

AUGE Response to Queries arising from AUGS Draft 2

Queries From	Npower
Date Received	31/10/2011
Date of Response	14/11/2011

Question/Issue:

The Executive summary acknowledges that a 'small number of data items are outstanding'. Does the AUGS assume these data items to be of low material impact?

Response:

It is not necessarily the case that the outstanding data items will be of lower material impact, they are simply areas where data from Xoserve is still outstanding. Of those categories affected by missing data, the "Shipperless <12 Months" category in the Shipperless/Unregistered Sites area is likely to be the largest, although without any data on the subject it is not possible to judge its likely magnitude. In addition, Xoserve have now supplied data that allows allocation algorithm bias to be calculated more accurately, and this will also impact on the final figures. The UG figures published in the second draft of the AUGS were interim figures only and were intended to help the industry bodies in their assessment of the proposed calculation methods. No final figures will be published until all necessary data is available.

It should also be noted that in their response to the second draft AUGS, Centrica suggested that it may not be possible to obtain data regarding Shipperless <12 Months sites.

Xoserve have requested information from the networks regarding the proportion of visits where a live meter passing gas has been found and this is expected to be received later this week.

Question/Issue:

Furthermore, does the spreadsheet issued on the Xoserve/UK Link/supporting documentation entitled 'Unidentified gas summary' address these data items and replace the figure given in the executive summary?

Response:

The data available on UK Link provides the background to the figures published in the second draft of the AUGS rather than an update to it. The figures in the "Unidentified Gas Summary" spreadsheet are the same as those presented in Section 7 of the AUGS. Both the AUGS itself and the background calculation spreadsheets will be updated when new information becomes available.

Question/Issue:

The volume of raw data provided by the Large Transporters Agents will have a significant impact on the overall volume of Unallocated gas. A request has been issued by Xoserve to the UK Link Committee, (LJ/1085.3/DA) as the full notice period for the issuing of such data has not been observed. Can the AUGS be certain that this will not compromise the integrity of the data?

Response:

We have queried this with Xoserve. The communication request referenced is regarding the charging aspects of the service and nothing to do with the publication of AUGS data or any consultation on that data. UK Link is just being used as a secure medium to share data with the industry. This appears to be a misunderstanding between the referenced request and the AUGS process.

Queries From	ICoSS
Date Received	31/10/2011
Date of Response	14/11/2011

Question/Issue:

The split between the LSP NDM and DM sectors needs to be defined.

Response:

This is acknowledged. It was stated in the AUGS that no split between DM and NDM LSP sites had yet been attempted, and the UG estimates were only intended as interim figures. The final UG estimates include a split between the DM and NDM LSP market sectors when they are published.

Question/Issue:

Consideration should be given to the SSP NDM metering bias as the model is dependent on SSP meter reads.

Response:

It is acknowledged that whilst SSP metering errors do not feed directly into the current Unidentified Gas calculation they do influence AQs and hence still impact on the process. As stated in Section 6.7 of the AUGS, however, we are making the assumption that whilst SSP (diaphragm) meter drift is known to occur, such meters are equally likely to drift upwards as downwards, resulting in a net zero bias across the population. This assumption has been reached through consultation with experts in GL's metering team and we therefore regard it as sound, although at present there is little data to back it up.

Very little research has been carried out into the drift of individual meters over time. Having said this, meter asset managers are obliged by their code of practice to understand and maintain the population that they are responsible for, and part of this responsibility is to maintain meters to within certain acceptable accuracy standards. The relevant elements of the code of practice are as follows:

MAMCOP:

Meter asset managers operate under an agreed code of practice (MAMCoP – Meter Asset Managers Code of Practice). As part of the requirements of this, a number of sections require the asset manager to understand and maintain the population that they are responsible for:

Section 17 Installation Performance and Functionality Monitoring

17.5 Verification of Meter Accuracy

17.5.1 Meters shall be maintained in proper working order for registering the quantity of gas supplied. This can be achieved by an appropriate maintenance regime described in Section 12 or by the procedure in sub-section 17.5.2.

Note: In addition to the requirements of the MAMCoP, there may be additional contractual requirements.

17.5.2 Procedure for Sample Testing

- If sampling is employed, it shall be undertaken periodically by manufacturer, meter designation, badged capacity and year. Sample sizes shall be statistically robust with respect to determining the in-service accuracy requirements determined by legislation or best industry practice.
- Appropriate testing of meters shall be carried out using test equipment calibrated to nationally traceable standards and recommended test procedures. Records of results of the sampling exercise shall be maintained such that the requirements to maintain meters in proper working order for registering the quantity of gas supplied can be evidenced to interested parties (for example Ofgem, meter manufacturers).

The implication is that meter asset managers are required to understand the performance of the population and should have suitable evidence available to support this.

In-service Requirements in the UK for MID (Measuring Instrument Directive) Meters:

A draft document has been developed by the Industry Metering Advisory Group (IMAG) that provides details of in-service testing requirements for meters that have been approved against the MID requirements. The document has been approved by National Measurement Office (NMO) but has not been formally accepted by the industry.

The process defined is based on a standard, BS 6002-1:1993 ISO 3951:1989 Sampling Procedures for Inspection by Variables, and looks to provide a mechanism whereby all Meter Asset Managers can implement and be part of a scheme to assess the performance of a meter population.

Included in the document are criteria for defining a population, determination of a sample size, and assessment of the performance of the population. The key outcome is a simple measure that clearly defines whether a population meets expected performance criteria; performance defined by in-service maximum permissible errors and summarised in the table below. If the population fails to meet the requirements of the process, then timescales for the removal of the population from service are defined.

Flow rate	MPE Class 1.5	MPE Class 1.0 (no additional in-service tolerance)
0.2 Q_{max}	$\pm 3.0\%$	$\pm 1.0\%$
1.0 Q_{max}	$\pm 3.0\%$	$\pm 1.0\%$

Table: Maximum permissible errors (MPE)

Sample size is allocated based on the size of the population in-service as shown in the table below.

Population	Sample Size
1,201 – 3,200	50
3,201 – 10,000	75
10,001 – 35,000	100
35,001 – 150,000	150
150,001 – 500,000	200

Table: Sample allocation

A population is assessed based upon the accuracy tests undertaken and if the level outside the MPE is above acceptable levels.

The implication is that meter asset managers are required to understand the performance of the population and should have suitable evidence available to support this.

In line with these codes of practice, National Grid Metering carry out a significant amount of SSP sector meter accuracy spot testing, with a total pool numbering tens of thousands of results over a number of years. Whilst we are aware of the existence of this data, however, it is owned by National Grid Metering and is not in the public domain, and hence it is not available for our use. The AUGS will make enquiries as to whether National Grid would be willing to authorise the use of this data in the AUGS.

