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AUGS Queries for the Query Process

Queries From	British Gas
Date Received	21/02/2012
Date of Response	TBA - ongoing

British Gas Response to latest AUGS

The current proposed methodology for allocating Unidentified Gas will result in inequitable and inaccurate results. We believe there are currently three critical failings:

1. That the AUGE has failed to develop a methodology of calculating Unidentified Gas, as set out within the UNC modification.
2. That it is unfeasible for the SSP-assigned element of Unidentified Gas to be set to zero.
3. The proposed method of allocating the balancing number between sectors is fundamentally flawed.

1. The AUGE has failed to meet the following high level objective:

- To develop a methodology of calculating Unidentified Gas

As the AUGE describes within the latest AUGS:

"It should be noted that the latest calculation method is based on a technique of estimating the total level of Unidentified Gas, directly calculating its individual component parts where possible, and calculating the aggregate effect of the remaining causes (i.e. those that it is not possible to estimate directly in a robust manner) by subtraction as the Balancing Factor."

This estimation of the total level of Unidentified Gas results in a failure to actually calculate the overall quantum of Unidentified Gas as required. Estimation of the total size of Unidentified Gas has been undertaken by many parties in the past with vastly differing outcomes. The appointment of the AUGE was necessary to specifically calculate the scale of Unidentified Gas thus removing any concerns or doubts as to the validity of previous estimates; in failing to develop a methodology to specifically calculate Unidentified Gas the AUGE has failed to comply with its primary purpose.

Under the proposed methodology the accuracy of the balancing number will only be as good as the initial "estimate" as to the total scale. Since the AUGE has only managed to directly calculate a relatively small proportion (23.75%) of the total this leaves an unacceptably high proportion (76.25%) subject to the AUGE's own discretion as to scale and allocation – we believe that this does not meet the specific requirement to "develop a methodology of calculating Unidentified Gas" since the vast majority remains estimated.

British Gas flagged concerns repeatedly during the consultation process that the total scale of Unidentified Gas was being artificially constrained by the AUGE's own view as to the likely levels of theft. The AUGE responded to these concerns by stating:

"The new method will allow the level of theft to be estimated without being influenced by expectations of its likely magnitude, either on the part of the AUGE or any other interested party."

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Yet the rationale the AUGE describe in the latest version of the AUGS states:

"UG estimates higher than this necessarily result in very large volumes of gas being assigned to theft (because other elements of UG are calculated directly and remain constant). Higher estimates of UG lead to values for theft that are far higher than previously published and accepted values and which the AUGE considers to be unrealistic."

The AUGE has failed to address the specific concerns raised by British Gas despite issuing a clear written assurance that it would do so – and puts into question the purpose of the consultation process. One of the AUGE's high level objectives is:

- To consult with the industry bodies and respond to questions / issues raised

The AUGE has, in essence, defined the scale of Unidentified Gas by its belief as to the likely scale of theft in the industry, despite an absence of any supporting data. This demonstrates that the latest version of the methodology is constrained by the AUGE's preconceptions about unidentified gas and is not entirely based on fact, reason or evidence. As such the AUGE has failed to calculate the remaining causes that are not possible to estimate directly "by subtraction as the Balancing Factor" as previously stated, since the AUGE's expectation of the likely magnitude of theft is the dominant factor in determining the overall scale of Unidentified Gas. The AUGE has attempted to calculate the balancing number by first defining its likely expectation as to the scale of the balancing number – this is not a method any other reasonable expert would use.

As stated within the AUGS, the balancing number contains:

1. Theft
2. Errors in the shrinkage estimate
3. Open bypass valves
4. Meters "Passing Unregistered Gas"
5. Unknown Sites
6. Addition Common Cause Variation

Despite this the allocation of the balancing number across sectors is defined by the AUGE's erroneous view of the theft allocation alone. It is not reasonable to assume that all factors will be distributed as per theft, particularly when the AUGEs view as to the allocation of theft is so divergent from proportional. All this means the AUGE's methodology cannot be said to have *calculated* unidentified gas.

2. It is unfeasible for the SSP-assigned element of Unidentified Gas to be zero for the measured period.

The AUGE states:

"a factor has been included for future analysis in order to allow the SSP-assigned element of Unidentified Gas to be estimated. This is set to zero for the current analysis, however, as the required to estimate it accurately is not yet available."

We welcome the fact that the AUGE has finally adjusted their methodology to cater for the Unidentified Gas that is initially allocated to the SSP sector but conclude that setting this to zero is unreasonable given the available evidence that suggests the contrary.

