGT provide any further supporting information to refine the data adjustment to either confirm the large adjustment in unit cost is correct or demonstrate that the adjustment may be considered excessive.

Unit Cost Paper - A22. 16.4.5 – ILI (in line inspections)

Review of NGGT unit cost submission

Based on the NGGT submission Faithful+Gould confirm the following aspects: -

- Scope of work relevant to UID.
- Relevant Work Breakdown Structure elements identified for UID
- PAC spend in each year converted to 2018/19 price base using RPI adjustment.
- Unit cost calculated by dividing total outturn costs for PAC by actual volume completed.

This asset type is suitable to be measured on a unit cost basis.

Review of Ofgem Unit cost analysis

Ofgem's assessment is clearly presented and understandable. Adjustments to unit cost are clearly outlined defining observations and calculations in support of those.

Ofgem made adjustments to: -

- Additional volume identified in on PAC resulting in a different unit cost.
- Errors identified in the base data calculations
- Misallocated costs
- The movement from weighted average to the median relating to the unit cost variances

Key Findings and Recommendations

Faithful+Gould support Ofgem's assessment and adjustment factors applied and the use of the median unit cost due to the overall base data variance and disproportional impact NGGT presented.

In summary the findings of Faithful+Gould are: -

- Given the number of anomalies in the base data a more detailed review may be beneficial to ensure no further data issues exist.

Given the finding further consideration may be given to a more detailed audit of base data with specific identification and evidence requested from NGGT in support of the accuracy of base data.

Summary /Conclusion - Pipelines

Ofgem's overall approach associated with NGGT reviews in calculating the unit-cost matrix are in Faithful+Gould opinion consistent in their methodology in calculating their costs based on the data submitted by NGGT.

We would recommend that Ofgem look for NGGT to improve the quality and issue their Data / breakdowns in a more unified and logical way providing a summary table of costs.

It is important for Ofgem to know the relevance/reflectiveness of the base data in relation to the proposed forward volume and the more base data in support the more confident Ofgem can be in the unit cost information. Data based on a larger sample, with appropriate internal governance supports a better basis for review.

The mixed nature of actual completed data, quotation information and identified anomalies across this intervention does not provide a high degree of confidence in the base data quality.

In conclusion we would address the overall method of how NGGT both collect and ultimately submit their Engineering Justification Papers, their approach we consider could and should be improved providing more and better detail.

4. Civils

Scope of Work

Quality Assurance review of Ofgem's assessment of the supporting data provided by NGGT for their proposed unit cost allowances contained within their Engineering Justification Paper A22.18. – Civils. Specifically, unit cost justification papers:

- A22.18.1.11 – Relining of Pipe Supports & Pits at Compressor Sites – Pit Wall Transitions
- A22.18.1.12 – Relining of Pipe Supports & Pits of AGI's – Replace Concrete Pipe Supports
- A22.18.1.14 – Relining of Pipe Supports & Pits of AGI's – Remove Chamber Walls, Inspect and Backfill.
- A22.18.2.4 – Site Access Roads and Paths – Major Refurb
- A22.18.2.11 – Security- fences and gates – AGI (Minor Works)

The review covers the following areas:

- A qualitative review of the NGGT data submission excluding detailed review of submitted SAP data.
- Review of the Ofgem assessment for clarity, completeness, consistency and appropriateness.
- Findings and recommendations for each paper with the objective of improving the transparency and quality of the overall assessment.
- A summary of the overall assessment

Unit Cost Paper - A22.18.1.11 Relifing of Pipe Supports & Pits at Compressor Sites – Pit Wall Transitions

Review of NGGT unit cost submission

Based on the NGGT submission Faithful+Gould confirm the following aspects: -

- Scope of work relevant to UID.
- Relevant Work Breakdown Structure elements identified for UID
- PAC spend in each year converted to 2018/19 price base using RPI adjustment.
- Unit cost calculated by using a percentage (26%) of the total PAC cost divided by the number of “pit wall transitions” taken from the commissioning completion record.

This asset type is suitable to be measured on a unit cost basis.

Review of Ofgem Unit cost analysis

Ofgem’s assessment is clearly presented and understandable. Adjustments to unit cost are clearly outlined defining observations and calculations in support of those.

Ofgem made adjustments to: -

- The volume of asset types based on the original sanction record (5) rather than the commissioning record (3).

Ofgem have taken the view that the sanction number should be used as the volume to be utilised as opposed to the commissioning record inferring that NGGT should have further records if they had, in fact completed a further 2 “pit wall transitions as part of the PAC.

Key Findings and Recommendations

Faithful+Gould support Ofgem’s assessment and adjustment factors applied given the commissioning record did not necessarily clarify that only 3 of the 5 sanctioned were completed. Furthermore, the date associated with the commissioning record does not clearly define the timescale supporting the completed project.

In summary the findings of Faithful+Gould are: -

- The 26% value utilised by NGGT is based on the sanction paper rather than outturn cost so may not accurately reflect the completed cost of the pit wall transition?
- Further clarification/evidence to support which of the actual volumes are correct given the impact on the unit cost calculation.
- The base PAC may not sufficiently reflect the completed RIIO-T1 volume when being applied to a proposed volume of [Redacted] in the RIIO-T2 period.

