

**Review Group Report**  
**Review Proposal Reference Number 0251**  
**Review of the Determination of Daily Calorific Values**  
**Version 0.5**

This Review Group Report is presented for the UNC Modification Panel's consideration. Consensus has been reached by the Review Group that no UNC change is necessary to take forward the identified recommendations.

## 1 Review Proposal

National Grid NTS raised Review Proposal 0251 (available at [www.gasgovernance.co.uk/0251](http://www.gasgovernance.co.uk/0251)). The agreed Terms of Reference for the Review are attached below as Appendix 1.

Most gas meters measure volume rather than energy. To ensure that gas consumers are not at material risk of being charged for energy not supplied, the Gas (Calculation of Thermal Energy) Regulations 1996 (the regulations) prescribe the CV that can be used for billing purposes. The regulations prescribe the Shipper daily CV calculation within each charging zone, with each LDZ representing a charging zone. Daily CV is capped at 1MJ/m<sup>3</sup> above the lowest average CV source entering that charging zone.

At entry points, the energy associated with inputs to the system is measured. Therefore, a mismatch can arise between the measured amount of energy (kWh) delivered to the system on a day and the total amount of energy that is deemed to have been offtaken by gas consumers, this difference being "unbilled" energy. Any such "unbilled" energy is procured by National Grid NTS to make up the shortfall in the daily energy balance and is known as CV Shrinkage.

The impact of the flow weighted CV capping rules is, therefore, that some customers are billed for more energy than they actually consume, but this over-billing is capped. Conversely, the capping means that all other consumers pay for less energy than they actually consume. The net cost of the unbilled energy is spread across all customers and reflected in both the level of transportation charges and in final customer bills.

It was proposed that a Review Group be established to consider the appropriateness of these arrangements going forward. In particular, this was proposed since the topology of supplies to the network is changing, and the increased variety of supplies may give rise to an increased level of costs arising from CV capping. It was therefore suggested by National Grid NTS that a Review Group should consider a number of issues. These issues, together with the Review Group's view as to whether these had been covered during the review process, were:

- review the existing flow weighted average CV and CV shrinkage arrangements;
  - *reviewed at the initial Review Group meetings;*
- consider the issues which impact on the accuracy of the flow weighted average CV methodology when comparing actual energy delivered to the system against that which is billed to gas consumers;
  - *consideration was given to the treatment of decimal points (covering truncation and rounding), offtake metering accuracy, different flow patterns and new supply sources, with the scale of problem looked at under a range of scenarios.*
- develop potential solutions to resolve any issues identified;
  - *the key issue identified was the potential for a small supply of gas with a relatively low CV to have a disproportionate impact on the level of CV shrinkage. Five main options were looked at, as described in the remainder of this Report;*

- if necessary, explore the process for amendment to the Regulations; and
  - *DECC attended a group meeting and provided an explanation of the process for amending the Regulations (recorded in the minutes of the meeting held on 26<sup>th</sup> June 2009);*
- develop relevant amendments to the Regulations and UNC to deliver any proposed changes to the current arrangements.
  - *no amendments to the Regulations or UNC are recommended in this Report.*

## 2 Review Process

In accordance with the Modification Rules, at its meeting on 16 April 2009, the Modification Panel determined that this Review Proposal should be referred to a Review Group for progression. This Review Group Report was subsequently compiled by the Joint Office and approved by Review Group attendees.

The Review Group met on six occasions, and all the associated papers are available at [www.gasgovernance.co.uk/0251](http://www.gasgovernance.co.uk/0251).

## 3 Areas Reviewed

### a) Scale of Issue

The Group initially agreed the scope of analysis which National Grid NTS should carry out to quantify the scale of CV shrinkage and how this might be expected to change in light of developments to the nature of supplies to the NTS. This took account of the nature and volume of imported supplies that could lead to gas with a greater variety of CV characteristics entering the network.

The analysis indicated that an increase in CV shrinkage costs could be anticipated (see table below), but that this remained small relative to total Unaccounted for Gas (3,650 GWh in 2008/9). The Group did not consider that the anticipated scale of change, nor the likelihood of more extreme NTS supply scenarios emerging, was sufficiently material to justify any change to the existing arrangements.

