

Notes on the AUGÉ's Response to British Gas's Queries on the AUGS

This document focuses on the issues of allocation, AQ, reconciliation and RbD. The "Question / Issue" numbers refer to the original British Gas response to the AUGS; the page numbers refer to the AUGÉ's response document.

Question / Issue 14:

Page 2.

In the Demand Estimation Technical Forum on 10th June 2011, Xoserve provided some guidance around appropriate use of the Demand Estimation Sample data. Xoserve should be consulted on whether it is appropriate to use the sample data for the AUGÉ's purpose. Source: <http://www.gasgovernance.co.uk/desc/100611> "03 June 2011 DETF presentation (provided by Xoserve)", slides 3 and 4.

Prepayment meters are excluded from the sample because the metering technology does not allow the recording equipment to be fitted. This excludes c. 10% of the domestic gas population from the sample, and we believe this 10% consume less gas, and have a different consumption profile to higher consuming customers with credit meters. This must be addressed in any top-down model, in addition to any self-selection bias for the sample participants.

Question / Issue 20

Page 4.

The AUGÉ asserts that RbD is largely composed of model error and as such the majority should be apportioned to the SSP sector. It is correct to say that a degree of error must exist in the allocation model, but there is no evidence to suggest that this accounts for the majority of RbD.

Model error could be positive or negative, and could therefore increase or decrease RbD.

The assertion that RbD is largely made from model error, appears to be based on preconceived ideas around theft levels.

The statement that "RbD introduces "actual" LSP Loads" is not true. In any one year, LSP allocation less RbD does not equal LSP consumption, for the reasons given below.

Page 5

Although it seems reasonable to assume that theft varies with demand seasonally, for example, a domestic customer may steal more gas in cold weather, other factors might affect the relationship between throughput and demand across different years, for example the price of gas and the economy.

The calculations in the table are based on incorrect assumptions, and the content of two columns is unclear.

1. RbD invoiced in a year relates to throughput in that year. This is not the case. RbD invoiced in a year relates to reconciliation of consumption which has taken place up to 5 years ago. It also contains adjustments that do not relate to the month in question.

2. The Gen Rec column does not appear to contain figures calculated using the Mod 228 methodology.

3. It is unclear what the column headed “Direct” contains.

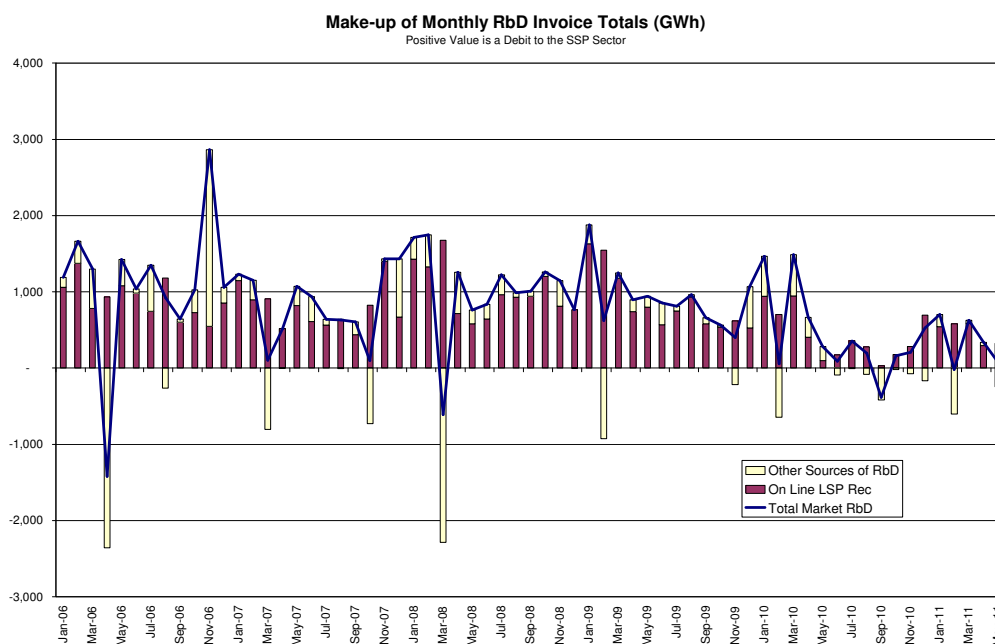
4. The calculation for the balancing number is based on the assumption that unidentified gas is contained wholly within RbD. This is not the case. Unidentified gas is initially allocated across both the LSP and SSP sectors. It is possible that the quantity of unidentified gas created by LSPs is either smaller or larger than the RbD quantity.

