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Dear Julian,

RE: MODIFICATION PROPOSAL 0115 – “Correct Apportionment of NDM Error”

Thank you for the opportunity to comment on the above modification proposal.

British Gas Trading (BGT), as the proposer of this modification, fully supports its implementation.

We have set out in further detail, under the following headings, why we believe our modification proposal better facilitates the achievement of the relevant objectives of the Uniform Network Code.

1. Executive Summary
2. Background
3. The Modification Proposal
4. Reconciliation
5. Potential Measurement Failure Points
6. Benefits of our Proposal
7. Implementation

In addition we have attached as Appendix (I), a report by Engage Consulting Limited that provides an independent overview of our case for UNC modification proposal 0115.

1. Executive Summary

Reconciliation by Difference (RbD) was introduced in 1998, as a prerequisite to the continued rollout of competition to the domestic Small Supply Point (SSP) sector. This was a key reason for the application of RbD to the SSP sector, as opposed to all non-daily metered supply points.

1. The RbD cost allocation methodology was intended to allocate costs accurately and fairly, it has not achieved this.

2. Charges arising from RbD were expected to be small, reducing and temporary, this has not been the case.

3. RbD has not been caused by SSP meter reading or deeming shortfalls, but is a consequence of measurement failures that are applicable to all non-daily metered sites. These measurement errors include:

- LDZ Off take metering errors
- Shrinkage
- Theft and meter bypasses
- Independent Gas Transporter network reconciliation
- Unregistered, unconfirmed and unrecorded sites
- Supply point metering
- Shipper / supplier processes
- Deeming algorithms

4. The independent demand verification analysis undertaken by xoserve proves that the domestic sector has been overcharged by more than 2% year on year.

5. It is unacceptable to unfairly allocate RbD costs to the SSP sector and penalise Shippers active within this market sector. These unfair costs adversely affect competition and result in increased prices for customers within the SSP sector.

6. The current RbD cost allocation methodology places disincentives upon the LSP sector that restrict its willingness to resolve the issues and so reduce the level of RbD.

7. Gaz de France concede in their alternative modification (0115a) that RbD charges should not be wholly apportioned to the SSP sector, but has raised this alternative proposal so that it can avoid these costs. Their proposal does not deliver the same benefits as our original proposal 0115 and we have provided a separate consultation response to this proposal.

8. We believe that our proposal better facilitates the achievement of the relevant objectives of the Uniform Network Code. It reduces the extent to which cross subsidies exist between Shippers, thereby securing effective competition between them. It also extends to the LSP sector incentives to tackle the root causes of RbD,

which will in turn stimulate more efficient and economic operation of the pipeline system.

2. Background

This section sets out the history of the Reconciliation by Difference (RbD) mechanism, describing the original rationale for its introduction and explaining why the rationale that underpins the present regime is no longer valid.

Put simply, RbD is defined as:

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

RbD was introduced in 1998, further to approval of Network Code modification 194 by Ofgas¹. This was an urgent modification proposal, deemed necessary to enable the sustained rollout of supply competition to the domestic “small supply point” sector. Whilst the final modification report itself suggested “the prospect of lower gas prices for end customers”, there were significant concerns expressed at the time with regard to the risks of negative impacts upon the domestic sector.

On the 23rd December 1997 Eileen Marshall, Director, Regulation and Business Affairs at Ofgas wrote to Phil Nolan Managing Director at Transco, expressing a number of concerns, and seeking a number of assurances from the modification proposer. Within its letter Ofgas said;

“Transco is not proposing to accept a standard of service in relation to the size of the reconciliation to the domestic sector. Transco is proposing that the amount of any unallocated gas (the reconciliation variance) be monitored and that action be taken if this variance is, or becomes substantial (so implying greater risk for domestic Shippers).“

It went on to state:

“Ofgas considers this variance is an important measure of whether RbD is working efficiently. Discussion needs to continue to assess what should happen if this variance does increase unacceptably.”

Ofgas approved the implementation of modification proposal 194, but in its decision letter dated 23rd January 1998, Ofgas again highlighted a number of key issues:

“Shippers have expressed concern that unless Transco is given an incentive to do so, once this modification is signed, it will not have sufficient motivation to limit the size of reconciliation to the domestic market. Ofgas shares these concerns.”

¹ Ofgas was subsequently merged with the Electricity Regulator, Offer to become Ofgem.

The table below² shows the level of RbD charge to the domestic (SSP) sector. This represents over 2%³ of LDZ throughput. The independent demand verification exercise undertaken by xoserve, that we shall describe in more detail later in section 4.2 also highlights a persistent year on year overcharge to the domestic sector of over 2%.

Year		TWH
1999	-	19.610
2000	-	14.506
2001	-	18.429
2002	-	11.322
2003	-	10.657
2004	-	12.407
2005	-	9.370
2006	-	13.054

This evidence demonstrates that Ofgas and Shippers were right to be concerned about the risks to the market of the RbD mechanism and further reinforces the need to reconsider how RbD costs are allocated.

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 Daily Metered (DM) and large Non-Daily Metered (NDM) supply points 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 believed to be essentially 'self correcting'⁴. It was believed 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 demonstrates further that this charge is not a result of temporary deeming inaccuracies within the SSP sector.

The principle assumptions made when the methodology for smearing RbD to the SSP sector was developed can no longer be relied upon. In sections 4 and 5 we set out empirical evidence, which supports a view that the RbD charge should be applied equally across all NDM supply points.

² Sourced via xoserve.

³ Ofgem RbD consultation 2006

⁴ Section 1 Page 2 Modification Proposal 0194 Definition and Business Rules V1.0 17/11/1997

We have reviewed in some detail RbD modification proposal 194, the detailed business rules and process definition document and the Ofgas decision letter. From this it is apparent that the nature and extent of potential measurement failures, that span the whole NDM sector, was not fully understood at the time by the industry.

RbD is a balancing charge that can arise from a number of different potential measurement deficiencies. It is therefore not possible to precisely identify what proportion each type of measurement deficiency contributes to RbD. It is though possible to determine, whether such measurement deficiencies can exist, and whether they affect the SSP sector in isolation.

During 2006, Ofgem issued a consultation entitled 'Review of Reconciliation by Difference (RbD)', which sought comments from industry participants on whether the current arrangements remained valid and transparent. The industry currently awaits Ofgem's conclusions from this consultation, but it was noted from their initial views which were released in July 2006, that Ofgem would rely on the industry to drive the reform of current arrangements.

BGT has therefore initiated modification proposal 0115 to correct the current inequities in the gas settlement process.

3. The Modification Proposal

This section describes our proposal, it details those options that we considered, explains our rationale for the options we chose, and reasoning behind the discounting of other options.

To address the inequities regarding the manner in which RbD costs are solely apportioned to the SSP sector and in line with Ofgem's view that industry reform in this area should be lead by industry participants, BGT raised Modification Proposal 115 in September 2006 entitled 'Correct Apportionment of NDM Error'.

It is important to note that prior to this modification, BGT initiated a number of other modification proposals aimed at ensuring improved robustness of the AQ Review process. These included:

- UNC Modification proposal 081 - "AQ Review Process - publication of information"
- UNC Modification proposal 094 – "Reconciliation following AQ Amendment, SSP becoming LSP with change of <20% or 15,000kWh"
- UNC Modification proposal 095 – "Reconciliation following AQ Amendment, SSP becoming LSP following change of Registered User"

- UNC Modification proposal 096 (followed by 0136) "Reconciliation following AQ Amendment, SSP becoming LSP following inter process amendment of AQ"
- IGT Modification proposals (various) – "Introduction of a revised IGT AQ Review Process (2006)"

These modification proposals provide for an increased level of robustness to the AQ Review process, across all market sectors and Shippers.