Year	Annual CV Shrinkage (GWh)	Annual Estimated Cost (£k)
2006-07	22.673	417.2
2007-08	-5.254	(77.2)
2008-09	7.733	165.5
2010	20.506	195.9
2011	-15.205	(145.3)
2012	84.514	807.4
2013	105.099	1004.1
2014	26.967	257.6
2015	42.434	405.4

While the impact of changes to supplies from the major ASEPs was considered unlikely to justify change, the Group recognised that there was significant potential for relatively small supplies to be provided to either the NTS or directly to a DN, with biogas being an example. There is potential for the CV of these supplies to be significantly different from the flow weighted average in a charging area, and therefore for relative small supplies to mean the CV cap is triggered. Analysis indicated that the potential increase in NTS CV shrinkage costs of an illustrative biogas entry point in one charging zone could be of the order of £10-£15m pa, giving

the potential for a CV Shrinkage cost of the order of £100m pa if supplies were to be developed in all charging zones. This could have an impact on Shipper Shrinkage which arises from shippers being required to bill consumers based on a pure average of the daily flow weighted average CVs across the billing period. This could also have an impact on Shipper Shrinkage, being the difference between the energy that a Supplier bills their customer and the energy that they are allocated - the Gas Calculation of Thermal Energy Regulations require an end consumers' bill to be calculated based on the arithmetic average of the CV for the period truncated to one decimal place, whilst Shippers are allocated energy based on a daily CV. For April 2009, Shipper shrinkage was estimated at £280,000 for the month. Shipper shrinkage could increase significantly if new gas supplies increased volatility in daily CV values.

The impact from the likely development of small supplies was therefore recognised as being both material and potentially disproportionate, and hence the Group considered options for amending the arrangements with a view to mitigating the transfer of costs between customers.

#### **b) Options for Mitigating Costs**

Under the existing arrangements, CV capping costs arise when the CV of gas at any entry point within a charging zone is more than 1MJ/m<sup>3</sup> below the flow weighted average CV. To reduce the costs, therefore, either action is needed to ensure that the lowest CV gas entering the system is closer to the flow weighted average; or the rules must be changed such that capping does not apply.

##### Option 1 – Do nothing

This is clearly a viable option and provides a benchmark against which change can be assessed.

##### Option 2 – Process Gas to Target CV

Under this option, the permitted CV for gas entering a charging zone would be set at a target range in order to reduce/avoid the impact of the cap being triggered. For the avoidance of doubt, while CV does not feature in the Gas Safety (Management) Regulations (GS(M)R), any such target would need to be consistent with related GS(M)R parameters, and the Group did not consider any options for allowing any non-GS(M)R compliant gas within any network. To achieve the target CV, it was envisaged that processing would be necessary prior to the gas being delivered to the network. This could take the form of nitrogen ballasting for high CV sources or propane enrichment for low CV sources.

To gauge the potential costs of this and subsequent options on a consistent basis, the Group focussed on the example of propane enrichment at a single biogas based entry point. Dave Lander Consulting estimated marginal costs using a modelled example. Assuming that propane enrichment is already in place in order to deliver GS(M)R compliance, such that no additional capital expenditure is required, marginal operating costs could typically be of the order of 2p per m<sup>3</sup>, with the actual cost varying with specific circumstances and requirements.

##### Option 3 – Blend Gas to Target CV

A target CV would also apply under this option. Rather than gas processing being undertaken, gas of different CVs would be blended prior to the FWACV being calculated, such that the target would be achieved subsequent to blending. In principle, therefore, Options 2 and 3 are equivalent – the difference is in the means and cost of achieving the same outcome.

Wales & West Utilities looked at two options for implementing this approach, with the ability to deliver this in practice being dependent on the precise circumstances in any area at any given time, both in terms of sufficient gas being available to blend with and an opportunity being available to install the required infrastructure. The number of locations where this is a realistic option is, therefore, limited unless the producer is willing to operate on an interruptible basis in order to deal with occasions when insufficient gas is available for blending purposes<sup>1</sup>.

The ability to offer blending is also dependent on the extent of take-up with a risk that it could be seen as discriminatory if available to an initial producer(s) but not later market entrants.

Options examined were:

*a) Mix and Measure*

This approach involves blending gas away from the existing system. Hence gas would be taken off the existing network and mixed with the new supply prior to entering the system, at which point the CV would be measured. The cost associated with this option would vary with circumstances but, as an example, connecting a biomethane plant was roughly estimated to cost circa £700,000. This would involve providing two pipelines within which the gas would be blended; two sets of metering (on and off the system); and a pressure reduction installation to reduce pressure to enable injection into the network. The cost of CV measurement equipment is excluded from this estimate.

