



SHRINKAGE BRIEFING PACK

JOINT GAS DISTRIBUTION NETWORK SUBMISSION

HIGH LEVEL ILLUSTRATION OF THE PROCESSES AND ASSURANCES UNDERTAKEN TO FACILITATE THE ACCURATE CALCULATION OF SHRINKAGE

Joint Gas Distribution Network Submission

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1 Methodology Statement

Gas Transporters have an obligation under Transportation Principle Document (TPD) section N – Shrinkage of the Uniform Network Code (UNC), Gas Transportation (GT) Licences and RIIO-GD1 to determine the Shrinkage quantity for each year and submit the report to Ofgem on an annual basis as part of the RIIO-GD1 requirements.

The RIIO-GD1 and Gas Transportation (GT) Licences contain controls around the estimation of emissions from Gas Distribution Systems. These controls are in place to support the Shrinkage and the Environmental Emissions Incentives (EEI). The objective of the incentives is to encourage the Distribution Networks (DNs) to reduce shrinkage and leakage respectively.

In addition, Special Condition 1F of the GT Licences places a number of obligations on Gas Distribution Network Operators (DNOs).

For the above reasons, Shrinkage and Leakage Model (SLM) was designed to facilitate the accurate calculation and reporting of gas Shrinkage and Leakage for each GDN operated by a Licensee. Any changes to this model can only be made following consultation with other Distribution Networks (DNs), Shippers, any other interested parties, and must be approved by Ofgem.

Shrinkage gas is gas lost from the Network as a result of Leakage, Own Use Gas (OUG) and Theft of Gas (TOG):-

1.1 Leakage

Leakage is a non-combusted gas, which has escaped from the Distribution System and is made up of:-

- Leakage from Low Pressure (LP) Systems; Mains and Services
- Leakage from Medium Pressure (MP) Systems; Mains
- Leakage from Above Ground Installations (AGI); National Transmission System (NTS) Offtakes, Local Transmission System (LTS) Pressure Reduction Stations (PRSs), Holder Station, District Governors and Service Governors
- Leakage as a result of Interference Damage; above and below 500kg of gas released for Mains and Services

1.2 Own Use Gas (OUG)

OUG is a combusted gas used by Gas Transporters in operating and maintaining the Distribution System (also known as Operational Usage). Under the current Uniform Network Code (UNC) Shrinkage regime, OUG is treated as a consolidated quantity which is estimated by applying a fixed OUG factor 0.0113% to the annual gas throughput.

1.3 Theft of Gas (TOG)

TOG is a combusted gas that is stolen upstream of the Emergency Control Valve (ECV) and is a small proportion of overall Theft. Under the current regime, TOG is treated as a consolidated quantity which is estimate by applying a fixed TOG factor 0.02% to the annual gas throughput.

2 The Reporting Models

In order to populate the data for the return, it is required that the Leakage Model, Shrinkage Model and Scotland Independent Undertakings (SIUs) Model must first be established.

Note:

- Leakage Model contains the information related to all GB LDZs (with the exception of the SIUs).
- Shrinkage Model contains the information related to all GB LDZs (with the exception of the SIUs) and is identical to the Leakage Model with additional worksheet 'Shrinkage'.
- Scotland Independent Undertakings (SIUs) Leakage Model contains the information related to SIU LDZs i.e. LC (Campbeltown), LO (Oban), LT (Thurso), LW (Wick) and LS (Stranraer).
- Scotland Independent Undertakings (SIUs) Shrinkage Model contains the information related to SIU LDZs i.e. LC (Campbeltown), LO (Oban), LT (Thurso), LW (Wick) and LS (Stranraer) and is identical to the SIUs Leakage Model with additional worksheet 'Shrinkage'.

3 Data and Control Framework

Between April and May of each year, large volumes of data are obtained from the wider business which is used for completing these models. This annual process ensures that ongoing change is captured in each year's return. Requested data includes:-

1. Average District Governors Pressure data and the MEG analysis data which is sent via an External Agency.
2. Throughput data, cost of gas (p/kWh), Prior Year cost adjustment and Shrinkage cost.
3. District and Service Governors data.
4. NTS Offtakes, LTS PRS and Holder Data.
5. Interference Damage >500kg data.
6. Interference Damage <500kg data for both Mains & Services
7. Services Replacement and Transfers data.
8. Low Pressure and Medium Pressure Mains Asset length data.
9. Customer Numbers data
10. Actual Calorific Value data for each day for the reporting year.

All Asset data is routinely captured in the GDNs Asset Repository, monitored and reported on a monthly basis. The raw data is obtained by running SQL queries and then exporting the data into an Excel spreadsheet. The data can then be 'pivoted' to match the reporting requirements shown on Shrinkage, leakage and SIU Models.

The statistical information relating to the asset data is reported annually as part of the Ofgem RRP.

As well as processing large volumes of data, GDNs adhere to rigorous Data Assurance Guidelines (DAG) procedures which are underpinned by strict internal governance. The procurement, processing and validation of this large volume of data results in lead times of approximately 4 months (April-July) to produce the final Leakage and Shrinkage figures. These are subject to detailed internal scrutiny and formal approval processes prior to being sent to Ofgem as part of the GDN's Regulatory Reporting Pack (RRP) and is used to compile the annual Assessment and Adjustment report¹ published at the end of July.

The Control frameworks are embedded within the data assurance activities that are undertaken within this process²:-

1. Second Person Review
2. Internal Expert Review
3. Senior Manager Sign-off
4. Director Sign-off.

In addition, final Regulatory submissions, of which the above are a part, are subject to:-

1. Internal Audit
2. External Audit
3. Control check points i.e. carry out checks to validate and verify; the accuracy of data, processes and systems to provide confidence to GDNs, Ofgem and stakeholders that its data submission is reliable.

Although the data used to populate the submission comes from various systems, both internal sources and external sources, control is exercised throughout the process by using the control frameworks as previously mentioned to prevent risks of errors and inaccurate data.

Enhanced version controls are used when preparing the Leakage and Shrinkage Models to ensure that any amendments can be easily captured and documented, especially when the models are works in progress. The completed RRP submission is submitted to Ofgem by the Regulation Department by 31st of July each year.

¹ <https://www.gasgovernance.co.uk/Shrinkage/Assessment-and-Adjustment>

² For the purpose of illustrating the process, generic titles have been used. Actual titles may differ between Gas Distribution Networks.