With the current absence of this data, it is necessary to rely on information available in order to make reasonable assumptions about SSP sector meter bias. When working within the above codes of practice, and with the additional knowledge and experience of the GL Noble Denton metering team with regard to the nature of meter drift, it is a reasonable assumption that for both the SSP and LSP populations drift can occur in either direction and is likely to have a net effect close to zero across the whole population.

This leads us to believe that our current assumption of no net bias over the SSP population is reasonable, which in turn means that Metering Error calculations are valid as they stand.

Question/Issue:

A significant majority of the LSP NDM Unidentified Gas identified (in particular that attributed to Unregistered/Shipperless sites) is transient in nature and should be excluded from any final Unidentified Gas volumes.

Response:

The AUGE had not been made aware before publication of the second draft of the AUGS that backbilling processes existed for LSP theft, LSP sites on iGT CSEPs, and certain types of unregistered and shipperless sites. The exact nature of what can and cannot be backbilled is currently being verified with Xoserve, and calculations will be amended as appropriate based on the information received.

Queries From	Total Gas and Power
Date Received	31/10/2011
Date of Response	14/11/2011

Question/Issue:

Unallocated gas within this category under established industry rules should in time be reconciled back to the opening meter read that relates to the meter connection date. This will ultimately assign the gas to the relevant supplier and market sector. The temporary nature of this unallocated gas is demonstrated by an example from the AUGE findings in the North West (NW) LDZ where one very significant site caused the entire NW LDZ to be around five times overstated at around 500GWh. This site was subsequently confirmed removing this gas from the unallocated total.

Therefore as this gas is eventually over time reconciled to a supplier and accounted for, it will reduce the overall amount of unallocated gas and should not be reallocated to another category within the existing overall volume currently estimated by the AUGE.

If this gas was not discounted from the investigation it would be effectively double counted and shippers, and therefore customers, would be paying twice.

TGP accepts that there are some issues with the processes relating to unregistered siteworks within the industry and these are being addressed under established workgroups. The current inefficiencies may cause the gas to sometimes remain unallocated for longer periods than it should be but generally the gas is reconciled and accounted for. Therefore unless current process issues can be remedied within the required timescales then this category of unidentified gas should be removed from the AUGE investigation.

Response:

As noted in the above responses to ICoSS, the AUGE acknowledges that it was unaware of backbilling processes for certain LSP loads, including unregistered sites. The exact nature of what can and cannot be backbilled is currently being verified with Xoserve, and calculations will be amended as appropriate based on the information received.

Question/Issue:

We understand that the AQ's associated with siteworks / new connections that were taken as provided to the AUGE and have received no validation by either the AUGE or Xoserve. It is well understood within the industry that AQ's are often erroneous and the eventual gas usage on some sites bears no resemblance to the initial AQ that was originally proposed. They often end up overstated and TGP is currently undertaking some analysis on this and will share any relevant findings with the AUGE.

The data provided to the AUGE by Xoserve contains many erroneously large AQ's which would have been evident had the data been analysed. For example, upon examining the Orphaned sites list provided by Xoserve there is a primary school with an AQ of 6 million therms. A typical AQ for a primary school would be within the range of 5,000 to 20,000 therms this is clearly incorrect. There are many other examples of very large and spurious AQ's which is distorting the perceived unallocated gas in this sector. TGP would recommend that at least the top 200 AQ's from the Shipperless / unallocated data are analysed and acted upon.

Response:

Up until this point, shipperless and unregistered data has been supplied to the AUGE in aggregate form, making it impossible to investigate individual sites. We have now arranged with Xoserve for the background data for each report to be provided so that potentially spurious sites can be identified and subjected to further examination. It should be noted, however, that in order to ensure anonymity all identifying data is removed from the background datasets before it is supplied to us. We cannot therefore make assessments ourselves of how appropriate any particular AQ is for a site of that type, because site data information has been withheld. Xoserve has also indicated that they only have the site name and no information on the type of business (as there are no industry standard behavioural codes). Whilst some sites will have names that give a clue to the type of business (e.g. a school) this will not always be the case. We have put a process with Xoserve in place in order for them to examine any sites we flag as being potentially erroneous, and they can then carry out their investigations with full data available. By necessity this means we have to flag sites without knowledge of the site type, but our flags will apply to large sites anyway, and hence any site with an artificially high AQ is more likely to be picked up. By the same token, sites with a lower AQ (even if it is one that is too high for the size and type of site it applies to) will have a low material impact on results.

Finally, it should be noted that if such sites are backbilled anyway there is no net contribution to Unidentified Gas and this becomes a moot point.

Queries From	ScottishPower
Date Received	31/10/2011
Date of Response	14/11/2011

Question/Issue:

“Unknown” supplies – there are a significant number of Large Supply Points which are unknown to National Grid and are consequently using unallocated gas (ScottishPower reference to the Sohn queries).

See also ScottishPower response to AUGÉ clarification questions dated 9th November:
“ScottishPower are not aware of supplies that are currently “unknown”, but were highlighting that obviously there are parties, such as Sohn Associates who have been involved in investigations through their work with consumers, where they have identified sites, which are in the “unknown” category. We therefore welcome the AUGÉ’s commitment to speaking to Sohn, with a view to identifying these sites.

We would also propose that there may be an opportunity to review siteworks requests from circa 1996 (when Sohn suggested the problem relates to) to check whether requested siteworks quotes resulted in a record on the Sites and Meters database. In the cases where this did not happen, further investigation could be carried out to determine whether there is a live supply that should have a Sites and Meters record. It is in the Transporters’ interest and in the interest of safety overall to ensure that there are accurate records of live gas supplies across the country.”

Response:

These are referenced in the AUGS as “Unknown Sites” and are contained in the Balancing Factor. This is covered in Section 6 of the AUGS. Following the first draft of the AUGS, data was requested from shippers concerning such sites, but there is insufficient knowledge about them to allow a robust direct analysis to be made. Therefore, this area will continue to be covered by the Balancing Factor.

If Sohn, ScottishPower or any other Shipper, or Industry participant are aware of sites that are unknown, however, these should be brought to the attention of the relevant authorities. This will ensure that they are included in Xoserve’s unregistered sites reports and calculated directly in the AUGS rather than being part of the Balancing Factor. The fact that Sohn are aware of these sites means that they are not truly unknown, but that they are not properly registered for some reason, and hence they should properly be dealt with as unregistered sites. It is not possible to include true unknown sites specifically in the unregistered/shipperless sites report because by definition nothing is known about them and so they have to be covered in the Balancing Factor.

