UNC Modification

At what stage is this document in the process?

01 Modification
02 Workgroup Report
03 Draft Modification Report
04 Final Modification Report

UNC 0894:

Facilitating Biomethane entry into the GDN by exporting methane from the GDN into the NTS via Compression

Purpose of Modification:

To introduce new criteria of Offtake where gas flows into the National Transmission System (NTS) from the Gas Distribution Network (GDN), and to clarify the treatment of the associated energy.

Next Steps:

The Proposer recommends that this Modification should be:

- considered a material change and not subject to Self-Governance
- assessed by a Workgroup

This Modification will be presented by the Proposer to the Panel on 15 August 2024. The Panel will consider the Proposer's recommendation and determine the appropriate route.

Impacted Parties:

High: National Gas Transmission, Distribution Network Operators

Low: Shippers

None:

Impacted Codes:

None

Contents

Timetable

Modification timetable:

Pre-Modification Discussed	04 July 2024
Date Modification Raised	06 August 2024
New Modification to be considered by Panel	15 August 2024
First Workgroup Meeting	05 September 2024
Workgroup Report to be presented to Panel	20 February 2025
Draft Modification Report issued for consultation	21 February 2025
Consultation Close-out for representations	13 March 2025
Final Modification Report available for Panel	20 March 2025
Modification Panel decision	17 April 2025

Any questions?

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1 Summary

What

The UNC currently defines an Offtake as *"…the point of connection between the NTS and an LDZ comprising a single pipe at which gas can flow from the NTS into the LDZ"*. This defines the direction of flow to be one way only from the NTS to the LDZ and does not allow for flows from the GDN to the NTS.

Why

The growth of greener gas can result in instances where the supply of biomethane outstrips total gas demand in remote areas resulting in the biomethane plants being unable to export desired quantities to the network. This has led to the need to identify efficient network reinforcements that enable the distributed entry gas to flow. One such option is to transport gas from the lower pressure tiers to the higher. In these scenarios, moving methane from the GDN back to the NTS could free up the capacity required to allow the biomethane plant to enter its 'green' gas. As this change would result in greater volumes of greener gas entering the Total System, it would help facilitate net zero targets.

How

The modification will allow for a connection that transports gas from the GDN into the NTS for the purpose of reverse flow compression only. It will also clarify the treatment of the associated energy moved from the GDN into the NTS.

2 Governance

Justification for Authority Direction

The self governance guidance document states a proposal is likely to require Authority decision if it "*Would entail network operators seeking approval of an amended Safety Case*".

The use of a compressor to transport gas from the GDN to the NTS will be a first for the UK gas networks and as such, carries an element of risk and uncertainty. However, the Gas Transporters' primary focus is on safety, security of supply, and network integrity. Therefore, robust controls will be agreed and implemented in order to mitigate any risk. New management and work procedures will be prepared and documented in the updated Safety Case. Additionally, there will be new operating and maintenance arrangements, and measures to prevent under-pressurisation on the suction side of the network and over-pressurisation in the discharge section of the network.

All GDNs wishing to introduce the use of compression to their system will need to amend their Safety Case, as will Cadent following implementation of this proposal.

Requested Next Steps

This Modification should:

- be considered a material change and not subject to Self-Governance.
- be assessed by a Workgroup.

Producers wish to commence injection of biomethane into the GDN at a new AD plant in June of 2026. Implementation of this modification proposal at the earliest possible date would provide the appropriate assurance to investors that an enduring framework is in place before they commit to funding the project.

In addition, other projects of a similar nature are likely to seek connection to the system in the near future.

3 Why Change?

The definition for an Offtake is set out in the Offtake Arrangements Document (OAD).

SECTION A – SCOPE AND CLASSIFICATION

2 Offtake Definition

2.1 Offtake

*2.1.1 An "**Individual Offtake Point**" is an Individual System Point which is the point of connection between:*

(a) the NTS and an LDZ; or

(b) two LDZs which are not comprised in the same Distribution Network;

comprising a single pipe at which gas can flow from the NTS into the LDZ or (as the case may be) from one of such LDZs to the other.

New criteria will be introduced that allows for the flow of gas from the GDN to the NTS. For the avoidance of doubt, the connection will **not** be bi-directional.

