UNC Request	At what stage is this document in the process?
# UNC 0719R: ## Calculation of Energy Value of Gas	01 Request 02 Workgroup Report 03 Final Modification Report

Purpose of Request:

The Offtake Arrangements Document describes arrangements between Transporters for calculating the energy value of the gas in the network. The main driver for this Review Group is the UNC OAD notice period available to National Grid Gas (NGG) to terminate the provision of the existing service to the Gas Distribution Networks (GDN), however several developments such as the growth of biomethane injection into distribution networks, a need to review the process for attributing energy values from one offtake to another and questions about whether the UNC obligations sit with the correct party also direct that a review of these arrangements is required.

	The Proposer recommends that this Request should be assessed by a Workgroup This Request will be presented by the Proposer to the Panel on 19th March 2020.
	High Impact: Transporters
	Medium Impact: Shippers
	Low Impact: IGTs

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About this document:

This document is a Request, which will be presented by the Proposer to the panel on 19 March 2020.

The Panel will consider the Proposer's recommendation and agree whether this Request should be referred to a Workgroup for review.

Any questions?

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1 Request

Why is the Request being made?

The UNC Offtake Arrangements Document (OAD) describes arrangements for calculating the energy value of the gas in the network. A review is required due to:-

- The current UNC OAD obligations provide for a notice period to be served on the GDNs by NGG for the termination of the service to calculate Flow Weighted Average Calorific Values (FWACV).
- The growth of biomethane injection into GDN networks at directed sites that require calculation of energy values.
- A need to review the process for attributing CV values from one offtake to another should equipment fail. (Calorific Value (CV) attribution)
- Whether the UNC OAD obligations sit with the correct party or parties.

Both GDNs and NGG have an interest in the FWACV calculations, GDNs need to declare the Flow Weighted Average Calorific Value (FWACV) and NGG need the data to calculate Calorific Value (CV) shrinkage and CO_2 emissions from NTS compressors.

Scope

UNC 0646R - Review of the Offtake Arrangements Document is reviewing a number of sections of the OAD but is not reviewing sections F and M which are the focus of this review. Therefore, the two reviews can run in parallel.

A significant amount of work has already been completed by the GDNs and NGG to identify four options to continue to meet the UNC OAD obligations. These need to be assessed and the most appropriate way forward identified, in terms of cost, timescales and overall efficiency for the industry. Potential changes to the Gas (Calculation of) Thermal Energy Regulations (the thermal energy regulations) are out of scope. The options identified are:

Option 0 (current arrangement)

National Grid Gas continues to provide a centralised service to the industry.

Option 1

GDNs take responsibility for the service and use Xoserve to provide a centralised service and publish the information on a centralised web site.

Option 2

GDNs take responsibility for the service and use a third party provider or complete the work in house and publish the information on a centralised web site.

Option 3

Each party performs the functions that naturally fall to them and exchange information as required.

The UNC OAD related document “Transmission System Operator to Distribution System Operator Agreement Guidelines” describes the process for projects affecting distribution and transmission relevant to the OAD and this document needs to be complied with in delivering whichever solution is chosen. Section 6 and annex 1 are particularly relevant.

https://gasgov-mst-files.s3.eu-west-1.amazonaws.com/s3fs-public/ggf/Transmission%20System%20Operator%20to%20Distribution%20System%20Operator%20Agreement%20Guidelines%20v1.0.pdf

Impacts & Costs

The first stage of the process will be to calculate the total cost and assess the impacts of each option. For each option there are likely to be one off set-up costs and ongoing costs, who pays for these costs needs to be decided. Some options may take longer to deliver than others and this needs to be considered in conjunction with constraints imposed by other projects and budgets.

Recommendations

The objective of the Review Group is to identify the most appropriate solution that delivers the requirements and works with the current structure of the industry. The outcome may be a UNC Modification which proposes a solution to deliver an option which meets the relevant licence objectives.

This Modification should be developed through a UNC workgroup to enable all industry parties to contribute to the assessment of the options and development of the solution.

Additional Information

Gas Act section 12 provides

> *12 Methods of calculating therms.*
>
> *(1) Except in prescribed cases, the number of therms or kilowatt hours conveyed by a gas transporter to premises, or to pipe-line systems operated by other gas transporters, shall be calculated in the prescribed manner—*
>
> > *(a)on the basis of calorific values of the gas determined by the transporter in accordance with regulations under this section, or so determined by another gas transporter and adopted by the transporter in accordance with such regulations; or*
> >
> > *(b)if and to the extent that regulations under this section so provide and the transporter thinks fit, on the basis of declared calorific values of the gas;*
>
> *and regulations under this section shall be made by the Director with the consent of the Secretary of State.*

