



LDZ SHRINKAGE ASSESSMENT

FOR PERIOD: 1st October 2008 to 31st March 2009

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LDZ Shrinkage Assessment for the 6 Months Ending 31st March 2009

1 Executive Summary

The purpose of this document is to present the Wales & West Utilities element of the assessment of LDZ Shrinkage for the period: 1st Oct 2008 to 31st Mar 2009, in accordance with *Uniform Network Code Section N 3.3.3*.

WWU's final LDZ Shrinkage Quantity proposal for the final 6 months of Gas Year 2008/09 was not subject to Condition 7(4) disapproval and as a result, the proposed LDZ Shrinkage Factors were applied in accordance with *Uniform Network Code Section N 3.1.8*.

LDZ Shrinkage Quantities are comprised of three main components:

- Leakage quantities applied at LDZ level.
- Operational Usage with a factor applied at a national level.
- Transporter responsible Theft of Gas with a factor applied at a national level.

The LDZ Shrinkage Quantities proposed for the final 6 months of Gas Year 2008/09 were derived using the methodology and data sources as stated in the proposal document. Table 1 shows the date range for the information used as the basis of the proposed and assessed quantities for the final 6 months of Gas Year 2008/09:

Table 1. Date Range of Data Used for LDZ Shrinkage Proposal and Assessment for period: 1st October 2008 to 31st March 2009.

LDZ Shrinkage Component	Basis of Proposed LDZ Shrinkage Assessment for 6 months ending 31st March 2009	Basis of Assessed LDZ Shrinkage for 6 months ending 31st March 2009
Leakage	Assessment of actual leakage for the financial year 2008/9 divided by 2.	Assessment of actual leakage for the financial year 2008/9 divided by 2.
Operational Usage	Assessment of actual leakage for the financial year 2008/9 divided by 2.	Assessment of actual leakage for the financial year 2008/9 divided by 2.
Theft of Gas	Assessment of actual leakage for the financial year 2008/9 divided by 2.	Assessment of actual leakage for the financial year 2008/9 divided by 2.

Expressed as energy, the assessment of LDZ Shrinkage covering the months of October 2008 through to March 2009 is 21.0 GWh lower than the amount of Shrinkage purchased for the same period.

2 LDZ Shrinkage Quantity Assessment

This section of the report provides a detailed breakdown of the assessment for the period 1 October 2008 to 31 March 2009.

2.1 Leakage

For the Gas Year 2008/09, LDZ specific Shrinkage Quantities were based on an assessment of leakage for the calendar year 2007 derived from the Network Leakage Reduction Monitoring Model (NLRMM). The NLRMM utilises the following information:

- Leakage rates
- Asset profile information for both mains/service from, WWU's asset management system, Systems, Applications and Products in Data Processing (SAP)
- An assessment of network pressures within LDZs

2.1.1 Assessment of Leakage: 1st October 2008 to 31st March 2009

In accordance with the agreement established at the LDZ Shrinkage Forum held 8 June 2004, the leakage applicable for the period: 1st October 2008 to 31st March 2009 has been calculated such that it reflects changes to Average System Pressure. All other inputs are those that were used for the 2007 Leakage Assessment (i.e. those used to derive the Shrinkage Quantities for the final 6 months of the 2008/09 Gas Year). LDZ specific Flow Weighted Average Calorific Values (FWACV) are applied to convert the NLRMM output from a volume to an energy value.

Estimated and assessed leakage quantities for each LDZ are shown in Table 2.

Table 2 Estimated and Assessed Leakage Energy by LDZ:

LDZ	6 Months Ended 31 st March 2009 Assessed Energy (GWh)	6 Months Ended 31 st March 2009 Estimated Energy (GWh)
South West	144	157
Wales North	34	34
Wales South	73	81
Total	251	272

As shown in Table 2, the assessment of leakage has resulted in a decrease in energy of 21GWh.

Analysis of LDZ specific changes were detailed in Wales & West Utilities LDZ Shrinkage Factors Final Estimates Gas Year 2008/09, issued 31 August 2008, which also compared 2007 leakage data with 2006 leakage data.

2.2 Operational Usage

Operational Usage, also known as Own Use Gas (OUG), is gas used within the LDZ for such purposes as pre-heater fuel to counter the impact of the Joule-Thompson effect and for other minor operational purposes, e.g. venting.

Pre-heater fuel is the largest component of OUG and it is determined using the output from a model that utilises the thermodynamic principles of the Joule-Thompson effect and LDZ throughput, calorific value, pressure and temperature data. The Operational Usage has been assessed for the Gas Year 2008/09 using 0.0113% of LDZ throughput which is equivalent to 8.0 GWh.

2.3 Theft of Gas

Uniform Network Code Section N1.4.2 states that LDZ Shrinkage shall include gas lost through theft either upstream of the customer control valve or downstream where there is no shipper serving the gas consumer.

Unidentified theft was estimated to be 0.2% of throughput for 2008/2009, of which 10% was deemed to be the Transporter's responsibility. The best information available to the gas Transporters is supportive of the assumed level and proportions of Theft of Gas and as such, Wales and West Utilities do not believe that it should revise its assessment of theft of gas from 0.02% of LDZ throughput.

2.4 Reasons for Differences

WWU have introduced improved control and monitoring processes for the profile electronic controls and, combined with proactive replacement of obsolete profile equipment in the South West, this has led to a further reduction in average system pressures and hence leakage.

WWU have made a considerable investment in the South Wales closed loop system, including software and hardware upgrades. This has led to a more stable and controlled system which has brought average pressures down. Proactive replacement of obsolete profile equipment has also had an impact on the South Wales profile controlled pressures.

In North Wales the slight reduction in Shrinkage has been due to the ability to set some of the fixed pressure networks at reduced pressures in accordance with a milder winter.

WWU have commenced a strategic 5 year AGI CAPEX program (2008/09 – 2012/13) and improvements in average systems pressures have already become evident.