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| UNC Workgroup Report | At what stage is this document in the process? |
| UNC 0808:  Reverse Compression |  |
| **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 Workgroup recommends that this Modification should [not] be subject to Self-Governance  The Panel will consider this Workgroup Report on dd month 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 | |

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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).

1. 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.

1. 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.

1. Code Specific Matters

#### Reference Documents

UNC

#### Knowledge/Skills

Understanding of meter point rules and distributed gas entry requirements.

1. 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.

1. Impacts & Other Considerations

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

No.

Does Workgroup agree?

#### 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 Response to Proposer’s views above:

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

No change.

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| 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 Response to Proposer’s views above:

#### Cross-Code Impacts

None. Does Workgroup agree?

#### EU Code Impacts

None. Does Workgroup agree?

#### Central Systems Impacts

No impact. Does Workgroup agree?

**Rough Order of Magnitude (ROM) Assessment** *(Cost estimate from CDSP)*

#### Cost estimate from CDSP where the Modification relates to a change to a CDSP Service Document

Not yet available as Solution not yet finalised

***OR***

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| **Rough Order of Magnitude (ROM) Assessment** *(Workgroup assessment of costs & lead times)* | |
| Cost estimate from CDSP | Insert text here |
| Insert Subheading here | Insert text here |

**Performance Assurance Considerations**

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

Workgroup response:

#### Panel Questions

1. Consequential impact on upstream metering

Workgroup response:

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

Workgroup response:

1. What are the charging implications?

Workgroup response:

#### Workgroup Impact Assessment

Workgroup Participants have discussed the Modification at the following meetings:

* [Workgroup 0808 25 August 2022](https://www.gasgovernance.co.uk/0808/250822)
* [Workgroup 0808 28 July 2022](https://www.gasgovernance.co.uk/0808/280722)
* [Workgroup 0808 23 June 2022](https://www.gasgovernance.co.uk/0808/230622)
* [Workgroup 0808 26 May 2022](https://www.gasgovernance.co.uk/0808/260522)

Discussions have covered the following topics to date

1. Whether the “special” points exiting at low pressure for reverse compression and entering at higher pressure again need a new definition?
2. Who will own/operate the reverse compression facility (RCF)?
3. How to prevent other connections to the RCF?
4. Responsibility for the gas during reverse compression – licence requirements/title and risk?
5. Would RCF operator need to be an IGT?
6. How will Code obligations be managed by the RCF owner/ operators? How much will need to be disapplied?
7. Metering requirements/ CV monitoring
8. 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.
9. 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).
10. Legal Text production not yet possible, answering queries from legal perspectives
11. Requirement for a pre-agreement to enable feasibility/network analysis/lifetime estimate etc.

**Workgroup views on Governance route**

For self governance

* Why?

For Authprity Direction

* Why?

**Workgroup interim conclusions (25 August 2022)**

How much more time is required to finalise the Modification and get it ready to be sent out for consultation? Should Panel extend the reporting timeline?

1. Relevant Objectives

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| 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 Objcetives:**

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 Objcetives:**

Workgroup Participants agreed/did not agree with the Proposer assessment relating to Relevant Objective b) because…

* Assisting DNs through additional tools for managing capacity/pressure?

Workgroup Participants agreed/did not agree with the Proposer assessment relating to Relevant Objective c) because…

* Undue discrimination?

Workgroup Participants agreed/did not agree with the Proposer assessment relating to Relevant Objective d) because…

* Alleviating capacity constraints…
* Likelihood of flaring?
* Improved access to the network for those focusing on green gas?

1. 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.

1. Legal Text

#### Text Commentary

To be provided by the relevant Transporter if DNOs conclude that UNC modification is desirable.

#### Text

To be provided by the relevant Transporter if DNOs conclude that UNC modification is desirable.

1. Recommendations

#### Workgroup’s Recommendation to Panel

The Workgroup asks Panel to agree that:

* ~~This modification should proceed to consultation.~~
* This proposal requires further assessment and should be returned to Workgroup.