



Mr Bob Fletcher,  
Joint Office of Gas Transporters  
51 Homer Road  
Solihull  
West Midlands

Centrica Energy  
Millstream East  
Maidenhead Road  
Windsor  
Berkshire  
SL4 5GD

Tel. (07789) 570610  
Fax (01455) 448352  
Our Ref.  
Your Ref.

6<sup>th</sup> February 2008

Dear Bob,

**RE: MODIFICATION PROPOSAL 228**

British Gas fully supports the implementation of both our Modification Proposal 228 and Scottish Power's Modification Proposal 228A. However, we have a preference for our own proposal 228 as we believe that this would create a much stronger incentive regime.

Please note that we have submitted a separate representation with regards to the alternate proposal 228A raised by Scottish Power.

We have set out in further detail under the following headings why we believe our Modification Proposal better meets the relevant objectives of the Uniform Network Code.

1. Executive Summary
2. Background
3. The proposal
4. How this proposal better facilitates the relevant objectives
5. Implementation

If you have any queries relating to this representation, please do not hesitate to contact me.

Yours sincerely,

Mitch Donnelly

Regulatory Manager

## 1. Executive Summary

1. The current Reconciliation by Difference (RbD) allocation places all of the costs arising from energy allocation error solely into the Small Supply Point (SSP) sector. Therefore it does not provide any incentive on Shippers in the Large Supply Point (LSP) market to correct errors that are impacting the SSP market. The existing arrangements do not target costs correctly, resulting in Shippers with poor performance in the LSP market being protected from any liability.

2. The present methodology for the allocation of costs includes no scope for analysis and no detail of the individual causes of RbD. Therefore there is no mechanism for determining or apportioning levels of contribution to RbD that different customer groups should make. It is unacceptable to continue to use such an inefficient approach that fails to provide appropriate incentives around Shippers performance and fails to accurately allocate such significant costs.

3. RbD is driven principally by measurement errors that are prevalent in the LSP as well as SSP sector including. Many of the measurement errors which currently impact RbD can be reduced if Shippers are taking appropriate actions to address them. The current methodology is deficient as it does not utilise the allocation of costs generated by these errors to incentivise their resolution.

4. The current methodology was developed on the false assumption that RbD is attributable solely to the domestic sector. This is principally because it was wrongly believed that any corrections were a result of differences between initial allocations to the domestic sector and actual use by it. However we now have clear evidence using independently produced industry data and analysis that shows the extent of such differences is currently limited to 15%. We can demonstrate beyond doubt that there are other causes to RbD.

5. Our Modification builds further upon Modification Proposal 194. It establishes the framework set out in that proposal and also uses available data to establish a more accurate allocation of costs to shippers. This will extend incentives to all shippers and as a result unreconciled energy and therefore costs to consumers shall reduce.

We have used independently sourced analysis and applied this in a systematic manner to identify and quantify each of the causes of RbD. In addition, again using independently sourced data, we have determined the proportion of each cause that should be attributable to various market sectors.

6. Our proposal reduces the misallocation of costs arising from the current RbD cost allocation methodology. This in turn helps remove those disincentives upon the LSP sector that restricts its willingness to resolve issues, such as theft. So if our proposal is approved LSP suppliers will do more to tackle those issues that increase costs to customers and risks to the public in general.

In addition, our proposal will address the unfair allocation of RbD costs to the SSP sector that penalise Shippers active within this market sector. This

improved allocation of costs will better facilitate competition by giving new market entrants certainty that they would not be exposed to erroneous charges. It is widely accepted that costs should be allocated accurately; in the past numerous proposals that correct much smaller misallocations of cost than are identified here have been approved on the basis of better facilitating competition.<sup>1</sup>

7. We are pleased to note that Scottish Power have raised an alternate Modification to this proposal (228A) which shares many of the key features of this proposal. Scottish Power's proposal uses the same data analysis and makes the same assessments as our proposal of both the level of RbD error and required the allocation between the LSP and SSP Markets.

However, Scottish Power's proposal uses the 194A framework proposed by Corona Energy. As a result, unlike 228, it does not link the correction of errors that manifest in RbD to the actual RbD invoice. The improved incentives brought by Modification 228A are therefore not as strong as those in 228.

We are supportive of Scottish Power's proposal because it makes a significant step towards mitigating some of the risk borne by the SSP market. However we believe that Modification 228 better facilitates the relevant objectives because it maintains the link between errors which manifest in RbD charges and the actual RbD volumes. Scottish Power's proposal is based on the same model as that proposed by Corona Energy in their Modification Proposal 194A. This model uses a fixed charge which does not relate to actual RbD volumes but sets an arbitrary charge which is applied to the LSP sector and so leaves risk associated with error wholly with the SSP sector.

8. Our proposals for reform in this area first began in 2006. Since then this topic has been subject to extensive debate and widespread consensus that the present arrangements do need to change. However the commercial sensitivity of this topic has resulted in attempts by some parties to frustrate progress, which has been disappointing. Meanwhile over £294m has been allocated by RbD to the SSP sector.

9. If approved, our proposals will result in 25% of RbD being allocated towards the LSP sector. It will be argued by some that this is too high. They may attempt to argue that theft has been overstated. However, under our proposal the proportion of cost allocated to LSP sector for Theft is only 29%. This is a smaller allocation than for most other issues and should be compared to a 38% share of throughput. If theft does not contribute to RbD to the extent that we suggest then a larger and not smaller allocation of RbD should be made to the LSP sector.

Some may also argue that the volatility of RbD on a month to month basis demonstrates that RbD is caused by read reconciliation over and above everything else. This is not the case - between February 1998 and November

---

<sup>1</sup> For example Modification 80 Acceptance of AMR Reads with Corrector fitted; Modification 90 Revised DN interruption Arrangements; Modifications 94 & 95 Reconciliation following AQ Amendment.

2007, RbD followed a clearly observable pattern, with an 80% adherence to the statistical mean of 676GWh.<sup>2</sup>

10. We believe that ultimately the key question is “Will our modification proposal reduce the extent to which cost and risk is unfairly loaded towards any one sector?”

The answer is yes. The risk and costs will be more fairly shared. It may be argued that our proposal will result in the non domestic sector subsidising the domestic sector. Whether a cross subsidy would remain in one direction or another is debateable, but ultimately irrelevant. It is unquestionable that any cross subsidy will be smaller than it is today. Therefore our proposal will deliver improvement and that is the key test as always that must be applied.

---

<sup>2</sup> Cambridge Economic Policy Associates, “Correct apportionment of unallocated gas volumes: Reconciliation by Difference and Mod 228” See Appendix 3

## 2. Background

In this section we set out the history of both our modification proposal and the Reconciliation by Difference (RbD) mechanism. We describe the original rationale for its introduction and explain why the rationale that underpins the present regime is no longer valid.

