

# SGN

## LDZ Shrinkage

## Assessment and Adjustment

For 1 April 2023 - 31 March 2024

July 2024



# SGN

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# LDZ Shrinkage Assessment and Adjustment for the Period 1 April 2023 – 31 March 2024

## 1 Executive Summary

The purpose of this document is to present an assessment of LDZ Shrinkage for the period 1 April 2023 to 31 March 2024, in accordance with Uniform Network Code Section N 3.3.3, in addition to providing notification of the leakage and shrinkage volumes to be used for incentive purposes as required by Special Condition 4.4.10 of the Gas Transporter License.

In accordance with Uniform Network Code Section N3.3.3 the following information provides an assessment of shrinkage for Scotland, Thurso, Wick, Campbeltown, Oban, Stranraer, South, and South East LDZs. SGNs Final LDZ Shrinkage Proposals for the Formula Year 2023/24 were not subject to Standard Special Condition A11 (18) disapproval and as a result, the proposed LDZ Shrinkage Quantities were applied in accordance with Uniform Network Code Section N 3.1.8.

LDZ Shrinkage Quantities are comprised of three main components:

- Leakage with individual quantities being applied at LDZ level;
- Operational Usage with a single factor being applied across all LDZs; and
- Transporter responsible Theft of Gas with a single factor being applied across all LDZs

The assessment of LDZ Shrinkage for the Formula Year 2023/24 detailed within this document provides, where applicable, reasons for significant variance between the estimated and the assessed LDZ Shrinkage Quantities for the period.

For the 2023/24 shrinkage assessment, SGN has applied V1.4, which has been approved for use. The assessment for the purposes of the 2023/24 shrinkage adjustment has resulted in annual shrinkage for 2023/24 of 581.5 GWh, which is 5.7 GWh lower than estimated.

The Leakage Volume (LVt) and Actual Shrinkage Volume (ASVt) to be used for reputational incentive (ODI-R) purposes (RRP Tab 4.07) for 2023/24 are 541.7 GWh (LVt) and 580.8 GWh (ASVt). The values relating to each specific LDZ can be found in Table 1. The values used for reputational incentive purposes differ from those used to calculate the Shrinkage Adjustment for UNC purposes because they are calculated using the same calorific value assumptions from RIIO-GD1, which have been utilised to calculate RIIO-GD2 forecasts, thus avoiding potential windfall gains or losses arising from variations in outturn calorific value.

## 2 LDZ Shrinkage Quantity Assessment

### 2.1 Leakage

LDZ specific Shrinkage Quantities were proposed based on an assessment of leakage for the formula year 2023/24. SGN applied V1.4 of the Leakage Model to carry out the assessment of leakage for the formula Year 2023/24. No further amendments have been made to the methodologies applied within the leakage model.

**Table 1: Estimated and Assessed Energy by LDZ**

LDZ	Baseline CV			Actual CV		
	2023/24 Assessed Shrinkage - ASVt (GWh)	2023/24 Assessed Leakage - LVt (GWh)	2023/24 Estimated Leakage (GWh)	2023/24 Estimated Leakage (kWh/Day)	2023/24 Assessed Leakage (GWh)	2023/24 Assessed Leakage (kWh/Day)
South	176.0	165.8	166.8	455,666	167.0	456,273
South East	246.7	232.0	231.7	633,103	231.8	633,352
Scotland	157.0	142.9	144.2	393,952	142.6	389,635
Campbeltown	0.1	0.1	0.1	361	0.1	351
Oban	0.3	0.3	0.3	873	0.3	848
Stranraer	0.3	0.2	0.2	531	0.2	657
Thurso	0.1	0.1	0.1	357	0.1	346
Wick	0.2	0.1	0.1	405	0.1	393
<b>SGN Total</b>	<b>580.8</b>	<b>541.7</b>	<b>543.6</b>	<b>1,485,247</b>	<b>542.4</b>	<b>1,481,855</b>

Estimated and assessed leakage quantities for each LDZ are shown in Table 1;

As shown in Table 1 above, the assessment of leakage has resulted in a decrease in energy of 1.2 GWh.

## 2.2 Operational Usage

Operational Usage is gas, also known as Own Use Gas (OUG), used within the LDZ for such purposes as pre-heater fuel to counter the impact of the Joule-Thomson 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-Thomson effect and LDZ throughput, calorific value, pressure and temperature data. The OUG factor applied for 2023/24 is 0.0113% which was determined from Advantica's 2006 review of their OUG model.

**Table 2: Assessment of Own Use Gas**

LDZ	Consumption 2023/24 (GWh)	Applied OUG Factor 2023/24	Daily OUG Quantity (kWh)
South	32,580	0.0113%	10,059
South East	46,806		14,451
Scotland	45,249		13,970
Campbeltown	29		9
Oban	26		8
Stranraer	143		44
Thurso	38		12
Wick	36		11
<b>SGN Total</b>	<b>124,907</b>		<b>38,564</b>

The assessment of OUG has resulted in a decrease in energy of 1.6 GWh from the 2023/24 Final Proposal position. This is due to a decrease in consumption from the Final Proposal forecast view.

## 2.3 Theft of Gas

Uniform Network Code Section N1.3.2 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 0.0200% of throughput for 2023/24.