*b) Inject and Infer*

An alternative would be to allow blending within the existing system. An inferred CV would then be calculated on the presumption that this CV would have been reached through the blending process prior to the gas reaching an end consumer. Additional infrastructure would be needed to support the blending process, with the estimated capital cost for the same illustrative example being roughly estimated at circa £450,000. Additional system operation costs could also be anticipated with this option in order to manage the increased system complexity and potentially to estimate and manage the inferred CV.

#### Option 4 – Redefine Charging Zones

With smaller charging zones, the variation in CV could be smaller, and hence capping would be reduced. For example, if charging zones were defined to cover only the area reached by low CV gas, the impact of capping in the remainder of the existing charging zone would be removed. That is, at present a very small source of gas which only reached a handful of customers would create a subsidy for all other customers in that charging zone, since they would be billed on the basis of a lower CV than they actually enjoyed. Hence with charging zones in which the average CV was less variable, billing would be more accurate and cost reflective for all customers.

Implementing this approach would require both Transporters and Shippers to invest in significant systems enhancements to enable additional charging zones to be recognised and for bills to be generated accordingly. The Transporters, via xoserve, have carried out some analysis as to an initial solution to the FWACV impacts of DN Entry. xoserve identified an initial solution that would allow a defined area (by postcodes) within a charging zone to be removed from the FWACV allocation and have a bespoke declared/calculated CV. This solution would allow for a small number of DN Entry points to be managed within each existing charging zone. If the CV within an area was

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<sup>1</sup> Current industry arrangements do not contemplate interruptible entry and industry changes would be required to facilitate this.

influenced by more than one DN Entry point the proposed solution would become increasingly difficult to manage and hence this is only seen as a potential initial solution. To be clear, this solution would allow individual supply points to have a declared/calculated CV - it would not create smaller charging zones (as defined in the Thermal Energy Regulations). The high level estimated cost of developing this limited initial solution is between £1m - £1.5m with an estimated delivery timescale of 12-18 months.

Shippers indicated that the impact of implementing smaller charging zones would also be considerable for both Shippers and Suppliers. The analogy of the Wet Gas process was considered but rejected as this occurred rarely and was handled as an exception process. By contrast, moving to smaller, flexible charging zones would require a systematised solution.

In some cases a systematised solution would require a significant upgrade of Supplier billing and meter read processing systems whereas in other cases it would require a complete system rebuild. It is difficult to estimate the cost impact on an individual Supplier's system since it is dependent on the state and nature of existing systems. A high level estimate provided by one Supplier would suggest a range of £200,000 to £5m. Assuming an average cost of £2m per supplier and 15 active suppliers, this would indicate a direct cost of £30m for supplier system changes.

It should be noted, however, that there may be an opportunity to move to more localised CV measurement (and therefore smaller localised, charging, zones) with the rollout of systems to support smart and advanced metering systems, plus updates to the Transporters' IT systems (through project Nexus). At this point, older I&C Supplier systems are likely to have been updated to allow processing of higher volumes of data and a smart meter solution could reduce the impact of an increased number of charging zones on domestic suppliers. This, however, should be considered a long-term solution with a long implementation lead time, and would also require the Regulations to be reconsidered.

The Review Group did not, therefore, believe this was a viable option in the immediate future. However, it was accepted that this could be an ideal solution if it were costless to implement, being consistent with non-discrimination and minimising CV shrinkage.

#### Option 5 – Alter FWACV Capping Rules

The capping rules could be amended, or even abandoned. The Group recognised that any steps to reduce the protection afforded to customers that happen to receive low CV gas would be an issue of equity rather than efficiency. It was agreed that a Review Group should not make political judgements regarding what was or was not an acceptable level of cross subsidy and cost transfer between customer groups. Given this, the option of altering the FWACV rules was not quantified and not pursued further. However, the Group did identify that very small flows with, in particular, low CV gas could trigger a disproportionate increase in CV shrinkage costs. It was therefore agreed that there could be merit in considering whether flows below a threshold should be disregarded for CV capping purposes. Ofgem also indicated that all gas quality changes brought on by new connections, including an increased scope for biomethane, would be viewed holistically, with FWACV as one element.