With regard the suggestion that siteworks requests from 1996 should be investigated vs the sites and meters database this is really the responsibility of the GTs and/or Xoserve. The AUGÉs responsibility is to estimate UG rather than rectify deficiencies in how the gas industry operates.

Question/Issue:

Daily Metered Sites with incorrect meter index factors – “I have been involved in negotiations with Suppliers on behalf of clients who have been retrospectively billed huge amounts due to errors in setting up meters and correctors in the industry databases with the result that the recorded consumption has been out by a factor of 10 or 100” (ScottishPower reference to the Sohn queries).

Response:

It is assumed that RbD is credited when such errors are discovered, and hence this becomes a matter of whether all errors of this type are found within the reconciliation time limit or whether any can be considered to run indefinitely. In the former case, there is no net contribution to UG over time (as long as RbD is credited when the error is found). In the latter case there will be a contribution to UG, and with reference to this the AUGS will request data from shippers on this subject. If there are found to be sites with incorrect index factors where the loss is never reconciled, this will be included directly in Meter Error calculations. It should be noted, however, that the nature of the UG calculations means that such errors are currently captured in the Balancing Factor.

Question/Issue:

Over Sized meters – where a number of large non-domestic rotary meters which are well over 20 years old and likely to be under recording, with one non-domestic Shipper/Supplier noted as having nearly 50% of their portfolio comprising these meters (ScottishPower reference to the Sohn queries).

Response:

This area will be covered by the DM element of the Meter Error calculation, which will be included in the next draft of the AUGS.

Question/Issue:

The report believes that the provision of actual meter readings eliminates any model error on allocation and that all model error should then be picked up by the SSP sector. If modelling has to be used by the whole sector as a means of efficient allocation ahead of and on the day, why should the SSP sector pay for it? The statement suggests that the model error is “a significant component” and looks about 25TWh of volume. In section 4.3 there is a suggestion that this could be split out to show the proportion of model error in the LSP sector. We would query why the SSP sector should pick up all of the model error?

Response:

As demonstrated in the 2nd draft of the AUGS, the ongoing reduction in AQs over time results in the allocation algorithms having a tendency to over-estimate LSP load. This produces consistently positive LSP model error figures. These positive values represent gas that the algorithms have allocated to the LSP market, that it is subsequently demonstrated that they should not have – it is

gas that was actually consumed by the SSP market. Therefore it is fair and valid to assign this gas to SSP, because this is the market sector it arose from. Note that this issue is not actually concerned with on the day and day ahead allocation: we're looking at after the day when LSP load is known, and it is the fact the LSP load is known that allows us to eliminate model error. It should also be noted that total algorithm bias for the whole country (as presented in Section 7 of the AUGS and in the spreadsheet "Unidentified Gas Summary.xls" supplied on UK Link) is about 3TWh rather than 25TWh. However, this figure is subject to revision when updated data is used in the calculation.

Question/Issue:

Alternative approach: the drawback to this approach is that AQs are inaccurate, due to them being based on historic consumption, and there being data quality and update issues associated with them. ScottishPower's MOD379A would help address this situation by improving data quality.

Response:

It is agreed that realistically this alternative approach would have to involve AQs (to scale sampled metered consumption values up to cover the full population), and hence would be subject to any inaccuracies these introduce. Both the current and alternative method would benefit from any improvement in AQ quality. It is still valid to consider the alternative approach because of the potential benefits it can bring if it can be applied accurately. Having said this, the current method is less sensitive to AQ inaccuracies as it relies only on changes in AQ from one gas year to the next. The alternative method relies on the absolute values of AQ being accurate in order to obtain a total consumption. The current method is therefore better if AQ inaccuracy is found to be an issue.

Question/Issue:

Orphaned sites: the report says that data has been received about opening meter readings, but does not show the volume estimated to be used – can we see this?

Response:

The data obtained is a sample of orphaned sites with their opening meter reading, and it can be found on UK Link (Section 22 "Mod229 AUGS Data Provision", sub-section 1 "Shipperless and Unregistered", file name "Orphaned sites with opening meter read_V2.xls"). The purpose of this dataset is not to calculate volumes consumed by orphaned sites, but to estimate the approximate percentage of orphaned sites with a meter that take UG before they are registered. The Unregistered/Shipperless sites report that we receive on a 2-monthly basis contains an aggregated summary of all orphaned sites with meters, and so it is necessary to estimate from this how many are actually taking gas. This is calculated using the proportion estimates from the orphaned sites opening meter read data.

In the reference dataset, where opening meter reads are 0, maximum (e.g. 99999) or close to these, it is assumed that no UG has been taken. Where the opening meter read falls outside this definition, it is assumed to have taken UG. Meters are classified into the two groupings and the

proportion having consumed UG is calculated. The estimated consumption of orphaned sites with meters in any given 2-month period is dependent on the number of AQ of sites during that time, and the calculations are based on these. This information is contained in the 2-monthly Unregistered and Shipperless Sites report.

Question/Issue:

New LSP sites: have these sites been considered to see if there is a ramp up effect on consumption levels – should the AUGÉ not be considering if the initial AQ that was established is appropriate?

Response:

Data has been analysed in this area and no significant ramp-up effect has been identified for such sites. It remains the case that initial AQs may not be accurate, however, and so a process has been put in place between GL and Xoserve whereby any suspicious AQs are investigated thoroughly before inclusion in calculations, as described in the responses to issues raised by Total Gas and Power above.

Data in this area is held in two separate files, each of which covers a different LSP EUC range. “LSP_Meter Read_Summary_v2.xls” (covering EUCs 02B-04B) does not appear to have been published on UK Link, so this oversight will be addressed. “LSP Summary V3.xls” (covering EUCs >04B) is available on UK Link (Section 22 “Mod229 AUGÉ Data Provision”, sub-section 2 “LSP Read Summary”).

Question/Issue:

MOD81 Reports – the AUGÉ has requested additional information for AQ by EUC post the AQ Review – can we see this?

Response:

This data has now been supplied to the AUGÉ and is also available on UK Link. It can be found in Section 22 “Mod229 AUGÉ Data Provision”, sub-section 12 “MOD81”.

Question/Issue:

The DESC sample data does not include samples of pre-payment meters in addition there is no consideration of new building standards, where AQs for the properties should be less than historic buildings that are less energy efficient. Are DESC going to address these shortfalls?

Response:

As discussed at the UNCC meeting on October 17th the AUGÉ is not permitted to use the DESC sample data. Questions regarding the sample used by DESC should really be addressed to them.

Question/Issue:

How is the AUGÉ going to keep the composite weather variable under consideration?

