

David Watson & Frontier Economics
British Gas

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Reference: Frontier Economics report on Allocation of Unidentified Gas

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Dear David

Thank you for the report provided by Frontier Economics which we have reviewed as part of the 2nd consultation. You will appreciate that at the time we received it we were near completion of the 2nd draft AUGS and it would have been inappropriate for us to act on or deal with items raised in it at that time.

Sections 1 and 2 provide an overview of the unidentified gas problem and we have no particular comments on these other than to note that Frontier Economics were unaware as we were that unregistered sites in certain circumstances get backbilled.

Section 3.1

Since the first draft was written it was established that we could not use the deeming algorithm sample data for this analysis and hence this data is no longer used. Frontier rightly note that as they did not have information on the approach they could not comment further so we welcome their comments on the 2nd draft AUGS now that the methodology and calculations have been published.

3.2.1 Shipper Responsible Theft

Frontier Economics highlight the issues that we encountered in initially trying to estimate theft bottom up and comment that the revised approach top may lead to a more accurate estimate of theft. Again they are unable to comment further as at the time of writing they did not have the 2nd Draft AUGS.

3.2.2 Unregistered, Shipperless and unknown sites

We note in British Gas's response to the 2nd Draft AUGS a suggestion to verify sites that are "believed to have/not have as meter" be visited to establish how correct the data is and have responded to that issue separately.

3.2.3 Independent Gas Transporter (iGT) Measurement Errors

No comment

3.2.4 Errors in estimation of shrinkage

A review of the shrinkage models was included in the 2nd draft AUGS and indeed the shrinkage error would be captured in the balancing factor.

3.2.5 Unreconciled LSPs

No comments.

3.2.6 Metering Errors

The handling of under reads and for that matter potential meter over reads are covered in the 2nd draft AUGS. With regards LDZ metering error these are picked up and included in RbD over time.

3.2.7 Stock Change

No comment

4.2 The Top-down approach proposed by the AUGS

Frontier Economics provide a good overview of the initial version of the top down approach and go on to highlight the issues of the deeming algorithm training sample. Since then it has been established that this data is not to be used for this purpose and so the issues associated with it (although valid if anyone were to revisit this in future) are irrelevant as this data set is no longer used.

It is worth noting however, with regard to the first bullet point on p27 that the model is built from sample sites and therefore has errors. These may or may not be biased but the largest source of bias is the data that is subsequently used in the models, not the models themselves i.e. AQ

4.3.1 Estimation of actual SSP consumption using Xoserve meter readings

The AUGS is grateful for the suggested alternative approach proposed by Frontier Economics. We recognise that the availability of large numbers of SSP meter reads gives us additional information which could be used in the calculation of unidentified gas. This data is used indirectly in the current methodology via the SSP AQs which will affect the algorithm bias towards LSP. However, going forward it may be possible to use these more directly to help estimate total UG.

Two methods were proposed. The first 'The sampling approach' is not recommended due to the diverse behaviour of NDM meters (particularly LSP), unless the sample is very large. In fact, what is referred to as 'Entire NDM population' is actually just a large sample, as it is recognised that this will not contain all meters. In reality we would expect it to be based on approximately 87% of SSPs and 76% of LSPs assuming that the criteria for calculating consumption based on meter reads would be similar to that currently used in the AQ review calculation.

Considering the suggested calculation for consumption further, it is apparent that the AQ and consumption are to some extent interchangeable. The AQ is in fact just the consumption corrected back to seasonal normal weather using the algorithm. Given the revised AQ based on meter reads, the consumption can be calculated using the algorithm. This equivalence can be shown algebraically, but it is easier to demonstrate by example. The attached spreadsheet (AQ_vs_Consumption.xls) allows the user to enter meter read data. The spreadsheet then calculates consumption as per the Frontier Economics method. It also calculates a revised AQ as per the AQ review process. A comparison is then made between the consumption and the result of applying the algorithm with the revised AQ to show their equivalence. This is not surprising given both methods use the deeming algorithm scaled to match the consumption between the two meter reads.

It is noted that this equivalence assumes the same meter reads are used and this implies that the consumption would be calculated at the same time as AQ and that the same validation criteria for meter reads is applied. One further potential difference in using consumption would be in the case of new/lost meters. In this case the AQ would still represent an annual quantity whilst we might expect the consumption to represent only the gas taken. However, given information about start/end dates for meters, the algorithm/AQ approach can still be used as a proxy for consumption.

The conclusion from this is that an assessment can actually be made of the suggested 'consumption' approach by using AQ data and the deeming algorithm. To this end, some work was done to look at how accurately the consumption based approach could estimate UG depending on the proportion of meter reads available and levels of bias introduced by using carried forward AQ in place of actual metered consumption as suggested by Frontier Economics. The attached spreadsheet (SensitivityOfConsToNumMetersRead.xls) allows the user to test the sensitivity of the UG calculation to various inputs. Although a simple example with numerous assumptions, it highlights the fact that a large percentage of accurate meter reads would be required for this approach to be effective. This is because even a small % bias in overall consumption is large in comparison to the quantity of UG.

This analysis is just an initial sensitivity study and further assessment of the approach will be undertaken.

5. Allocating Unidentified Gas Between Components and Sectors.

The method proposed by Frontier Economics in terms of estimating UG top down, taking off the quantifiable UG leaving theft is in line with the method proposed by the AUGÉ.

5.2.2 Assessment of the allocation of upstream unidentified gas

No comment.

5.2.3 Assessment of the allocation of downstream unidentified gas

At the UNCC meeting on October 21st it was established that shippers backbill unregistered sites in most circumstances contrary to the understanding of the AUGÉ and the comment in this section of the Frontier Economics report. In certain circumstances unregistered sites will still contribute to UG, but the majority will be backbilled which will greatly reduce this element of UG.

Frontier Economics discuss the various options of allocating UG by Shipper, by sector and across all sectors/shippers against criteria of Efficiency, Fairness and Practicality.

However, the AUGÉ is requested to estimate UG and attribute between supply points based on their contribution to the overall volume of unidentified gas.

For site registration issues the AUGÉ attributes UG according to the sector in which the UG arose.

For theft, Frontier Economics suggest that it is smeared across all sectors, however, this is contrary to mod 229 requirements that it should be attributed based on their contribution to the overall volume of unidentified gas and this is how the method is implemented as described in the second draft AUGS.

During the process the AUGÉ has received various opinions, data, evidence regarding theft levels in both the SSP and LSP sectors, some of which is rhetorical and the AUGÉ has requested additional information where appropriate

to try and establish the validity of these claims (see 2nd draft AUGS for summary of shipper responses to questions on theft).

Throughout the process the AUGS is mindful of the need by the industry for figures to be backed up by real data. For theft the occurrence of alleged and confirmed theft forms the key evidence of theft levels and to date no one has been able to provide robust information on levels of unknown theft.

Whilst it may not be an ideal solution, the method of apportioning theft as described in the 2nd draft AUGS is the only practical one that is based on real data and apportions UG by the sector in which it occurs as guided by mod 229.

Yours sincerely

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