

UNC Modification	At what stage is this document in the process?
<h1 data-bbox="134 322 657 416">UNC 0843:</h1> <h2 data-bbox="134 450 1000 667">Establishing the Independent Shrinkage Charge and the Independent Shrinkage Expert</h2>	<div data-bbox="1209 309 1469 629"> <div>01 Modification</div> <div>02 Workgroup Report</div> <div>03 Draft Modification Report</div> <div>04 Final Modification Report</div> </div>
<p data-bbox="129 698 507 734">Purpose of Modification:</p> <p data-bbox="129 750 1466 824">To incentivise the reduction of greenhouse gas emissions and customer bills, this Modification introduces the role of the Independent Shrinkage Expert (ISE) who will establish:</p> <ul data-bbox="180 840 1085 1034" style="list-style-type: none"> the Independent Shrinkage Model (ISM), the Independent Shrinkage Model Methodology (ISMM), the Independent Shrinkage Multiplication Factor (ISMF), and the Independent Shrinkage Charge (ISC). <p data-bbox="129 1068 308 1104">Next Steps:</p> <p data-bbox="129 1120 979 1155">The Proposer recommends that this Modification should be:</p> <ul data-bbox="156 1171 1147 1254" style="list-style-type: none"> considered a material change and not subject to Self-Governance assessed by a Workgroup <p data-bbox="129 1270 1466 1344">This Modification will be presented by the Proposer to the Panel on 20 April 2023. The Panel will consider the Proposer's recommendation and determine the appropriate route.</p>	
<p data-bbox="129 1794 399 1830">Impacted Parties:</p> <p data-bbox="129 1845 379 1881">High: Consumers</p> <p data-bbox="129 1897 1015 1933">Medium: Distribution Networks Operators, Shippers, Suppliers</p>	
<p data-bbox="129 1968 389 2004">Impacted Codes:</p> <p data-bbox="129 2020 734 2056">UNC, Independent Gas Transporters UNC</p>	

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Timetable

Modification timetable:	
Pre-Modification Discussed	23 March 2023
Date Modification Raised	03 April 2023
New Modification to be considered by Panel	20 April 2023
First Workgroup Meeting	27 April 2023
Workgroup Report to be presented to Panel	20 July 2023
Draft Modification Report issued for consultation	20 July 2023
Consultation Close-out for representations	10 August 2023
Final Modification Report available for Panel	14 August 2023
Modification Panel decision	21 September 2023

1. Summary

What

Shrinkage consists of Own Use Gas, Theft of Gas, and gas leaks.

The purpose of this Modification is to enable the more accurate allocation of Shrinkage to Gas Distribution Networks (GDN).

As Shrinkage currently contributes to 1% of the UK's total greenhouse gas emissions, inaccuracies in the Shrinkage and Leakage Model (SLM) damage the environment.¹

The Revenue = Incentives + Innovation + Outputs (RIIO) incentivises Shrinkage reduction off the back of Shrinkage volumes that GDNs self-report to Ofgem. If the self-reporting of Shrinkage is wrong, RIIO is undermined.

Currently, for the leakage element, the SLM uses set leakage rates and multiplies these across the lengths of pipes that are in the ground, along with temperature and pressure data. This estimation method is shown to have flaws.

Numerous studies show that Shrinkage volumes are understated.² For example, Imperial College London's study using direct air measurement shows that the leakage element of the SLM is currently 30-35% understated.³

Furthermore, for Formula Year 2023/24 Allocation of Unidentified Gas Statement has allocated UIG 8,497 GWh of the forecasted 11,713 GWhs of UIG to contributors. It is arguable that some or all of the 3,216 GWh of unaccounted-for gas is attributable to under-reported Shrinkage levels.⁴ 3,216 GWhs is over double the volume of Shrinkage that is currently self-reported by GDNs.

Underestimating Shrinkage causes increases in Unidentified Gas (UIG). This has the direct impact of inflating customer bills, as UIG is a line item in the price cap set by Ofgem.

Making changes to the SLM is problematic, as it is written into GDN's licence conditions, and attempts to change the SLM are staunchly resisted by the GDN. To get around such resistance, This Modification does not propose to change the SLM. The SLM will continue to be managed by the GDNs and they can continue to self-report Shrinkage volumes.

Instead, it creates a new charge to manage any manifest error.