In developing modification 0115, we have endeavoured to seek simple solutions that can be easily implemented, and that result in arrangements which are fairer than those presently in existence. We have recognised that because essentially we are dealing with a balancing mechanism, a perfect solution is simply not possible.

We propose that all energy charged under the proposed revised arrangements, would be charged at the same rate across all market sectors, with the proposed rate to be used being the current SSP charge rate.

It is BGT's view that this appropriate solution to charging ensures that all market sectors receive equal treatment and would provide the RbD arrangements with a consistent approach with that taken with regard to the application of charges under the existing Modification Proposal 0640 arrangements.

The modification proposal underwent significant development via the UNC Distribution Workstream over a period of six months. The subsequent output concluded, as detailed within the Workstream Report, that development of the proposal was complete with a recommendation that the Modification Panel should issue the proposal to consultation.

4. Reconciliation

4.1 The Reconciliation Process

"Reconciliation by Difference (RbD) is the method of reconciling the difference between actual (metered) and deemed (estimated) measurements of gas." These reconciliations are used in the calculation of energy and transportation charges to shippers.

Under RbD, it is not necessary to reconcile the deemed gas consumption with an actual meter reading for every supply point. In simple terms, the rationale for RbD is that gas consumed on each Local Distribution Zone (LDZ) is calculated daily by metering the gas flowing into each LDZ, adjusting for any stock change and shrinkage, then removing the level of gas consumed at DM supply points. The residual amount of gas is then allocated between small and large NDM supply points on the basis of their Annual Quantity (AQ) and End User Categories (EUC). Together, the AQ and EUC

(essentially a consumer usage profile) provide a reasonable estimate of the gas consumed.”⁵

A central argument for the application of RbD to the SSP sector only, is that there is an equal and opposite energy impact for larger and smaller supply points, such that an over allocation to DM and large NDM supply points represents an under allocation to SSPs. The equal and opposite effect may be evident to at least some degree between the DM and the NDM sector, however we do not agree that such a principle holds true within the NDM sector itself. There is now significant empirical and practical evidence that demonstrates that SSP sites are consistently over deemed as a result of the application of the RbD mechanism .

4.2 Domestic Monitor Panel

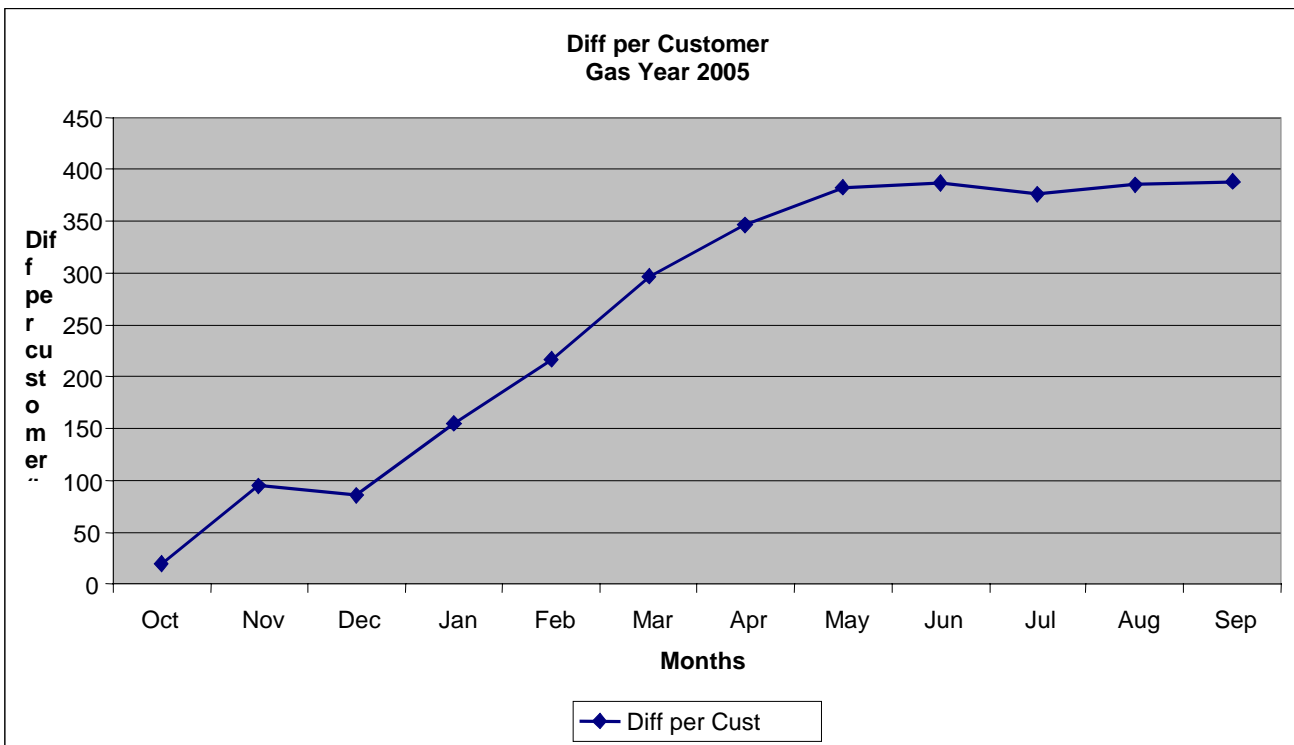
The domestic monitor panel was established further to the implementation of RbD. This was to provide assurance that the SSP sector was not being exposed to unacceptable charges or risk arising from the RbD mechanism.

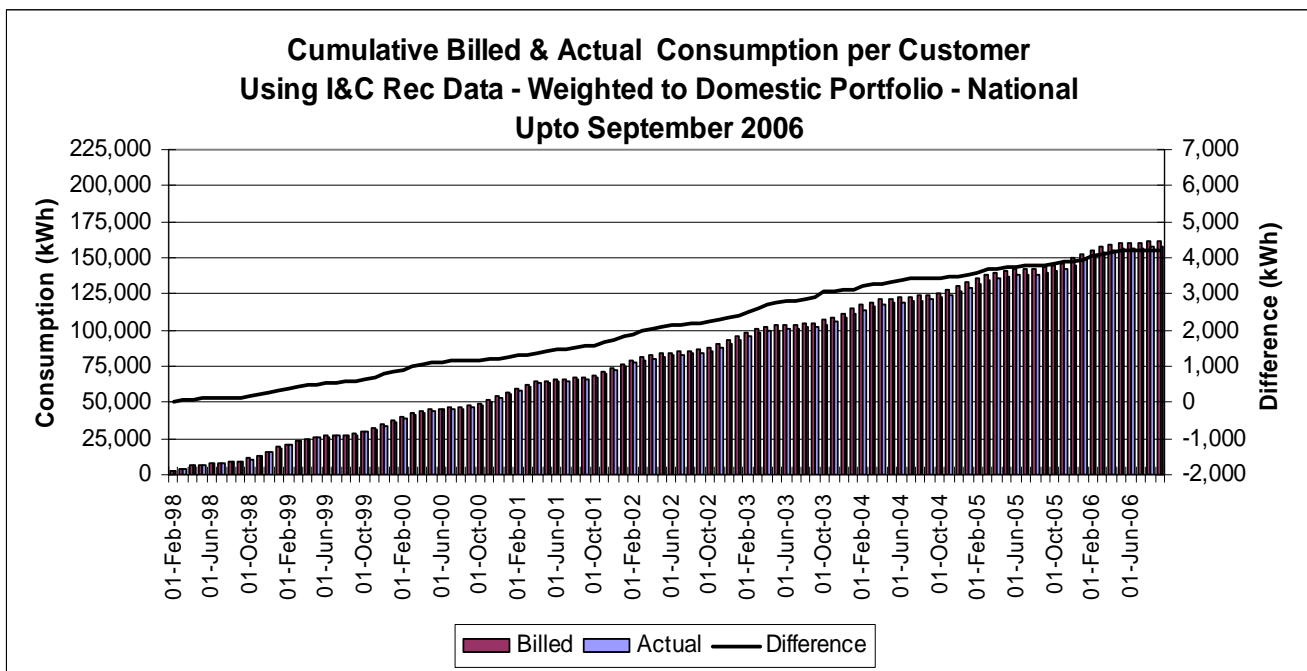
The domestic monitor panel comprises circa 6,000 domestic meters for which readings are captured on a weekly basis. These reads are then fed into detailed statistical analysis tools by xoserve, that are used to verify the difference between actual and deemed consumption for these meters with that presented by RbD. In simple terms the domestic monitor panel applies meter point reconciliation to a statistically robust sample of sites, and compares the results with the RbD process.

