

UNC Modification	At what stage is this document in the process?
<h1>UNC 0808:</h1> <h2>Reverse Compression</h2>	<div data-bbox="890 584 1075 629">01 Modification</div> <div data-bbox="890 645 1075 689">02 Workgroup Report</div> <div data-bbox="890 705 1075 750">03 Draft Modification Report</div> <div data-bbox="890 766 1075 810">04 Final Modification Report</div>
<p><b>Purpose of Modification:</b></p> <p>Clarification of the requirements when gas can flow to a DN from an iGT as well as from a DN to an iGT, such as through reverse compression with zero net flow into or out of the DN.</p>	
<p><b>Next Steps:</b></p> <p>The Proposer recommends that this Modification should be:</p> <ul style="list-style-type: none"><li>• subject to Self-Governance</li><li>• assessed by a Workgroup.</li></ul> <p>This Modification will be presented by the Proposer to the Panel on 19 May 2022. The Panel will consider the Proposer’s recommendation and determine the appropriate route.</p>	
<p><b>Impacted Parties:</b></p> <p>High: Some Distributed Gas Producers, Compression service developers.</p> <p>Low: Distribution Network Operators (DNOs)</p> <p>None: Gas Shippers and Suppliers, CDSP and Consumers</p>	
<p><b>Impacted Codes:</b></p> <p>None</p>	

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 Any questions?


Contact:  
**Joint Office of Gas Transporters**


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### Timetable


**Modification timetable:**


Pre-Modification Discussed	28 April 2022
Date Modification Raised	09 May 2022
New Modification to be considered by Panel	19 May 2022
First Workgroup Meeting	26 May 2022
Workgroup Report to be presented to Panel	18 August 2022
Draft Modification Report issued for consultation	22 August 2022
Consultation Close-out for representations	12 September 2022
Final Modification Report available for Panel	15 September 2022
Modification Panel decision	20 October 2022

4  [enquiries@gasgovernance.co.uk](mailto:enquiries@gasgovernance.co.uk)


5  0121 288 2107


6 Proposer:  
7 **Tim Davis**  
7 **Barrow Shipping Ltd**

7  [tdavis@barrowshipping.co.uk](mailto:tdavis@barrowshipping.co.uk)


 07768 456 604

Transporter:  
**David Mitchell, SGN**

 [david.mitchell@sgn.co.uk](mailto:david.mitchell@sgn.co.uk)

 07799 343 082

Systems Provider:  
**Xoserve**

 [UKLink@xoserve.com](mailto:UKLink@xoserve.com)

## 1 Summary

### What

The Code is silent on embedded “Reverse Compression”. This modification was initially proposed to allow private sector investment in reverse compression to be treated in the same way as network investment, for example with no entry or exit charges applicable. Legal advice is that a GT licence would be required for any pipeline system that supports reverse compression. This modification now seeks to introduce the requirements that would apply in cases where gas can flow from an iGT to a DN.

### Why

Compressors can be used to move gas from a lower to higher pressure tier pipeline. This can relieve capacity constraints for distributed entry. This can only be effective if the relevant DNO supports the process and manages its DN to accommodate the changed flows. It is proposed that this and any specific requirements the DNO has of the iGT be captured in an operating agreement. UNC modification is proposed to require the iGT and DNO to enter into an operating agreement.

### How

UNC amendment to recognise that gas can flow from an iGT to a DN and, when proposed, require an iGT and DNO to enter into an operating agreement in order to support this.

## 2 Governance

### Justification for Self-Governance

Reverse compression will only be successful if supported by the relevant DNO and so cooperation is essential. This is an enabling modification that would require development of the operating parameters, but the actual operation would not be impacted. As it is a clarifying and enabling modification, implementation is unlikely to have a material impact on any party and Self-Governance is appropriate.

### Requested Next Steps

This Modification should:

- be considered a non-material change and subject to Self-Governance.
- be assessed by a Workgroup.

## 3 Why Change?

The injection of distributed gas is growing. As at the end of March 2022, 126 DN entry points were registered on Gemini.