Why

This Modification should be made to lower greenhouse gas emissions and customer bills. We are currently in a climate emergency, and as such also signed up to the COP 26's Global Methane Pledge to reduce the output of methane by 30%.⁵

¹ https://www.gasgovernance.co.uk/sites/default/files/ggf/book/2022-02/2021-22%20Shrinkage%20and%20Leakage%20Model%20Review_Consultation%20FINAL.pdf

² See appendix 1

³ [Continuous CH₄ and δ¹³CH₄ measurements in London demonstrate under-reported natural gas leakage](#); see also [London produces up to a third more methane than estimates suggest | Imperial News](#).

⁴ [AUG statement 23/24](#)

⁵ [Global Methane Pledge](#)

If Daily Metered and Non-Daily Metered volumes are substituted from Total LDZ throughput, there are currently two mechanisms that are used to account for any gas that is missing: Shrinkage and Unidentified Gas (UIG). First Shrinkage is removed from any missing gas and the rest is deemed to be UIG. UIG is then distributed amongst Shippers by the independent Allocation of an Unidentified Gas Expert (AUGE). If GDNs under-report Shrinkage the extra cost is ultimately fed through to the customer via the Shipper/Supplier relationship. GDNs will also be under-incentivised to find and fix gas leaks.

Making changes to the SLM is also met with resistance by GDNs – see Shrinkage Forum throughout the years - who are protective over their calculation. If GDNs were obliged to purchase 3 TWhs of natural gas as it is found to be due to gas leaks the financial impact would be significant.

At a price cap of £0.13 per kWh, 3 Twhs equates to £390,000,000.

Around 12 TWh of UIG are currently paid for by Shippers.

Throughout the years, constant efforts to amend the SLM by Shippers have been shot down by the GDNs. This has meant that the majority of Shippers no longer attend the Shipper Forum. The argument against amending the SLM is usually that it is set in the licence and unalterable. Other arguments are based on the cost of making a change to the SLM being too expensive.

This Modification seeks to navigate around any licence concerns by creating a new mechanism that sits alongside the SLM.

How

To tackle the issue of Shrinkage error, this Modification will create the role of Independent Shrinkage Expert (ISE).

The ISE will use methodologies to create an Independent Shrinkage Model (ISM) via which to estimate an independent account of Shrinkage.

Where there is a difference between the LDZ Shrinkage Quantities estimated by the SLM and the Independent LDZ Shrinkage Quantities estimated by the ISM, the ISE will recommend to the Authority the approval of the Independent Shrinkage Model Multiplication Factor (ISMF) and the Independent Shrinkage Charge (ISC).

The ISMF will be calculated by dividing LDZ Shrinkage Quantities by Independent LDZ Shrinkage Quantities. E.g. if LDZ Shrinkage Quantities = 10 GWh and Independent LDZ Shrinkage Quantities = 12 GWh, the ISMF would be 1.2 and the ISC would be 2 GWhs.

If approved by the Authority, Transporters will be obliged to purchase volumes of natural gas to cover the ISC.

As with LDZ Shrinkage Quantities, the ISC will be subtracted from missing gas prior to UIG being apportioned to Shippers.

This will lower bills and incentivise GDNs to fix sources of leaks.

The Modification also proposes to introduce the Framework for the Appointment of an Independent Shrinkage Expert. Like the AUG Framework, the CDSP will be used to procure the ISE.

2. Governance

Justification for Authority Direction

The Modification:

- (i) is likely to have a material effect on:

- (aa) existing or future gas consumers; and
 - (bb) competition in the shipping, transportation or supply of gas conveyed through pipes or any commercial activities connected with the shipping, transportation or supply of gas conveyed through pipes; and
 - (cc) the operation of one or more pipe-line system(s); and
 - (dd) matters relating to sustainable development, safety or security of supply, or the management of market or network emergencies; and
 - (ee) the uniform network code governance procedures or the network code Modification procedures; and
- (ii) is unlikely to discriminate between different classes of parties to the uniform network code/relevant gas transporters, gas shippers or DN operators.

Requested Next Steps

This Modification should be considered a material change and not subject to Self-Governance.

This Modification is likely to have a material impact on existing and future gas consumers, by more accurately allocating Shrinkage.

Any delay in the implementation of this Modification will negatively impact the environment and customer bills, as detailed above.