5. The table contains a circular proposition – it constrains theft levels at a proportion of throughput, calculates genuine reconciliation, and the difference between the sum of those and RbD is attributed to model error, which is described as varying randomly, and larger than theft – the only reason it is larger than theft is because theft is kept at a constant, low level.

These points are explored in more detail below.

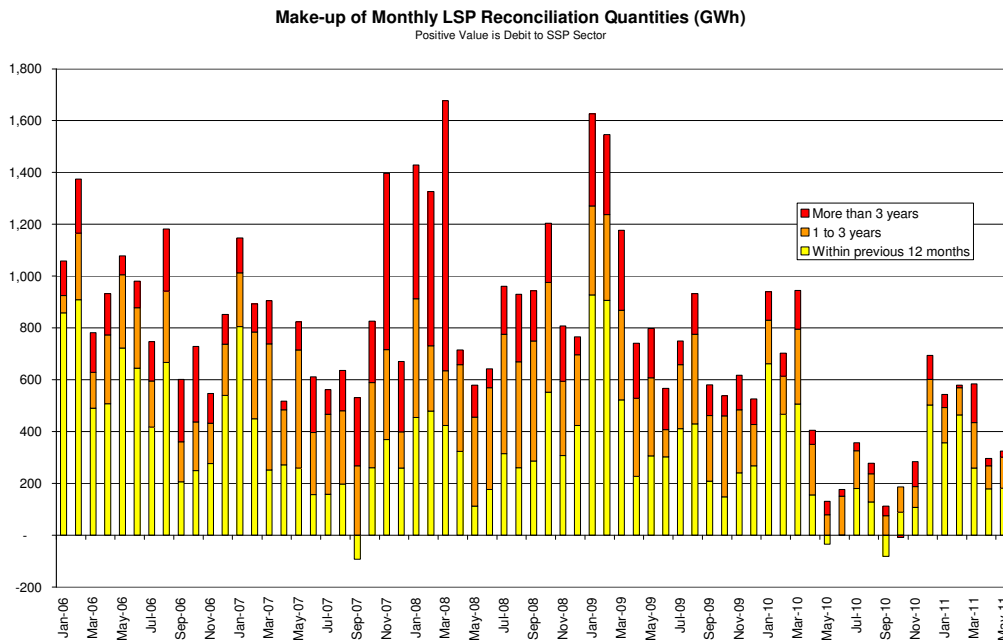
RbD invoiced quantities and billing periods.

The monthly RbD Invoices are made up of LSP reconciliation and other sources of RbD.