RbD is defined as follows:

*“Reconciliation by Difference (RbD) is the method of reconciling the difference between actual (metered) and deemed (estimated) measurements of gas.”*

The methodology for allocating unreconciled energy costs, Reconciliation by Difference (RbD), was implemented in 1998 as a prerequisite to the continued roll out of the competitive supply market. At the time it was expected that RbD would be small in value and would decline. The scale and persistence of RbD has demonstrated that this has not been the case.

The table below shows the level of RbD charge to the domestic (SSP) sector. This represents over 2% of LDZ throughput. The independent demand verification exercise undertaken by xoserve has also highlighted a persistent, year on year, overcharge to the domestic sector of over 2%.

<b>Year</b>	<b>TWH</b>
<b>1999</b>	<b>19.610</b>
<b>2000</b>	<b>14.506</b>
<b>2001</b>	<b>18.429</b>
<b>2002</b>	<b>11.322</b>
<b>2003</b>	<b>10.657</b>
<b>2004</b>	<b>12.407</b>
<b>2005</b>	<b>9.370</b>
<b>2006</b>	<b>13.054</b>
<b>2007</b>	<b>11.835</b>
<b>2008</b>	<b>11.880</b>

This evidence demonstrates that RbD has been both persistent and significant.

An underlying principle of the allocation of RbD costs to the SSP sector, was that there is an equal and opposite energy impact for Larger and Smaller Supply Points, such that an over allocation to Large Supply Point Market represents an under allocation to SSPs.

This assumes that the reason for all misalignment between actual (metered) and estimated (deemed) measurement of gas, is solely a result of issues attributable wholly to the SSP sector.

RbD was also originally believed to be essentially ‘self correcting’. It was thought that any deeming inaccuracies would ultimately be corrected as

additional readings were provided by Shippers, with the Must Inspect obligations acting as a final backstop. Extending this rationale, any temporary deeming inaccuracies within the SSP sector and associated RbD charges would be corrected, at least, over a two year cycle. The scale, consistency and duration of the RbD charge to the SSP sector demonstrate further that this charge is not principally a result of temporary deeming inaccuracies within the SSP sector. Therefore the assumptions made when the methodology for smearing RbD to the SSP sector was developed can no longer be relied upon.

In 2006 British Gas initiated Modification Proposal 115. This was in response to increasing recognition that the present arrangements for allocating RbD costs were unacceptable. Modification Proposal 115 would have introduced a very simple solution resulting in the sharing of RbD costs across all sectors and ultimately was not approved. However in their Modification 115 decision letter dated 24<sup>th</sup> October Ofgem state that;

*“we agree with the basic tenet of the proposals, that it is inappropriate for one sector of the gas market to bear all the costs of unallocated gas through RbD”*

It is now widely accepted that the RbD charge should not be applied singularly to the predominately domestic small supply point sector.

In January 2008 we raised Modification Proposal 194, which would introduce both a framework for allocation of costs and a suggested level of allocation to each sector. Six months of development was undertaken by the industry. This included significant independent input from distributors and xoserve including 17 separate presentations on individual causes of RbD.

In August 2008 Modification Proposal 194 was amended so that it focused singularly on the framework for the more accurate allocation of RbD costs. This framework takes the form of an Allocation Table, as an Appendix to the UNC document that could subsequently be populated to allow for a reallocation of RbD charges between the Large and Small Supply Point Sectors.

The elements of the proposal that discussed the actual levels of contribution from different sectors were removed, such that they could be included in a separate proposal. On 24<sup>th</sup> September 2008 alternate Modification Proposal 194A was raised by Corona Energy, this was initiated on the very last day that the Modification Rules allowed for an alternate proposal to be raised. No intention to raise such an alternate proposal had been indicated in the previous 8 months following the initiation and extensive discussion about Modification Proposal 194.

Subsequently Modification 228 was formally raised in October 2008 further to the presentation of numerous drafts to industry in the preceding months. Modification Proposal 228 proposed the values that should be used to populate the “RbD Allocation table” and therefore set levels of contribution that should be made by each sector.

Modification Proposal 228 is based upon the analysis and evidence that was

gathered via the development of Modification Proposal 194. The proposed level of contribution was initially set out in Modification 194 and only removed after discussions about such levels of contribution had been substantively completed.

In November 2008 Modification 228 was amended to include the establishment of the RbD Allocation Table as well as the level of cost allocation. This was further to simplify the industry decision making process and further to advice from the UNC panel on 16<sup>th</sup> October 2008.

### **3. Our Proposal**

Our Modification Proposal creates a mechanism, the 'RbD Allocation Table' for allocating RbD to those parties which cause it. The "RbD allocation table" sets out the causes of RbD and allows for the impact that each of these areas have on the overall volume of RbD to be considered. The allocation table then identifies those market sectors, or classifications that we have identified as having potentially differing impacts on the levels of RbD, allowing for differentiation and more accurate cost allocation.

Our Modification Proposal 228 builds upon the framework developed in 194, by using the independent data collated through the 194 workgroup, to make an assessment as to the causes of RbD error, their extent and degree to which each market sector contributes to that error. Each of the issues that contribute to RbD are set out individually. For each issue the analysis, supporting evidence and rationale is detailed in support of our proposed revisions to the allocation of RbD costs

The proposed framework set out in Modification proposal 228 seeks to use the percentage defined by the RbD Allocation Table to re-charge RbD to those parties who have contributed to the error.

Evidence shows that RbD is driven principally by measurement errors. These errors are prevalent in the LSP as well as SSP sector. Many of the measurement errors which currently impact RbD would be reduced if Shippers were taking appropriate actions to address them. The current methodology is deficient as it does not utilise the allocation of costs generated by these errors to incentivise their resolution.

Our proposal seeks to capture and apply any changes in the level of RbD to all sectors immediately. This means that incentives upon shippers are stronger. As they invest effort and reduce RbD they will see an immediate benefit. As they begin to tackle the levels of Theft of gas or reduce the number of unregistered sites, RbD will reduce and they should enjoy the benefit of that reduction straight away.

While developing this proposal, where there have been conflicting views as to the best way to interpret the data, we have taken a conservative view with regards to the level to which the LSP sector contributes to an error. The likely outcome of this is that the allocation to the LSP sector will be lower than their actual contribution to the error.

#### **3.1 Genuine Reconciliation**

Our Modification Proposal recognises that RbD is not made up entirely from measurement errors, but that an element of RbD can be attributed to genuine reconciliation and it is therefore appropriate that the costs associated with this



remain with the SSP sector.

The current methodology for the allocation of Gas Energy works in this way<sup>3</sup>;

1. The total volume of gas consumed in a local distribution zone over a period of time is measured by the transporters.
2. The consumption for Daily Meter Customers is known and can be accurately allocated to each Shipper.
3. xoserve allocate the remaining gas to the LSP and SSP sectors based on their Annual Quantity (AQ) figure.
4. As reads are provided for the LSP Sector, debit and credit reconciliations are created through RbD.

If the total AQ for both the LSP and the SSP sector were 100% accurate this would result in a net zero reconciliation<sup>4</sup> through RbD. Likewise, if the total (*or aggregate*) AQs for both sectors were **equally** overstated or understated then there would be a net zero reconciliation, as the balance between both markets would be maintained.

