

Uniform Network Code (UNC) 0843: Establishing the Independent Shrinkage Charge and the Independent Shrinkage Expert (UNC0843) – Appendix: Analysis Report

Decision:	The Authority ¹ has decided to reject this modification ²
Target audience:	UNC Panel, Parties to the UNC and other interested parties
Date of publication:	15 April 2026

1. Appendix – UNC0843 Analysis

UNC Modification 0843 proposed the introduction of an Independent Shrinkage Expert (ISE) to improve the accuracy of Shrinkage reporting and reallocate costs currently attributed to Unidentified Gas (UIG). Our analysis therefore considers the extent to which improved measurement accuracy could reallocate volumes from UIG to shrinkage, and whether any resulting reduction in UIG costs might translate into consumer benefits. Based on the assumptions tested, we find that the proposal would introduce additional cost and complexity without sufficient evidence of commensurate benefits.

This appendix sets out the data sources, assumptions and methodological steps used in Ofgem’s assessment of the potential consumer impact of UNC 0843. Due to data limitations, the figures (ISE implementation cost figures) presented in this analysis are illustrative and are intended to demonstrate the sensitivity of consumer outcomes to different assumptions about shrinkage accuracy and reallocation. They do not represent final or approved cost estimates.

¹ References to the “Authority”, “Ofgem”, “we” and “our” are used interchangeably in this document. The Authority refers to GEMA, the Gas and Electricity Markets Authority. The Office of Gas and Electricity Markets (Ofgem) supports GEMA in its day-to-day work. This decision is made by or on behalf of GEMA.

² This document is notice of the reasons for this decision as required by section 38A of the Gas Act 1986.

2. Data

The analysis is based on the data from the following sources:

2.1 Shrinkage Data

Shrinkage volumes for FY 2024/25 were obtained from the Shrinkage Assessment & Adjustment statements³ for each LDZ.

2.2 UIG Data

For this analysis, Xoserve provided UIG data aggregated to LDZ level, incorporating reconciliation updates published to date in the Reconciliation by Month reports on the UIG webpage. These figures are indicative, as they reflect the position currently recorded for Gas Year 2024/25. The UIG position for the year is still evolving, as UIG represents the item⁴ in daily allocations and is subject to ongoing adjustments through the reconciliation process. Under the arrangements introduced by Modification 0886 and Modification 0896⁵, these reconciliations continue for up to two years after the relevant billing month. Therefore, the UIG figures will change as meter point reconciliations are completed. However, these changes do not affect the conclusions of this analysis, which are based on the relative uplift and reallocation assumptions rather than the precise absolute UIG values. This reflects the intent of the proposal, which focuses on cost reallocation resulting from improved shrinkage accuracy rather than on the absolute level of UIG itself.

Tables summarising baseline shrinkage and UIG estimates (Tables 1 and 3) form the quantitative baseline against which scenario impacts are assessed.

³ [Assessment and Adjustment 2024-25 | Joint Office of Gas Transporters - Gas Governance](#)

⁴ The residual value needed to make sure the daily allocation accounts for all gas entering and leaving the system.

⁵ Mods 0886V and 0896 reduce the reconciliation window to approximately two years. [Line in Sand the Modifications](#)

2.3 Cost Data

Potential implementation cost estimates were sourced from Xoserve, including procurement cost, CDSP implementation cost, and ongoing contract cost. A breakdown of the cost components is provided in Table 4. As stated earlier, these cost inputs are illustrative, and do not represent the final cost of establishing and implementing the Independent Shrinkage Expert (ISE).

3. Methodology

3.1 Calculation of Shrinkage Cost and Uplift

3.1.1 Baseline Shrinkage Cost

Shrinkage costs for FY 2024/25 were estimated using the shrinkage volumes reported in the Shrinkage Assessment and Adjustment statements for each Gas Distribution Network, multiplied by the System Average Price (SAP) for FY 2024/25. See Table 1.

3.1.2 Shrinkage Accuracy Scenarios and Uplift

The shrinkage uplift represents the increase in shrinkage cost that arises when improved accuracy results in a greater proportion of gas being attributed to shrinkage rather than UIG. Improved accuracy therefore increases shrinkage volumes while reducing UIG volumes. In practical terms, the uplift corresponds to the difference between the baseline shrinkage cost and the recalculated shrinkage cost under each accuracy scenario, as shown in Table 2.

Three accuracy improvement scenarios were modelled, reflecting 10%, 20% and 30% increases in shrinkage accuracy. These scenarios represent potential improvements in the attribution of shrinkage rather than changes in the underlying level of physical loss.

The 10–30% range was selected because, according to the proposer, shrinkage volumes have been shown to be currently understated by 30–35% (e.g., Imperial College London leakage study referenced in the Modification Report). These scenarios therefore represent plausible

levels of correction that an Independent Shrinkage Expert could feasibly deliver. Larger improvements such as 50%, 60% or 70% were not considered because they would imply correcting well beyond the proposer's own estimate of current understatement and are not supported by the available evidence.

