UNC Workgroup Report	At what stage is this document in the process?
# UNC 0808: ## Reverse Compression	01 Modification 02 Workgroup Report 03 Draft Modification Report 04 Final Modification Report

Purpose of Modification:

Clarification that reverse compression, with zero net flow into or out of the network, is not to be classified as an entry and exit point.

Next Steps:

The Panel to consider this Workgroup Report on 15 September 2022. The Panel will consider the recommendations and determine the appropriate next steps.

Impacted Parties:

High: Some Distributed Gas Producers, Compression service developers.

Low: Distribution Network Operators (DNOs)

None: Gas Shippers and Suppliers, CDSP and Consumers

Impacted Codes:

None

Contents

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	15 September 2022
Draft Modification Report issued for consultation	*TBC*
Consultation Close-out for representations	*TBC*
Final Modification Report available for Panel	*TBC*
Modification Panel decision	*TBC*

Any questions?

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1 Summary

What

The Code is silent on embedded “Reverse Compression”. Clarity is needed that any reverse compression, with net zero flow, should not be regarded as creating a network entry and exit (meter) point.

Why

Compressors can be used to move gas from a lower to higher pressure tier pipeline. If this is done by a DNO, this would be regarded as part of network operation. The installation of compressors does not, however, have to be undertaken as a regulated activity. If carried out by a third party, the movement between tiers could be regarded as an exit and entry point, even though the flow leaving the lower pressure network is identical to the flow entering the higher pressure one (with plant being designed to ensure no losses/venting). Whether a DNO or third party installs such a Reverse Compression plant the physical flows would be identical and this Modification seeks to ensure a level playing field, avoiding a potential requirement to install entry and exit meters and apply transportation charges that would not arise if the plant were installed by a DNO.

How

UNC amendment to clearly provide that third party installation of reverse compression shall not lead to either an entry nor exit meter point being created (or confirmation that this is the case with no UNC change being necessary).

2 Governance

Justification for Self-Governance

If it is accepted that reverse compression does not require exit and entry points to be created, then as a clarifying modification, implementation is unlikely to have a material impact on any party and Self-Governance is appropriate.

A number of biomethane plants face capacity constraints at times of low demand, meaning they are unable to inject gas to the network. There is concern that high gas prices will lead to lower gas demand than otherwise in Summer 2022, and this may mean there are widespread capacity constraints with a larger number of biomethane plants being unable to inject gas to low pressure tiers (gas flow of X scmh into a 2 bar or 7 bar pipeline is only possible if the downstream flow leaving that pipeline is >X scmh).

As a consequence, a number of projects to install reverse compression are being actively pursued with an intention of being operational in summer 2022. If the DNOs accept that any such project would not create an exit and entry point, any preferred confirmation of this through modification of the UNC could follow later. However, if this is not accepted the consequences on project costs and timing may mean that urgent procedures will be requested.

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 Distribution Network (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 network 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 in summer 2022, 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 network to accept gas, with higher pressure tiers able to more easily accommodate additional gas as it provides access to more widespread sources of demand.

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 are 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.

If a DNO includes reverse compression within its network, this would not constitute an entry nor exit (meter) point but simply be part of the network. If a third party were to build an identical facility to transfer gas between two pipeline pressure tiers, BGG believes the UNC is silent on how this should be treated. As such, it may be argued that in the absence of any specific Code terms, the compressor should be treated as part of the network, thereby delivering the same treatment as would apply if the DNO implemented an identical arrangement. Equally, however, it may be argued that the gas passing through the compressor should be treated as having created both an entry and exit (meter) point.

To remove any scope for doubt, and to avoid imposing significant costs on third party developments that would not apply were a DNO to undertake the same development, clarity in the Code that no entry nor exit point is created may be beneficial. This would reflect the fact that no net flow is anticipated, and would be consistent with the principles established by Modification 0363 that charges should be based on net flows – i.e. there should be no network charges for reverse compression, which is achieved by not being an entry/exit point.

4 Code Specific Matters

Reference Documents

UNC

Knowledge/Skills

Understanding of meter point rules and distributed gas entry requirements.

5 Solution

It is proposed that the Code be modified if necessary, to clarify that reverse compression - a physical arrangement that moves gas from one pressure tier to another higher pressure tier within a distribution network with no anticipated net flow into or out of the DN – shall not create either an entry nor exit (meter) point.

6 Impacts & Other Considerations

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

No.

Workgroup has yet to discuss this point.

Consumer Impacts

Proposer's view:

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.

Workgroup has yet to discuss this point.

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
Lower bills than would otherwise be the case Theoretical benefit but too small to be realised in practice.	Positive
Reduced environmental damage Reducing biomethane flaring has clear environmental benefits. Reverse compression will also facilitate additional distributed entry that would otherwise not be developed due to network capacity constraints.	Positive
Improved quality of service No change	None

Benefits for society as a whole Small employment opportunities would be created through the development and installation of compressors.	Positive

Workgroup has yet to discuss this point.