The AUGS states:

"Under the current reconciliation process, Unidentified Gas is fragmented until after RbD is applied. At this stage it is collected into a single quantity, but exists only as an aggregate with SSP load, where the breakdown of the two is unknown."

"The nature of the calculation means that the Unidentified Gas component is split across EUCs. It can be demonstrated by scenario analysis that its distribution across the EUCs is driven by allocation algorithm error in each category in addition to market sector volume, with high (positive) errors leading to larger volumes of UG in that category. This is unlikely to represent a realistic breakdown of where UG arises. In addition, whilst the components of each EUC load estimate are known (as listed above), the split between them is not."

"The proposed methodology is based on Unidentified Gas calculations carried out on post-RbD data, with estimates of LSP sector Unidentified Gas being made using the average offset from zero in the quantity of RbD over time. It is at this stage that all the elements of Unidentified Gas are joined together for the first time, as identified in the third stage of Figure 2. The split between actual SSP load and Unidentified Gas is still unknown, however, and so an algorithm is required to estimate this."

This demonstrates that the AUGE accepts that Unidentified Gas is assigned to the SSP sector initially yet the methodology to allocate across sector sets this to zero – in doing so this knowingly introduces error to the calculation. This error has the effect of artificially constraining the total scale of Unidentified Gas and also over-allocating cost to the SSP sector.

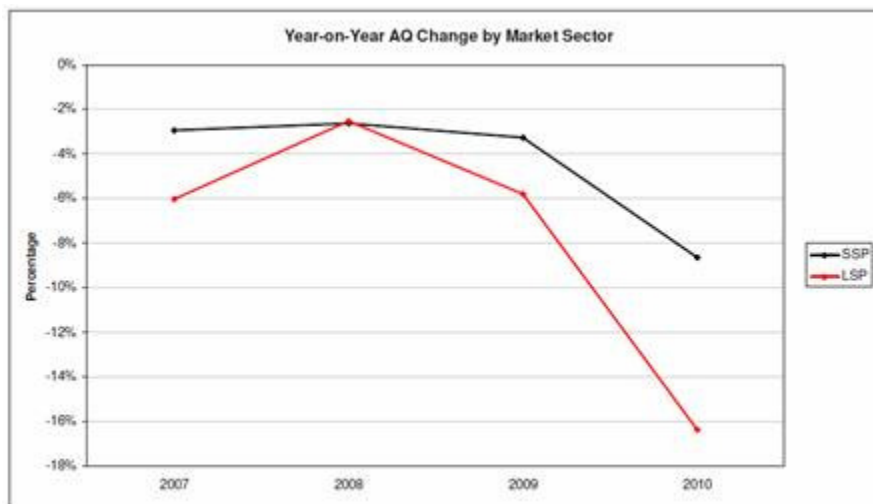The following is an extract from the AUGS:

Figure 1 – Aggregate AQ Change by Market Sector

"Whilst the AQ values for all EUCs tend to be over-estimates for the reasons stated above, the level of overestimation is greater for LSP NDM loads than for SSP loads. This is because AQs are, on average, falling more quickly (when expressed as a percentage of the total for the market sector) for LSP loads. This can be seen in Figure 1 above. The allocation calculations therefore have a tendency to skew the load estimate towards the LSP NDM section, and this imbalance is redressed via the RbD calculations."

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It is clear from Figure 1 that in 2008 the SSP AQs decreased by a slightly greater degree than LSP AQs. According to the AUGE:

"In previous drafts of the AUGS, the assumption was made that Unidentified Gas was split across market sectors by volume ratio, but it can be demonstrated using the tool that this is only the case if there is no bias in the initial SSP or LSP allocations."

The greater reduction in aggregate SSP AQ values over LSP AQ values indicates that proportionally more than the SSP volume share (75%) of Unidentified Gas was initially assigned to the SSP sector during this year; as an absolute minimum there was no bias. This means that during the measured period used by the AUGE (2008 – 2010) a minimum of 25% of unidentified Gas has been allocated to the SSP sector as defined by the AUGE's own calculations. Technically, since consumption has declined year-on-year the Unidentified Gas present during 2008 would be greater than both 2009 and 2010 and therefore a 75% allocation of UG pertaining to 2008 would represent more than 25% of the total for the 3 years. It is therefore unreasonable that the AUGE has failed to account for this despite clearly identifying its existence. The AUGE are required to correct for this error which will have the effect of increasing the total scale of Unidentified Gas by a minimum of 25% and will have a significant effect in the apportionment across sector.