Barrow Green Gas (BGG) understands that around 15 existing biomethane projects flare gas from time to time because of DN capacity constraints. BGG has seen an estimate that suggests around half of the currently identified potential new biomethane sites face local grid capacity constraints and, as a result, are unlikely to be developed. This may be exacerbated by high gas prices that can be expected to reduce gas demand, with a consequence being additional flaring of biomethane due to the capacity reduction (biomethane plants cannot be instantaneously turned off and the ability to flare gas is a safety measure to ensure pressure can be relieved).

Constraints typically arise in the summer months when demand is low. However, it is possible to export gas from one pipeline pressure tier (e.g. Medium Pressure) to a higher one (e.g. Intermediate Pressure). This increases the ability of a DN to accept gas, with higher pressure tiers able to more easily accommodate additional gas as it provides access to more widespread sources of demand.

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The ability of Reverse Compression to increase the capacity available to accommodate distributed gas is established in Europe, for example with over 30 projects in France. Cadent are completing the first such project in GB at a site near Doncaster, funded by Ofgem NIC. All the DNOs are proposing to offer reverse compression within their networks as an option, with discussions underway in an entry connections forum. Distributed gas producers, however, are interested in arranging this for themselves, and a number of such projects are being actively pursued.

This modification was initially brought forward to ensure a level playing field such that private sector investment in reverse compression could compete with DNO investment. However, legal advice from the DNOs is that any pipeline installed to deliver reverse compression would have to be subject to a GT licence. The UNC is silent on the concept of an iGT that supports gas being injected to as well as receiving it from a DN, and does not envisage reverse compression via an iGT system. This modification is, therefore, proposed to address this and provide clarity about the requirements when gas can flow from an iGT to a DN.

## 4 Code Specific Matters

### Reference Documents

UNC IGTAD

### Knowledge/Skills

Understanding of connected system rules and distributed gas entry requirements.

## 5 Solution

Any proposal to connect ~~a reverse compression assets by an new Independent Gas Transporter (iGT) iGT network~~ to a ~~DNOGT~~ network would be subject to the standard requirements as specified in Licence Condition 4B statements produced by each ~~DNOGT~~. If the DNOs conclude that it is desirable to change these statements in light of gas being able to flow from an ~~iGT to a DNO's network the DN~~, the ~~relevant DNOy~~ will bring forward and consult on the changes they propose ~~to their 4B statement. Regarding this modification, it is proposed that the Code be modified to require that an iGT and DNO enter into an operating agreement when an iGT Connected System supports gas flowing in to a DNO this will be known as a Network Exit and Re-Entry Agreement (NERA).~~

General UNC business rules associated with the Modification:

1. The concept arrangements when reverse compression gas can enter a DN from an iGT system is an arrangement to be detailed in an agreement NERA between an iGT and a DNO.  
Reverse compression should be defined in the UNC as gas exiting a DNO network into an iGT network at a given pressure which is subsequently compressed to a higher pressure and re-entered onto a DNO network at the higher pressure.
2. It is proposed that the UNC be modified to require that, an iGT and DNO enter into (a) in addition to the existing requirements to enter in to a connection's agreement in line with the relevant DNO's 4B Statement covering the physical connection of of the reverse compression iGT assets to the DNO network, and (b) an operating agreement be entered in to by with the DNO and iGT. This will be referred to as a Network Exit and Re-Entry Agreement (NERA).
3. Any gas lost or unaccounted for which results from the operation of the reverse compression iGT assets should be included within iGT's Shrinkage.
4. For the avoidance of doubt, transportation charges as detailed in UNC TPD Section Y currently applicable to gas offtaken from the total system or entered into the total system at LDZ Exit and Entry points will not apply to the iGT reverse compression asset owner / operator.
5. Any gas offtaken from the DNO's network and re-entered onto the DNO's network must remain within the donor network's LDZ.
6. In line with existing UNC arrangements title and risk to the gas passes from the DNO to the iGT on exit from the DNO network and back to the DNO from the iGT on re-entry to the DNO exit from the iGT network.

**Commented [MD1]:** Workgroup to discuss the referencing of a Network Exit and Re-Entry Agreement (NERA) does this fit into the iGTAD or the UNC? Currently the iGTAD only references exit arrangements so would need to be expanded to allow for entry.