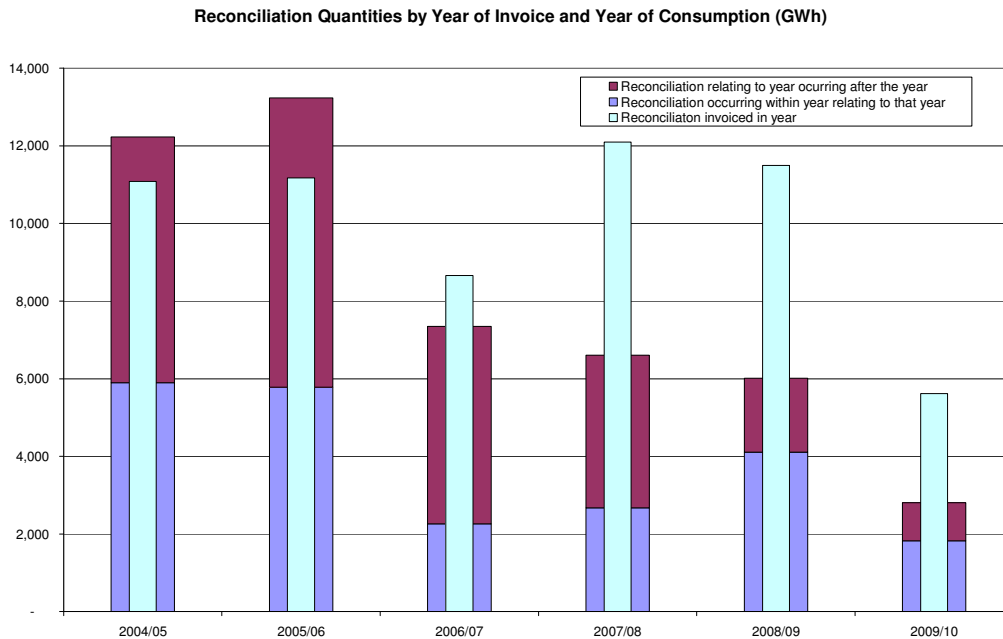


The sources for this chart and the following two charts are: 1. Xoserve: RbD Monthly Invoice Totals; 2. Xoserve: NDM Reconciliation by Gas Flow Month report

The monthly RbD invoiced quantities include reconciliation spanning several years.



Reconciliation quantities invoiced in a year are not equal to reconciliation relating to that year. Note that for the 2005/06 year onwards reconciliations will continue to occur.



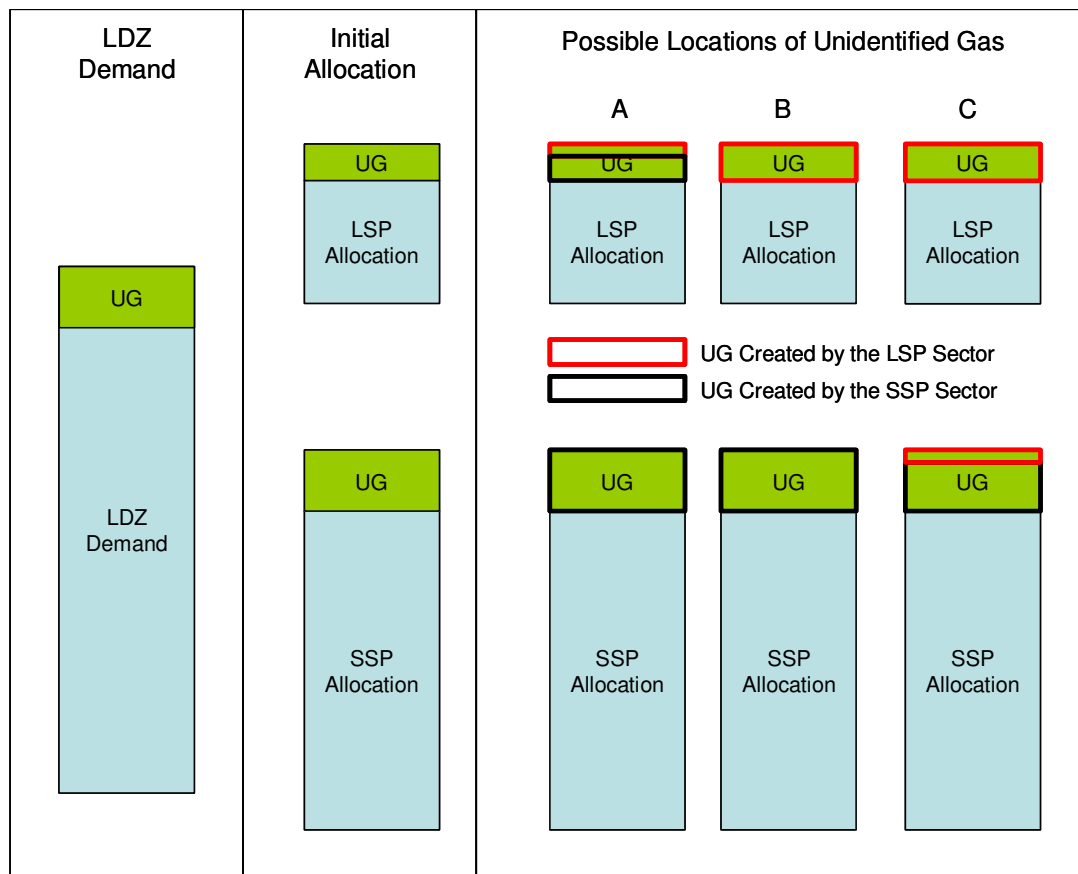
Unidentified Gas and Relationship to RbD