Unit Cost Paper - A22.18.1.12 – Relifing of Pipe Supports & Pits of AGI’s – Replace Concrete Pipe Supports

Review of NGGT unit cost submission

Based on the NGGT submission Faithful+Gould confirm the following aspects: -

- Scope of work relevant to UID.
- Relevant Work Breakdown Structure elements identified for UID

- Data from one PAC spend and PMC projects converted to 2018/19 price base using RPI adjustment.
- Unit cost calculated by dividing total outturn costs by actual volume applied.

This asset type is suitable to be measured on a unit cost basis.

Review of Ofgem Unit cost analysis

Ofgem's assessment is clearly presented and understandable. Adjustments to unit cost are clearly outlined defining observations and calculations in support of those.

Ofgem made adjustments to: -

- The unit cost by applying a weighted average
- Ops support cost adjusted from 5% to 3.6% to remain consistent with other interventions.

Key Findings and Recommendations

Faithful+Gould support Ofgem's assessment and adjustment factors applied.

In summary the findings of Faithful+Gould are: -

- The use of a weighted average is the most appropriate method to be adopted
- Whether the base sample represents sufficient and reflective data of future RIIO-T2 volume spend
- NGGT provided cost data not relevant to this asset type meaning the Ofgem analysis had to extract and analyse the specific data. NGGT could have provided more distinct relevant data.

Unit Cost Paper - A22. 18.1.14 – Relifing of Pipe Supports & Pits of AGI's – Remove Chamber Walls, Inspect and Backfill.

Review of NGGT unit cost submission

In summary Faithful+Gould confirm the following aspects: -

- Scope of work relevant to UID.
- Relevant Work Breakdown Structure elements identified for UID
- Submitted data based around combination of bottom up estimation for mechanical and quotation information for civils.
- The unit cost is based around adding the individual components.

This asset type is suitable to be measured on a unit cost basis.

Review of Ofgem Unit cost analysis

Ofgem's assessment is clearly presented and understandable. Adjustments to unit cost are clearly outlined defining observations and calculations in support of those.

Ofgem made adjustments to: -

- The efficiency to be gained by opting for a competitive tender (civils).
- Reverting to previously submitted actual outturn data instead of bottom up notional estimating (mechanical) as Ofgem have more confidence in the previously submitted outturn data.

Key Findings and Recommendations

Faithful+Gould support Ofgem's assessment and adjustment factors applied.

In summary the findings of Faithful+Gould are: -

- The use of notional bottom up estimating defined a higher than previous unit cost and therefore the decision to revert to previous outturn data was justifiable.
- The adjustment to the quotation to reflect potential efficiency by opting to competitively tender the work is also considered fair as a competitive process would have demonstrated a more reflective best value for the purpose of review.
- We question whether actual outturn data for both mechanical and civil activities completed in RIIO-T1 exists to better support the confidence in the unit cost assessment.

Unit Cost Paper - A22. 18.2.4 – Site Access Roads and Paths – Major Refurb

Review of NGGT unit cost submission

Based on the NGGT submission Faithful+Gould confirm the following aspects: -

- Scope of work relevant to UID.
- Relevant Work Breakdown Structure elements identified for UID
- PAC spend converted to 2018/19 price base using RPI adjustment.
- Unit cost calculated by using the total PAC cost divided by the volume.

This asset type is suitable to be measured on a unit cost basis.

Review of Ofgem Unit cost analysis

Ofgem's assessment is clearly presented and understandable. Adjustments to unit cost are clearly outlined defining observations and calculations in support of those.

Ofgem made adjustments to: -

- SAP data error in terms of accrual
- Travel/subsistence expenses included

Key Findings and Recommendations

Faithful+Gould support Ofgem's accrual adjustment but do not support the removal of travel/subsistence costs.

In summary the findings of Faithful+Gould are: -

- It is not clear from the bases NGGT data where the volume of 38 completed asset types stems
- If PAC costs reflect outturn, there is no reason to have excluded the travel/subsistence costs highlighted in OFGEM's assessment.

Identification and further evidence could be requested from NGGT.

Unit Cost Paper - A22. 18.2.11 – Security- fences and gates – AGI (Minor Works)

Review of NGGT unit cost submission

Based on the NGGT submission Faithful+Gould confirm the following aspects: -

- Scope of work relevant to UID.
- Relevant Work Breakdown Structure elements identified for UID
- PAC spend and tendered data converted to 2018/19 price base using RPI adjustment.
- Unit cost calculated by using the total PAC/tender cost divided by the volume of [Redacted] sites.

This asset type is not suitable to be measured on a unit cost basis as the size and scale of a site level, in its current high level form, would likely be disproportional and the application of a “unit cost”. Using a more granular structure i.e. further categorisation of site sizes or simply determining a unit cost around per m/perimeter would be more appropriate.