The AUGE have stated in the recent AUGS:

"Despite the relatively small size of this error, the AUGE recognises that it is important to estimate Unidentified Gas as accurately as possible in all circumstances."

We are therefore confident that the AUGE will recognise and correct for this error prior to the inaugural implementation.

The 2011 AQ results show that the SSP AQ values have again dropped by a significantly larger proportion than the LSP AQ values. It is therefore clear that the AUGE cannot reasonably continue to state that there is an "inherent bias" towards the LSP sector since in 2 of the last 4 years this has not been the case.

3. The AUGE's proposed method of allocating theft between sectors is fundamentally flawed

The only correct method of allocating theft instances across sector is to effectively re-calculate the AQ taking into account metered and un-metered (theft) consumption when doing so. This new AQ value can then be used to allocate the associated theft volume to sector.

The AUGE's proposal to utilise reported theft statistics and to extrapolate to a total fails to take into account the critical fact that efforts to detect theft are not uniform across sector. British Gas can reliably state this since it accounts for c79% of all reported theft instances during the period analysed by the AUGE. The theft detection strategy of British Gas during this period was to focus almost exclusively on domestic (almost invariably SSP) theft. More recently (see years 2009 and 2010 in the tables below) British Gas has focussed slightly more on LSP theft detection, but the majority of its focus remains on SSP theft detection. This trend can be easily observed within the xoserve data.

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	2006	2007	2008	2009	2010
SSP	19,682,887	14,233,542	12,312,158	26,302,773	12,194,711
LSP	4,115,329	3,269,931	2,710,733	11,962,505	6,558,267
Total	23,798,216	17,503,473	15,022,891	38,265,278	18,752,978

	2006	2007	2008	2009	2010
SSP	82.71%	81.32%	81.96%	68.74%	65.03%
LSP	17.29%	18.68%	18.04%	31.26%	34.97%

The AUGE has attempted to correct for perceived data bias elsewhere within its proposed methodology but has failed to correct for this most obvious of biases. Theft is surely more likely to be identified at premises that are targeted by a data-driven, experienced, field-based team specifically designed for the detection of theft. The SSP sector pays for all undetected theft whether from LSP or SSP sites. As such there is no incentive for LSP-only suppliers to expend any effort on the detection of theft within their portfolio and every incentive for SSP suppliers to do all they can. This market distortion is seemingly not recognised within the AUGS.

The AUGE's proposed method of utilising the AQ immediately prior to the reported theft period to allocate the subsequent theft volume is fundamentally flawed. This is especially so when the annual theft volume allocated to the SSP sector in many instances exceeds the SSP sector consumption threshold volume, and in some cases is many times greater. Surely the AUGE must accept that an SSP site cannot consume, for example, 274,725KWh of un-metered consumption and 53,469KWh of metered consumption in a single year and remain within the SSP sector –over 4 times the SSP volume threshold. This is only one example of many where the AUGE methodology inaccurately allocates LSP theft volume to the SSP sector. The AUGE methodology cannot reasonably allocate annual theft volumes that are in excess of the LSP consumption threshold to the SSP sector and then use this ratio to allocate the whole balancing number.

The assessment of stolen energy may be required for use in court. As such it has to be an amount that can be evidenced and for this reason is therefore typically a conservative view of the actual volume of gas stolen. For similar reasons the period of assessment is also likely to be understated and therefore the AQ immediately prior to the reported theft period is not a reliable basis upon which to determine market sector ownership.

There is no basis to simply replace an AQ of 1 with the average SSP AQ and use this to determine sector allocation. This material error has the effect of biasing theft allocation (and therefore the allocation of the whole balancing number) towards the SSP sector unfairly.

The table below shows 4 theft instances where the assessed theft period exceeds a complete year and the level of theft volume at a total and annualised level would place the account within the LSP sector based on theft consumption alone regardless of any metered consumption (the lowest annual theft volume is >95,000KWh). These 4 instances that are mistakenly assigned to the SSP sector within the AUGEs methodology represent 1.17% of the total theft volume recorded in the period analysed by the AUGE. The allocation proportion of the balancing number (£122m) to the SSP sector is artificially increased by 1.17% and the allocation to the LSP sector is artificially reduced by 1.17%. Under the AUGE's proposed methodology, these 4 accounts alone have the aggregate effect of distorting the allocation of the balancing number by 2.33% (>£2.8m) against the SSP sector. Given the magnitude of error, it would be unreasonable for the AUGE not to correct for this.