Unidentified gas is allocated to both SSPs and LSPs in the initial allocation.

Currently LSPs can reconcile their allocation of Unidentified Gas, passing it to the SSP sector.

It is possible that Unidentified Gas created in the LSP sector could be:

- A. A sub-set of the UG allocated to the LSP sector, and therefore likely to be also smaller than RbD.
- B. Equal to the UG allocated to the LSP sector.
- C. Greater than the UG initially allocated to the LSP sector, and so also be contained in the SSP sector's initial allocation of unidentified gas.



The AUGÉ appears to have assumed that case A is the correct one, but there is no evidence given to support this decision.

Theft levels

If the above points around RbD, reconciliation and the location of unidentified gas were taken into account, the AUGÉ might reach a different conclusion around the relative levels and variability of model error and theft.

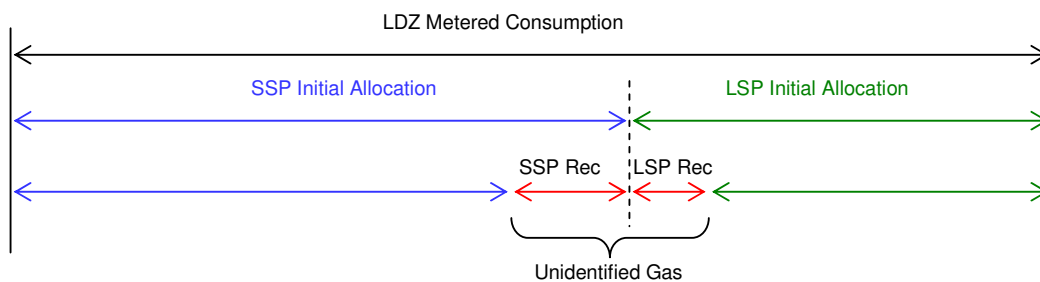
Page 6.

The terms “Raw RbD Data” and “RbD Values” refer to monthly invoiced RbD quantities.

The AUGÉ notes that the RbD monthly invoice values are positive on approximately 80% of occasions, and suggests that this indicates a bias in the allocation model, allocating more to the LSP market.

This is an incorrect conclusion – although it indicates that LSP reconciliation is largely a credit to LSPs, it is not correct to suggest that SSPs are initially under-allocated. If SSPs were allowed to reconcile as LSPs do, reconciliation would also result in a credit to the SSP market, as shown below.

If reconciliation occurred on both SSP and LSP sites, unidentified gas could be quantified.



As it is as important for SSP sites to provide reads to Xoserve as for LSP sites we believe Xoserve hold as many reads for SSP sites as they do for LSP sites (in fact more SSPs have their AQ's restated based on current read pairs each year in the AQ review than LSPs). The reads collected for both LSPs and SSPs are all used in important industry settlement processes and are of equal quality.