Cross-Code Impacts

None. Workgroup has yet to discuss this point.

EU Code Impacts

None. Workgroup has yet to discuss this point.

Central Systems Impacts

No impact. Workgroup has yet to discuss this point.

Rough Order of Magnitude (ROM) Assessment

Not yet available as Solution not yet finalised.

Performance Assurance Considerations

The Workgroup must consider any areas which PAC will need to monitor as a result of implementation if this Modification

Workgroup has yet to discuss this point.

Panel Questions

1. Consequential impact on upstream metering

   Workgroup has yet to discuss this point.

2. Clarification of who would operate the installation and thus whether it is part of "the network"

   Workgroup has so far discussed whether the installation could be;

   - Built and owned by the relevant GDN.
   - A self-lay option (to be built by the developer) if a specification can be agreed that can be purchased. The relevant Network would then adopt (and operate) the installation.
   - The Modification approach where the installation would be owned and operated by the developer.

   The Workgroup determined that the preferred approach should be identified by a sub-group meeting between the Proposer and GDN representatives and asked that this be reported at Workgroup in September 2022.

3. What are the charging implications?

   A Workgroup Participant identified that a Modification may be required in order to suspend certain charges in respect of reverse compression exit/entry charges.

   Further Workgroup discussion is required.

Workgroup Impact Assessment

Workgroup Participants have discussed the Modification at the following meetings:

- Workgroup 0808 25 August 2022
- Workgroup 0808 28 July 2022
- Workgroup 0808 23 June 2022
- Workgroup 0808 26 May 2022

Discussions have covered the following topics to date:

4. Whether the "special" points exiting at low pressure for reverse compression and entering at higher pressure again need a new definition?
5. Who will own/operate the reverse compression facility (RCF)?
6. How to prevent other connections to the RCF?
7. Responsibility for the gas during reverse compression – licence requirements/title and risk?
8. Would RCF operator need to be an IGT?
9. How will Code obligations be managed by the RCF owner/ operators? How much will need to be disapplied?
10. Metering requirements/ CV monitoring
11. Bi-lateral agreement document– requirements, topics and scope
    - Communications between 3rd party & GDN
    - Site management/non-operational windows
    - Gas quality and operating rules
    - Site operation – manual/auto?
    - ROV requirement?
    - Asset responsibility (ownership and operational responsibility)
    - Exit and entry rates (Scm/h)
    - End of life decommissioning responsibilities
    - Impact of conversion of network to hydrogen.
12. Requirement for more detail in the Solution section and an amended Modification (clear solution; business rules; some for avoidance of doubt statement(s) e.g. regarding bi-lateral agreements).
13. Legal Text production not yet possible, answering queries from legal perspectives
14. Requirement for a pre-agreement to enable feasibility/network analysis/lifetime estimate etc.

Workgroup views on Governance route

- Workgroup has yet to discuss this point.

Workgroup interim conclusions (25 August 2022)

The Workgroup has continued to consider whether the issue may be dealt with through direct agreements between network operators and thus not require a Code modification. The proposer of the Modification has progressed with the option to obtain an IGT Licence that would facilitate such arrangements.

The Proposer has argued that it will be preferable to have a generic form of arrangement rather than several bilaterally negotiated agreements. The Proposer noted that the specification for compression currently being suggested by networks is not realistically available for installation.

One Workgroup Participant has identified that even if direct arrangements can be agreed (between networks) there may still be a need for a change to Code in order to suspend certain Transportation charges.

The Proposer has agreed to continue in discussions with network operators to determine whether this Modification Proposal is needed. The Workgroup agreed to consider the feedback from these meetings at its next meeting in September 2022 and in the interim to seek from the Modification Panel permission to extend the duration of the Workgroup for two months.

The nominated provider of legal text (SGN) is awaiting confirmation of the requirements.

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

Proposer's view of the Relevant Objectives:

Implementation of this Modification would ensure no undue costs arise for third parties developing schemes to provide compression that moves gas between pressure tiers, creating a level playing field with the requirements were the incumbent DNO to implement the same solution. The third party would not, for example, be expected to pay Local Distribution Zone (LDZ) transportation charges associated

with each of the positive and negative elements of a zero net flow arrangement. Implementation may therefore 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 third party 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.

Workgroup view of the Relevant Objectives:

Workgroup Participants have not yet considered the Relevant Objectives as the Solution has yet to be properly identified.

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 SGN if DNOs conclude that UNC modification is desirable.

Text

To be provided by SGN if DNOs conclude that UNC modification is desirable.

10 Recommendations

Workgroup's Recommendation to Panel

The Workgroup asks Panel to agree that:

- This proposal requires further assessment and should be returned to Workgroup with an extension to the reporting time of 2 months.