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The ~~Code UNC should~~ shall specify that the ~~NERA operating~~ agreement ~~should~~ will include, *inter alia*, details of arrangements ~~between the DNO and the IGT~~ concerning:

1. ~~Asset ownership and maintenance responsibilities.~~
1. ~~Enduring operational c~~ommunications between ~~the IGT and the DNO~~DN operator ~~concerning the day-to-day operation of the reverse compression~~IGT assets which will include timely updates on expected exit and entry flow rates from and to the network.~~s~~
2. ~~Reverse compression~~IGT operationalSite management: ~~the DNO~~GDN will ~~give~~provide the IGTreverse compression facility advance notice of any maintenance on the DNO's ~~its~~ network ~~that~~which may ~~will~~ impact the operation of the ~~reverse compression~~IGT facilityasset. ~~This will cover non-operational windows when the DNO~~GDN requires the ~~reverse compression~~IGT asset's exit/entry ~~volume~~flows to be reduced or turned off for network maintenance activities.
3. ~~Network entry provisions covering the gas quality of the gas re-entered onto the DNO network.~~
4. ~~Site operation the reverse compression facility will provide to the GDN its planned exit and entry flows from and onto the network on an enduring basis in Scm/h.~~  
~~Gas that Exit's and re-enters~~ry the GDN's network will be via the ~~IGT pipeline during this process there will be no loss of gas rates (Scm/h).~~  
~~IGT Shrinkage calculations will take into account reverse compression facilities.~~
1. ~~Transportation charges will not be applicable for gas off taken at a reverse compression facility as the same volume of gas will re-entry the GDN's network.~~

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## 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

Reduced biomethane flaring is positive through environmental benefits. Increasing biomethane supply theoretically lowers consumer prices (higher supply and unchanged demand puts downward pressure on prices), but the limited scale means any impact would be minimal.

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

No change.

### Impact of the change on Consumer Benefit Areas:

Area	Identified impact
Improved safety and reliability No change.	None

<p><b>Lower bills than would otherwise be the case</b></p> <p>Theoretical benefit but too small to be realised in practice.</p>	Positive
<p><b>Reduced environmental damage</b></p> <p>Reducing biomethane flaring has clear environmental benefits. Reverse compression will also facilitate additional distributed entry that would otherwise not be developed due to DN capacity constraints.</p>	Positive
<p><b>Improved quality of service</b></p> <p>No change</p>	None
<p><b>Benefits for society as a whole</b></p> <p>Small employment opportunities would be created through the development and installation of compressors.</p>	Positive

**Cross-Code Impacts**

None.

**EU Code Impacts**

None.

**Central Systems Impacts**

No impact.

**7 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.	None
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.	Positive
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.	None
f) Promotion of efficiency in the implementation and administration of the Code.	None
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.	None

Ensuring that an operating agreement is in place between an iGT and DNO will facilitate economic and efficient system operation through clarity and certainty around how the connected systems will be operated.

By facilitating the development of iGT Connected Systems that deliver reverse compression, implementation would increase the likelihood of schemes being implemented that alleviate capacity constraints and allow increased volumes of distributed gas to be injected. This would facilitate:

Efficient and economic operation of the pipeline system through the existence of reverse compression that may not otherwise be installed, increasing the options available to a network operator.

Efficient discharge of the licensee's obligations by ensuring a level playing field between DNO and iGT compression schemes, avoiding any suggestion of undue discrimination.

Securing of effective competition between relevant Shippers and between relevant Suppliers by allowing injection of distributed gas that may otherwise be flared or not developed, with increased supply available to the market when it is economic to inject.

## 8 Implementation

No implementation costs are envisaged as a result of this Modification.

As Self-Governance procedures are proposed, implementation could be sixteen business days after a Modification Panel decision to implement, subject to no Appeal being raised.

## 9 Legal Text

### Text Commentary

To be provided by the relevant Transporter.

### Text

To be provided by the relevant Transporter.

## 10 Recommendations

### Proposer's Recommendation to Panel

Panel is asked to:

- Agree that Self-Governance procedures should apply.
- Refer this proposal to a Workgroup for assessment.