3.2 Baseline UIG Cost

UIG volumes were valued using the average System Average Price (SAP) for the relevant period, consistent with the approach used for Shrinkage. SAP averaging provides an indicative cost but does not reflect month-by-month price movements. See Table 3 for UIG volumes and cost estimate for GY 2024/25.

3.3 Reallocation Assumptions Scenarios and Residual Uplift

3.3.1 Definition of Reallocation

The analysis considers how different assumptions about reallocation (i.e. the extent to which gas previously recorded as UIG is now treated as shrinkage) affect the proportion of the shrinkage cost uplift that can be attributed to improved explanation of losses, including volumes previously recorded as UIG. In this context, reallocation refers to the share of the uplift that is treated as being explained by reductions in UIG. It is important to note that in reality, only part of the shrinkage uplift will come from such reallocated UIG volumes; the remainder will arise from other categories of gas loss that contribute to shrinkage.

3.4 Scenario Design/Sensitivity Analysis

Five reallocation scenarios were modelled, reflecting different assumptions about the proportion of the reduction in UIG that is reclassified as shrinkage: 0%, 25%, 50%, 75% and 100%. These scenarios are analytical sensitivities used to illustrate how consumer outcomes vary under differing reallocation assumptions. The 100% scenario is included solely as an

upper bound sensitivity, as some level of UIG is expected to persist even with improved modelling.

3.5 Cost Valuation

Because both Shrinkage and UIG are valued using SAP, Shrinkage uplift would fully net off against an equal reduction in UIG when reallocation is 100%⁶. Where reallocation is below 100%, only part of the uplift is offset, and a positive residual remains by construction. In other words, the uplift in shrinkage is not fully offset by a reduction in UIG unless 100% of the uplift reflects reallocated UIG volumes.

3.6 Appraisal Period

We have used a single year appraisal period for this analysis due to data limitations and time constraints. Due to the low impact of this proposal, to remain proportionate, a one-year appraisal period was deemed appropriate.

3.7 Residual Uplift and Consumer Impact

For each accuracy scenario, the reallocated amount is the share of the uplift that is treated as being explained by reductions in UIG. The residual uplift is the portion of the uplift that is not attributed to reductions in UIG. This explains why, at reallocation levels below 100%, the reduction in UIG is smaller than the uplift in shrinkage: the uplift includes volumes that originate from other loss categories, so the associated cost does not offset against UIG. As a result, only part of the uplift offsets, and the remainder represents a net cost to consumers. Thus, unless 100% of the uplift is reallocated, part of the increase in shrinkage cost is not offset by a reduction in UIG and therefore remains a net cost to consumers.

⁶ In this analysis, shrinkage uplift is valued using FY 2024/25 average SAP, while UIG is valued using GY 2024/25 average SAP. In principle, this can leave a very small monetary difference at 100% reallocation, but in this case the difference is de minimis, so the uplift fully nets off the UIG reduction.

3.8 Net Consumer Impact Calculation

Net consumer impact is calculated by combining the residual uplift with the implementation cost of the Independent Shrinkage Expert (ISE): Net Consumer Impact = Residual Uplift + Implementation Cost of the ISE. The ISE implementation cost is approximately £2.4 million for FY 2024/25, on an illustrative basis, as stated earlier.

The implementation cost of the Independent Shrinkage Expert is based on an illustrative estimate provided by Xoserve. The approximate total cost used for the analysis is £2.4 million and includes procurement, CDSP implementation and ongoing contractual costs. These costs are illustrative estimates provided by Xoserve, based on their understanding of the costs associated with sourcing specialised expertise within the gas sector, and does not represent the eventual cost that may arise from procuring and establishing an Independent Shrinkage Expert; further detail is provided in Table 4.

4 Results

Table 1 provides the baseline shrinkage estimate for FY 2024/25, showing the assessed shrinkage quantities for each LDZ and the corresponding shrinkage cost calculated using the FY 2024/25 System Average Price (SAP). The total shrinkage cost for FY 2024/25 is £68.86 million, which forms the baseline shrinkage position used in the analysis.

