LDZ SHRINKAGE ASSESSMENT

FOR GAS YEAR 2006/07

National Grid

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Version 1.0

CONTENTS

LDZ Shrinkage Assessment for the Gas Year 2006/07

1 Executive Summary

The purpose of this document is to present an assessment of LDZ Shrinkage for the Gas Year 2006/07, in accordance with *Uniform Network Code Section N 3.3.3*.

National Grid's final LDZ Shrinkage Factor proposal for the Gas Year 2006/07, issued 1 September 2006, proposed individual LDZ Shrinkage Factors equating to a national factor of 0.62% of LDZ throughput. The final proposal for the Gas Year 2006/07 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 Factors are comprised of three main components:

- Leakage with factors applied at LDZ level.
- Operational Usage with a factor applied at a national level.
- National Grid responsible Theft of Gas with a factor applied at a national level.

The LDZ Shrinkage Factors proposed for the Gas Year 2006/07 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 factors for the Gas Year 2006/07:

Table 1. Date Range of Data Used for LDZ Shrinkage Factor Proposal and Assessment 2006/07

LDZ Shrinkage Component	Basis of Proposed LDZ Shrinkage Factor 2006/07	Basis of Assessed LDZ Shrinkage Factor 2006/07
Leakage	Assessment of actual leakage for the calendar year 2005.	Assessment of leakage for the calendar year 2006[1].
Operational Usage	Results of the Advantica OUG Model	Results of the Advantica OUG Model
Theft of Gas	Assessment for the calendar year 2005.	Assessment for the year 2006/07.

The assessment of LDZ Shrinkage for the Gas Year 2006/07 detailed within this document provides, where applicable, reasons for significant variance between the estimated and the assessed LDZ Shrinkage Factors for the period.

Expressed as energy, the assessment of LDZ Shrinkage for 2006/07 is approximately 6 GWh higher than the amount of Shrinkage purchased for the Gas Year 2006/2007.

The reason for this is an increase in leakage, from 1766.9 GWh to 1772.9 GWh, associated with the difference between assumed and actual operating pressures.

[1] For the purposes of the Assessment process, the assessment of Leakage has been restricted to changes in Average System Pressure, in accordance with the agreement at the LDZ Shrinkage Forum held 8 June 2004 at Buckingham Gate.

2 LDZ Shrinkage Factor Assessment

This section of the report provides a detailed breakdown of the assessment for individual LDZs operated by National Grid for the Gas Year 2006/07.

2.1 Leakage

For the Gas Year 2006/07, LDZ specific Shrinkage Factors were proposed based on an assessment of leakage for the formula year 2004/05, which led to a procurement of 1,767 GWh for leakage in 2006/07.

2.1.1 Assessment of 2006/07 Leakage

The assessment of leakage for the Gas Year 2006/07 applied the same methodology as used to derive National Grid's original procurement of leakage (all categories) of 1,767 GWh for that year. In accordance with the agreement established at the LDZ Shrinkage Forum held 8 June 2004, the leakage applicable to the 2006/07 Gas Year Assessment has been calculated such that it reflects changes to Average System Pressure only with all other inputs being those used for the 2004 Leakage Assessment, i.e. that used to derive the 2006/07 Gas Year applied Shrinkage Factors.

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

Table 2. Estimated and Assessed Leakage Energy by LDZ

LDZ	2006/07 Estimated Leakage (GWh)	2006/07 Assessed Leakage (GWh)
EA	250.4	251.7
EM	337.8	335.4
NT	337.9	336.4
NW	479.1	481.1
WM	361.7	368.3
National Grid	**1766.9**	**1772.9**

As shown in Table 2, the assessment of leakage has resulted in an increase in energy of approximately 6 GWh.

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 has always been determined using the output from a model that utilises the thermodynamic principles of the Joule-Thompson effect and gas volume, calorific value, pressure and temperature data.

For the purposes of assessment in respect of the 2006/07 Gas Year, no better information or calculation for actual OUG was available, therefore the proposed factor of 0.012% of throughput was used.

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"*.

In respect of the 2006/07 Gas Year, a National Factor of 0.02% of throughput, equating to a deemed Transporter responsibility of 6.67% of assumed theft, was applied.

Confirmed theft incidents reported to National Grid's Theft of Gas team for 2006/07 are shown in Table 3.

Table 3. Confirmed Theft of Gas Incidents Reported to National Grid for 2006/07

	2006/07 Cases	
Responsibility	**No**	**%**
Shipper	725	94.5%
National Grid	42	5.4%

The statistics of confirmed Theft of Gas incidents reported to National Grid, above, suggest that the 6.67% National Grid proportion is still an overestimate. However, issues exist around the information available for the assessment of Theft of Gas, and National Grid is continuing to work with the shipping community with regard to participation in the Theft of Gas process, resolving outstanding cases and to obtain data on the energy quantities for each theft case.

The assessment of the 2006/07 Gas Year applied the 0.02% Theft of Gas factor.

2.4 LDZ Specific Shrinkage Factors

National Grid initially proposed LDZ specific Shrinkage Factors for the Gas Year 2006/07 in July 2006, with the same factors again being included within the final proposal. National Grid's proposal was not subject to Ofgem disapproval under Licence Condition 7 (4), with the proposed LDZ specific Shrinkage Factors being applied with effect from the 1 October 2006. The proposed (applied) LDZ Shrinkage Factors are shown in Table 4, along with the Assessed LDZ specific Shrinkage Factors for 2006/07 produced in the method detailed within this document.

Table 4. LDZ Specific Shrinkage Factors

LDZ	Applied Factors 2006/07	Assessed Shrinkage Factors 2006/07	Difference Between Assessed & Applied Factors
Eastern	0.59%	0.5930%	0.0030%
East Midlands	0.52%	0.5166%	-0.0034%
North Thames	0.62%	0.6174%	-0.0026%
North West	0.66%	0.6626%	0.0026%
West Midlands	0.73%	0.7426%	0.0126%
Weighted Average	0.62%	0.6234%	0.0034%

Note: i) Shrinkage Factors are expressed as a percentage of national LDZ throughputs and should be considered in context with the actual throughput number used to derive them.

2.4.1 Reasons for Differences

The difference between National Grid's estimated and assessed LDZ Shrinkage Factors is the 6 GWh increase in leakage associated with differences between assumed and actual operating pressures.