**Table 3: Assessment of Theft of Gas**

LDZ	Consumption 2023/24 (GWh)	Applied ToG Factor 2023/24	Daily ToG Quantity (kWh)
South	32,580	0.0200%	17,803
South East	46,806		25,577
Scotland	45,249		24,726
Campbeltown	29		16
Oban	26		14
Stranraer	143		78
Thurso	38		21
Wick	36		20
<b>SGN Total</b>	<b>124,907</b>		

The assessment of TOG has resulted in a decrease in energy of 2.8 GWh for the 2023/24 Final Proposal position. This is due to a decrease in consumption from the Final Proposal forecast view.

The quantification of the level of theft and proportion attributable to Transporters is under review – both in the Shrinkage Gas Forum and Theft of Gas Forum.

## 2.4 LDZ Specific Shrinkage Quantities

SGN made their final LDZ specific Shrinkage Quantities proposal for the Formula Year 2023/24 in February 2023. SGN's proposal was not subject to Ofgem disapproval under Licence Condition A11 (18) disapproval, with the proposed LDZ specific Shrinkage Quantities being applied with effect from the 1 April 2023. The proposed/applied LDZ Shrinkage Quantities are shown in Table 4 below, along with the assessed LDZ specific Shrinkage Quantities for 2023/24 produced in the method detailed within this document.

**Table 4: LDZ Specific Shrinkage Quantities (kWh/day)**

LDZ	Leakage	OUG	ToG	Assessed Shrinkage Quantities 2023/24	Applied Shrinkage Quantities 2023/24	Difference Between Assessed & Applied Quantities (kWh/day)
South	456,273	10,059	17,803	484,135	490,705	-6,571
South East	633,352	14,451	25,577	673,380	677,669	-4,289
Scotland	389,635	13,970	24,726	428,332	433,089	-4,757
Campbeltown	351	9	16	376	386	-11
Oban	848	8	14	871	894	-23
Stranraer	657	44	78	779	653	127
Thurso	346	12	21	379	390	-11
Wick	393	11	20	424	436	-12
<b>SGN Total</b>	<b>1,481,855</b>	<b>38,564</b>	<b>68,255</b>	<b>1,588,675</b>	<b>1,604,221</b>	<b>-15,546</b>

The difference between SGN's estimated and assessed LDZ Shrinkage Quantities is 15,546 KWh per day, as shown in Table 4.



### 3 LDZ Shrinkage Adjustment

#### 3.1 Introduction

This document advises Shippers of the Shrinkage Adjustment for SGN operated LDZs for the period 1 April 2023 to 31 March 2024, as referred to in the *Uniform Network Code* Section N 3.4.1. The Shrinkage Adjustments have been calculated in accordance with the LDZ Shrinkage Adjustments Methodology Version 3.0.

#### 3.2 LDZ Shrinkage Reconciliation Calculations

The LDZ Shrinkage Reconciliation Quantity (SLRQ) is calculated as the difference between the Assessed and Procured LDZ Shrinkage Quantities. This reconciliation quantity is the amount that SGN has over or under procured.

Therefore, for each LDZ;

$$\begin{array}{rcccl}
 \text{LDZ Shrinkage} & & & & \\
 \text{Reconciliation Quantity} & = & \text{Assessed LDZ} & - & \text{Procured LDZ} \\
 \text{(SLRQ)} & & \text{Shrinkage Quantity} & & \text{Shrinkage} \\
 & & \text{(SLAQ)} & & \text{Quantity (SLPQ)}
 \end{array}$$

Table 5 below shows the LDZ Reconciliation Quantities for the Shrinkage Adjustment for the period 1 April 2023 to 31 March 2024.

LDZ	LDZ Shrinkage Reconciliation Quantity (kWh/day)
South	-6,571
South East	-4,289
Scotland	-4,757
Campbeltown	-11
Oban	-23
Stranraer	127
Thurso	-11
Wick	-12
SGN Total	-15,546

### 3.3 Financial Adjustment

The Financial Adjustment (FA) due to SGN for Energy (cost of the gas) is calculated as shown below:

$$FA(\pounds) = \sum_{1/4/23}^{31/3/24} SLRQ(kWh) \times SAP(p/kWh)/100$$

Where:

FA (£) = Financial Adjustment

SLRQ (kWh) = LDZ Shrinkage Reconciliation Quantity

SAP = Daily System Average Price for the period 1 April 2023 to 31 March 2024

The allocation of any debit or credit to Shippers resulting from the Adjustment process is achieved by calculating the energy adjustment daily, multiplying this by the daily system average price, summing this by LDZ by month and apportioning this by the relevant Shipper affected portfolio in each LDZ for each month.

**Table 6, below, shows the financial adjustment by LDZ for the period 1 April 2023 to 31 March 2024, calculated daily in line with the methodology indicated above.**

LDZ	LDZ Shrinkage Reconciliation Quantity (kWh/day)	Adjustment Value due to Changes to Shrinkage Quantities
South	-6,570.57	-£69,231.00
South East	-4,289	-£45,189.15
Scotland	-4,757	-£50,121.85
Campbeltown	-11	-£111.15
Oban	-23	-£244.57
Stranraer	127	£1,335.88
Thurso	-11	-£111.37
Wick	-12	-£125.27
<b>SGN Total</b>	<b>-15,546</b>	<b>-£163,798.49</b>

The overall financial value for the Energy Adjustment of negative £163,798.49 is therefore identified as a credit to SGN and a debit to Shippers.