#### **c) Benefits of Mitigating Costs**

While the costs of reducing CV shrinkage are real resource costs that can be quantified, the benefits are largely distributional. CV shrinkage costs are a transfer payment with no real resources involved – some consumers pay less as a result of CV shrinkage, others pay more. Some Group members therefore questioned there was any real benefit in seeking to reduce CV shrinkage. However, others felt that the level of transfers should be managed in order to ensure cost reflectivity and to minimise cross subsidies,

consistent with the GT licence obligations. This would also ensure appropriate cost targeting and accurate billing. If energy cannot be billed, this has to be procured by the shrinkage provider and this is a cost that is allocated between National Grid NTS and NTS Shippers.

Measuring the change in CV shrinkage costs as a result of implementing any of the options identified is an exercise in establishing the level of costs avoided – that is, the benefit in any particular case is not that shrinkage costs are reduced but rather that an increase as a result of a change in the CV mix of gas supplies is avoided (or reduced).

#### **d) Cost Allocation**

Assuming that it were agreed that steps should be taken to ameliorate levels of CV shrinkage, the Group considered how the costs of any measures should be met. It was agreed that, where possible, costs should be targeted to those responsible for creating them, but that there should be no undue discrimination in any approach that is adopted.

Application of the “polluter pays” principle was discussed. This approach implies that if there is a potential or actual change in the range of CVs encountered in a charging zone, and a consequent increase in CV shrinkage costs, the party responsible for that change should bear the change in costs. This would involve either meeting the increased shrinkage costs or funding steps to prevent the increase in costs arising – i.e. adopting whichever of the options outlined above was most economic in the circumstances.

To apply the polluter pays principle would require the party responsible for an increase in CV shrinkage to be identified. In cases where a new entry point became operational, this would provide a prime candidate. However, some Group members argued that it would be wrong to regard the latest entrant as necessarily creating the issue – it could be argued that the issue is in relation to the range of CVs experienced, and that the polluters could be regarded as any that do not supply gas in line with the FWACV for that particular charging zone. Licence Condition D12 specifically requires Transporters not to discriminate unduly when offering terms with respect to new connections, and Ofgem was invited to provide a view as to whether or not it would be unduly discriminatory to require a producer to fund measures designed to ameliorate potential CV shrinkage impacts.

Ofgem provided a paper which indicated that behaviour is not discriminatory provided all in the same position face exactly the same requirements. If particular conditions were imposed on one class of (or a particular) user but not others, that would be discriminatory. Whether or not this was justified would be dependent on the particular circumstance and the onus would be on the Transporter concerned to demonstrate that there were specific, objective reasons that justified the different treatment. However, Transporters did not feel that, in the present circumstances, this provided them with sufficient comfort to necessarily require a new low CV connection to meet more stringent CV conditions than others in order to mitigate any expected increase in CV shrinkage.

The present NTS SO incentive arrangements include an incentive for National Grid NTS to minimise CV shrinkage costs, with the benefits of any reductions being shared with Shippers. This approach could be extended such that an appropriate incentive scheme is in place to facilitate the Transporters undertaking actions to ameliorate potential changes in CV shrinkage where it is economic to do so. This could enable the Transporters, as opposed to producers, to fund options, such as those outlined above, to the extent that doing so created a benefit under the terms of the incentive scheme. The Group recommends that Ofgem consider development of such an incentive scheme to address, in particular, the arrangements implemented at new entry points. This would facilitate producers and Transporters working together to identify the most economic means of avoiding a material change in CV shrinkage costs; and would provide a framework within which the Transporters could assess whether or not to fund the identified measures

given the anticipated change in CV shrinkage costs. While the Group does not have the experience or expertise which Ofgem has in incentive design, it is suggested that the scheme might need to look towards funding incremental capital expenditure as well as operating costs. A potential model for this may be the electricity Balancing Service Incentive Scheme or NTS investment incentives.

An alternative approach considered by the Group was the creation of a model to estimate the impacts on CV shrinkage of a change in gas supplies. This could be used in conjunction with independently established criteria to determine the CV range which any source of supply was required to meet and should consequently be specified in the relevant Network Entry Agreement. It would be for the Transporters to develop this model and for Ofgem to approve both the model and the criteria used to determine the permitted CV range. This would be similar to the concept of an economic test with respect to new network connections, although the issue of who should pay for the measures necessary to achieve the target CV range would still need to be resolved. Any such requirement might, for example, be used to justify the receipt of funding through government schemes to encourage the most environmentally advantageous gas supplies.