Table 1: Estimated Shrinkage Costs for FY 2024/25 (by LDZ)

LDZ/Region	Assessed Shrinkage Quantities ⁷(GWh)	Shrinkage Cost⁸ (£m)
East Anglia (EA)	162.3	5.30
East Midlands (EM)	179.3	5.86
North London (LDN)	171.3	5.60
North West (NW)	239	7.81
West Midlands (WM)	221	7.22
Northern (NO)	116.2	3.80
North East (NE)	133.4	4.36
Southern (SO)	207.5	6.78
South East (SE)	236.6	7.73
Scotland (SC)	150.3	4.91
Campeltown	0.18	0.01
Oban	0.32	0.01
Stranraer	0.31	0.01
Thurso	0.14	0.00
Wick	0.15	0.00
Wales North (WN)	39.8	1.30
Wales South (WS)	80.3	2.62
South West (SW)	168.7	5.51
Total	2106.8	68.86

⁷ Assessed Shrinkage Quantities provided in the Shrinkage Assessment and Adjustment statement

⁸ Cost estimated using Average System Price (SAP) for FY 2024/25 – 3.2686 pence/kWh

Table 2 presents the recalculated shrinkage costs under the 10%, 20% and 30% accuracy improvement scenarios, together with the resulting uplift relative to the baseline estimate. The table illustrates how improved attribution leads to progressively higher shrinkage costs as more gas is recognised as shrinkage.

Table 2: Shrinkage Uplift Under Accuracy Improvement Scenarios (FY 2024/25)

Improvement Scenario (%)	Shrinkage Cost (£m)	Shrinkage Uplift⁹ (£m)
10%	75.75	6.89
20%	82.63	13.77
30%	89.52	20.66

Table 3 presents the latest available UIG volumes and associated UIG costs for Gas Year 2024/25 by LDZ, calculated using the GY 2024/25 System Average Price (SAP). The total UIG estimate for the year is £544.66 million, which forms the baseline UIG position used in the analysis.

⁹ The Uplift assumes that the ISE is revealing previously underestimated shrinkage. It corresponds to the difference between the baseline shrinkage cost and the recalculated shrinkage cost under each accuracy scenario.

Table 3: Estimated UIG Costs for GY 2024/25 (by LDZ)

LDZ	Gas Year 2024/25 Latest UIG (GWh)¹⁰	UIG Cost¹¹ (£m)
East Anglia (EA)	979.28	32.50
East Midlands (EM)	1,734.42	57.56
North Thames (NT)	2,144.61	71.17
North West (NW)	2,534.74	84.12
West Midlands (WM)	1,348.74	44.76
Northern (NO)	831.96	27.61
North East (NE)	1,336.69	44.36
Southern (SO)	1,238.43	41.10
South East (SE)	969.86	32.19
Scotland (SC)	1,871.95	62.12
Wales North (WN)	209.94	6.97
Wales South (WS)	382.21	12.68
South West (SW)	829.46	27.53
Total	16,412.29	544.66

Table 4 summarises the illustrative cost components associated with establishing and operating the ISE, including procurement, CDSP implementation and ongoing contractual costs. These values underpin the £2.4 million implementation cost used across the scenarios. A procurement cost of £150,000 has been used for analysis purposes; however, the actual cost of running a procurement process for the ISE is likely to be higher, reflecting the preparatory work involved, including stakeholder engagement and the development of the

¹⁰ UIG volumes supplied by Xoserve incorporate LDZ-level data and the latest reconciliation updates.

¹¹ Cost estimated using Average System Price (SAP) for GY 2024/25 – 3.3186 pence/kWh

required scope and service specifications. For the CDSP implementation cost, the UNC 0843 Final Modification Report set out a range of £180,000 to £315,000¹², and for the purposes of this analysis the midpoint of £247,500 has been applied as a central estimate. The ongoing contractual cost is an illustrative estimate based on Xoserve’s experience procuring specialised expert services in the gas sector and is intended to provide an indication of potential scale rather than a final cost.

Similar to the UIG figure, the precise final implementation cost of the ISE does not affect the conclusions of the analysis, which depend on how improved accuracy reallocates volumes (and therefore costs) between the UIG and shrinkage pots, not on the exact implementation cost itself. Accordingly, the overall conclusion remains the same regardless of the final cost ultimately incurred.

Table 4: Independent Shrinkage Expert (ISE) – Illustrative Implementation Cost

Component	Cost (£)
Procurement Exercise	150,000
CDSP Implementation	180,000 - 315,000
Ongoing Contractual Cost	2,000,000

Table 5 shows how improving the accuracy of Shrinkage estimates affects costs, and how those costs change depending on how much of the increase is assumed to come from gas previously recorded as Unidentified Gas (UIG).

Across all scenarios, the reallocated amount plus the residual amount always equals the total uplift in shrinkage. However, only under 100% reallocation is this uplift fully offset by a corresponding reduction in UIG, meaning the overall system liability (Shrinkage + UIG) remains unchanged. At reallocation levels below 100%, the reduction in UIG is smaller than the uplift in shrinkage, so the system liability increases.