It is unclear where the 80% figure is sourced. From the monthly RbD data between 2005 and 2010, 3 of the 60 monthly values are negative. Looking at the chart on page 2, it appears these negative RbD quantities were largely driven by adjustments.

Pages 7 and 8.

The analysis around RbD and the histograms applies statistical techniques to RbD as if it were due to a natural variation in a steady process, which is perhaps not the correct treatment.

The AUGÉ proposes that the distribution shown in the histograms is due to model error and bias which may be due to two causes: Unidentified gas from the LSP sector, and Deeming Algorithm bias. It is true that these factors will cause some of the variation.

There are other factors which contribute to the variation, which must be considered before drawing any conclusions:

1. The analysis is of RbD monthly invoiced quantities. As stated above, these invoices contain reconciliation quantities relating to the previous 5 years, and ad-hoc adjustments.
2. RbD is not a natural process, it is commercially driven. Shippers can influence the monthly invoiced RbD quantities by changing reconciliation behaviour on their LSP sites.

- For example, in the 07/08 gas year, prior to the introduction of Mod 152 in April, it can be seen from the reconciliation figures that shippers proactively reconciled historic quantities whilst the opportunity was still available (see chart on next page).

- It can also be seen that monthly reconciliation quantities invoiced each month were higher throughout the 07/08 and 08/09 than the 09/10 gas year, largely due to historical reconciliation (the increase perhaps brought about by greater awareness of the value of reconciliation following Mod 152; the recent decline due to less historical reconciliation now being available), whereas reconciliation relating to recent months has remained more constant (see top chart on page 3 above).

3. RbD quantities vary to an extent seasonally – more reconciliation in absolute GWh terms occurs in times of greater demand.

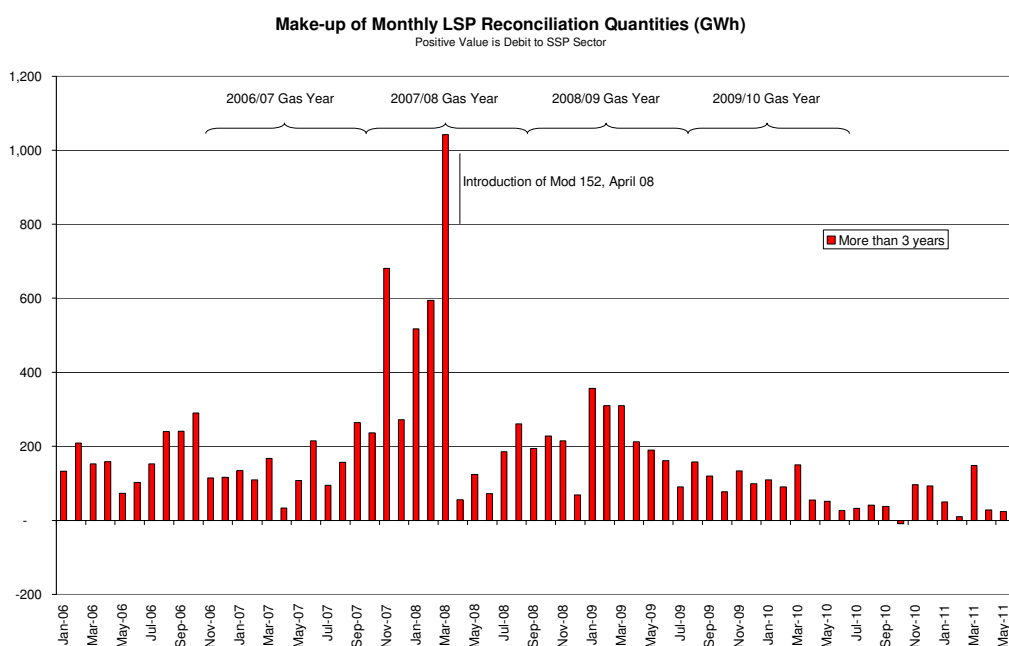
4. The RbD distribution is distinctly different in different years. This could be due to changes in variables used in the deeming algorithm, the ALPs, DAFs, etc., which are revised each year. It could also be due to consumption behaviour in the LSP market – more reconciliation occurs in periods of economic downturn, and less reconciliation has occurred more recently as the economy has picked up and commercial LSP sites have started to use more gas.