We also need to consider the Upstream/Downstream relationship:

A 2.3 Upstream and downstream Party

2.3.1 In relation to any Offtake, subject to paragraph 2.3.2:

*(a) the "**upstream**" System is the NTS or (as the case may) the LDZ from which gas flows at such Offtake;*

*(b) the "**downstream**" System is the LDZ to which gas flows at such Offtake;*

*(c) the "**upstream**" Party is the Party which operates the upstream System;*

*(d) the "**downstream**" Party (or DNO) is the Party which operates the downstream System.*

The new provisions will allow for the LDZ to be the **upstream** system (and therefore, also Party) where compression is being used to transport flows from the GDN to the NTS.

Certain areas of the GB Gas Network (such as East Anglia) are in the position where the supply of greener gas in the form of bio-methane, at times outstrips the demand in the local system. Where this occurs, we explore suitable reinforcement options. The most efficient option can be to transport flows via the use of compression to GDN higher-pressure tiers, or in some cases, to the NTS.

Introducing the provisions within this modification would allow for greater quantities of greener gas to enter the GB gas network, furthering Relevant Objectives and therefore facilitate Net Zero targets.

Additional Information

- Gas entering the NTS should satisfy Gas Safety (Management) Regulations 1998

- Further requirements would be set out in the NG Network Entry Agreement (NEA) and the Gas Ten Year Statement.

4 Code Specific Matters

Reference Documents

Offtake Arrangements Document Section A: Scope and Classification

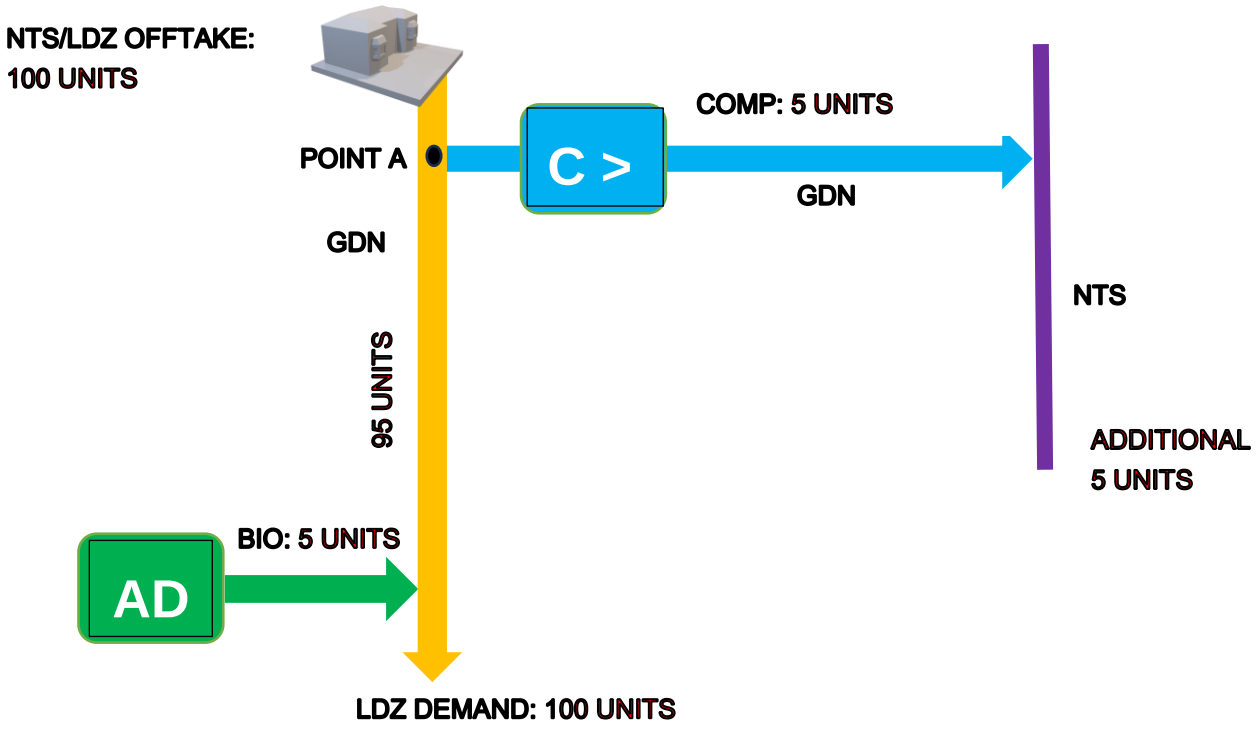
Transportation Principal Document (TPD) SECTION E: DAILY QUANTITIES, IMBALANCES AND RECONCILIATION 1.3

Knowledge/Skills

An understanding of the OAD along with the reconciliation process, UIG (Unidentified Gas), etc would be advantageous.