The graph below sets out the difference between deemed and actual consumption as calculated by the domestic panel. ⁶

⁵ Extracted from Ofgem Review of Reconciliation by Difference 2006 Ref 57/06

⁶ Source: xoserve – extracted from domestic monitor panel RbD verification output





The above graph clearly shows that deemed consumption exceeds actual consumption, and has done over a considerable period of time. This difference equates to, on average, over 2% deemed energy.

This independent, statistically robust analysis confirms that the effect of the RbD charge is to over charge the domestic sector by more than 2%.

4.3 Centrica Analysis

Centrica has commissioned its own portfolio specific analysis to compare its deemed energy charges with actual consumption, the energy recorded on consumer meters being used.

This analysis confirms that there was a propensity for sites to be over deemed, typically by over 2%.

Details of the Centrica analysis are provided within Appendix (II).

4.4 Impact of Reconciliation on the LSP NDM sector

The LSP sector is reconciled whenever readings are available, this is not the case for the SSP sector. However, the net effect of LSP NDM reconciliations over the past 9 years have consistently resulted in the following net credits to the LSP NDM sector.

Year	TWH
1998	5.69
1999	19.61
2000	13.97
2001	12.71
2002	11.98
2003	9.37
2004	11.80
2005	11.03
2006	13.62

- This demonstrates that increased availability of readings does not result in an increase in charges i.e. there is not a general tendency for AQs to be under deemed. There is no evidence to suggest that SSP AQs are under deemed.

We also questioned whether there were any reasons why energy deemed to the SSP sector, based on AQs, would be more likely to be under deemed than the LSP sector. We concluded that the RbD charge itself reduced any commercial incentive upon SSP Shippers to artificially reduce AQs.

4.5 Analysis of trends in RbD v SSP and LSP market

Attached, as Appendix (III) are detailed statistical comparisons between the scale of RbD charges, versus the relative scale of the LSP NDM, and SSP NDM market.

This analysis demonstrates that:

- There is **no** correlation between the scale of the SSP sector and the level of RbD.
- There is potentially a link between the scale of the LSP sector and the level of RbD.

5. Potential Measurement Failure Points

Throughout the gas supply chain there are a number of areas where measurement inaccuracies can occur, these are set out below. The risk/benefit of all such measurement failures across the supply chain is currently solely borne by the SSP Sector, via RbD.

Measurement errors are prevalent within the LSP sector as well as the SSP sector. Whilst it may be possible to argue that some issues affect each sector to different degrees, it is not possible to prove this. As the LSP sector is not exposed to RbD charges, the incentives upon it to detect, quantify and resolve measurement failures are weaker than those that are on the SSP sector. On this basis we argue that RbD costs should be borne equally across all NDM supply points.

5.1. LDZ Off-take Metering

Gas is delivered from the National Transmission System (NTS) to the Local Distribution System via Local Distribution Zone (LDZ) off-take meters.

Presently any inaccuracy in the measurement of gas entering the system, will have an equal and opposite effect on the volume of energy reconciled via the RbD mechanism to the SSP sector. There is no reason why the SSP sector should bear any more reward or risk from any LDZ metering off-take measurement inaccuracies.

The meters connected at LDZ off-takes are designed, constructed and maintained to ensure the measurement of standard volume flow. These standards allow for as much as a 2% +/- level of inaccuracy, at normal flow rates.

These LDZ off-take meters are owned and operated by the Distribution Network owners. As part of their price control⁷ the network owners have a throughput incentive. The effect of this incentive is that the higher the volume of gas measured as entering the Distribution Network, the greater the allowed revenues of the network owners.

⁷ Gas Distribution Gas Control 2002 – 2007 Paragraph 81 (ii)

These incentives could therefore create a bias towards the over measurement of energy entering the system. The consequences of any measurement failure in this area are currently inappropriately borne solely by the SSP sector.

5.2. Shrinkage

LDZ Shrinkage Factors are reviewed on an annual basis. The process for the forecasting of shrinkage for the forthcoming gas year is a somewhat arbitrary process, with a series of estimates made by the network owners for each component of shrinkage.

The purpose of the shrinkage process is to encourage network owners to reduce shrinkage from the system. However this can have a perverse effect, especially in terms of upstream theft. The number of detected upstream thefts is used to inform the calculation of the theft element of the shrinkage factor. The more theft detected, the higher the shrinkage factor, and the greater the costs to network owners. The network owners can therefore be penalised for detecting theft.

It should be noted that the present interpretation of “shrinkage theft”, applied by the network owners, is constrained only to instances where physical interference upstream of the control valve has occurred. Theft, or gas flow through unregistered, or unrecorded sites, are not included in shrinkage factor calculations.

Any understatement of shrinkage is to the detriment of the SSP sector. As shrinkage relates to the whole of the LDZ network infrastructure, exposure to shrinkage miscalculations should be applicable to both the SSP and LSP sectors.

5.3. End User Theft

The current industry arrangements do not provide effective incentive arrangements upon Suppliers, Shippers or Gas Transporters to identify the theft of gas from the system. This was referenced within the Ofgem ‘Theft of Gas and Electricity – Discussion Document’ which was issued in April 2004.

Theft of gas is pertinent to both the domestic and non-domestic markets and all unaccounted for consumption is currently paid for by the SSP sector through RbD. Subsequently LSP sector Shippers and Suppliers have no commercial incentive to proactively identify and resolve cases of intentional consumer theft.

There is no evidence or industry data which shows that the level of undetected theft within the SSP sector is any more prevalent than levels of theft within the LSP NDM sector. However, under the current RbD arrangements an incorrect assumption is made that all theft within an LDZ is attributable to the SSP sector, which subsequently takes the full financial burden.

It is widely accepted across the industry that the scale of end user theft, across the whole gas market, is not clear and that there is a lack of robust data relating to the actual number of cases of theft and the total amount of energy which is illegally taken from the system.

In relation to detected theft, in 2005 xoserve recorded 139 allegations of theft in the LSP market, with 20 confirmed cases totaling 3,379,137 kWh being assessed as stolen⁸. This information categorically proves that theft does indeed exist within the NDM LSP sector. What this information does not demonstrate is the absolute level of theft in this sector. LSP Shippers pay transportation and energy charges when they detect theft, and receive no benefit from reduced RbD volumes. Typically recovery of monies is problematic, so LSP Shippers lose most and gain the least by detecting and reporting theft. This is further evidenced by the relatively high volume of cases where LSP theft has been detected, but no subsequent assessment submitted by the LSP Shipper, as to how much gas has been stolen.

BGT can confirm that it has detected theft within the LSP sector on both monthly read and non-monthly read sites. Information relating to these cases can be provided upon request.

5.4 Bypasses

The use of bypasses within the LSP NDM sector is commonplace, specifically where bypasses have been installed by the Gas Transporter when engineering work is required or on the assumption that work will be undertaken at a later date. The extent of these bypasses varies and they can be utilised at both large and small commercial sites. However, those which are installed at large sites can use significant volumes of unrecorded gas for significant periods of time.