Points 2 to 4 are explored in more detail below.

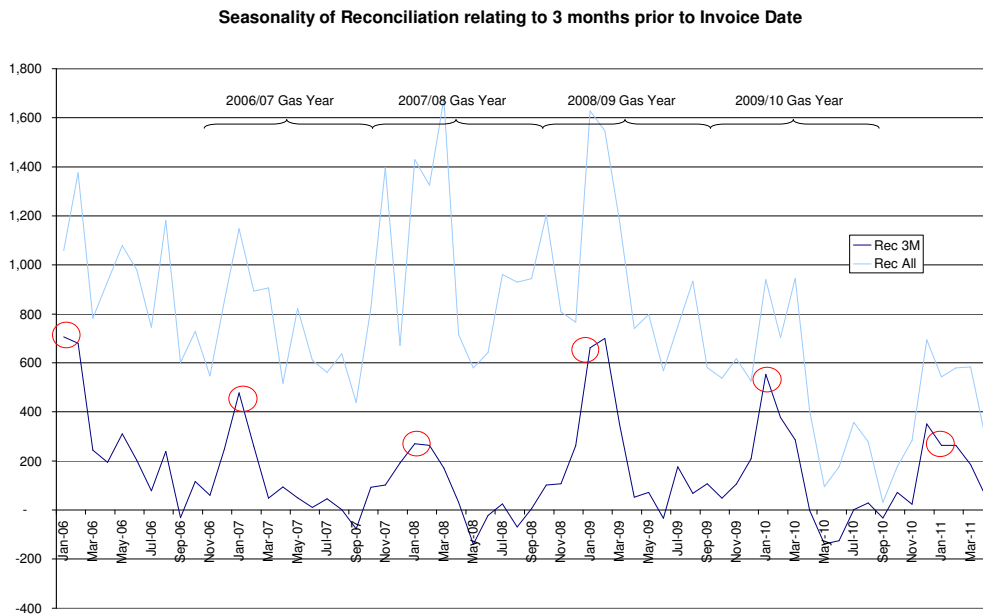
2. Evidence of the commercial behaviour driving reconciliation quantities can be seen below. This is the same data as on the second chart on page 2, but only reconciliation quantities relating to consumption periods more than 3 years prior to the reconciliation month are shown.

It can be seen that prior to the implementation of Mod 152 which introduced a 4/5 year backstop date to reconciliation, there was an increase in reconciliation activity for these older consumption periods.

This is a cause of some of the variation in the histogram in the AUGÉ's response.