3. Why Change?

Greenhouse gases (GHG) pose an existential threat. This is recognised by the UK government in their [Net Zero Strategy](#):

“We are at a crossroads in our history. As we recover from the impact of the pandemic on our lives and livelihoods, we know that it will not be enough to go back to the way things were before. The science is clear, we know that human activity is changing our climate and that this will have a devastating impact on human lives, the economy, and the natural world – ranging from the extinction of some species and the melting of ice caps to extreme weather patterns threatening our homes, businesses, and communities.”

Methane is widely accepted to be 84x more potent than CO₂ as a greenhouse gas. 16 TWh of methane that enters the gas distribution network is currently unaccounted for. Current rates of methane leaks are estimated off the back of the National Leakage Tests performed in 2002, which have been shown to be inaccurate. Inaccuracies in this test lead to the deficient application of RIIO-GD2. This change seeks to remedy that deficiency.

4. Code Specific Matters

Reference Documents

The AUGS currently exists under the AUG Framework. Work has been undertaken within 0828R to establish what an ISE Framework would look like. The ISE Framework should be based on principles of impartiality, environmentalism, and best outcomes for end-consumers.

5. Solution

- The ISE will be procured via tender by CDSP under a Framework such as that which was used to procure the AUGER and managed by the UNCC
- The ISE will be led by principles of impartiality, environmentalism, and best outcomes for end-consumers
- The ISE will use methodologies to create an Independent Shrinkage Model (ISM) via which to estimate an independent account of Shrinkage.
- Where there is a difference between the LDZ Shrinkage Quantities estimated by the SLM and the Independent LDZ Shrinkage Quantities estimated by the ISM, the ISE will recommend to the Authority the approval of the Independent Shrinkage Model Multiplication Factor (ISMF) and the Independent Shrinkage Charge (ISC).
- The ISMF will be calculated by dividing LDZ Shrinkage Quantities by Independent LDZ Shrinkage Quantities.
- Eg if LDZ Shrinkage Quantities = 10 GWh and Independent LDZ Shrinkage Quantities = 12 GWh, the ISMF would be 1.2 and the ISC would be 2 GWhs.
- If approved by the Authority, Transporters will be obliged to purchase volumes of natural gas to cover the ISC. The same mechanism to purchase gas for Shrinkage will be employed here.
- As with LDZ Shrinkage Quantities, the ISC will be subtracted from missing gas before UIG is apportioned to Shippers.
- The ISE will review the ISM on an annual basis.
- The ISE will be able to request data from UNC Parties and UNC Parties will not be able to unreasonably withhold that data. Non-compliances can be escalated to the UNCC and Authority
- The ISE will enable engagement with their activity via the Shrinkage Forum
- Further business rules are detailed within the Draft Framework for the Appointment of the Independent Shrinkage Expert, which can be found in Appendix 2.

6. Impacts & Other Considerations

Does this Modification impact a Significant Code Review (SCR) or other significant industry change projects, if so, how?

No

Consumer Impacts

Consumers: Reducing gas leaks will reduce greenhouse gas emissions. Reducing methane emissions facilitates Net Zero. As less gas would be lost to the atmosphere, wholesale gas costs, Shrinkage costs, and UIG costs will be reduced, ultimately lowering bills.

This aligns with Ofgem's strategic vision:

- facilitating net zero
- energy consumers receiving good value energy services
- minimise costs

- a data-enabled energy sector.

What is the current consumer experience and what would the new consumer experience be?

Direct bill costs: all consumer groups (Domestic Consumers; Small non-domestic Consumers; Large non-domestic Consumers; Very Large Consumers) currently pay for gas leaks at a rate that could be 35% higher than is currently incentivised under RIIO-GD2. This mod would ensure that GDNs are appropriately incentivised, thereby reducing consumer costs and increasing confidence in the reliability of energy infrastructure.

Environmental cost: the environmental impact of gas leaks on all consumer groups is higher. The knock-on impacts of greenhouse gases on the climate crisis are much higher. This mod would ensure that GDNs are appropriately incentivised, thereby reducing the environmental impact of natural gas leaks in the UK.