#### **e) Other Issues**

Ofgem raised a concern about the mismatch between NTS metering standards at entry and exit. This discrepancy has the potential to introduce systematic bias which leads to shrinkage being overstated. Ofgem suggested that as a significant contributor to shrinkage, the Review Group should address this issue. However, it was accepted that this lay beyond the scope of the Review Proposal as raised, which was directed specifically at CV shrinkage rather than NTS shrinkage in general. As a result, Ofgem presented the issue to the Transmission Workstream for consideration.

Two Group members provided a paper arguing that the existing requirements for measuring CV at small entry points has the potential to impose disproportionate costs. Their view was that a lower standard of equipment would be sufficient for the purpose envisaged and more cost effective. It was agreed that this issue should be passed to the Transporters' CV Liaison Group for further consideration in the first instance, with an open invitation to Shippers to attend should they so wish. The views of this Group would then inform Ofgem's decision whether or not to approve differing specifications for CV measuring equipment in any particular case.

Wales & West Utilities suggested that concerns regarding the potential increase in CV shrinkage might be more effectively addressed if Shippers were given a formal UNC obligation to have regard to CV shrinkage when accepting gas into the system. This could result in Shippers taking steps to ensure that gas they procured for input into DNs in particular had a CV that did not cause CV shrinkage. However, Shippers pointed out that transferring responsibility for CV shrinkage to themselves would be problematic since the associated shrinkage amounts are determined by the CV of the source gas and the measured volumes. Therefore the accuracy of offtake metering is key to accurate assessment of CV shrinkage, but the Group had concluded that metering accuracy was outside the scope of this UNC Review Group. Since the accuracy of offtake metering is within the control of Transporters and not Shippers, it would not be appropriate for Shippers to be given obligations with respect to CV Shrinkage.

In addition, Shippers suggested that any general UNC obligation to mitigate shrinkage would necessitate appropriate incentives being developed in order for this to be effective. It is difficult to foresee how such an incentive mechanism could be devised that would not disadvantage certain Shippers, dependent upon their area of activity both from a market sector and geographical viewpoint. It was also noted by Shippers that the ability to identify which Shippers were causing CV shrinkage would be exceptionally complex

as it would not be clear whether a Shipper procuring low CV gas was causing CV shrinkage as opposed to a Shipper procuring high CV gas.

#### **4. Recommendation**

The Modification Panel is invited to accept this Report.

The Review Group recommends that:

1. No change to the UNC or the Regulations should be pursued at the present time;
2. To inform Ofgem's decision whether or not to approve differing specifications for CV measuring equipment in any particular case, the Transporters CV Liaison Group could be consulted;
3. To economically and efficiently address the potential for disproportionate increases in CV shrinkage as a result of small low CV supplies, consideration should be given to Ofgem/DECC establishing a policy against which Transporters could legitimately set CV requirements for gas entering the network, i.e. to be closer to the FWACV. DECC/Ofgem may also wish to consider the appropriate route for funding any requirement to treat gas to meet these target CV requirements, either through SO incentive schemes or through other measures i.e. support for environmentally advantageous schemes as a form of capturing carbon costs; and
4. Consideration be given in the longer term as to whether the advent of industry developments - the rollout of smarter meters, increased localised CV measurement and Shipper and Transporter IS systems replacement - could in due course support an increase in the number of CV charging zones.



## Appendix 1: Terms of Reference

### Purpose

The Review Group is to investigate the appropriateness of the current methodology for calculating daily billable calorific values and its impact on CV Shrinkage. Where issues are identified the Review Group should explore options and make recommendations to resolve them.

### Background

The calorific value (CV) of natural gas determines the amount of energy transported. CV information is provided daily to Shippers and Suppliers and is used by them to bill gas consumers for the energy they use. The methodology for calculating the daily CV within each charging zone is designed to ensure that gas consumers within a zone are not at material risk of being charged for energy not supplied due to local variations in the CV of the gas entering that zone.

The methodology that is currently used for determining the daily billable CV for each charging zone is enshrined within the Gas (Calculation of Thermal Energy) Regulations 1996 (as amended 1997) (the "Regulations"). In summary, the methodology detailed in paragraph 4(A) of the Regulations says that the daily CV for a charging zone shall be the lowest of:

- The flow weighted average CV calculated across all of the inputs into the charging zone; or
- The average CV measured at any of the individual input points to the charging zone, plus 1MJ/m<sup>3</sup>.