See also ScottishPower response to AUGÉ clarification questions dated 9th November:
“Adjustment to the CWV can be made through the year, through the process introduced under MOD204. We want to ensure that the AUGÉ will consider developments here and look for any issues that might arise and consider if there is any implication for unidentified gas.”

Response:

The calculation of Unidentified Gas is based on the long-term annual trend in RbD and hence is not affected by whether Year Y+1 is warmer or cooler than Year Y. This approach is the most appropriate to use because UG calculations are made in advance based on data up to and including the previous year. Therefore weather conditions for the year we are estimating UG for are unknown when the estimate is made, and so they cannot be accounted for. If there are changes to CWV during the coming year that are not known at the time the AUGS is published then they cannot be taken account of for the coming year (although if there is an ongoing change that has an impact this could be covered in future years). There is also no process to make any retrospective adjustments to the UG estimate at the end of the year.

Question/Issue:

New Meters/Isolated meters – “It has been assumed that a meter is removed from the allocation process immediately after it stops taking gas. If a site stops taking gas but is not removed from the allocation process for some time, this will result in the incorrect allocation based on AQ when the true consumption is actually zero”. It might be useful for the AUGÉ to consider all the status information on sites, which Xoserve have provided under the AQ Review and which are referred in MOD379A e.g. dead, clamped capped etc.

Response:

Information regarding this issue has been requested from Xoserve and will be considered by the AUGÉ.

Question/Issue:

Accuracy levels noted for AQs do not take account of sites with issues on site status (as above). LSP sites AQs are not updated to 78%, it is nearer 65%.

Response:

We have obtained the presentation given by Xoserve regarding the number of sites that have passed/failed calculation (http://www.xoserve.com/docs/AQ2010_ActualCalcPresentation.pps). On this presentation, slide 2 of the main part shows a summary of the number of sites calculated and not calculated in each sector (which does indeed work out at 65% if you look at LSP for 2010).

However, on slide 6 the table shows a number of dead/extinct sites and an LSP calculation percentage of 78% for 2010 after excluding these. These figures excluding dead/extinct meters are the ones used by the AUGS and resulted in the average figure over 3 years of 76% for LSP.

Clearly, it would be wrong for us to scale up the AQs from the LSP 65% to 100% if that 100% included a portion of dead/extinct sites not taking gas. Therefore the figures used in the 2nd draft AUGS are correct.

Question/Issue:

Could analysis be carried out to look at samples of usage (metered volume) –v- deemed –v- “corrections” (through RbD as LSP reads are factored through)?

See also ScottishPower response to AUGS clarification questions dated 9th November:
“ScottishPower proposed that it might be beneficial to analyse metered volume –v- deemed –v- corrections. Such analysis would consider deemed volume for Demand Estimation sample sites in each NDM EUC band, which could then be compared to what has actually been billed to these customers by the Supplier. In addition if you add in the effect of RbD adjustments over time it will highlight the accuracy of modeling for the SSP and LSP sector and highlight any bias in the process.”

Response:

The AUGS believes that this is already assessed by the Demand Estimation team in development of the NDM profiling algorithm although bias can still exist as we have identified in the analysis of the methodology. In addition, comparing this to what has been billed by the supplier is not necessarily a good measure since (in the case of the SSP market), direct debit bills (for example) may not necessarily reflect actual consumption.

The AUGS is committed to looking at meter consumptions in terms of their suitability for input into the methodology to calculate UG and will be able to look at a sample of these vs deemed demand and corrections but this will be carried out post this years AUGS process.

Question/Issue:

The document talks about there being an issue with WS LDZ, which is caused by either incorrect AQs or actual allocations and that Xoserve are investigating – we would question why Xoserve have not picked this up previously and would like an explanation of the issues here.

Response:

This issue has now been resolved by Xoserve. Their explanation of the issue is as follows:
“I have confirmed with the Process Owner that an MPR was incorrectly created on our systems with an AQ value of 3,984,000,000 Kwh for 2007-2009. I have tracked the MPR and it has not been included in any allocations process and no consumption has been attributed to it, however it was

incorrectly included in your original AQ Totals spreadsheet. I have now removed the invalid Kwh from WS for each of the years impacted and the total NDM LSP Value is now in line with the aggregate consumption value for these years.”

The AUGÉ will therefore ensure that all future calculations exclude this spurious meter. Xoserve have confirmed that it was categorised in EUC group 09B.

Question/Issue:

The statement talks about there being little opportunity for AQs to change during the year and seems to suggest that the only opportunity for change is where the site is a threshold crosser. We would like clarification that the AUGÉ is aware of the option to appeal a site AQ, which exists more or less year-round for LSP Shippers.

Response:

We are aware of the AQ appeal process and comment was made in section 6.2.4 of the AUGS “Within the gas year, any LSP or potential threshold crosser (SSP to LSP or vice versa) can have its AQ amended, but this facility is not often used (“Review of Reconciliation by Difference (RbD) Xoserve response to Consultation Ref: 57/06” [23]).”.

Question/Issue:

Accuracy levels noted for AQs do not take account of sites with issues on site status (as above). LSP sites are not update to 78%, it is nearer 65%.

Response:

Please see previous response regarding the percentage of LSP sites calculated.

Question/Issue:

“It is not unreasonable to assume that the AQs of the meters which have not been updated in the AQ review have changes in a similar manner to those which have been updated” – we do not believe that this statement holds true and would suggest that the AUGÉ should be looking at the aging of sites where the AQ has not been updated and providing some information to substantiate their assertion.

Response:

Approximately 76% of LSP meters are updated in the AQ review. By any standards, this is a large sample of the overall population and would be expected to be a good representation of the remaining 24% unless there is an inherent bias in the sample. As this proportion specifically excludes dead/extinct meters, we see no reason why the non-calculated meters should be different to those calculated.

The AUGS has received further data from Xoserve which contains details of whether sites that fail a review are different each year or whether there are sites that have failed reviews for several years. For those sites that have failed the review for the most recent year, the previous years AQ is likely to be a good representation for its demand (whilst we accept that there may be cases where the demand has changed). For those sites that have failed for 2-3 years then there is still some information in terms of the previous known AQ. For those sites that have never passed a review then there is little information about them and we can only assume they behave like the overall population. Note that having meter reads as an alternative would not necessarily improve the situation as the AQs rely on the meter reads in order to estimate the AQ in the first place. The AUGS will carry out some analysis on the data received and include in a refined AUGS to illustrate the proportion of sites with long term AQ failures.

Question/Issue:

Should there be reporting on the inaccuracies of types of pipework, which are assumed to be in the ground, where some other material is found at replacement?