Year	TOG Start Date	TOG End Date	LDZ	Market Sector	Originator	Meter AQ	Kwhs
2006	31/10/2004	04/09/2006	WM	SSP	Shipper	1	517,531
2009	06/02/2008	12/07/2009	NT	SSP	Shipper	1	200,000
2008	16/06/2004	17/10/2005	NW	SSP	Network Operator	1	138,059
2009	27/11/2006	24/06/2009	WA	SSP	Shipper	1	247,220

1,102,810

The AUGE has used AQs as a proxy for consumption throughout its methodology. Where the AUGE felt that the AQ was no longer representative of consumption it has adjusted the AQ to take this into consideration (for example meter points that did not have their AQ amended during the AQ review). The most obvious and extreme disconnect between AQ and consumption is with the existence of theft. The AUGE has not adjusted the AQ but utilised an older AQ that is not appropriate for the purpose or time period for which it is being used. This failing has the affect of allocating LSP theft volumes to the SSP sector and distorting the allocation of the total balancing number. The balancing number contains not just theft but also:
1. Errors in the shrinkage estimate;
2. Open bypass valves;
3. Meters "Passing Unregistered Gas;
4. Unknown Sites;
5. Addition Common Cause Variation.

As such the AUGE is also misallocating the above across sector to such a degree as to have a dramatic and material impact on the fairness of the Unidentified Gas allocation.

Until these failings are addressed, it is our view that the high level objectives and primary purpose of the appointment of the AUGE has not been met. It is unreasonable for the proposed methodology to not correct for these material errors and continue to bias the allocation of Unidentified Gas costs to the mostly-domestic SSP sector.

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Queries From	Inexus
Date Received	08/03/2012
Date of Response	TBA - ongoing

On reading the Allocation of Unidentified Gas Statement Report No. 11170 published 4th May 2011, Section 6.3 states that;

"New sites, particularly housing estates will be built to new building regulations with improved energy efficiency levels and therefore expected AQs may be lower than average consumptions. This will need to be allowed for in subsequent estimations of consumption.

Data has been requested to allow this analysis to take place."

I understand that following contact with IGTs during May 2011 Xoserve provided the details of missing or rejected IGT CSEPs which enabled the volume of gas to be calculated for the purposes of the report.

Following on from the above, Version 4 published 23rd December 2011 in Table 16 lists the aggregate Quantity of Unidentified Gas as 693 GWh.

Are you able to confirm the AQ values that were used to calculate this figure? The reason I have raised this as during the latter part of 2010 and 2011 IGTs carried out a review of their AQ values which concluded that the current CSEP NExA table values (last reviewed in 2006) are currently around 19% lower than those listed in the current NExA table. The modification based on this work (IGT040V) was approved by the Authority for implementation on June 29th 2012, the details of which can be found at http://www.igt-unc.co.uk/Modifications/Open+Modifications/iGT040. As such the gas volume and monetary values in report version 4 if based on the "current" NExA table values are likely to be approximately 19% overstated. Should there be a further updated to the report, are you able to confirm whether the report will take account of the revised values?

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Queries From	Shell Gas direct
Date Received	08/03/2012
Date of Response	13/03/2012

My question relates to section **7.1 Estimation of SAP Price**.

I know that the prices here are only indicative and given as a guide for shippers to budget for UG gas costs. However, I'm having difficulty referencing these prices. Your statement gives the Annual average SAP figure between 2009 and 2011 as 2.6pkWh. However, after downloading the SAP prices for this period from the National Gird website – I calculate the figure to be far lower, around 1.46pkWh.

I just wondered, if anyone there could assist in explaining the source of the 2.6pkWh figure.

Response
The SAP price estimates were based on projecting the trend of prices over 2009-2011 to 2012/13. Several methods were considered, number 1) which we think you are referring to states "Annual average SAP price based on 2009-2011 (2.6p/kWh)". It probably needed to be stated a little more clearly as described with the other options we looked at which covered monthly, daily trends. It is using the data from 2009-11 and scaling up based on the average increase year on year from 2009-2011. This came out at 2.6p/kWh. Note that at the time of calculation we didn't have a complete year hence there were two varieties of this.

Of course there has been some recent reductions in gas price so the actual average SAP price for 2012/13 may turn out lower than this.

In terms of the AUGS and final figures this query is classed as requiring no action.

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