Impact of the change on Consumer Benefit Areas:

Area	Identified impact
<p>Improved safety and reliability</p> <p>This change would mean that the energy system can operate more safely and reliably in the future in a way that benefits end consumers. Gas leaks are dangerous - as this Modification would reduce gas leaks, it would also reduce the inherent danger of gas leaks.</p>	Positive
<p>Lower bills than would otherwise be the case</p> <p>Better incentivisation, will reduce costs attributable to gas lost from the system and knock on environmental costs. This will lower bills and help protect the environment.</p>	Positive
<p>Reduced environmental damage</p> <p>This will reduce greenhouse gas emissions by reducing natural gas leaks, supporting the journey to net zero. Natural gas is a potent greenhouse gas that is 84x more potent than CO2. Approximately 16 TWh of natural gas were lost from the total system in 2021/22. It will support the decoupling of leak estimation from party bias. Via accurate calculation of the environmental impact of gas leaks, it will support decisions on how to move away from GHG-intensive energy supply in the UK.</p>	Positive
<p>Improved quality of service</p> <p>Increases confidence in customers that our gas system is operated efficiently</p>	Positive
<p>Benefits for society as a whole</p> <p>As above: this Modification would lower bills and GHG emissions. The economic impacts of climate change are detailed within the linked government webpage.</p>	Positive

Cross-Code Impacts

IGTs may need to have an equivalent Modification. 19 GWh of IGT Shrinkage is currently purchased by Shippers via UIG, as detailed in the AUG Statement.

EU Code Impacts

N/a

Central Systems Impacts

The new charge to cover ISE costs may need to be considered.

Relevant Objectives

Impact of the Modification on the Transporters' Relevant Objectives:

Relevant Objective	Identified impact
a) Efficient and economic operation of the pipe-line system.	Positive
b) Coordinated, efficient and economic operation of (i) the combined pipe-line system, and/ or (ii) the pipe-line system of one or more other relevant gas transporters.	Positive
c) Efficient discharge of the licensee's obligations.	Positive
d) Securing of effective competition: (i) between relevant shippers; (ii) between relevant suppliers; and/or (iii) between DN operators (who have entered into transportation arrangements with other relevant gas transporters) and relevant shippers.	Neutral
e) Provision of reasonable economic incentives for relevant suppliers to secure that the domestic customer supply security standards... are satisfied as respects the availability of gas to their domestic customers.	Positive
f) Promotion of efficiency in the implementation and administration of the Code.	Neutral
g) Compliance with the Regulation and any relevant legally binding decisions of the European Commission and/or the Agency for the Co-operation of Energy Regulators.	Positive

"Efficient and economic operation of the pipe-line system" - this mod will incentivise the reduction of gas leaks leading to efficiency in the operation of the pipe-line system. It will also lead to economic improvements via the accurate allocation of costs for the operation of the pipe-line system. "Efficient discharge of the licensee's obligations" this is positive as licensees are obliged to ensure that the environment is not negatively impacted and that accuracy in data is maintained and assured independently. "Provision of reasonable economic incentives for relevant suppliers to secure that the domestic customer supply security standards... are satisfied as respects the availability of gas to their domestic customers." Via lowering UIG, this will be achieved by making the price cap more accurately reflective of actually costs. "Compliance with

the Regulation and any relevant legally binding decisions of the European Commission and/or the Agency for the Co-operation of Energy Regulators" - facilitates net zero.

Impact of the Modification on the Transporters' Relevant Charging Methodology Objectives:

Relevant Objective	Identified impact
a) Save in so far as paragraphs (aa) or (d) apply, that compliance with the charging methodology results in charges which reflect the costs incurred by the licensee in its transportation business;	Positive
aa) That, in so far as prices in respect of transportation arrangements are established by auction, either: 1. no reserve price is applied, or 2. that reserve price is set at a level - (I) best calculated to promote efficiency and avoid undue preference in the supply of transportation services; and (II) best calculated to promote competition between gas suppliers and between gas shippers;	Positive
b) That, so far as is consistent with sub-paragraph (a), the charging methodology properly takes account of developments in the transportation business;	Positive
c) That, so far as is consistent with sub-paragraphs (a) and (b), compliance with the charging methodology facilitates effective competition between gas shippers and between gas suppliers; and	Positive
d) That the charging methodology reflects any alternative arrangements put in place in accordance with a determination made by the Secretary of State under paragraph 2A(a) of Standard Special Condition A27 (Disposal of Assets).	Positive
e) Compliance with the Regulation and any relevant legally binding decisions of the European Commission and/or the Agency for the Co-operation of Energy Regulators.	Positive

7. Implementation

Implementation should be as soon as possible after approval by the Authority.

8. Legal Text

See the Framework for the Appointment of an Independent Shrinkage Expert for suggested text. It is also expected that legal text within Section N of the TPD amongst other areas will need to be updated.

9. Recommendations

Proposer's Recommendation to Panel

Panel is asked to:

- Agree that Authority Direction should apply