Response:

This should be handled by Shrinkage forum – there is no way for us to know in advance of pipe replacement whether the pipe in the ground is as expected. Once identified, the GTs can adjust the leakage estimate accordingly at the end of the year.

Question/Issue:

The report suggests that climate change effects are having an effect on gas temperatures and assumes that Own Use Gas will be lower as a result – can we see some substantiation as to why this would be the case?

Response:

This part of the AUGS is based on an OUG sensitivity analysis report that concludes that climate change *could* have an impact on ground temperatures. This report also goes on to say that further analysis would be required to establish if this is indeed the case. Again, this is really a topic for the Shrinkage forum to investigate. The OUG Sensitivity Analysis report also notes that gas temperatures could start off at a higher temperature due to the effects of compression (e.g. if the networks were able to run at a higher pressure due to pipe network improvements, the gas temperature would be higher through compression and hence less pre-heating would be required). This would also reduce OUG requirements.

We do not have data to substantiate this either way, hence the suggestion that further analysis and data would be required to assess the impact of this. The Hadley Centre history of Central England Temperatures shows an increase over 2000-2010 vs previous periods of $\approx 0.5-1^{\circ}\text{C}$: the question is how much of an effect does this have on ground temperature? The temperature difference is not likely to be significant, and will have a small impact on OUG, although if the above is true then there could be a small bias and given we had agreed to identify potential areas of bias it is right and proper for us to identify this as a *potential* area of bias. Note that OUG is a very small

component of shrinkage. Furthermore, one of the limitations of ground temperature is that it is monthly and limited to various key locations across the country. Any difference in ground temperature over time is likely to be outweighed by the limited granularity of data.

Question/Issue:

Unregistered/shipperless sites: it could be argued that unregistered/shipperless customers will in fact be using more than their AQ, as they will not be paying for their gas usage and therefore have no incentive to keep consumption low. In addition as meter readings will not be taken then the AQ will not be getting updated.

See also ScottishPower response to AUGE clarification questions dated 9th November.

Response:

It has become clear that most unregistered and shipperless sites will be backbilled in certain circumstances, and where this is the case the accuracy of their AQ is not an issue. For those cases where backbilling does not take place (e.g for Shipperless SSrP sites), data would be required to demonstrate that demand for such sites falls when they have a shipper before any such effect could be included in the analysis.

We have asked Xoserve for information on this topic and their response is that as sites can be Shipperless for a long period of time they (Xoserve) do not hold any consumption details for these periods as no reads are received. We believe therefore it would be impractical to carry out this comparison (given lack of data during the Shipperless period) which when considered overall would have a very small impact on UG.

Question/Issue:

The report says “Only those that have a meter are capable of flowing gas” – We would question if this is definitely the case.

Response:

The exception to this would be where no meter is fitted but there is a direct connection to the gas supply by some means. Additional site visit data (which Xoserve have requested – see responses to BG issues later in this document) may provide more details on this.

Question/Issue:

Shipperless/Unregistered sites: we accept that Xoserve have not been tracking sites in this area, but we would recommend that there should be some tracking going forward, as this will enable the AUGE to make more accurate assessments going forward. Can the AUGE put this in place with Xoserve?

Response:

A process has been put in place with Xoserve where data in this area is provided every two months. This data is in the form of aggregated summary information for each type of unregistered and shipperless site, along with background data from individual sites with identifying information removed to ensure anonymity. There is no guarantee that individual sites can be tracked in this background data due to the lack of identifying data/confidentially and we would therefore not be able to share such findings with the industry, although it should be possible to identify most sites using their AQ value. This information will continue to be provided every two months and this will provide a tracking trail going forward. It is not possible for Xoserve to produce historic files, however.

Question/Issue:

Can Xoserve not provide information as to “must inspections” that are outstanding across the whole market?

Response:

The AUGE has requested data from Xoserve on this topic and this is being finalised before sending to us.

Question/Issue:

We do not agree with the assertion that a “large blue-chip” company would not be expected to be involved in theft – in particular companies of this scale potentially have the expertise to undertake theft in a safe manner.

Response:

This is not an opinion formed by the AUGE but a summary based on responses from the Shippers to questions raised in April. Xoserve have investigated this area, and their stated conclusions are as follows:

“I have spoken with our Theft of Gas Team who have confirmed that they have no instances of Blue Chip Companies being suspected or proven to have stolen gas. They confirmed that the small kWh values associated to successful thefts would also indicate that they were not applicable to Blue Chip Companies.”

It should also be noted that this area is incidental, because our estimates of theft are based on supplied figures for identified and alleged theft and do not directly use these shipper responses.

Question/Issue:

In respect of sites that may have a meter, take gas and not have an MPRN and not be registered – the report notes - “At least 2 respondents provided examples of when this occurs for them” – this

suggests that this problem is systemic and we would propose that further details should be requested from the 2 Shippers both on when this happens and the number of cases identified.

Response:

The fact that two respondents provided examples of this phenomenon does not necessarily make it systemic. In each case the respondent stated that it was rare but not impossible and gave very small numbers of sites in connection with this. No other respondents referred to the existence of any such sites. It is therefore a small and unusual event for such a site to exist and as such these sites are dealt with in the Balancing Factor.

Question/Issue:

The report suggests that there is not a net contribution to unidentified gas from metering errors – we do not believe this to be the case and have evidence of the metering errors to date that can be provided. In particular we would flag to the AUGÉ that there are a couple of modifications in the UNC MOD process, which are looking to restrict the reconciliation period which would impact for these errors. We therefore believe that more needs to be done by the AUGÉ in this area.

See also ScottishPower response to AUGÉ clarification questions dated 9th November that corrects question and refers to LDZ metering errors specifically.

Response:

The AUGÉ is aware of LDZ metering errors and that these can be quite large. The issue is whether such errors are detected after the reconciliation period has closed. Our current working assumption is that they are captured and addressed through RbD which is catered for in the UG methodology. For errors that are found outside the reconciliation period we would need to estimate what that level is likely to be in a typical year which means that there would be some instances where this is under/over estimated as it would be unknown in advance. We suggest the industry consider a post year UG reconciliation process to deal with the larger events in a similar way to how Shrinkage is revised.

Question/Issue:

“The high level of LSP Unidentified Gas observed in NW LDZ is mostly due to the ‘Unregistered <12 months’ category. The raw Unregistered and Shipperless Sites Report shows a consistent and very high AQ of sites in this category” (AUGS Section 7). The figure for the NW LSP is 27% of the total unidentified gas for the whole of the LSP market – can this be explained in detail, together with what the figures for this LDZ for LSP sites has been in the past and what is being done to rectify it?