¹² “An enduring system solution will cost at least £180,000 but probably no more than £315,000. This range does not take into consideration the procurement of an ISE and is purely for system impacts only.” Can be viewed on the Joint Office of Gas Transporters website at [Establishing the Independent Shrinkage Charge and the Independent Shrinkage Expert | Joint Office of Gas Transporters - Gas Governance](https://www.jogt.org.uk/establishing-the-independent-shrinkage-charge-and-the-independent-shrinkage-expert)

Table 5: Shrinkage and UIG Pots Under Accuracy and Reallocation Scenarios

Improvement Scenario (%)	Reallocation Scenario (%)	Reallocated Amount (£m)	Residual Uplift (£m)	Shrinkage Pot (£m)	UIG Pot (After Reallocation) (£m)	Total System Cost (Shrinkage Pot + UIG Pot)
10	0	0.0	6.89	75.75	544.7	620.41
10	25	1.7	5.16	75.75	542.9	618.69
10	50	3.4	3.44	75.75	541.2	616.96
10	75	5.2	1.72	75.75	539.5	615.24
10	100	6.9	0.00	75.75	537.8	613.52
20	0	0.0	13.77	82.63	544.7	627.29
20	25	3.4	10.33	82.63	541.2	623.85
20	50	6.9	6.89	82.63	537.8	620.41
20	75	10.3	3.44	82.63	534.3	616.96
20	100	13.8	0.00	82.63	530.9	613.52
30	0	0.0	20.66	89.52	544.7	634.18
30	25	5.2	15.49	89.52	539.5	629.02
30	50	10.3	10.33	89.52	534.3	623.85
30	75	15.5	5.16	89.52	529.2	618.69
30	100	20.7	0.00	89.52	524.0	613.52

Table 6 summarises the net consumer cost across all accuracy and reallocation scenarios. The results show that net costs decrease as reallocation increases and converge to approximately £2.4 million at 100% reallocation, reflecting the ISE implementation cost used in the modelling. This occurs because, under full reallocation, the uplift in shrinkage is entirely offset by an equivalent reduction in UIG, leaving the ISE cost as the only remaining net impact. At lower reallocation levels, only part of the uplift is offset, so the un-offset portion represents a residual increase in total system costs, resulting in higher net consumer costs.

Table 6: Net Consumer Cost Under Accuracy and Reallocation Scenarios

Improvement Scenario (%)	Reallocation Scenario (%)	Net Consumer Cost¹³ (£m)
10	0	9.28
10	25	7.56
10	50	5.84
10	75	4.12
10	100	2.40
20	0	16.17
20	25	12.73
20	50	9.28
20	75	5.84
20	100	2.40
30	0	23.06
30	25	17.89
30	50	12.73
30	75	7.56
30	100	2.40

5 Caveats

The findings of the analysis are subject to several caveats that reflect the inherent uncertainties in the underlying data and assumptions. These caveats are important for understanding the scope and limitations of the analysis, particularly in relation to the indicative cost estimates, the evolving UIG position, and the sensitivity-based scenario design. The key caveats are summarised below.

¹³ Net consumer cost is calculated by combining the residual uplift with the implementation cost of the Independent Shrinkage Expert (ISE).

- (i) Implementation cost estimate: As stated earlier, the cost estimate for implementing the ISE (£2.4 million) is illustrative and based on information provided by Xoserve. It does not represent the final cost that may arise through procurement or operational arrangements.
- (ii) Evolving UIG position: UIG figures for Gas Year 2024/25 are not final and may continue to change for up to two years because of reconciliation cycles. These values reflect the latest indicative position but will be updated as reconciled meter data becomes available.
- (iii) Sensitivity based scenarios: The scenario results are sensitivities designed to illustrate how outcomes vary under different assumptions about accuracy improvements and reallocation. They are not forecasts of system behaviour.
- (iv) Bounding assumption at 100% reallocation: The 100% reallocation scenario is not realistic and is included solely for bounding purposes. It represents the limiting case in which all uplift is offset by a corresponding reduction in UIG, leaving only the implementation cost of the ISE.
- (v) Determinants of consumer impact: The magnitude of consumer impacts will depend on the following:
 - the reallocation assumption (i.e., the extent to which the shrinkage uplift is offset by reductions in UIG)
 - the SAP values for the period (as both shrinkage and UIG costs are calculated at SAP)
 - the realised level of shrinkage understatement (which determines the size of the uplift)
 - future reconciliation outcomes (which may revise the baseline UIG volumes)

- the final implementation cost of the ISE

Overall, the scenario-based analysis indicates that the introduction of an Independent Shrinkage Expert would increase consumer costs across all modelled combinations of accuracy improvement and reallocation. While the precise values of UIG and the final implementation cost may vary as further information becomes available, these variations do not affect the direction of the results, which is determined by the relative uplift and reallocation assumptions; however, they do influence the magnitude of net consumer costs. Net consumer costs remain positive in every scenario, with the minimum impact occurring only under the upper bound assumption of 100% reallocation. As such, the analysis demonstrates that, under realistic assumptions, the proposal does not deliver a net financial benefit to consumers.