When carrying out the initial allocation of energy, the AQs for both the SSP and the LSP sector are 'scaled' up or down equally to match the volume of energy that needs to be allocated. Therefore as long as the 'balance' between LSP and SSP Markets is correct then the allocation will be accurate. If the aggregate AQs for either market are more or less accurate than the other then a RbD will result in a net credit or debit to one market.

Our Modification Proposal uses this principle to determine the level of genuine reconciliation contained within RbD. The level of difference between the actual consumption and the original total AQ of a market sector can be ascertained by looking at the level of change following the annual AQ Review. This information is reported via the independently produced industry reports under the auspices of the Modification 0081 process.

During 2008 the LSP sector's total AQ reduced by 5.14%, whereas the SSP sector was reduced by 3.48%.

Using the following formula, we can calculate the volume of genuine reconciliation within RbD.

---

<sup>3</sup> See Appendix 1 for worked example.

<sup>4</sup> There may still be reconciliation at a site level but this would net to zero overall.

$$\left[ \begin{array}{l} \text{LSP Share of} \\ \text{NDM AQs} \\ \text{(2007/08)} \end{array} - \begin{array}{l} \text{LSP Share of} \\ \text{NDM AQs} \\ \text{(2006/07)} \end{array} \right] \times \begin{array}{l} \text{Total} \\ \text{NDM AQs} \\ \text{(2007/08)} \end{array}$$

During the Gas year 1st October 2007 – 30th September 2008 the volume of energy in RbD attributable to the different rates of declining LSP and SSP usage was 1.77TWh of the total 11.8TWh of RbD or 15.000% of RbD.

Therefore we have demonstrated that 15% of RbD arises from differences in the relative accuracy of AQs in the SSP and LSP sectors, which in turn gives rise to actual and correct reconciliation. It must also therefore be concluded that the remaining 85% of RbD volume is attributable to factors other than genuine reconciliation, i.e. error.

We acknowledge that there is potential for Annual Quantities to be inaccurate. However we do not believe that this is relevant unless any inaccuracy is biased in favour of the SSP sector. This is because the relative balance between the LSP and SSP markets at initial allocation will be maintained and any transient error picked up in our calculation of genuine reconciliation.<sup>5</sup>

There is no evidence of any setting of Annual Quantities disadvantaging one market sector over any other. In addition modifications 640 and UNC Modifications 80, 81, 94, 95 and 136v have all delivered improvements in levels of assurance and transparency in this area. Recent industry dialogue on the Annual Quantity Review process has centred on ways of addressing systematic overstatement of domestic AQs.<sup>6</sup>

### 3.2 Late confirmed and Unregistered Sites

An 'Unregistered Site' is a site that is connected to a gas main network and is able to consume gas, but has not been registered by a Shipper. The consumer may be being billed by a Gas Supplier, but the Supplier will not incur any charges for the gas used.

There are two types of unregistered sites, those that can be readily identified on industry systems (xoserve's sites and meters database) and those for which no industry record exists. In both instances the costs of the gas consumed at the unregistered site are wholly allocated to the Small Supply Point Market.

Evidence presented by xoserve demonstrates that unregistered sites exist in the LSP market.<sup>7</sup> Further analysis demonstrated that around 286.26GWh (or 2.854% of RbD) was caused by the failure of Shippers to register supply points in a timely manner.<sup>8</sup>

<sup>5</sup> See Appendix 2 for example scenarios

<sup>6</sup> UNC Review Group 0177 and Development Modification Proposal 209 – Rolling AQ

<sup>7</sup> xoserve presentation to Modification Development Workgroup 194 on 7th July 2008.

<sup>8</sup> Presented by xoserve to the Modification 194 development work group on 11th July 2008

It has been argued by some LSP Shippers that it is inappropriate for Late Confirmed Sites to be included in this proposal as the impact which they have upon RbD is 'transient' and will often be corrected in time. We do not dispute that the impact to RbD caused by late registration is, in some cases, transient. However, we do not believe that this should prevent its inclusion in this proposal.

Where a site has not been registered but is consuming gas, the costs are borne wholly by RbD. Where a Shipper in the LSP sector goes on to register this site **and** begins their registration from the opening meter index such that they become liable for the gas consumed during the unregistered period a reconciliation is created.

This reconciliation would result in a debit charge to the LSP Shipper and an equal and opposite credit charge to RbD. Under this proposal the credit charge would be applied to the reallocation and so to the LSP sector, thus cancelling out their original debit charge.

Under the present arrangements, no incentive exists for shippers in the LSP sector to register sites in a timely manner. Where LSP Shippers do not immediately register a site which is off taking gas, the costs are borne wholly by the SSP sector, who in effect are providing a free overdraft service and bear all of the cash flow risk associated with this.

Under this proposal the LSP sector would also bear an element of this cash flow risk, providing an appropriate incentive for them to register sites in accordance with industry rules.

Once a site is correctly registered the resulting credit is applied to all on the same basis as the debit charge was and the LSP Shippers are returned to a neutral position.

### **3.3 IGT Issues**

This error is a result of an under allocation of energy to the Independent Gas Transporter (IGT) market, caused by deficiencies within the industry processes between xoserve and the IGTs.

The volume of gas consumed by IGT networks is not metered, but needs to be deducted from the total volume of gas used in a local distribution zone in order for accurate allocation to take place. The IGTs currently provide details to xoserve of the number of supply points they have registered and the total AQ. However, because of issues with processing the files between the IGT and xoserve, there are a significant and persistent number of sites that consume gas from IGT networks which xoserve are unaware of.

Therefore, when xoserve calculate the volume of energy associated with IGTs, those sites for which xoserve do not have any information are not included

resulting in an under allocation to the IGT Market. The resulting under allocation to the IGTs leads to a corresponding over statement of 'non-IGT' gas which is then allocated via RbD to the SSP community.

Shippers have been working via the Gas Forum to quantify the size of this error by comparing the differences between the numbers of IGT Supply Points charged for by the IGT and by xoserve through the Connected System Exit Point (CSEPs) invoice.

Throughout UNC Review Group 157 the Gas Forum collated this anonymous data from six large suppliers. This showed that the levels of error associated with discrepancies between IGT and xoserve's CSEPs portfolio remained constant throughout 2008. Independent xoserve analysis<sup>9</sup> demonstrated that a maximum of 572.51GWh of energy or 5.708% of RbD can be associated with measurement errors connected with independent gas transporters' networks.

This proposal recognises that no one market sector contributes more than another towards this error, as the causes of this error are deficiencies in the process for the creation and maintenance of CSEPs between the IGTs and xoserve. However, it is clearly inequitable that one Market Sector should wholly bear the costs associated with this error. Therefore under this proposal the costs are allocated based on the relative IGT market share of the SSP and LSP sectors.

### **3.4 Shrinkage Errors**

Shrinkage is the process by which losses (leaks) from the system and gas used by the Distributors, for their own purposes, is accounted for.