Response:

This figure arose from a single very large site in NW LDZ that was listed as having been unregistered for less than 12 months. Investigation by Xoserve showed that the site was genuine, that the AQ was appropriate for a site of that type, and that it was genuinely unregistered. The

calculations were therefore correctly picking up the Unidentified Gas consumed by this site. The site in question became registered with a shipper at the end of September and no longer appears in the Shipperless and Unregistered Sites report (and hence will not appear in subsequent UG calculations). As a result of this, and other similar issues, the AUGÉ and Xoserve have agreed on a process whereby any sites highlighted by the AUGÉ will be investigated by Xoserve in order to ensure that AQ values are representative and that the sites should indeed be included in calculations.

Queries From	British Gas
Date Received	31/10/2011
Date of Response	XX/11/2011

Question/Issue:

Simple arithmetic error(s) in the application of the AUGÉ's stated methodology for calculating the total quantity of UG. The impact of the error(s) is to understate the value of unidentified gas (by incorrectly calculating the "balancing factor") and consequently arriving at an incorrect allocation.

[This is a summary of the full comment from BG on this issue. Full details can be found in their response document, which is available on the Joint Office website.]

Response:

This comment is based on text from Section 4.2 of the latest draft of the AUGS, which describes the location of Unidentified Gas in market sector volume estimates throughout the allocation and RbD process. This section was originally written for the first draft of the AUGS, when it was believed that (as stated in Section 4.2 of the AUGS) "the Unidentified Gas component is split across EUCs by volume ratio". Subsequent analysis carried out for the second draft of the AUGS showed that this was not the case, and the improved understanding of the situation is referred to in Section 4.4 of the second draft: "In addition, the AUGÉ has carried out sensitivity analysis of worked UG allocation scenarios, and these have shown that small quantities of LSP UG may be assigned to the SSP market during the allocation process." It is recognised that Section 4.2 should have been updated to describe the improved understanding of the situation, and that these changes were not made. The AUGÉ apologises for any misunderstanding that has resulted from this oversight.

It can be shown that Unidentified Gas is only split across market sectors by volume ratio if there is no bias in the initial SSP or LSP allocations. This is not the case, however, and it is demonstrated in Section 4.2 of the AUGS that there is an inherent bias towards LSP in the allocation process due to AQ drift. When this bias is included in calculations it becomes the dominant factor in the placement of Unidentified Gas and skews it heavily towards the LSP sector. The analysis tool spreadsheet (UG Apportionment.xls) provided with this document can be used to investigate different scenarios and their effect on the location of Unidentified Gas by market sector.

The table below shows the results from this tool for a number of scenarios.

Scenario	SSP Actual	LSP Actual	SSP Alg Err %	LSP Alg Err %	SSP Allocation	LSP Allocation	DM Actual	Total LDZ	Total UG	SSP Assigned UG	LSP Assigned UG	SSP Assigned UG %	LSP Assigned UG %
1	300	100	0.67%	5.00%	302	105	90	495	5	0.52	4.48	10.40%	89.60%
2	300	100	1.00%	6.00%	303	106	90	495	5	0.04	4.96	0.80%	99.20%
3	300	100	-0.67%	4.00%	298	104	90	495	5	0.22	4.78	4.40%	95.60%
4	300	100	0.00%	5.00%	300	105	90	495	5	0.00	5.00	0.00%	100.00%
5	300	100	0.67%	5.00%	302	105	90	497.5	7.5	2.37	5.13	31.65%	68.35%
6	300	100	1.00%	6.00%	303	106	90	497.5	7.5	1.89	5.61	25.18%	74.82%
7	300	100	-0.67%	4.00%	298	104	90	497.5	7.5	2.07	5.43	27.66%	72.34%
8	300	100	0.00%	5.00%	300	105	90	497.5	7.5	1.85	5.65	24.69%	75.31%
9	300	100	0.67%	5.00%	302	105	90	500	10	4.23	5.77	42.29%	57.71%
10	300	100	1.00%	6.00%	303	106	90	500	10	3.74	6.26	37.41%	62.59%
11	300	100	-0.67%	4.00%	298	104	90	500	10	3.93	6.07	39.28%	60.72%
12	300	100	0.00%	5.00%	300	105	90	500	10	3.70	6.30	37.04%	62.96%

Three sets of scenarios are shown in this table, each of which holds the level of Unidentified Gas constant whilst varying the SSP and LSP allocation error percentages within reasonable bounds. Note that analysis of Scaling Factors from the allocation algorithm shows that the long-term average is very close to 1, with individual figures varying either side of this. This result shows that on average, over time, the initial allocations are not scaled, indicating that overall (aggregate) model bias is similar in magnitude to Unidentified Gas. The scenarios have been chosen to reflect this.

The AUGC believes that the level of Unidentified Gas is likely to be around 1% of throughput, for a number of reasons:

1. This is the level of UG produced by the current calculation methodology detailed in the second draft of the AUGS, which represents the most accurate estimate available to date.
2. Whilst full calculations were not carried out for the bottom-up method proposed in the first draft of the AUGS, it is known that the UG estimates produced would have been no greater than 1% of throughput.
3. 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 vastly higher than previously published and accepted values and which the AUGC considers to be unrealistic.

We therefore consider the first set of four scenarios (Runs 1-4) to be the most realistic, as they reflect a situation where UG is 1% of throughput. The other scenarios, with UG at 1.5% and 2% of throughput are included for comparison purposes.

Runs 1-4 return UG allocations of 90% to 100% to the LSP sector. Note that the split of *arising* UG is approximately 67% SSP and 33% LSP, so even in a scenario where 10% of UG is assigned to the SSP sector, only a third of this – around 3% – is LSP arising. This is the most extreme case in Runs 1-4, and others place the allocation of LSP arising UG to the SSP sector even lower, and in one case at zero. Other realistic scenarios, not presented here, even result in negative UG assigned to the SSP sector.

These results of scenario analysis are what lead us to make the statement in Section 4.4 of the AUGS that only small amounts of LSP arising UG are ever assigned to the SSP sector. It is

acknowledged that the current methodology does not account for these, but the error associated with this is small because the volumes in question are small.

This analysis demonstrates that assignment of UG across the SSP and LSP markets by the allocation process is not relative to market sector size, but is instead driven by allocation bias and skews UG heavily towards the LSP sector. It is certainly not valid to multiply the LSP assigned UG figure up to a final UG volume using market sectors as a base, as this will result in a huge over-estimate of total UG.

The AUGÉ therefore believe that despite the current methodology potentially missing a small amount (up to 3%) of LSP arising UG, it is the most appropriate method given the available data. We are committed however to investigating the alternative approach of using SSP and LSP meter read data for future years. This approach will be adopted if it is feasible and results in improvements to the UG estimate.