This means that the daily CV used by Shippers and Suppliers for billing gas consumers in each charging zone can be effectively capped at 1MJ/m<sup>3</sup> above the lowest average CV source entering that charging zone, no matter how little the amount (volume) of low CV gas is delivered on that Day. Conversely, at entry the energy associated with all inputs to the system is derived from actual measured CVs at each of the various delivery facilities. Therefore, a mismatch can arise between the total amount of energy (kWh) delivered into the system on a day and the total amount of energy that is deemed to have been offtaken by gas consumers, this difference being "unbilled" energy. Any such "unbilled" energy is procured by National Grid NTS to make up the shortfall in the daily energy balance. This is known as CV Shrinkage and a proportion of the cost of this energy procurement is currently redistributed to NTS shippers through NTS Commodity charges. In some instances, this proportion would be 100%.

Historically, UKCS production has been high and stable, which has meant that CV related shrinkage has been at relatively low levels. However, as GB moves towards a greater diversity of supplies, this will almost certainly mean a greater variance in CV between different sources of gas imported from different countries. Furthermore, the development of biogas and coal bed methane projects in GB is likely to introduce low volume, and potentially lower CV gas into the system which may lead to a greater propensity for CV capping effects under the current regime. Whilst at present such projects are at an early stage of development, a key enabler for them was the implementation of Modification 0154 "Enduring Provisions for LDZ Entry Points" in October 2007, which established an enduring framework for new entry and storage to connect directly to Distribution Networks.

National Grid NTS first drew attention to the potential need for reform in this area in December 2007 and has since been supported by Ofgem and others. Indeed, Ofgem have recently urged National Grid NTS, Distribution Network Operators and Shippers to work together to explore the issues.

### Scope and Deliverables

The Review Group's remit is:

- Consider the current rules for calculating daily billable CVs based on the current gas supply topology;
- Identify future gas network flow scenarios associated with:
  - potential new sources of gas entering the NTS and/or directly entering DNs, including biogas;
  - deliveries from existing sub-terminals if all were to adopt the full range of gas quality parameters as set out in the Gas Safety (Management) Regulations 1996 and in Appendix 5 of National Grid NTS's Ten Year Statement;
- For a range of identified future gas network flow scenarios, forecast levels of unbilled energy based on the current rules for calculating daily billable CVs;
- Analyse the cost impacts of the identified unbilled energy scenarios, including Shipper and Supplier costs, in particular, assessing whether any parties may be unduly disadvantaged;
- If appropriate, develop alternative methodologies for the calculation of daily billable CVs, forecast their cost impact on the various parties and explore the pros and cons of each;
- Consider the appropriateness of current CV measurement processes within the DNs;
- Identify the governance arrangements and process for implementation associated with a change to the Regulations;
- Develop if appropriate relevant modifications to the UNC, identifying how their implementation would facilitate achievement of the Code Relevant Objectives; and
- Identify the impact on processes and procedures associated with the implementation of any alternative methodologies.

The Review Group will provide a report to the UNC Panel by 15 October 2009.

### **Limits**

While the Review Group should focus on changes to the UNC, it should also identify potentially beneficial changes to the Regulations pertaining to the calculation of daily billable CVs. If, during the course of this review, it becomes apparent that other industry arrangements have potential interactions with the outputs from this Review Group, the Review Group may consider the effects that those arrangements may have on this Group's deliberations.

The Review Group will focus on developing proposals for change that efficiently address any issues identified in a proportionate and cost effective manner.

### **Composition of Review Group**

Membership has been sought from a wide range of parties and the following have registered to be Members:

Tim Davis (Chair)	Joint Office
Lorna Dupont (Secretary)	Joint Office
Adam Sims	National Grid NTS
Alan Raper	National Grid Distribution
Brian Durber	EON UK

Chris Wright	Centrica
Dave Lander	Consultant (representing National Grid Distribution)
Dave Tilley	National Grid Distribution
Jeff Chandler	Scottish and Southern Energy
Joanna Ferguson	Northern Gas Networks
John Baldwin	CNG Services
John McNamara	NTS Shrinkage Provider
Ljuban Milicevic	Ofgem
Phil Hobbins	National Grid NTS
Richard Wilson	NTS Shrinkage Provider
Simon Trivella	Wales & West Utilities
Stefan Leedham	EDF Energy
Steve Rose	RWE npower
Steve Rowe	Ofgem
Steve Sherwood	Scotia Gas Networks

### **Timetable**

A total period of 6 months has been allowed to conclude this Review.

Although the frequency of meetings will be subject to review and potential change by the Review Group it is suggested that the frequency of the meetings be once a month.

Meetings will be administered by the Joint Office and conducted in accordance with the Chairman's Guidelines.