During each 'Shrinkage Period' the Distributors provide an estimate of the Shrinkage volume they expect to see. This estimate will be based on data such as the type of pipe work (plastic PPE vs. Iron) within the network, their own use demands (such as for preheating gas before it is metered), etc. Adjustments to the assumptions which form the basis for the calculation of Shrinkage volumes can result in an adjustment at the end of the Shrinkage period.

We recognise that this adjustment is of low materiality when compared to other factors contributing to RbD<sup>10</sup>; however it seems inequitable that an adjustment to a charge which was originally levied upon all market sectors should only be allocated to one market sector.

In the same way as the original Shrinkage Allocation, our Modification Proposal allows for the costs associated with this adjustment to be smeared across all Market Sectors based upon their share of total through put.

---

<sup>9</sup> Presented to the Modification 194 work group on 27th March 2008

<sup>10</sup> xoserve analysis presented to the Modification 194 work group on 12th June 2008 demonstrated that around 0.04GWh could be associated with the difference between initial and final levels of shrinkage

### **3.5 Theft of Gas**

#### **The level of theft**

It is widely accepted that Theft of Gas is a significant issue. However it is not possible to precisely quantify the actual volume of Theft of Gas in the Market without detecting every single act of theft.

Through this proposal we have shown that there is an accurate way to determine the level of Genuine Reconciliation and that when Genuine Reconciliation is subtracted from the actual RbD volume the remaining value is RbD error. Other factors which make up this RbD error are quantifiable. The level of error between IGT and CSEPs can be calculated, as can Shrinkage adjustments and late confirmations.

Having identified and quantified all causes of RbD except theft we are left with 76% of RbD unattributed. We conclude that this 76% must be a consequence of theft. Therefore a key principle of our Modification Proposal is that Theft of Gas acts as the balancing factor in determining the make up of RbD. i.e. once the known errors have been subtracted from RbD error, the remaining balance must be attributable to Theft.

Our assertion in this proposal that Theft accounts for over 76% of RbD has been challenged by other LSP Shippers who claim that this is too high. However, no alternative view or supporting evidence has been put forward that can explain why after known errors and genuine reconciliation are accounted for RbD remains so high. At the meeting of the 194 Development Workgroup on the 5th August it was agreed that, in the absence of any other evidence, the balancing factor was likely to be Theft.

In the absence of any information to support the weighting of costs to any one sector it is reasonable that no such weighting be applied. Therefore if the delta between known issues and RbD is not made up by theft it must be allocated between the LSP and SSP sectors based on throughput rather than any other basis. Any throughput based allocation would result in a higher proportion of RbD being reallocated to the LSP under the auspices of theft as the balancing factor.

Therefore if our conclusion that theft is the balancing factor is invalid then a GREATER level of allocation to the LSP sector can be justified.

#### **The proportion of theft that takes place in the LSP sector**

Data provided by xoserve during the development of Modification Proposal 194 clearly demonstrated that Theft takes place in the LSP as well as SSP sector.

The effect of theft of gas upon the settlements process is an under allocation of energy on a site by site basis which in turn results in an artificial inflation of RbD

volume. Under the current arrangements the cost of theft is borne wholly by the Small Supply Point Market. This results in a lack of incentive upon Shippers operating in the LSP market to investigate allegations of theft and to report stolen energy.

Data provided to the 194 Development Workgroup by xoserve<sup>11</sup> has demonstrated that the levels of detection of theft in the LSP market are lower than those in the SSP market when the number of allegations are looked at in relation to the number of Supply Points in each market.

Xoserve data shows that LSP Shippers often fail to provide xoserve with any response around what activity, if any, has taken place to investigate allegations of theft, this is a consequence of lack of incentives upon LSP Shippers to detect theft and reduce RbD

In our Modification Proposal 194, we set out three different approaches to interpreting the data that exists around Theft.

### ***Option 1 – Percentage of AQ of Allegations***

Determine the contribution each market sector makes to the Theft element of RbD by using the proportion of annual consumption (AQ) for sites where there has been an allegation of theft across sectors to determine the level of apportionment.

### ***Option 2 – Corrected Percentage of ‘valid’ theft energy***

Uplift volume of detected LSP theft so as to;

1. Correct for the frequent failure of many LSP suppliers to submit the kWh volume of stolen gas to the Transporter, as evidenced by xoserve data.
2. Correct for the significantly lower detection rate of LSP suppliers that is a result of the lack of incentives upon them to detect theft. Using the proportion of AQ for sites based on detected theft in the LSP market, and increase the value by the same conversion rate factor between allegation and valid as exists in the SSP.

### ***Option 3 – Simple average between allegations and detected theft***

Using a simple average between the percentage of allegations and the lower (excluding network relevant theft) detections rate.

Whilst there are arguments in support of options 1 and 2 we elected to use

---

<sup>11</sup> Theft of Gas presentation by xoserve at Modification Development Workgroup 194 on 9<sup>th</sup> June 2008

option 3 on the basis that this more conservative approach would removed any doubt that our proposals may result in an over allocation of cost to the LSP Sector.

No evidence has been provided which shows that there are proportionately a larger number of false allegations in the LSP sector than in the SSP sector and so there are strong logical arguments in support of Option 1, which would have resulted in close to an equal split of theft between the LSP and SSP sectors.

Option 2 seeks to 'level the playing field' by applying the same Theft detection rates as those achieved in the SSP sector to the allegations in the LSP sector. However, lack of incentives around the reporting of stolen energy in the LSP sector, as well as a lack of data caused by failure to report theft has resulted in the starting position being erroneously low, creating a critical problem with using this approach.

Option 3, as we have previously stated takes a conservative approach, the most likely outcome of which is an under-allocation to the LSP sector.

### **3.6 Other Issues Considered**

In addition to the errors identified through this proposal, the Development Workgroup also considered a number of other factors or processes that may have an impact on RbD.

Each of these were discussed at length and it was agreed that either there was no impact to RbD as a result of the issue or that there was no evidence which could demonstrate that there might be an impact.

We have set out below the background to these issues.

#### **3.6.1 LDZ Meter Off-take Errors**

Where an off take metering system is over recording the volume of gas passing from the National Transmission System into an LDZ, there will be an overstatement in the initial allocation of gas to both the SSP and LSP sectors.

As LSP meter points provide reading their over statement will be corrected, resulting in an increase in RbD and an over charge to the SSP Market.

Where the Metering system is under recording, the converse is true and will result in an under charge to the SSP Market.

Analysis of historic Off Take Metering errors has shown that where these do occur they have resulted in a net under recording of gas and so have led to an under charge in the SSP Sector. Therefore, where these errors are identified, this proposal allows for the correction – debit or credit to pass solely to the SSP Sector via RbD without being subject to the re-charge.

### **3.6.2 Supply Point Metering**

The Modification 194 Development Workgroup spent time looking at the impacts of any systematic bias within the end supply metering population.

Fiscal meters used in the gas market are allowed a +/- 2% accuracy range, the group considered the impacts of this being biased towards either over or under recording within this tolerance.

