# Final LDZ Shrinkage Factors Proposal for Gas Year 2007/08

**National Grid**
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# Final LDZ Shrinkage Factors Proposal for Gas Year 2007/08

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# Final LDZ Shrinkage Factors Proposal for Gas Year 2007/08

## 1 Purpose of Proposal

The purpose of this paper is to present our final proposed LDZ Shrinkage Factors for the Gas Year 2007/08 as required under *Uniform Network Code Section N 3.1.7*.

As there have been no representations from the shipping community, we see no reason to fundamentally change from our Initial Proposals. However, an error identified in the medium pressure calculation has been corrected for these proposals, the impact of which has been included within this document.

## 2 Summary of Proposal

We propose to apply the Shrinkage Factors outlined in the table below for the Gas Year 2007/08 effective from 06:00 hrs on 1 October 2007.

LDZ Specific Shrinkage Factors:

| LDZ | Initial Proposal Shrinkage Factor | Final Proposal Shrinkage Factor[1] | Final Proposal Shrinkage Factor to be applied in GEMINI |
|---|---|---|---|
| Eastern | 0.625% | 0.616% | **0.62%** |
| East Midlands | 0.511% | 0.510% | **0.51%** |
| North Thames | 0.550% | 0.546% | **0.55%** |
| North West | 0.631% | 0.627% | **0.63%** |
| West Midlands | 0.731% | 0.727% | **0.73%** |
| Flow Weighted Average[2] | 0.604% | 0.600% | |

## 3 Basis of Proposal

The proposed LDZ Shrinkage Factors for Gas Year 2007/08 are based on the data and methodologies outlined within our '*Initial Proposals in respect of the LDZ Shrinkage Factors for Gas Year 2007/08*' issued on 1 July 2007.

The Shrinkage Factors proposed within this document are derived using LDZ specific factors for leakage and universal factors for operational usage and theft. A brief description of each of these elements has been outlined below.

### 3.1 Leakage

Leakage from the low and medium pressure systems accounts for the majority of overall leakage within an LDZ. The leakage estimate has been derived from information obtained from the 2002/03 National Leakage Test programme combined with measured Monoethylene Glycol saturation levels, annual average system pressures and mains and services population data.

In addition, we have taken into account the leakage and operational venting from Above Ground Installations (AGIs). The magnitudes of these losses have been determined from the 2003 leakage survey of these sites.

Leakage, in terms of cubic metres of gas, is converted into energy by use of flow-weighted average CVs (measured in $MJ/m^3$) that are detailed within the Initial Proposals.

[1] Shrinkage Factor is expressed as a percentage of anticipated annual LDZ consumption. The shrinkage factors shown are displayed to three decimal places (as a percentage) to indicate the impact of the medium pressure correction. However, due to system constraints, the shrinkage factors are applied to two decimal places (as a percentage) in Gemini.

[2] Provided for information only

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An error has been identified in the spreadsheet model for medium pressure leakage; the model incorrectly referenced the leakage rates. This has been corrected for these proposals and the details are given below:

| LDZ | Medium Pressure Leakage (GWh) | |
|---|---|---|
| | Initial Proposal | Final Proposal |
| Eastern | 22 | 17 |
| East Midlands | 45 | 44 |
| North Thames | 29 | 26 |
| North West | 25 | 20 |
| West Midlands | 28 | 25 |
| **National Grid** | **148** | **133** |

This represents a 10% reduction in Medium Pressure leakage or a 0.7% reduction in overall Shrinkage.

### 3.2 Operational Usage (also known as Own Use Gas)

We intend to apply the more accurate Own Use Gas model that has been developed by Advantica in respect of these proposals.

This model produces a flow weighted average OUG factor of 0.012%, which we propose to apply.

The reason why the Advantica model is better than the model that has been used previously is that it makes extensive use of real flow, pressure and temperature data whereas the older model makes much more use of assumed values.

In spite of the Advantica model producing Own Use Gas factors that are lower than the model previously applied, there is evidence that it still overstates the amount of Own Use Gas.

The reason for this is that a heater efficiency of 50% is assumed in the model whereas there is evidence that the true level of efficiency is greater than this; therefore, the amount of gas actually used is correspondingly less.

Our waterbath heaters have been measured to have efficiencies in the range 53-69%, and 17% of our heating plant (by capacity) is made up of modular boilers, which are more efficient than waterbath heaters.

The Own Use Gas Factors calculated by the Advantica model in respect of our LDZs have been given in our Initial Proposals.