5 Solution

The proposed physical setup is represented below. In this pictorial, the biomethane plant (AD) delivers gas to the DN. At times of low demand when the DN would otherwise be unable to accept continued deliveries (e.g. warm summer nights), the compressor would offtake methane in order to enable the continued acceptance of the biomethane by the DN, whilst maintaining safe pressure levels. The gas offtaken would be compressed and of a quality considered acceptable for delivery into the NTS. Biomethane acceptance by the DN would therefore be uninterrupted at times of low demand.



POINT A: Smart Pressure Control utilised to automate operation of compressor

- Sensor to monitor inlet pressures
- Under low demand conditions when pressures are high, compressor would operate and deliver agreed quantities of methane back to the NTS
- NG Network Entry Agreement (NEA) to state parameters e.g. Volumes, Pressure Range, and Gas Quality, etc.

Business Rules

BR1 The modification will allow for a connection that transports gas from a GDN into the NTS for the purpose of reverse flow compression only.

BR1 Note: for the avoidance of doubt, this will change the existing concept of upstream and downstream in code where currently, an upstream system is the NTS (or an LDZ in the case of a LDZ-to-LDZ offtake).

BR2. All UIG will be reconciled to account for any gas that is transported from a GDN into the NTS for the purposes of reverse flow compression.

BR2 Note 1: for the avoidance of doubt, this modification relies upon gas neither entering, nor leaving the Total System and as such, connections between a GDN and the NTS may not be operated by Independent Gas Transporters (iGTs).

BR2 Note 2: for the avoidance of doubt, all gas that exits a GDN and enters the NTS for the purposes of the modification will be metered.

Treatment of Flows (Energy) Transported into the NTS

TPD A: System Classification states:

1.1 System

1.1.1 In the Code:

*(a) "**System**" means:*

(i) the National Transmission System; or

(ii) a Local Distribution Zone;

*(b) "**Total System**" means all the Systems taken together.*

As gas neither enters, nor exits the Total System, there are no new Entry or Exit Points created and therefore, no Entry or Exit Capacity Charges to incur.

The result of gas flows leaving the GDN and entering the NTS without incurring capacity charges will be that the GDN will see a slight increase in the amount of unaccounted-for gas, and NG will see the equal and opposite in the form of a decrease in unaccounted for gas.

In order to resolve this, discussions have taken place with our industry colleagues at Xoserve resulting in a number of high-level options being considered. The most suitable being that a reconciliation exercise would take place after the event (monthly) that would net off any loss or gain within the GDN or NTS.

Doing so would ensure that any unaccounted-for gas resulting from reverse flow compression only would be netted off, seeing no loss to the GDN and no gain to the NTS. The exact methodology to carry out this reconciliation will be developed taking into consideration the views of workgroup participants.

6 Impacts & Other Considerations

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

None.

Consumer Impacts

An increase in the number of gas producers and sources of gas supply should result in increased competition although it is recognised that at the current scale, there is no material impact.

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 as the new sources of gas would have no material impact on security of supply.	None
Lower bills than would otherwise be the case No change as the additional sources of gas would not be material in volume.	None
Reduced environmental damage There are a growing number of bio-methane producers with many unable to deliver their desired volumes into the network. This modification will help support this injection and therefore, have a positive impact on greenhouse gas emissions.	Positive
Improved quality of service No change.	None
Benefits for society as a whole Growth in the bio-methane sector should lead to more jobs in the greener arena which should have a positive impact upon society in general.	Positive

Performance Assurance Considerations

No impact.

Cross-Code Impacts

We do not envisage any cross-code impacts.

EU Code Impacts

None.

Central Systems Impacts

Discussions are at an early stage and there is the potential for system enhancements.

To be confirmed as workgroup progresses.

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.	None
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.	None
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

This proposal furthers Relevant Objective b) as it encourages an innovative utilisation of the combined system, one that has been deemed as the most efficient approach.

8 Implementation

The modification proposal should be implemented as soon as possible following Authority direction to do so. An implementation date would provide assurance to investors that an enduring solution is in place. The developer is targeting a 'gas on' date of June 2026.

9 Legal Text

Text Commentary

To be provided later.

Text

To be provided later.

10 Recommendations

Proposer's Recommendation to Panel

Panel is asked to:

- Agree that Authority Direction should apply.
- Refer this proposal to a Workgroup for assessment.