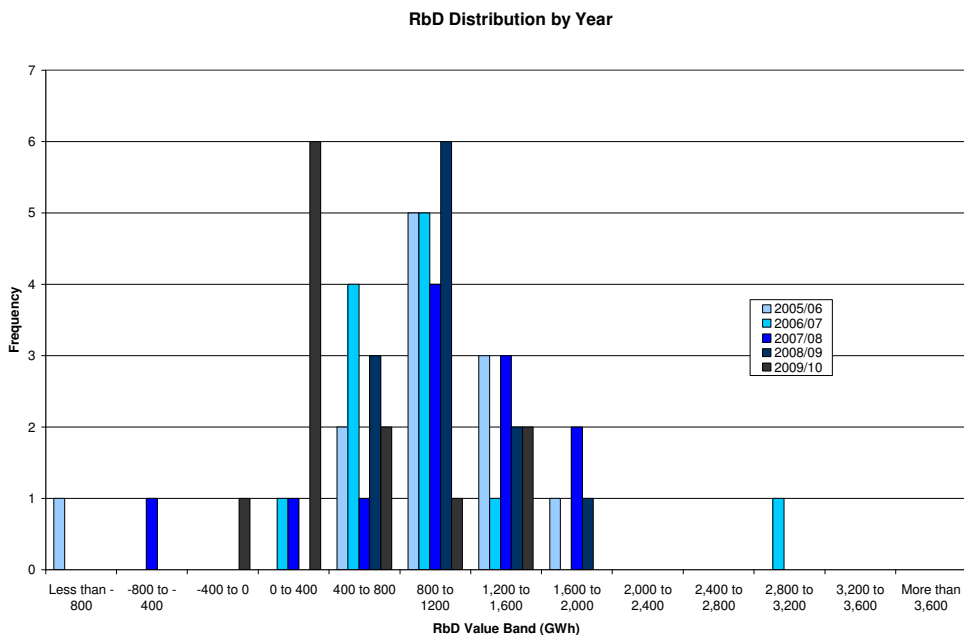


3. Reconciliation relating consumption within 3 months of the invoice month shows seasonality, higher quantities occurring in winter months. Januaries are circled. The pattern of seasonality is still apparent, albeit not so clearly, in the total reconciliation invoice quantities volumes in each month.



4. The RbD distribution varies year to year. For example, the distribution for the 2009/10 gas year is centred around the 0 to 400 GWh band and has fewer larger quantities than the 2008/09 gas year.

In combination with the top chart on page 3 above, a trend in reducing RbD volumes can be seen which to an extent defines the shape of the histograms in the AUGÉ's response.



Page 9.

The AUGÉ asserts that deeming is biased towards the LSP sector due to an AQ bias. This is substantially the same analysis as performed by TPA Solutions. The table does not contain actual consumption as labelled, and the comparison between AQ and allocation might be inappropriate for the following reasons:

1. It is based on actual annual allocation to the sectors (as opposed to actual consumption, which is unknown) which has been weather-adjusted to a “normal” year.
2. The LSP figure is based on initial allocation, it is not the final allocation net of reconciliation or RbD. It therefore contains unidentified gas.
3. The SSP figure is not “calculated by subtraction”, it is based on SSP allocation (note: Point 21 in the British Gas response to the AUGS is also incorrect on this point). It does contain unidentified gas.
4. Clarification is required around the method of weather correction used. Xoserve should be consulted on these points:
 - It is unclear whether the weather correction for the SSP and LSP allocations has been completed on the same basis as the weather correction performed to obtain an AQ, therefore the comparison between AQ and allocation is potentially not on the same basis.
 - Allocation is only partially proportional to AQ – differences in ALPs and DAFs (consumption profiles and weather sensitivity) throughout the year mean that allocation can be correctly disproportionate to AQ in each sector. It’s not clear whether the weather adjustment to the allocated quantities takes this into account.
5. Consideration should be given to the time lag between the period used for the AQ calculations (which will be different for each MPR but will typically start 18 months prior to the start of the gas year) and the period which the allocation relates to.

Page 10.

Based on the above, and as already noted by the AUGÉ, more investigation is required into the idea of AQ overstatement.

Point 3. It is unclear how a “realistic” level of theft has been determined and what this would look like.

Point 4. Given the above exploration of RbD and reconciliation, more consideration is required on the extent of model error and the likely scale of theft.

More explanation of this point is required.

Question / Issue 21

The AUGÉ implies that model error (and unidentified gas) is only present as a sub-set of RbD. This is not the case.

Question / Issue 24:

The AUGÉ indicates that it thinks unidentified gas is only introduced by the scaling factor. This is not that case. As described above, unidentified gas is allocated from the start of the

allocation process (i.e. UG is allocated under the $[AQ/365 * (1+WCF*DAF)]$ part of the algorithm), the scaling factor just scales the total of the allocations in all EUCs to equal the total demand in the LDZ.

More detail is required around the AUGE's proposal of "in-depth analysis... on large samples". Xoserve hold a wealth of meter reading data for all SSPs which could be used to facilitate this.