The conclusion of the group was that if there is a bias within the LSP meters causing them to under record then RbD, would go up, the opposite also being true that if there were a systematic over recording then RbD would go down.

Over recording in SSP sector would cause domestic AQs to be over stated – therefore within the context of our proposal the amount that we propose should be allocated to the SSP sector is greater than it should be because the AQs will not be reduced each year to the same degree as those in the LSP, resulting in a higher level of ‘genuine reconciliation’.

Ofgem confirmed that, based on their data, they did not see evidence of a systematic bias.

The group concluded that there was therefore no evidence to support ‘supply meter error’ as a contributory factor to RbD.

### **Temperature and Pressure Errors**

Another issue that was considered was around the use of standard national temperature and pressure conversion rates.

Prior to DN Sales, National Grid Transco used local temperature and pressure conversion figures when calculating the volume of gas passing into each exit zone.

Post DN Sales, changes were made to this process which resulted in the use of a national figure. In the same way as with LDZ off take Metering error if the volume of gas in an LDZ is incorrectly stated this can impact upon RbD.

National Grid Gas carried out some analysis looking at the differing impacts between diverse exit zones, they found that when combined with pressure changes the net impact was zero, therefore it was concluded that no adjustments needed to be made to RbD to correct for this issue.

## **4. How our proposal better facilitates the relevant objectives**



***A11.1 (a) the efficient and economic operation of the pipe-line system to which this licence relates.***

This proposal provides a framework and methodology that results in a more precise and efficient mechanism to determine the apportionment of RbD costs to Shippers. Thus incentives for identifying and resolving measurement failures that manifest as unreconciled energy and result in charges via RbD are extended to a broader range of Shippers. The detection and prevention of theft is a particularly important area to which this proposal will extend the incentives upon shippers. There is presently no incentive upon LSP Shippers to detect theft and this proposal addresses this.

As a result of this proposal the extent to which measurement failures, and especially Theft, persist shall be reduced. A reduction in the volume of energy transported through the system and then “lost” will improve efficiency. Improved confidence in throughput data through the reduction in error will also help improve the efficient and economic operation of the pipeline system.

***A11.1 (d) – the securing of effective competition (i) between relevant shippers and (ii) between relevant suppliers.***

Our proposal would reduce the extent to which the predominantly domestic Small Supply Point Market sector, and Shippers / Suppliers operating within it, cross subsidise Shippers / Suppliers operating in the Large Supply Point Market. The reduction of a cross subsidy between market sectors and individual Shippers / Suppliers operating in them, better secures effective competition between Shippers and Suppliers.

Under the current arrangements, Shippers operating largely or wholly in the LSP sector are protected from the impacts of their poor performance by this cross subsidy. The effect of this is that LSP Shipper / Suppliers are not incentivised to address issues such as theft in the same way as Shipper / Suppliers in the Small Medium Enterprise (SME) or Domestic Sector are, consequently they are not incentivised to invest in systems and processes in to the same level, thus distorting costs.

There is a precedent that Modifications which improve the accuracy of cost allocations can be regarded as better facilitating competition. Ofgem have directed a number of Modifications be implemented on this basis, including Network Code Modification 640, UNC Modifications 94, and 95 and 136v.

In their decision letters for these Modifications Ofgem agreed with the respondents;

*“...who considered that this proposal will better facilitate relevant objective (d), the securing of effective competition between relevant shippers and relevant suppliers.”*

The use of Theft as the ‘balancing factor’ for RbD in this proposal results in a

lower total allocation for the LSP sector. Any alternative view on balancing factors would invariably result in an allocation close to through-put levels for the LSP market, i.e. an allocation of 38% rather than the significantly lower 29.35% proposed in this Modification.

***A11.1 (f) So far as is consistent with sub-paragraphs (a) to (e), the promotion of efficiency in the implementation and administration of the network code and / or the uniform network code.***

This Modification does not propose any changes to the current calculation of Reconciliation as defined under section E of the UNC. Rather, it allows for a recovery of costs and redistribution at Month +1 by use of an appendix to the UNC document.

This approach results in minimal change to the current code rules and allows for future amendments to the level of allocation to be made to an appendix rather than requiring regular legal re-drafting and associated review; thus promoting efficiency in the administration of the UNC.

***The implications for Transporters and each Transporter of implementing this Modification Proposal, including:***

***a) The implications for operation of the System:***

This Modification Proposal will result in a more concerted effort by industry to tackle the systematic drivers of RbD error by broadening the coverage of incentives to include LSP Shippers. Such focus on improved settlement data, and improved measurement accuracy should have a positive impact on the operation of the system.

Transporters are required to carry out system monitoring and demand planning activities. Transporter demand estimations are based on data that they collect directly from end users. However, customers who are stealing gas are unlikely to use gas in the same efficient way as those who are paying for it; therefore theft will distort the actual levels of predicted demand from a network, requiring balancing activity by the Transporter.

Likewise, in the event of a system constraint, LSP customers who are engaged in theft are unlikely to comply with a firm load-shedding request.

## **5. Implementation**

Over the last two years, British Gas has been seeking reform of the arrangements via a total of three separate Modification Proposals; 115, 194 and 228.

During the last two years, consensus has been reached across the industry that there are a number of costs which the SSP Market are exposed to, via RbD, which are inappropriate and should be borne to some extent by LSP Shippers. To this end, a number of LSP Shippers have raised Modifications which accept this principle and seek to introduce re-allocation methodologies which carry the lowest level of risk and cost to them.

In their decision letter of 24<sup>th</sup> October 2007 on Modification Proposal 115, Ofgem agreed with the basic tenet that it is inappropriate for on Market Sector to bear all of the costs of unallocated gas through RbD. Since this date, the RbD market has continued to pay these inappropriate charges since Ofgem's decision letter.

We would therefore urge Ofgem to direct implementation on the implementation date of this proposal. Given the commercial sensitivity of this proposal, we believe it is highly likely that some suppliers argue for a delayed implementation. We are concerned that network owners could acquiesce to a significantly delayed implementation date.

We would suggest that the implementation date for this proposal should be not later than 1<sup>st</sup> October 2009.

1. System changes necessary to implement this activity are minimal.
2. The benefits of improved targeting of costs should not be unduly delayed.
3. It is not in the interests of consumers to delay implementation of this proposal such that I&C suppliers have more time to pass any additional costs through to them at contract renewal.

## **Appendix 1 – Worked Example of Gas Allocation and Reconciliation Process**

This example uses a fictitious LDZ called 'Central England' with the distribution operated by Central England Networks (CEN).

### **Off Take Measurement**

During the month of January 2009, 35,000 GWh of gas passed from the National Transmission system into the Central England LDZ.

### **Shrinkage Factor**

Central England Networks have set their Shrinkage Factor for this year at 0.75%

This means that of the 35,000 GWh that entered their Network, 262.5GWh is assumed to have been lost before it reached a consumer.

### **Daily Metered Allocation**

There are a small number of Daily Metered Customers operating in this LDZ, and the Daily Metered Data available for them shows that they consumed 4,200 GWh during January.