### 3.3 Theft of Gas

The *Uniform Network Code Section N 1.3.2* states that LDZ Shrinkage shall include, and National Grid is therefore responsible for, gas illegally taken upstream of the customer control valve and downstream where there is no shipper contract with the end-user.

Historically, unidentified theft has been assumed to be 0.3% of LDZ Consumption.

The responsibility for Theft of Gas is split between Gas Transporters and Shippers.

The statistics relating to National Grid networks for confirmed Theft of Gas for 2006 are detailed in the table below.

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| | 2006 | |
|---|---|---|
| | **Total** | **Transporter Responsible** |
| **Reported incidents of Theft** | 725 | 42 |

The statistics for 2006 indicate that, of the cases of confirmed theft made known to National Grid, 5.4% was identified as being the responsibility of the Transporter.

However, we do not propose at this time to recommend a change to last year's agreement; consequently, we believe that it is appropriate for National Grid to assume responsibility for Theft of Gas equal to 0.02% of LDZ Consumption.

### 3.4 Summary of proposed Shrinkage Factors

Our proposed Shrinkage Factors are shown in the table below.

| LDZ | Leakage Factor | OUG Factor | ToG Factor | Overall Shrinkage Factor |
|---|---|---|---|---|
| **Eastern** | 0.584% | 0.012% | 0.02% | **0.616%** |
| **East Midlands** | 0.478% | 0.012% | 0.02% | **0.510%** |
| **North Thames** | 0.514% | 0.012% | 0.02% | **0.546%** |
| **North West** | 0.595% | 0.012% | 0.02% | **0.627%** |
| **West Midlands** | 0.695% | 0.012% | 0.02% | **0.727%** |

## 4 National Grid's Opinion

We believe that it is appropriate to implement the proposed Shrinkage Factors in respect of LDZ Shrinkage for the period from 1 October 2007 to 30 September 2008.

The LDZ Shrinkage Factors have been determined by utilising the best information and data available and by application of robust methodologies, which are consistent with those used in previous proposals.

## 5 Extent to which the Proposal would better facilitate the relevant objectives

The proposal provides National Grid's best forecast of the level of LDZ Shrinkage for the Gas Year 2007/08. The proposal is based on robust methodologies and the best information available to National Grid.

This proposal is intended to further the efficient and economic operation of the system through more appropriate cost targeting.

## 6 The implications for National Grid of implementing the Proposal

Including:

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

National Grid is unaware of any such implications that would result from implementing this proposal.

**b) development, capital cost and operating cost implications:**

National Grid is proposing a change to the LDZ Shrinkage Factors that will correspond to a small decrease in operating costs.

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**c) extent to which it is appropriate for National Grid to recover the costs, and proposal for the most appropriate method for National Grid to recover the costs:**

The proposed change in LDZ Shrinkage Factors would lead to a slight decrease in costs for National Grid.

Recovery of costs for shrinkage gas is part of National Grid's operating costs as agreed for the Price Control Period 2002 to 2007.

**d) analysis of the consequences (if any) this proposal would have on price regulation:**

No such consequences are envisaged should this proposal be implemented.

## 7 The implications of implementing this Proposal for Users

This proposal improves the equitability and accuracy of cost targeting for Users.

## 8 Analysis of any advantages or disadvantages of implementation of the Proposal

Advantages: More reflective of the actual transmission and distribution system usage and losses with improved cost targeting.

Disadvantages: National Grid is not aware of any disadvantages.

## 9 User Representations

Users have had the opportunity to comment upon these proposals through Shrinkage Forum meetings and following publication of our Initial Proposals in writing. We have received no representations from any Shippers in relation to our 2007/08 proposals.

## 10 Programme of works required as a consequence of implementing the Proposal

The only required modification is to the LDZ Shrinkage Factors entered into Gemini.

## 11 Proposed implementation timetable (including timetable for any necessary information systems changes)

Under *Uniform Network Code Section N 3.1.8*, Users have until the 15 September 2007 to request that Ofgem issue a Condition 7 (4) disapproval of this proposal.

If the disapproval is not given, the revised LDZ Shrinkage Factors detailed in this proposal will be implemented at the start of the Gas Day on 1 October 2007.

## 12 Recommendation concerning the implementation of the Proposal

We recommend that the proposed LDZ Shrinkage Factors be implemented with effect from 06:00 hrs on 1 October 2007.

## 13 National Grid's Proposal

This report contains our proposal for the LDZ Shrinkage Factors for the Gas Year 2007/08. In summary, we propose that the LDZ Shrinkage Factors should be set at the levels indicated in the table on page 2 of these proposals.

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