Again, the LSP sector is immune to the costs associated with this unregistered gas, with the risk and costs being solely picked by the SSP sector via RbD. LSP Shippers and Suppliers therefore do not have any incentive to ensure that robust processes are in place to control and limit the impact of unregistered gas through bypasses.

5.5 Independent Gas Transporter CSEPs & NExAs

Shippers and Suppliers have expressed their concerns, over the past three years, as to the lack of robustness of the settlement and reconciliation processes that relate to sites connected to Independent Gas Transporter (IGT) networks.

IGT performance in this area has been monitored and reported to the IGT Work Group on a regular basis, by xoserve confirming the existence of a number of problems areas, three of which are detailed below.

⁸ xoserve data – Theft of Gas Operations Forum

1. Weekly CSEP update process
2. I&C CSEP Reconciliation
3. IGT AQ Review

At the recent Ofgem CSEP NeXA meeting, which took place on 23rd April 2007, xoserve gave a presentation that provided the industry with an update on the performance levels and issues associated with each of the aforementioned areas and summarised below.

5.5.1 Weekly CSEP Update Process

The DN / IGT NeXA states that SPA updates should be submitted by IGTs to xoserve on a weekly basis. Although recent performance statistics show a 95% overall level of performance across all active IGTs, xoserve caveat these figures with the statement that they are unable to validate the content of the file in terms of volume of supply points or validate whether IGTs have captured all new connections or transfers of ownership. The figures purely show that a weekly update file has been received.

Recent statistical information, collated by Ofgem, showed a significant mismatch between the number of supply points connected to IGT networks against the number of supply points which are known of by xoserve. This mismatch covered supply points across both the SSP and LSP market sectors.

5.5.2 I&C CSEP Reconciliation

There is an obligation upon IGTs within the current market arrangements, to ensure that all I&C NDM supply points are regularly reconciled.

Based solely upon the I&C supply points which are known by xoserve to exist, xoserve recently advised the IGT Work Group that there are a total of 3,570 I&C Logical Meter Numbers (LMNs). Of these only 4 LMNs have been reconciled within the last 12 months and only 728 LMNs have ever received a reconciliation invoice since the original introduction of IGT market arrangements. See Appendix (IV).

The lack of reconciliation across such a large number of LSP supply points and over such a long period of time has a direct impact to RbD and is of great concern.

5.5.3 IGT AQ Review

The AQ review is an established and important Network Code process which enables AQ values to be reviewed and amended on a yearly basis.

Further to recent information issued by xoserve, during the 2006 IGT AQ Review only 49,904 LMNs were submitted for amendment out of a total of 72,635 LMNs, which equated to only 68% of LMNs being amended.

This percentage is relatively low when compared with the 2006 UNC AQ Review process amendment figures, where 82% of supply points were amended and the reality that percentage figures within the IGT market should be higher due to the nature of the supply points and the impact of new connections.

The LSP sector provides a considerable proportion of the energy associated with connected IGT supply points and the lack of visibility of a large number of connected supply points and the relatively low level of AQ amendments, are providing risk and cost to RbD.

Further, the poor performance levels of I&C CSEP reconciliation and the fact that large numbers of I&C supply points have never been reconciled, are providing a significant level of risk and cost to the SSP sector via RbD, with no incentives upon LSP Shippers or Suppliers to pursue reconciliations.

5.6. Unrecorded Sites

Unrecorded Sites are those where premises exist that are receiving gas, but are not recorded on industry systems. These sites do not have meter point reference numbers allocated, and it can prove immensely difficult for a new occupant to therefore establish themselves as a customer with a Supplier. This scenario can and does exist in both the SSP and LSP sectors, however consumption associated with these sites flows directly through to RbD, the costs of which are currently solely borne by the SSP sector.

5.7 Unregistered and Unconfirmed Sites

Sites exist, across both the SSP and LSP market sectors, that are recorded on central industry systems (Sites and Meters) but which do not have a registered Shipper attached to them.

BGT recently presented on this particular issue to the April Service Delivery Ops Forum with a view to raising the profile of this issue across the industry and with a view to implementing better controls to prevent further uncertainty.

The existence of these unregistered and unconfirmed sites is resultant of numerous issues such as poor data quality, deficient industry arrangements or poor industry participant behaviour and is prevalent across both the SSP and LSP sectors.

5.8 Supply Point Metering

All gas for consumption leaving the distribution network should be registered on supply point meters.

There is potential for over or under measurement in all meters. The standards that relate to expected and allowable levels of accuracy are set out within 'The Gas (Meters) Regulations 1983' (as amended) and 'The Measuring Instruments (Gas Meters) Regulations 2006'. These standards are broadly similar across the whole of the NDM sector.

In our opinion, there is at least as much propensity for the over or under measurement of gas at end user meters in the LSP NDM sector as there is in the SSP sector, as both the metering technologies utilised and the applicable accuracy standards, do not differ widely across the majority of the whole meter point population.

In the LSP NDM sector should meters under register, whilst revenue is reduced so is cost. In the SSP sector if meters under register, revenue is lost but costs stay the same because of the application of RbD, which will balance any shortfall between end user metered gas, and gas metered at LDZ input meters.

5.9 Supplier Processes

5.9.1 AQ Review Process

The Uniform Network Code prescribes the way in which the annual AQ Review will be undertaken and details the relevant obligations on both Shippers and Gas Transporters.

While there is sufficient assurance that xoserve is operating the AQ Review process in accordance with the provisions of the UNC, historically there has been insufficient transparency regarding the participation and performance of Users.

Historically there has been the propensity for AQs to be artificially low within the SSP sector, hence a primary function for RbD is to capture these discrepancies and to smear the effects across the SSP sector.

As aforementioned, BGT initiated a number of modification proposals aimed at ensuring and improving the robustness of the AQ Review process.

The implementation of UNC Modification proposal 081 - "AQ Review Process - publication of information" provides an increased level of transparency and governance over the AQ Review processes.

In addition, the implementations of UNC Modification Proposals 094 – "Reconciliation following AQ Amendment, SSP becoming LSP with change of <20% or 15,000kWh" and 095 – "Reconciliation following AQ Amendment, SSP becoming LSP following change of Registered User", removed exclusions from the UNC pertinent to the

Modification 0640 process, which provided additional restrictions on User's abilities to manipulate AQs.

There are however still gaps with regards to the LSP sector, specifically in terms of the visibility of AQ appeal behaviour and the outstanding loophole in the Modification 0640 reconciliation processes, which our UNC Modification Proposal 0136 (the follow up to 096) "Reconciliation following AQ Amendment, SSP becoming LSP following inter process amendment of AQ", seeks to address. Specifically, this proposal seeks to further safeguard the AQ Review process from User manipulation by removing the sole existing exclusion within the Modification 0640 process.

As described earlier, under the current arrangements the benefits of reducing AQs are stronger in the LSP sector than they are within the SSP sector.

5.9.2 Correction Factors

For supply points which consume less than 73,200 kWh per annum, a standard domestic correction factor is utilised in the calculation of energy, with a separate standard correction factor being used for sites consuming between 73,200 kWh and 732,000 kWh.

A bespoke correction factor is calculated for all sites with an annual consumption in excess of 732,000 kWh, in accordance with the 'Gas Calculation of Thermal Energy Regulations 1996'.

Where there has been an error in the calculation of a bespoke correction factor, there is a propensity for the error to be in favour of the customer, with the amount of energy calculated being less than the volume actually used.

In these circumstances the result of any under calculation and subsequent under deeming of AQ is picked up via RbD.

5.9.3 User Suppressed Reconciliation Values

User Suppressed Reconciliation Values (USRVs) are generated from submitted meter readings, which are deemed by xoserve to be out of tolerance upon validation. USRVs are specific to the LSP sector and can be generated for any Larger Supply Point.