A precise allocation for of the gas used is carried out by xoserve on behalf of CEN, each Shipper is charged for the amount of energy their DM site consumed.

### **Initial Allocation**

In order to allocate the remaining 30,537.5 GWh, xoserve must determine what belongs to the Large Supply Point Market (LSP) and what to the Small Supply Point Market (SSP).

When the Total AQt for the LSP and the SSP are looked at they give an expected consumption in January of 28,000 GWh (10,640 LSP and 17,360 SSP)

All of the AQt are 'scaled up' slightly to match the actual amount that needs to be allocated, so the revised allocation is now 11,604.25 GWh to the LSP and 18,933.25 GWh to the SSP.

In the LSP Sector, the 11,604.25 GWh will be broken down to a site by site allocation, whereas in the SSP Sector it will remain an aggregate figure, divided up between Shippers based on their share of the total AQ.

## Reconciliation

Within the LSP Sector, the initial allocation was on a site by site basis, based on the AQ but scaled to match the total amount of gas consumed in the LDZ.

As reads become available throughout February, March and subsequent months for the LSP sites, the initial allocation needs to be corrected either up or down to reflect the true amount of Gas consumed by the customer.

In our example meter reads resulted in the following total corrections to the LSP Market - 6,500 GWh increase and 8,000 GWh decrease – resulting in a net 1,500 GWh decrease to the 11,604.25 GWh initial allocation.

As the LSP Market had now had a reduction in its allocation and equal and opposite allocation must be made to the SSP sector through RbD.

Therefore, following reconciliation the new allocation is –

**SSP - 20,433.25 GWh** (18,933.25 + 1,500)

**LSP – 10,104.25 GWh** (11604.25 – 1,500)

## Appendix 2 - Impacts of Error within Annual Quantity

### Scenario 1 –

*Errors in the LSP and SSP in the same direction (under or overstatement)*

During the Initial Allocation Process<sup>12</sup>, the total AQs for the SSP and the individual AQ for the LSP will have a scaling factor applied. The scaling factor is used to match the expected level of consumption (AQ) to the actual quantity of gas that needs to be allocated.

As the scaling factor is applied equally to both market sectors, the balance between the two is maintained.

*Example –*

*The actual total AQs for both markets are –*

*SSP 22,000GWh  
LSP 8,000GWh*

*Therefore, the allocation of gas should result in a 73% share to the SSP and 27% share to the LSP.*

*If there were a +10% error in AQs for both markets, this would cause them to be overstated as –*

*SSP 24,200GWh  
LSP 8,800GWh*

*However, as the error is equal, the ‘balance’ of 73% SSP and 27% SSP is maintained.*

*In the same way, assuming that the total gas that needs to be allocated is 31,350GWh the a scaling factor of 0.95 would be applied to both AQs reducing them to –*

*SSP 22,990GWh  
LSP 8,360GWh*

*But still maintaining the 73% / 27% split.*

### Scenario 2 –

*Higher level of error in LSP market sector*

In this example we assume that there is a +10% overstatement of LSP AQs and

---

<sup>12</sup> See Appendix 1 – Gas Reconciliation

the AQ values in the SSP market are correct.

*Example*

*The actual total AQs for both markets are –*

*SSP 22,000GWh*

*LSP 8,000GWh – but overstated due to AQ error as 8,800GWh*

This creates an Initial Allocation of 71% to the SSP Sector and 29% to the LSP Sector.

As the correct balance between the LSP and the SSP Sector (without the error) would have been 73% / 27% this would cause Genuine Reconciliation, which will result in a credit to the LSP sector as reads are provided and a corresponding debit to the SSP sector via RbD.

Under our proposal, a further 25.231% of this RbD debit would be recharged to the LSP sector.

**However**, the AQ error in the LSP Market would be corrected during the next AQ Review Period. This would result in an adjustment to the level of Genuine Reconciliation allowed for under our proposal, correcting the balance.

**Scenario 3 –**

*Higher level of error in SSP market sector*

In this scenario we assume that there is a +10% overstatement of SSP AQs and the AQ values in the LSP market are correct.

*Example -*

*The actual total AQs for both markets are –*

*SSP 22,000GWh – but overstated due to AQ error as 24,200GWh*

*LSP 8,000GWh*

This creates an Initial Allocation of 75% to the SSP Market and 25% to the LSP Market.

As there is no meter point reconciliation in the SSP Market, there would be no adjustment as a result of SSP reads being provided.

In this scenario, the LSP Market would have been under allocated energy, and provision of meter readings would result in a debit to the LSP Market and a credit to RbD.

Again, a further 25.231% of this RbD debit would be recharged to the LSP

sector. However, the AQ error in the SSP Market would be corrected during the next AQ Review Period. This would result in an adjustment to the level of Genuine Reconciliation allowed for under our proposal, correcting the balance.





## **APPENDIX 3**

# **CORRECT APPORTIONMENT OF UNALLOCATED GAS VOLUMES AND MOD 228**

## **RECONCILIATION BY DIFFERENCE**

---

**A paper commissioned by Centrica**

Submitted by:

**CEPA LLP**

---



## CONTENTS

1. Summary .....	28
2. Genuine reconciliation .....	29
3. Variability of RbD error .....	31
4. Conclusion .....	33
Annex 1: Calculating the level of genuine reconciliation volume .....	34

## Summary

In November 2008, Centrica raised UNC Modification Proposal 228 (Mod 228), which proposes to change the way in which the Reconciliation by Difference (RbD) methodology as set out in the UNC is applied. Mod 228 builds on proposals first set out in UNC Modification Proposal 194, in which a new framework was proposed for the correct apportionment of RbD.

Under existing arrangements, consumption by non-daily metered (NDM) supply points is effectively assumed to be equal to the volume of gas consumed on each local gas distribution network, less that consumed at Daily Metered (DM) Supply Points. Therefore, whenever meter readings are made for DM or Large Supply Points (LSPs), then an equal and opposite amount is allocated to customers at Small Supply Points (SSPs), so as to maintain the gas balance. This amount is allocated to SSP shippers based on their market share (set on the basis of the individual SSP AQs and End User Category (EUC))<sup>13</sup>.

In effect, this means that the costs of any shortfall in gas allocation resulting from meter point reconciliation are borne **solely by the SSP sector** (as part of the RbD smeared charge). This is despite the fact that the cost of unallocated gas volumes is caused by a number of factors (including theft, shrinkage and meter errors) for which customers at LSPs have a shared responsibility.

Originally, the RbD process was implemented so as to avoid the (costly) requirement to reconcile estimated gas consumption at **all** supply points with actual meter readings. However, when introduced, the level of the RbD charge was expected to fall over time (mainly as a result of improvements in data quality). This has not happened – and instead RbD has proven to be an enduring phenomenon.

Building on debate and analysis presented at the UNC Working Group established to discuss Mod 194, Mod 228 seeks to implement a **framework** by which RbD may be apportioned between SSP and LSP NDM supply points (consistent with that proposed in Mod 194), and also to **introduce the percentages** by which this apportionment is to be made.