Question/Issue:

In an ideal world theft should be apportioned in every instance by Shipper. In the absence of good data on this however an alternative approach is required. Whilst the AUGÉ has accepted this, the apportionment of theft (allocation ratio) between the SSP and LSP sectors is incorrect. The AUGÉ argues that the allocation of theft should be split between sectors in proportion to the estimated volume of theft occurring in each sector. Assuming that this is a reasonable approach, we provide evidence that the derived ratio cannot be correct and request that the AUGÉ re-evaluate the allocations.

[This is a summary of the full comment from BG on this issue. Full details can be found in their response document, which is available on the Joint Office website.]

Response:

The AUGÉ's theft calculations are based on data for both detected and alleged thefts between 2006 and 2010, and this data was provided by Xoserve. In addition to simply recording the number of thefts, the approximate volume of gas stolen is also estimated for each detected theft and for a number of alleged thefts. In order to ensure that only consistent data was used in calculations, figures for detected thefts and alleged thefts were analysed individually, and also in aggregate. This analysis showed that relative theft levels (in terms of both the number of occurrences and the volume of gas stolen) were very similar for both detected and alleged thefts, and so the full aggregate dataset could be used. In addition to consistency across detected and alleged thefts, calculated theft statistics were also very stable from year to year, giving increased confidence in the data.

The AUGÉ's calculation of the split of theft occurrences between the SSP and LSP sectors (approximately 95% from SSP and 5% from LSP) comes directly from the supplied data, using the occurrence count as base data. The split of theft volume (approximately 92% SSP and 8% LSP) also comes directly from the data, using theft volume as base data. Given that theft volumes are

provided by Xoserve and used directly, the AUGÉ sees little justification in estimating theft volumes in a different way and using these in preference to the actual values from the theft database.

Note that the dataset as initially supplied contained a bug in that for the most recent year the market sector was assigned based on the Volume Stolen column instead of the AQ column. This resulted in an SSP/LSP split of approximately 55%/45%. This was completely inconsistent with results from previous years but similar to figures for alleged theft quoted in Mod228, and this bug may be the result of this error. Values quoted here and used in the AUGS are based on those with the error resolved.

The British Gas analysis of theft volumes makes a key assumption that the volume of theft must be proportional to AQ, which the estimated theft volumes from the theft dataset show is not the case. These figures show that LSP sites steal a much lower proportion of gas (compared to their AQ) than SSP sites. This may be due to the greater scrutiny placed on LSP sites making them more likely to steal *some* of their gas rather than *all* of their gas, whilst SSP consumers are more likely to bypass their meter and record zero flows. Whatever the reason, this phenomenon is clearly illustrated by the estimated theft volume figures in the theft dataset, and given the existence of these figures, there is once again no justification in abandoning them in favour of volume calculated in a different, arbitrary manner.

British Gas noted that some sites may be wrongly allocated to the SSP sector rather than the LSP sector because the level of theft reduces their AQ so that it is included in the SSP sector.

There are two ways of interpreting this situation:

1) Theft remains in SSP

If a site's AQ is just below the LSP threshold and it's stealing gas, then if the theft was added back in the site would be in the LSP sector. However, the definition of an LSP site is one whose AQ is greater than 73,200kWh, and regardless of the reason the calculated AQ of this site is within the SSP range. It would only be assigned to the LSP sector if it hadn't been stealing gas in the first place, which would have resulted in it having a higher AQ. Under this scenario it would become an LSP site, but one with zero theft.

2) Theft is moved to LSP

The definition of an LSP site is not one with an AQ of over 73,200kWh but one with an annual consumption of over 73,200kWh. Under normal circumstances the AQ represents the annual consumption as accurately as is possible, but in cases of theft the two become different things and the AQ (which is based on metered demand) no longer represents the full consumption. The site in question still has an annual consumption of over 73,200kWh, however, despite the fact that some of this is unmetered and consequently the calculated AQ is below the threshold, and so it's still an LSP.

Having considered these scenarios, the AUGÉ believes that the theft arising from such sites should be allocated to the LSP sector and should be included in the updated calculations. Analysis of this

area indicates that this affects around 5% of sites where theft is detected. These sites will be reallocated to the LSP sector when the analysis to produce the final UG figures is carried out.

Question/Issue:

The AUGÉ has not considered allocating theft between sectors in proportion to overall consumption. In the absence of good data on theft we set out why the AUGÉ may choose this alternative approach this would be a significantly fairer method of apportioning volumes than the approach currently used. When the AUGÉ reviews and corrects the suggested allocation of theft, it will see that the evidence shows that theft (by volume) is more prevalent in the LSP sector. Allocating less theft than the LSP share of throughput (~26.45%) is therefore unacceptable as this would represent a continued bias in allocation approach.

[This is a summary of the full comment from BG on this issue. Full details can be found in their response document, which is available on the Joint Office website.]

Response:

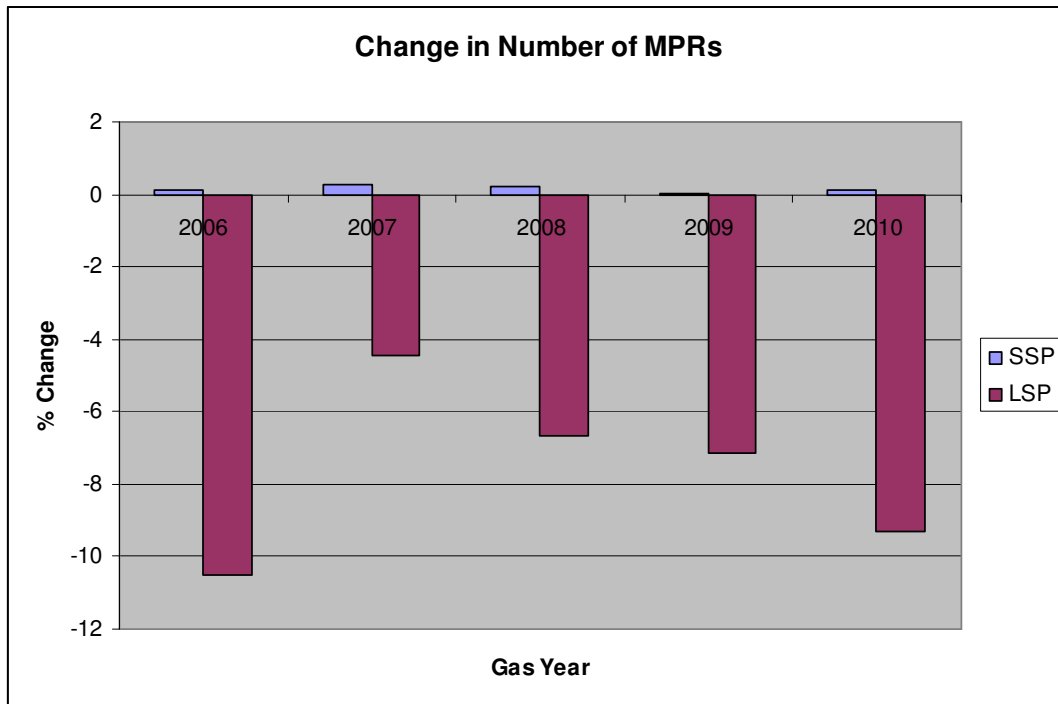
The remit of the AUGÉ is to estimate the volume and cost of Unidentified Gas arising from each market sector, and this is what the current calculations do. Whether it is fair and equitable to then charge those market sectors in proportion to the cost of UG arising from them, or whether an alternative charging methodology is more appropriate, is not a matter for the AUGÉ. This issue should be taken up with the UNCC. It may be necessary for a separate UNC Mod to be raised if British Gas feel that charging market sectors according to the cost of UG arising from them is not appropriate.