Modification Proposal 0637, implemented in February 2005, introduced a regime to incentivise Users to process and clear all USRVs in an efficient and timely manner,

Information recently issued to the industry by xoserve identifies that the general level of current User performance in this area is consistently below the expected standard,

with large numbers of items outstanding, going back as far as November 2001. See Appendix (V).

It is evident that the existing incentive regime is not working and BGT has raised UNC Modification Proposal 0141 – “Revision to the ‘User Suppressed Reconciliation Values’ Financial Incentives arrangements”, in order to further improve the operation of the current arrangements.

In the meantime, it is evident that there are a large number of outstanding USRVs and without the timely reconciliation of these affected LSPs, there continues to be a high level of risk upon RbD and to the SSP sector.

5.10 Deeming Processes

There are number of various algorithms which are used within the deeming process. Should these algorithms contain any level of inaccuracy the consequences are all inappropriately borne by the SSP sector.

6. Benefits of our Proposal

BGT believe that this modification proposes an effective and appropriate solution.

Simple & Transparent: Our proposal does not require complicated algorithms, nor contain multiple variables. We suggest simply that RbD is smeared at the same energy and transportation charging rate to all NDM supply points based on throughput.

We propose a hard “cutover” to any new arrangements, which again moves to arrangements that are simple and easy to understand.

Efficient & Effective: Our proposal does not require significant system change. We understand it can be easily implemented be xoserve on behalf of the transporters.

We have set out below more specifically how our proposal shall better facilitate the achievement of the relevant objectives.

6.1 Consequences of non-Implementation

Should our proposal not be implemented an unacceptable cross subsidy across market sectors and Shippers will remain. This will continue to compromise competition between Shippers. Costs in the SSP sector, and therefore to domestic customers, will be disproportionately high, when compared to the non-domestic sector.

In addition there will be a continuing lack of incentive upon LSP Shippers to address issues, which cause unreconciled energy.

6.2. Extent to which implementation of the proposed modification would better facilitate the achievement of the relevant objectives

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

Our proposal extends to a broader range of Shippers incentives for identifying and resolving measurement failures that manifest as unreconciled energy and resultant charges to RbD. Such issues have been described earlier. This includes for example theft and IGT reconciliation issues, where the engagement of the SSP Shippers has been extensive, but other Shippers minimal.

We believe that as a result the extent to which measurement failures persist will be reduced, and that this will enable more efficient operation of the pipeline system.

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

Our proposal reduces the extent to which the SSP market sector, and Shippers / Suppliers operating predominately within it, cross subsidise the LSP NDM market sector, and the Shippers / Suppliers operating predominately in it.

Shippers operating in the SSP sector, presently bear the full burden of RbD charges, whilst LSP NDM Shippers bear no charges. It can be argued that the LSP sector should bear a greater burden than the SSP sector and vice versa. However, it has been widely accepted that no sector should bear the full burden of RbD charges.

Our proposal therefore provides a fairer and more equitable allocation of costs than exists today. An element of cross subsidy may still remain further to the approval of our modification, and which direction cross subsidy is in may be debatable. However, ultimately the level of any cross subsidy will be lower than it is at present.

The reduction of a cross subsidy between market sectors and individual Shippers / Suppliers operating in them, in our view, better secures effective competition between Shippers and Suppliers.

7. Implementation

In line with discussions that took place during the development of this modification proposal, it is proposed that the most efficient and effective invoicing solution to deliver the aims and objectives of the proposal, would be achieved by the utilisation of an off-line invoicing system. This solution would use the current ad-hoc invoicing mechanisms, would not provide a significant impact upon xoserve systems, processes or procedures and therefore would be relatively straightforward to implement.

In the event that this proposal is approved, BGT recommend that implementation of the modification is undertaken as soon as practicable, following appropriate consultation via the UK Link Committee.

In order to ensure that a clean transition occurs from the current arrangements to the revised proposed arrangements, we recommend as part of our modification proposal that a hard landing approach is taken to implementation.

This would mean that the application of any subsequent debits or credits, calculated post the date of implementation of this proposal, would be applied to all Users and across all market sectors, under the terms of the new arrangements.

Should you have any queries with regard to this response please do not hesitate to contact me 07769 548070.

Yours sincerely,

Steve Briggs
National Industry Manager

**REVIEW OF BGT'S MODIFICATION
PROPOSAL UNC 115**

"Correct Apportionment of NDM Error"

**An independent review of British Gas Trading's
modification proposal UNC 115**

Prepared for BGT by
Engage Consulting Limited

April 2007



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1. INTRODUCTION

Engage Consulting Limited has been asked by British Gas Trading (BGT) to undertake an independent review the factual evidence supporting their proposal UNC 115 ("Correct Apportionment of NDM Error"). The brief for this research was to review BGT's rationale and supporting evidence in support of the modification proposal, based on available industry data and the findings from a series of internal (non-public) investigations.

In this report we present our findings, noting that this is designed to be read in conjunction with BGT's response to the industry consultation process. We have assumed that readers are familiar with common industry terminology and standard abbreviations.

2. BACKGROUND TO ENGAGE CONSULTING

Engage Consulting provides consultancy, data and assurance services to clients in the Electricity and Gas sectors, both in the UK and abroad. Formed in 1999 it has expertise in balancing and settlement mechanisms from both these markets together with a high level of expertise and experience in retail, transportation and transmission processes underpinning the energy trading markets. Within the gas sector, Engage people were part of the pre and post Network Code regimes and consequently have first hand experience of the practicalities of the operation and evolution of the competitive regime.

3. OVERVIEW

The Reconciliation by Difference ("RbD") mechanism was introduced in 1998 to enable competition in domestic gas supply to be implemented whilst avoiding significant and costly amendments to the existing UKLink systems. It was approved following a Network Code modification proposal by Transco, the monopoly Gas System Operator at the time, and was directed by Ofgas following extensive consultation with industry representatives and other interested parties at the time.

The RbD principal is based on the concept that the gas flows attributable to domestic supply points within an LDZ is the difference between the flows into the an LDZ and the flows attributable to non domestic supply points; this latter quantity being determined from daily metered supply points and supply points that are metered less frequently and reconciled. In this way gas flows attributable to the domestic supply points can be deduced rather than individually metered and reconciled against a deemed flow at individual meter point level. A necessary consequence of the RbD mechanism is that errors attributable to unreconciled energy and any other errors in energy measurements within the system, are attributed wholly to the domestic SSP market sector. Consequently, for RbD to be an equitable mechanism, shippers' error volumes have to be in the same proportions as the sum of their AQs. In this way errors are smeared in the same proportions as they arise.

The existence of persistent energy errors (errors that are not removed over time through reconciliation) within the LSP market is a contentious issue when considering RbD. Some proponents of the existing RBD arrangements have argued that almost all energy flows to LSP sites will ultimately be reconciled.

In theory, with almost all errors being reconciled over time the system energy allocation should tend towards the actual flows on a particular day. BGT has evidence that this is not the

case and that a significant volume of persistent error is created in the non domestic sector that, as a direct consequence of the existing RbD mechanism, is smeared in different proportions to that in which it is created. The original implementation of RbD was predicated on the assumption that errors (for example due to unregistered, duplicate or mismatched supply points et al) would reduce over time, and that a number of control mechanisms (such as the tuning of the AQ review processes) would reduce the overall level of energy needing to be reallocated through the RbD mechanism. Industry data suggests that this has not happened as expected.

BGT has proposed modification UNC 115 in response to Ofgem's draft conclusions from the 2006 Consultation on RbD. The proposal suggests that it will be more equitable to the market as a whole if the RbD charge were to be applied across a wider group of supply points, namely the entire NDM sector (both domestic and I&C). The proposal suggests that this would provide an incentive to participants to reduce, as far as may be possible, the errors that contribute to the RbD charge. BGT believes that it is a logical step forward and reflects the overall industry view, as described by Ofgem, about how to refine the RbD mechanism for the medium term.