Review of Ofgem Unit cost analysis

Ofgem’s assessment is clearly presented and understandable. Adjustments to unit cost are clearly outlined defining observations and calculations in support of those.

Ofgem made adjustment to: -

- The site-based approach vs other metrics that may support the funding more relative to the asset type.

Key Findings and Recommendations

Faithful+Gould support Ofgem’s assessment and adjustment factors applied.

In summary the findings of Faithful+Gould are: -

- Given the lack of potential accuracy applying a site level unit cost consideration should be given to a more focussed unit cost metric.
- To determine a more appropriate unit cost metric below that of site level only

Summary /Conclusion - Civils

Ofgem’s overall approach associated with NGGT reviews in calculating the unit-cost matrix are in Faithful+Gould opinion consistent in their methodology in calculating their costs based on the data submitted by NGGT.

We would recommend that Ofgem look for NGGT to improve the quality and issue their Data / breakdowns in a more unified and logical way providing a summary table of costs to pinpoint size and scale of base data points.

It is important for Ofgem to know the relevance/reflectiveness of the base data in relation to the proposed forward volume and the more base data in support the more confident Ofgem can be in the unit cost information. Data based on a larger sample, with appropriate internal governance supports a better basis for review.

In conclusion we would address the overall method of how NGGT both collect and ultimately submit their Engineering Justification Papers, their approach we consider could and should be improved providing more and better detail.

5. Electrical

Scope of Work

Quality Assurance review of Ofgem's assessment of the supporting data provided by NGGT for their proposed unit cost allowances contained within their Engineering Justification Paper A22.20 – Electrical. Specifically, unit cost justification papers:

- A22.20.1.17 – LV Switchboard Replacement
- A22.20.1.25 – Site Lighting External Column Replacement

The review covers the following areas:

- A qualitative review of the NGGT data submission excluding detailed review of submitted SAP data.
- Review of the Ofgem assessment for clarity, completeness, consistency and appropriateness.
- Findings and recommendations for each paper with the objective of improving the transparency and quality of the overall assessment.
- A summary of the overall assessment

Unit Cost Paper - A22.10.1.17 LV Switchboard Replacement

Review of NGGT unit cost submission

Based on the NGGT submission Faithful+Gould confirm the following aspects: -

- Scope of work relevant to UID as specific supporting evidence is in the form of a quotation.
- Relevant Work Breakdown Structure elements identified for UID.

This asset type can vary significantly in both size and scale and therefore it is questionable whether suitable to be measured on a unit cost basis.

Review of Ofgem Unit cost analysis

Ofgem's assessment is clearly presented and understandable. Adjustments to unit cost are clearly outlined defining observations and calculations in support of those.

Ofgem made adjustment to: -

- The base data reflecting the likely efficiency by competitively tendering.

Key Findings and Recommendations

Faithful+Gould support Ofgem's assessment and adjustment factors applied but question the validity of the single point quotation being used as the basis of assessment and whether reflective in size and scale of the planned future volume.

In summary the findings of Faithful+Gould are: -

- The single point quotation does not reflect a sufficient baseline.
- More analysis/consideration to a detailed unit cost analysis of any completed volume from RIIO-T1.

Unit Cost Paper - A22.20.1.25 Site Lighting External Column Replacement

Review of NGGT unit cost submission

In summary Faithful+Gould confirm the following aspects: -

- Scope of work relevant to UID.
- Relevant Work Breakdown Structure elements identified for UID
- Converted unit cost data to 2017/18 price base using RPI adjustment
- The base data uses 2 sites with a quotation for one and two quotations for the other,

Assuming that the scope of lighting and column replacement is similarly reflective at each site then utilising a notional unit rate would be considered appropriate.

Review of Ofgem Unit cost analysis

Ofgem's assessment is clearly presented and understandable. Adjustments to unit cost are clearly outlined defining observations and calculations in support of those.

Ofgem made adjustments to: -

- The number of removal and replacement of columns at one of the sites as was disproportional. there are more installations than removals.
- The average of the two submitted quotations has been used as the basis by NGGT whereas Ofgem have suggested using the best price.

Key Findings and Recommendations

Faithful+Gould support Ofgem's assessment and adjustment factors applied but question the validity of a quotation being used as the basis of assessment and whether reflective in size and scale of the planned RIIO-T2 volume.

In summary the findings of Faithful+Gould are: -

- The base sample is considered insufficient and may not reflect the future volume.
- More analysis/consideration to a detailed unit cost analysis of any completed volume from RIIO-T1.
- We recommend the use of the average unit rate between the two competitive quotations rather than utilise what represented the lowest cost reflecting the use of averages across the other intervention types.

Summary /Conclusion - Electrical

Ofgem's overall approach associated with NGGT reviews in calculating the unit-cost matrix are in Faithful+Gould opinion consistent in their methodology across all intervention types and in calculating their costs based on the data submitted by NGGT.

For this intervention quotation information only has been provided as substantiation towards unit cost and no actual completed data from RIIO-T1 has been provided in support.

In conclusion the limited data provided does not reflect sufficient substantiation to support the Ofgem determination.

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