Question/Issue:

Section 4.2, Page 10, Figure 1. The chart is incorrect. It shows a 16% reduction in LSP AQ in the 2010 AQ Review, but the actual LSP reduction was 9.8%, with SSPs reducing 9.1%. The figures for the other years are incorrect too (Mod81 Xoserve data as at 1st October 2010,09,08,07). This is not material to the AUGÉ's calculations but it incorrectly implies there was a huge difference in AQ reductions between LSPs and SSPs.

Response:

British Gas's calculations in this area are based on Mod81 data, which only includes meters that were alive in both reviews (i.e. both at the start and the end of the year in question). Therefore the figures quoted do not include loss of meters, only the AQ change of surviving meters. Meter loss is significant in the LSP sector, as shown in the following graph:



This shows that the number of SSP meters has actually increased slightly for each year, whilst the number of LSP meters has dropped considerably. AQ change for market sectors as a whole includes both addition/loss of meters and AQ change of existing meters. When both are included in calculations, the results are as presented in the AUGS.

Question/Issue:

Section 5.4, Page 17. Outstanding data item.

The AUGE has requested a summary of shipperless sites less than 12 months old. We conclude that Xoserve providing this would not be possible as a shipperless site cannot be established until such time as the safety visit has been done. The safety visit is not conducted until 12 months has been reached therefore a shipperless site cannot be identified earlier than this.

If data is available an alternative option might be:

- Obtain data from the networks on the total number of safety visits made
- What % have a meter found to be still on site.
- Obtain data from Xoserve on the number of sites withdrawn from less than 12 months.
- Apply the % to the withdrawn sites to calculate the proportion which are likely to flow through to shipperless.

As has been suggested by the AUGE, we believe that UG from Shipperless less than 12 months does need to be factored in.

Response:

Please see response to first Npower question regarding this data item. Logically, in order to schedule safety visits for sites that have been without a shipper for 12 months, details of that site (including address and AQ) must be available, along with a date when the site lost its shipper (without which nobody would know when the 12 months was up). These are precisely the details the AUGER requires for the “Shipperless <12 Months” analysis and so for this reason we are hopeful that this can be supplied. It may be that sites are not officially classed as “Shipperless” until they have been without a shipper for more than 12 months, in which case an alternative name for this category of UG (such as “Without Shipper <12 Months”) may be appropriate to avoid confusion.

Question/Issue:

Section 6.2. The conclusions about EWCF (Estimated Weather Correction Factor) differing from WCF (Weather Correction Factor) particularly in the last 3 months of the gas year are not conclusive. The last 3 months of the year are July, August and September, summer months where domestic gas usage is low. We expect the relationship between CWV and demand to be strained. The impacts are relatively low because little gas is used. WN LDZ is not a suitable example as there are relatively few gas users in north Wales.

Response:

This chart was just an example to demonstrate the bias in WCF resulting from changes in AQ. EWCF is not used in any calculations at present. WCF is corrected for the effect of AQ bias, but this correction is based on a mathematical derivation (Equation 4 in the AUGS), which does not rely on background data. Therefore, time of year and choice of LDZ are not relevant in this case.

Question/Issue:

Section 6.4.1. To calculate UG in this area the AUGER has only included sites believed to have a meter. However on the basis that “you don’t know what you don’t know” the AUGER has assumed that no meters are on site in the “not believed to have a meter” category. Before applying this assumption to what is currently >8k sites we feel further validation is required. The September Unregistered pack indicates that in the Orphaned sector not believed to have a meter an aggregated AQ of 527Gwh relates to LSP sites. A significant volume if just a small % actually do have a meter.

Validation could take a number of forms

- A % of site visits to validate the assumption
- Assess volumes flowing through from the not believed to have a meter to the believed to have a meter category
- Apply a similar exercise to the believed to have a meter category. i.e. of those not believed to have a meter, how many undergo registration with a non zero opening read indicating gas usage

Also, the AUGE states that based on data provided by Xoserve, their analysis shows that 36.8% of sites believed to have a meter have non-zero opening reads indicating gas usage. We find this surprisingly low and would like to have sight of the data/analysis.

Response:

We have verified with Xoserve that the terms of our contract do not allow for site visits to be made for the following reasons:

- The AUGE do not have permission to go on site, as only the GTs and shippers have this right.
- There are HSE issues with site visits, particularly considering that many will be building sites.

Xoserve are arranging a sample of site visits to provide additional information regarding the assumptions made. As things stand, the definitions of “believed to have a meter” and “believed to have no meter” are the best available and so they are what the AUGE should be working with. If the industry does not have confidence in these figures, then they should consider putting procedures in place to improve their quality.

The figure of 36.8% for the percentage of unregistered sites with meters that are taking gas comes from a sample of orphaned sites with their opening meter reading supplied by Xoserve. This data has been published on UK Link (Section 22 “Mod229 AUGE Data Provision”, sub-section 1 “Shipperless and Unregistered”, file name “Orphaned sites with opening meter read_V2.xls”).

Question/Issue:

Section 6.4.4. As these sites are in a “not believed to have a meter” status the AUGE has made the assumption they do not contribute to unidentified gas. Given there are nearly 30k sites (as reported at the July 2011 forum) we feel further validation is required by way of a % of visits to site to check the actual position.

Response:

Xoserve are looking to arrange a sample of site visits to provide additional information on this subject as this is not in the AUGE’s remit to do as noted above. An arrangement could be made with Xoserve to put such procedures in place, but this could not be done in time for inclusion in the current AUGS.