The proposal represents a practical and logical step towards:

- Providing an increased incentive on shippers and Gas Networks to minimise errors which may impact RbD;
- Ensuring that, where energy from the LSP sector (both monthly and non monthly sites) impacts the domestic sector, the effect is reflected across all NDM sites.

The modification proposes a solution which is both low-cost and straightforward to implement. It is consistent with Ofgem's suggestion⁹ that industry change mechanisms should be used to address shortfalls in the RbD process and addresses the fact that significant errors arise in the sectors of the market other than the domestic sector.

By its very nature, the 'by difference' methodology provides a mechanism for attributing the total LDZ input flows across the respective supply point groups. As a consequence, any discrepancies between actual and estimated energy in areas such as Theft of Gas are directly bourn by the Domestic SSP shippers - which may of course result in a debit or a credit to the RbD 'account'. BGT can demonstrate, through work that it has done in this area, that there are actual instances of detectable theft of gas in the LSP supply point market, both in the monthly and non-monthly read sector.

The volume of theft identified by BGT when sampling sites in 2 LDZs cannot be reliably extrapolated across the system but BGT's have evidence from site that it exists and this supports the extension of the RBD mechanism across the wider market.

We have discussed with BGT the technical analysis that they have carried out in support of their proposal and we discuss the finding from our review and discussions with BGT in more detail within the body of this report.

We conclude that the Modification proposal UNC 115 is a logical development arising from the Ofgem RbD consultation and that there is sufficient evidence to suggest that the RbD allocation process would be made more equitable by the reallocation across the wider supply point groups.

In the following sections, we examine some of the details underpinning BGT's case in support of the proposal UNC 115.

⁹ See the presentation document 'PresentationReconciliationbyDifferenceRbD_FINAL.pdf', Ofgem, July 2006

4. BGT'S RESPONSE TO THE PROPOSAL

In the following sections we look at BGT's rationale in support of the modification.

4.1 Summary of BGT Views

BGT's support for the proposal falls into 2 broad areas.

Firstly, BGT views the proposal as a logical development of the RbD mechanism in a manner that is consistent with Ofgem's draft conclusions from the 2006 RbD Consultation process. They have also cited the original decision document published by Ofgas and that the industry's expectations at the time of implementation (that the quantity of energy being allocated through the RbD mechanism would reduce over time) have not been met.

Secondly, they assert that there is key factual evidence that demonstrates that the RbD energy charge is not solely due to the effects of domestic supply points and that the effect can be attributed to the LSP sector.

There is evidence within BGT's domestic gas portfolio that demonstrates that there is a regular and systematic over-deeming against their Domestic Gas Supply Point Portfolio. This has been demonstrated using internal billing account analysis and also correlated against the results of the DMP (Domestic Monitoring Panel) analysis published by xoserve.

BGT has also performed statistical analysis of system and LDZ daily flows against both the SSP and LSP sector flows in an attempt to measure any correlation – and this has not been found.

There has also been an internal study of incidences of theft of gas which has proved beyond reasonable doubt that incidences of theft of gas have occurred in both monthly and non-monthly supply point groups.

We look at each area in more detail in the sections below.

4.2 The logical case for UNC 115

In addition to looking at the quantitative evidence behind the modification proposal, we have reviewed a number of key documents which signal Ofgem's views about how RbD should evolve. Collectively, we have identified that the route BGT proposes for 115 meets the majority of the criteria that have been signalled. These are considered below:

4.2.1 Retaining the RbD mechanism in the medium term

In their 'Initial Thoughts' presentation at the conclusion of the 2006 RbD consultation, Ofgem concluded that:

- The RbD mechanism is fit for purpose for the immediate term
- RbD issues should be addressed under existing industry arrangements
- No regulatory intervention is necessary at this stage
- It is up to the Industry to take the lead
- Ofgem would facilitate coordination of industry activity through an RbD issues log

BGT's proposal for 115 supports the view that the RbD mechanism should be retained, demonstrates that it is 'taking a lead' on promoting a case for change, and is not seeking direct Regulatory intervention. Hence, we can see a logical continuity in the approach.

Ofgem has commented that, in the longer term, a widespread take up of Advanced Metering technology should prompt a review of RbD. When this occurs, a cost benefit analysis should evaluate whether RbD remains the most appropriate mechanism or whether such technological advances provide more appropriate options. The industry is clearly not at this point and the 115 proposal is logical in this context.

4.2.2 Reducing the potential for misallocation of energy

In its notice of implementation of Network Code Modification 640¹⁰, Ofgem commented that "it is appropriate ... to propose modifications that remove the potential for misallocation of transportation and energy amongst RbD shippers". When considering theft, Ofgem states¹¹ that "theft is not acknowledged in the LSP market". Given that BGT has evidence of the existence of LSP theft, there is a strong case for 115 on the grounds that there is evidence that some costs are clearly attributable to NDM supply points and which should be apportioned more equitably. This principle can also logically be applied to misallocated or unregistered sites, which impact the RbD charge but cannot be shown to apply solely to the domestic sector.

BGT's proposal that the RbD charge should be reallocated across the whole NDM portfolio is logical in that it reflects the mechanism in place prior to the introduction of domestic competition, a fact highlighted by Ofgem when acknowledging that "prior to the implementation of RbD, any error in shrinkage was spread across all NDM shippers (excluding Daily Metered sites)¹²".

4.2.3 Removing disincentives

Again, in the RbD consultation document, Ofgem highlighted the fact that "there is little incentive either financial or commercial for parties to comply with the terms of the CSEP NExA to trigger a reconciliation. The lack of timely AQ Updates and reconciliation volumes by IGTs is considered to create undue risk to RbD, in terms of creating a potential misallocation of energy volumes through the RbD smearing mechanism, and thereby impacting on costs". BGT's view is that there is potential for IGT energy to not be properly allocated across independent networks and that this can give rise to quantities of energy which are attributed to the domestic SSP sector and are unlikely to be properly reconciled within a reasonable timescale.

Work has recently been sponsored by Ofgem to look at certain aspects of independent gas networks and it is important that the RbD impact from IGTs is evaluated and understood. If an energy impact is found to be material and the result of LSP supply points, this provides an incentive for RbD shippers to seek corrective action through the mechanism proposed by BGT.

Likewise, the incentive to LSP shippers to detect and deal with theft of gas (and other sources of potential error cited by BGT) is increased by the fact that these shippers will bear a proportion of the financial burden for it.

¹⁰ Ofgem document reference 'net/cod/mod/0640, dated 8th June 2004

¹¹ 'Review of RbD' document (Ofgem reference 57/06)

¹² Review of Reconciliation by Difference, Ofgem (ref 57/06)

4.2.4 Simple, low cost implementation

BGT has consulted with xoserve to develop a proposal for a practical and low-cost implementation of 115. The proposal outlined in UNC 115 would facilitate a simple and straightforward implementation route that has minimum impact on both xoserve and the shippers. Importantly, BGT and xoserve believe that it will not require significant amendments to UK Link systems to implement.

4.3 The factual case for UNC 115

The nature of the 'by difference' mechanism, whereby all domestic gas flows, together with un-reconciled energy and any energy accounting errors, are attributed to the domestic SSP sector means that such error quantities are generally unknown. Empirical studies of theft of gas and leakage serve to give an indication of some sources of errors in energy accounting but cannot be absolutely determined. BGT's proposal does not seek to clarify what these quantities may be, rather it seeks acknowledgement that it is feasible that these errors cannot be solely attributed to the domestic sector.