This note follows papers submitted in the context of Mod 194, and addresses two outstanding issues relevant to the consideration of Mod 228. Specifically, these are:

- whether the methodology proposed in Mod 228 accurately captures “genuine” reconciliation (i.e. real changes in volumes of gas used between SSP and LSP NDM supply points); and

---

<sup>13</sup> AQ (Annual Quantity) is a value held for each meter point that reflects the expectation of the volume of gas that a meter point will consume in a year.

- whether variability in observed levels of RbD error represents sufficient evidence to remove the need to apportion RbD costs between SSP and LSP NDM supply points.

This paper concludes that:

- genuine reconciliation should be accurately captured by the methodology set out in Mod 228;
- although the proposed methodology is reliant on the accuracy of Annual Quantities (AQs), recent (and ongoing) improvements in the AQ process suggest this is appropriate;
- statistical analysis of monthly RbD data over the period 1998 to 2006 suggests that over a significant period of time RbD is reasonably stable, following a clearly defined distribution with a positive mean (therefore positive RbD error is likely to an enduring feature of the arrangements as they currently stand); and
- variability that does exist in RbD is likely to result from identifiable underlying causes (such as individual large reconciliations), therefore short term variability in RbD is not sufficient evidence to disprove this.

## Genuine reconciliation

An aspect of Mod 228 (and Mod 194) that has attracted debate within the industry is the extent to which the proposal(s) adequately allow for “genuine reconciliation”; i.e. changes in relative consumption of gas in the SSP and LSP (NDM) sectors from year to year. A change in relative levels of consumption between NDM sectors is important because if, for example, consumption at SSPs increases relative to LSPs in a given year, then this will mean there is an amount of “unreconciled” gas identified through the RbD process that should be apportioned to SSPs in full.

Genuine reconciliation can be calculated accurately if actual levels of consumption in the SSP and LSP NDM sectors are known in each year. The equivalent calculated volume of RbD can then be apportioned to the sector that had a relative increase (or lower fall) in consumption over the year.

Mod 228 proposes that, as AQs in the *current* year are likely to be the best indicator of consumption by NDM supply points in the *preceding* year, then genuine reconciliation can be calculated as being the extent to which the LSP share of total NDM AQs changes by more than that of SSPs in the current year.

Expressed as a formula, genuine reconciliation in 2006/07 is therefore:

$$\left[ \begin{array}{l} \text{LSP Share of} \\ \text{NDM AQs} \\ \text{(2007/08)} \end{array} - \begin{array}{l} \text{LSP Share of} \\ \text{NDM AQs} \\ \text{(2006/07)} \end{array} \right] \times \begin{array}{l} \text{Total} \\ \text{NDM AQs} \\ \text{(2007/08)} \end{array}$$

This formula can then be expanded to the formula included in Mod 228 (set out more fully in Annex 1, with a further worked example using actual data for 2007/08).

The approach proposed in Mod 228 is therefore dependent upon annual changes in AQs accurately reflecting actual changes in consumption between consumers at SSPs and LSPs between years. To the extent that this is not the case, then calculating genuine reconciliation by analysing changes in AQs may introduce inaccuracies.

The accuracy of AQs has been the subject of significant regulatory attention in recent years. At the time that RbD was implemented, Ofgem recognised that portfolio AQ bias was considered to present the greatest risk to the accuracy of RbD. This led to the introduction of numerous checks to ensure that total system throughput is approximately equal to the sum of AQs. It also led to a further requirement that an industry work group should review the AQ amendment process (and the annual policing of AQ appeals).

In addition, a series of code modifications have been approved by Ofgem in recent years to improve the process by which AQs are amended, including:

- Network Code modification 0624 in April 2003 (“Changes to the 2003 Annual Quantity (AQ) Amendment Process”), that prevented shippers submitting AQ amendments in a selective manner (i.e. gaming AQ amendments);
- Network Code modification 0640 in June 2004 (“End of Year Reconciliation of Specific Categories of Smaller Supply Points”), that allowed NGG to undertake an end of year reconciliation on certain categories of SSP threshold crossers; and
- UNC modification proposal 081 in August 2006 (“AQ Review Process-publication of information”) that obliged transporters to publish data on the way in which the AQ review is conducted.

Most recently, the AQ annual review process was reviewed by an industry Review Group. This Group concluded in April 2008, with the recommendation that a rolling process of AQ review be adopted (essentially meaning that AQs could be amended more frequently than at present)<sup>14</sup>.

Given the industry scrutiny that AQs have had in recent years, the series of improvements in AQ amendment processes introduced through Modification proposals, and the conclusions of the AQ Review Group, it is hard to support the view that AQs

---

<sup>14</sup> Although this was largely driven by concerns over the accurate statement of AQs.

are significantly biased to such an extent that they invalidate proposals that use AQ levels as an input. The Review Group did consider that AQ data is typically out of date when it is used (on average being 18 months old when it is used)<sup>15</sup>. However, there was no suggestion that this AQ data was significantly biased in any particular class of customer relative to any other customer class<sup>16</sup>. In addition, the Review Group concluded that although gaming of the AQ amendment process by shippers could reduce an individual shippers transportation and/ or gas cost exposure, there was “little evidence” of this occurring in practice<sup>17</sup>.

In conclusion, given genuine reconciliation represents a significant proportion of RbD (approaching 15% in 2007/08), it would seem important to include the best available data in any revision to the RbD calculation methodology. Given ongoing efforts by industry to improve the quality of AQ data (and the lack of alternative sources of other reliable data on levels of consumption at NDM supply points), it would seem that the proposals in Mod 228 represent a pragmatic approach to the consideration of genuine reconciliation. However, it will also be important to monitor developments in the way AQs are determined in the future (as significant changes to the AQ process may have important implications for levels of genuine reconciliation calculated under Mod 228 – particularly if these have an uneven impact across industry sectors).

## Variability of RbD error

A further outstanding issue relating to Mod 228 is a view presented by some observers suggesting that RbD error is excessively variable, resulting from random error rather than well understood (and relatively predictable) underlying variables. As such, it has been suggested that proposals to attribute levels of RbD error to different underlying causes are unnecessary.