BGT has conducted a number of internal research projects that demonstrate key features in support of the proposal. Three of these significant projects are described below:

4.3.1 Internal Theft of Gas Survey

Given that a central tenet of the UNC 115 proposal is that a number of factors potentially influencing the RbD charge are not confined solely to the domestic sector, BGT has sought to confirm the existence of detectable theft in the monthly and non-monthly LSP sectors. We have seen the results of a site-level investigation of a selected number of LSP sites in 2 LDZs that has confirmed that theft of gas exists in the LSP market. This confirms Ofgem's view that "Although there is also a likelihood of theft of gas by industrial and commercial users, the current reconciliation process does not apportion any costs for theft of gas to the DM or large NDM sectors"¹³.

This adds weight to the argument that the energy allocation should be extended to the LSP sector, although it doesn't indicate how much energy is at stake.

BGT has confirmed that it does not believe that the theft study data can be reliably extrapolated to derive a representative value for all LDZs but we accept that its study demonstrates that that LSP theft is a reality.

4.3.2 Internal Invoice Imbalance Analysis

Having access to a large portfolio of gas customer consumption data, BGT has analysed the deemed energy against the actual usage data for a sample of domestic supply points which are known to be correctly registered on the Sites and Meter database and have a valid set of 'clean' meter reading data (defined as 6 or more true cyclic reads). They have been able to compare the actual gas consumption (as billed to the end consumer) against the energy deemed against the group of supply points. One conclusion from this internal study was that "there is a systematic bias in imbalance across the domestic (SSP) market of between 1.5% - 2.5% which is consistent with [DMP] analysis". The fact that there is a consistent positive

¹³ Review of Reconciliation by Difference, Ofgem (ref 57/06) , section 2.32, page 17

over-allocation to the domestic portfolio suggests that this is a symptom of energy accounting errors elsewhere in the system. There is no evidence that we have seen suggesting that this energy allocation is temporary or transitory in nature which supports the view that allocation across domestic supply points only is not ideal and the interests of the industry would be better served, in the medium term, by the adjustment to the RbD mechanism as proposed.

4.3.3 Statistical Analysis of RbD quantities

BGT has attempted to validate the hypothesis that, if the energy allocation was fundamentally geared to the Domestic SSP flows, one might reasonably expect to see a statistical correlation between the energy flowing to the domestic supply point group and the total system energy. This study was conducted in 2006 with support from xoserve and the results, based on the evidence we have seen, reveal no such correlation, either compared to the whole system or against individual LDZs. BGT take a view that, perversely, there is evidence to suggest a stronger correlation of RbD charges against the non-domestic LDZ flows but we remain to be convinced that this is significant. In our view, this does not provide absolute proof that the RbD charge is not driven by domestic supply points but it adds weight to view that that the effect is system-wide and supports BGT's logic underpinning their proposal.

5. CONCLUSIONS

The RbD mechanism is an appropriate method of ensuring the daily reconciliation of energy flows within the system but has the disadvantage that, irrespective of where errors in energy measurement originate, they are attributed to wholly the domestic gas supply points. In theory, the energy correction can be either a positive or a negative quantity but BGT's experience is that there is consistently a net positive charge which suggests that there are other influences over and above that due to purely domestic gas flow and has compelling evidence that a proportion of this error is attributable to the non domestic sector. The quantities allocated have not been reducing over time since implementation and the comments made at the time of implementation, together with the conclusions from the industry consultation in 2006, suggest that a review of RbD is timely.

BGT has responded to Ofgem's recommendations with a modification proposal that does not fundamentally change the principle of reconciliation for the domestic sector gas flows, yet does allow effects that are clearly attributable in part to the LSP sector to be reflected within that supply point group.

The proposal is a logical interim refinement in the absence of a wider adoption of advance metering technology. We accept that BGT's proposal is a logical extension of the RbD consultation process and is a constructive option for the industry at this point in time.

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Appendix (II) Centrica Analysis

Centrica have undertaken a large scale exercise to identify the key drivers of imbalance in the SSP market. Across every MPRN in its portfolio it has replicated calculated the imbalance incurred over the last 16 months by comparing the energy charged to each site with the volumes billed.

In calculating volumes billed, the analysis has taken into account:

- Recreation of the deeming calculations
- Matching in reconciliation and ad hoc invoices
- Apportionment of RbD charges to its SSP portfolio

The imbalance for each site was plotted on a frequency distribution graph. It would be expected that there would be some sites with significant imbalance as SSP sites are not reconciled to reflect consumption changes e.g. when there is a change of ownership. Overall, if the industry worked as originally anticipated, imbalance would be evenly distributed around zero.

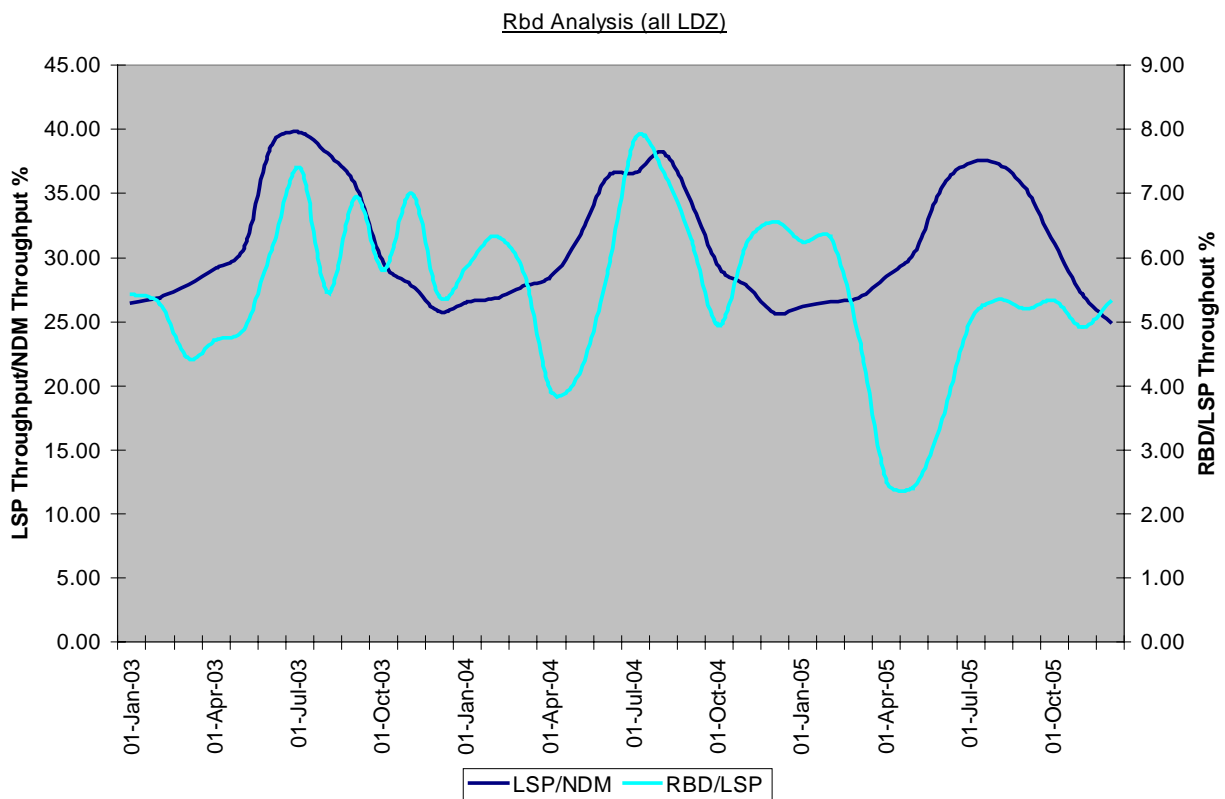
However, the chart clearly shows a positive skew and demonstrates that there is a systematic level of imbalance in excess of 2% of deemed volumes driven by the energy allocation algorithms.

As a further step in the analysis an analysis of MPRNs for which at least two actual reads had been obtained in the last twelve months to eliminate the impact of any issues around billing estimation. This analysis also showed an average imbalance of greater than 2%.