We have obtained data on actual levels of (monthly) RbD error over the period February 1998 to November 2006. The distribution of this data is illustrated in Figure 1, below:

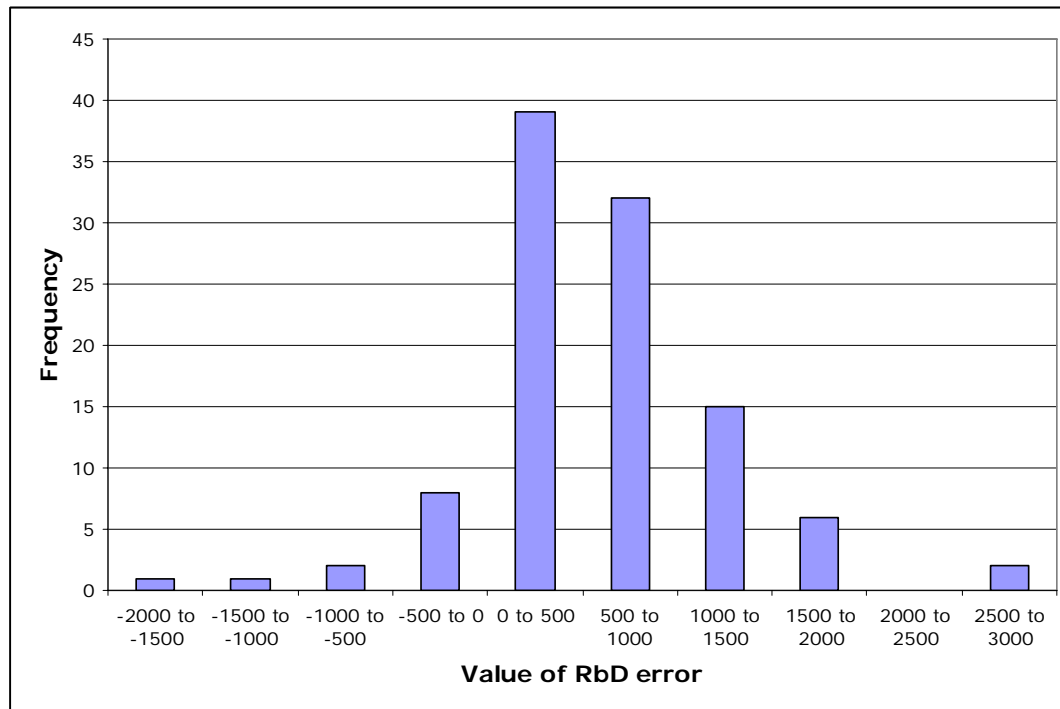
---

<sup>15</sup><http://www.gasgovernance.com/NR/rdonlyres/BA9765EB-9AE9-472B-BAB6-81D6A7D88665/20337/0177ReviewProposalv10.pdf>

<sup>16</sup><http://www.gasgovernance.com/NR/rdonlyres/A48D2E26-F818-4FA1-AD50-BF07FB447354/24940/0177ReviewGroupReportv11.pdf>

<sup>17</sup> Note that gaming levels of AQ may also constitute a breach of the supply licence.

Figure 1: Distribution of monthly RbD error (1998 – 2006)



This shows that, for the period analysed, RbD error followed a clearly observable distribution. The dataset does contain a number of outliers (most notably 4 observations either being below -1000 GWh, or being above 2500GWh), however over 80% of observations in the sample are within the range 0 to 1500GWh (with the dataset having a sample mean of 676GWh)<sup>18</sup>.

In addition to having a large positive sample mean, more sophisticated statistical analysis supports the view that RbD error represents more than statistical “noise”, and can instead be expected to fall within a clearly defined range. For example, a statistical test of the entire dataset (even including outliers) shows a high probability that RbD error values will be higher than zero (with a test of the hypothesis that a random observation in the observed distribution being greater than zero being 89%)<sup>19</sup>. This suggests that it is unlikely that RbD error is random, and instead that it is likely that RbD error will be positive, with observations being distributed around a significantly positive sample mean.

This would suggest that observed **variability** in RbD error, rather than being caused by random error, is more likely to be caused by swings in the factors underlying RbD over the year. For example, relatively low frequency / high impact events may result in large swings in RbD error. An example of such events may be meter point reconciliations at large customers which could result in significant swings in RbD error (particularly to the extent that these do not occur evenly over the year).

<sup>18</sup> We understand that some of the largest outliers – particularly those occurring in 2006 – related to LDZ measurement errors (and as such would be excluded from allocation under Mod 228).

<sup>19</sup> Note this assumes that the sample mean and standard deviation are equal to the true population mean and standard deviation (with mean 676.7GWh and standard deviation 551.6GWh).



In conclusion, analysis suggests that – over the period analysed - RbD error:

- follows a clearly defined distribution with positive mean;
- largely falls within a clearly defined range (particularly if outliers resulting predominantly from LDZ meter reconciliations are removed); and
- exhibits a level of variability that can be explained by unpredictable movements in the underlying drivers of RbD (e.g. large meter point reconciliations), rather than random error.

## Conclusion

This note has considered two outstanding issues that have been raised in the context of the ongoing assessment of Mod 228.

In terms of the concept of “genuine” reconciliation, we have concluded that this represents an important component of RbD, and that this should be captured by the methodology set out in Mod 228. The methodology is reliant upon the accuracy of annual changes in AQ, however a series of recent improvements in this process (and ongoing scrutiny by both industry and Ofgem) suggests the proposals in Mod 228 represent a pragmatic approach to the consideration of genuine reconciliation. However, it will also be important to monitor developments in the way AQs are determined in the future (as any significant changes to the AQ process may have important implications for levels of genuine reconciliation calculated under Mod 228 – particularly if these have an uneven impact across industry sectors).

We also undertook analysis of monthly RbD error data over an eight year period concluding that, rather than being highly unpredictable, RbD error tends to follow a clearly defined distribution with positive mean, and with values that largely fall within a clearly defined range. In addition, the level of observed variability in RbD error is likely to be explained by unpredictable movements in the underlying drivers of RbD (e.g. large meter point reconciliations), rather than random error. As such, it would seem appropriate to conclude that positive RbD error is an enduring feature of the current arrangements (and that short term variability in RbD is not sufficient evidence to disprove this).

## Annex 1: Calculating the level of genuine reconciliation volume

If genuine reconciliation can be expressed as being:

$$\left[ \begin{array}{c} \text{LSP Share of} \\ \text{NDM AQs} \\ \text{(2007/08)} \end{array} - \begin{array}{c} \text{LSP Share of} \\ \text{NDM AQs} \\ \text{(2006/07)} \end{array} \right] \times \begin{array}{c} \text{Total} \\ \text{NDM AQs} \\ \text{(2007/08)} \end{array}$$

Then using more rigorous algebra:

$$\left[ \frac{\text{AQ}^1}{\text{mAQ}^1} - \frac{\text{AQ}^2}{\text{mAQ}^2} \right] \times \text{mAQ}^1$$

Where:

$\text{AQ}^1$  = Total LSP AQs in current Gas Year

$\text{AQ}^2$  = Total LSP AQs in previous Gas Year

$\text{mAQ}^1$  = market aggregate NDM AQ in current Gas Year

$\text{mAQ}^2$  = market aggregate NDM AQ in previous Gas Year

### Worked example

To illustrate this, a worked example is presented below using data from 2006/07 and 2007/08:

LSP AQ reduced from 156.60 TWh to 147.47 TWh, and NDM market AQ reduced from 553.70 TWh to 527.50 TWh

Thus genuine reconciliation from LSP to SSP sector is:

$$\left[ \frac{147.47}{527.50} - \frac{156.60}{553.70} \right] \times 527.50$$

$$= (27.956\% - 28.283\%) \times 527.5 \text{ TWh} = - 1.72 \text{ TWh.}$$