APPENDIX (III) Analysis of LSP / SSP Throughput versus Level of RbD

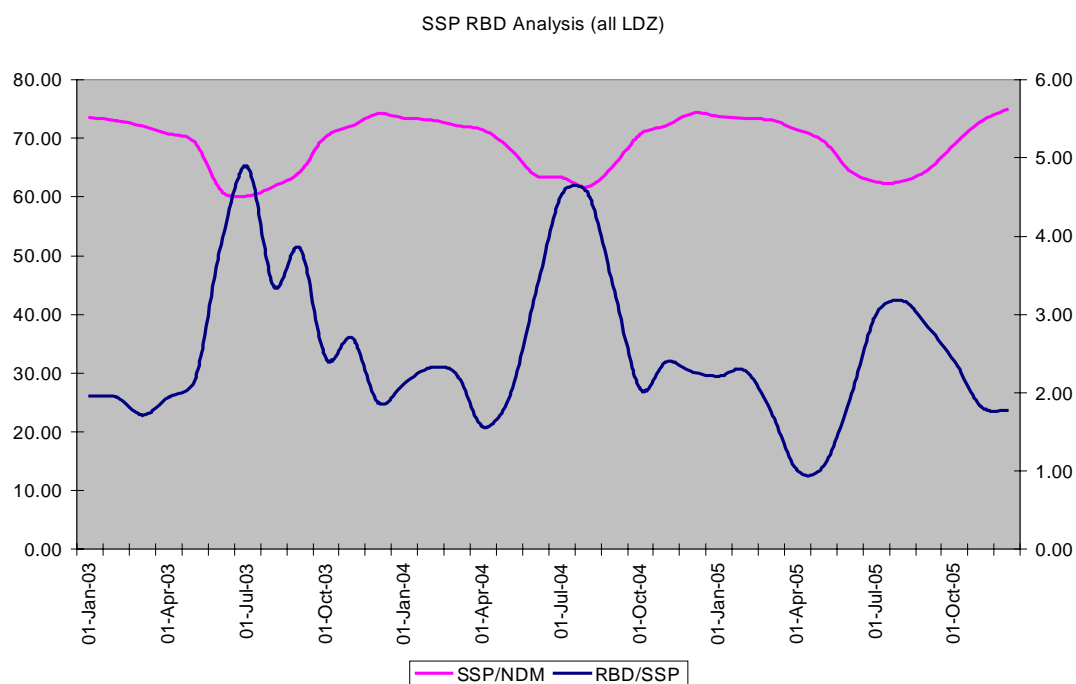
Using flow month data for RbD values and throughput values for the SSP and LSP markets the correlation coefficients were calculated. This analysis was not carried out on an LDZ basis due to potential for bias in regions.

Comparison of LSP NDM throughput with level of RbD



A correlation / common pattern between the two lines can be seen.

Comparison of SSP throughput with the level of RbD



No clear correlation between the two lines is evident

This analysis suggests that;

- There is no positive correlation between and SSP throughput RbD levels.
- There is a stronger correlation between LSP throughput and RbD levels.

The data underlying this analysis is shown below:

Market Flow Data												
GWh												
	Jan-03	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03
RBD	1,201	1,059	743	601	497	393	453	298	532	857	1,142	1,077
SSP	61,306	54,488	43,318	30,881	22,951	10,078	9,265	8,852	13,832	35,179	42,235	57,595
LSP	22,125	20,053	16,776	12,723	10,178	6,406	6,120	5,453	7,661	14,777	16,295	20,006
NDM	83,432	74,541	60,094	43,605	33,129	16,484	15,385	14,305	21,494	49,956	58,530	77,601
	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04
RBD	1,247	1,235	1,134	520	392	387	518	429	488	650	1,037	1,250
SSP	58,781	53,188	50,916	33,309	20,220	11,847	11,421	9,442	14,783	31,771	43,217	55,116
LSP	21,243	19,496	19,583	13,300	9,361	6,744	6,598	5,837	7,753	13,160	16,628	19,040
NDM	80,024	72,685	70,499	46,608	29,582	18,591	18,019	15,279	22,536	44,930	59,845	74,156
	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05
RBD	1,259	1,244	846	345	248	235	302	320	370	555	871	1,034
SSP	56,846	54,498	48,243	34,492	23,296	12,210	10,029	10,078	13,058	23,099	47,712	58,399
LSP	20,170	19,724	17,718	13,793	10,187	6,732	5,996	5,999	7,120	10,409	17,745	19,463
NDM	77,016	74,222	65,961	48,285	33,483	18,942	16,024	16,077	20,178	33,509	65,456	77,863

APPENDIX (IV) CSEPs Reconciliation Data

Source: xoserve presentation to industry CSEP / NexA Meeting on 23rd April 2007.

CSEPs Reconciliation Update - All LMNs both Live and Closed

IGT ID No.	Total LMNs	LMNs Received	LMNs Invoiced	LMNs Outstanding	LMNs Not Received	% of LMNs Cleared
A	2534	697	697	1837	1837	28%
B	515	3	3	512	512	1%
C	79	1	1	78	78	1%
D	1	0	0	1	1	0%
E	0	0	0	0	0	0%
F	2	2	2	0	0	100%
G	258	0	0	258	258	0%
H	36	0	0	25	36	0%
I	125	25	25	100	100	20%
J	0	0	0	0	0	0%
K	20	0	0	20	20	0%
L	0	0	0	0	0	0%
M	0	0	0	0	0	0%
	3570	728	728	2842	2842	20%

APPENDIX (V) Analysis of Outstanding USRVs

Source: USRV Statistics – March 2007 Age Analysis issued by xoserve to industry participants on 27th April 2007.

Reporting Month			
Number of Outstanding Filter Failures			
Sent Month	JAN	FEB	MAR
20/03/2007			6542
20/02/2007		6679	3773
20/01/2007	4670	2613	1631
20/12/2006	3759	2192	1813
20/11/2006	2486	1914	1616
20/10/2006	2091	1541	1386
20/09/2006	1459	1196	1055
20/08/2006	1165	969	813
20/07/2006	1227	1025	868
20/06/2006	844	658	530
20/05/2006	603	482	417
20/04/2006	608	485	405
20/03/2006	648	553	517
20/02/2006	411	345	308
20/01/2006	292	254	242
20/12/2005	364	306	285
20/11/2005	596	502	478
20/10/2005	241	223	215
20/09/2005	360	296	273
20/08/2005	283	245	210
20/07/2005	237	206	198
20/06/2005	186	164	149
20/05/2005	151	140	138
20/04/2005	112	100	97
20/03/2005	101	85	82
20/02/2005	107	105	102
20/01/2005	72	66	64
20/12/2004	66	58	56
20/11/2004	57	53	50
20/10/2004	54	47	46
20/09/2004	26	25	25
20/08/2004	32	29	29
20/07/2004	29	26	26
20/06/2004	30	29	29
20/05/2004	12	10	10
20/04/2004	14	13	13
20/03/2004	7	6	6
20/02/2004	15	13	13
20/01/2004	24	24	24
20/12/2003	13	12	12
20/11/2003	13	11	10
20/10/2003	17	17	17
20/09/2003	19	18	18

20/08/2003	9	7	7
20/07/2003	1	1	1
20/06/2003	8	7	7
20/05/2003	4	4	4
20/04/2003	2	2	2
20/03/2003	3	3	3
20/02/2003	8	8	8
20/01/2003	5	5	5
20/12/2002	6	6	6
20/11/2002	16	15	15
20/10/2002	8	7	7
20/09/2002	1	1	1
20/08/2002	13	13	12
20/07/2002	2	2	2
20/06/2002	13	12	12
20/05/2002	0	0	0
20/12/2001	1	1	1
20/11/2001	1	1	1