The regulations referred to above are the Gas (Calculation of) Thermal Energy Regulations. These were issued in 1996 and amended in 1997, 2002 and 2015. Links are below:

http://www.legislation.gov.uk/uksi/1996/439/contents/made

http://www.legislation.gov.uk/uksi/1997/937/contents/made

http://www.legislation.gov.uk/uksi/2002/3130/contents/made

http://www.legislation.gov.uk/uksi/2015/953/contents/made

The thermal energy regulations were originally drafted into legislation in 1996 and reflected the gas industry structure at that time, although they have been amended in subsequent years. The current gas industry structure has one transmission transporter, four distribution networks as well as Independent Gas Transporters (IGT) and it is not immediately clear whether one or more than one gas transporter has the legal obligation to calculate daily CVs or whether it is a shared legal obligation. Since bio-methane injected into a distribution network (or potentially an IGT network) will remain in the distribution network then it may be argued that the distribution network should calculate the energy values associated with this input. By that argument NGG would be responsible for calculating the energy value

of biomethane sites injecting into the NTS. NGG currently calculates energy values for end users directly connected to the NTS. Currently GDNs measure all the energy values at inputs into distribution networks and provide the data to NGG who calculate the FWACVs that are used for all energy settlements. NGG are the only party that has access to information to establish the directional flow of the gas flowing within the NTS and this information would be required by GDNs to identify the most appropriate offtakes if CVs have to be attributed to one offtake from another offtake. NGG uses the FWACV to calculate daily CV shrinkage (in accordance with General Terms C 3.3.3) and also uses the data once a year to calculate CO_2 emission factors for their compressors (this is not required by the thermal energy regulations). The information (CV, volume, and energy figures per LDZ) are currently published in NGGs MiPi system and on the National Grid Data Item Explorer. In the interests of convenience for Shippers and non-fragmentation of information, this information needs to continue to be published in a central easily accessible location, preferably together with other relevant information.

UNC OAD section F 3.2.2 provides NGG the option to serve six months' notice that they are terminating the current service to GDNs on the basis that the UNC states the calculation of FWACVs is a GDN obligation under the Thermal Energy Regulations.

2 Impacts and Costs

Consideration of Wider Industry Impacts

Impacts on Shippers

The aim is to identify potential impacts on Shipper organisations stemming from the various options to calculate the FWACV, with the aim to limit / eliminate any impacts and that CV information for all networks should still be published on one central accessible website.

Impacts on IGTs

No impact on IGTs is expected, there are currently no biomethane sites injecting into IGT networks and this review assumes that this will not change. Should a biomethane site, or other gas producer, inject into an IGT site and this site be directed by Ofgem under Gas Act section 12 (4), then the IGT will need to make appropriate arrangements.

Impact on Central Systems and Process	
Central System/Process	Potential impact
UK Link	• No major impact
Operational Processes	• Potentially new processes depending on solution option

Impact on Users	
Area of Users' business	Potential impact
Administrative and operational	• May impact depending on solution option / solution to communicate daily CVs.
Development, capital and operating costs	• May impact depending on solution option / solution to communicate daily CVs.
Contractual risks	• Nil

Impact on Users	
Legislative, regulatory and contractual obligations and relationships	• TBC

Impact on Transporters	
Area of Transporters' business	Potential impact
System operation	• No direct impact
Development, capital and operating costs	• Potential impact depending on option
Recovery of costs	• Potential impact depending on option
Price regulation	• Potential impact depending on option
Contractual risks	• Potential impact depending on option
Legislative, regulatory and contractual obligations and relationships	• Potential impact depending on option
Standards of service	• No impact

Impact on Code Administration	
Area of Code Administration	Potential impact
Modification Rules	• No impact
UNC Committees	• No impact
General administration	• No impact
DSC Committees	• No impact

Impact on Code	
Code section	Potential impact
	• OAD Sections F - Determination of Calorific Value and M - Information Flows

Impact on UNC Related Documents and Other Referenced Documents	
Related Document	Potential impact
Network Entry Agreement (TPD I1.3)	• Nil
General	Potential Impact
Legal Text Guidance Document	• Nil
UNC Modification Proposals – Guidance for Proposers	• Nil

Impact on UNC Related Documents and Other Referenced Documents	
Self Governance Guidance	• Nil
TPD	Potential Impact
Network Code Operations Reporting Manual (TPD V12)	• Nil
UNC Data Dictionary	• Nil
AQ Validation Rules (TPD V12)	• Nil
AUGE Framework Document	• Nil
Customer Settlement Error Claims Process	• Nil
Demand Estimation Methodology	• Nil
Energy Balancing Credit Rules (TPD X2.1)	• Nil
Energy Settlement Performance Assurance Regime	• Nil
Guidelines to optimise the use of AQ amendment system capacity	• Nil
Guidelines for Sub-Deduct Arrangements (Prime and Sub-deduct Meter Points)	• Nil
LDZ Shrinkage Adjustment Methodology	• Nil
Performance Assurance Report Register	• Nil
Shares Supply Meter Points Guide and Procedures	• Nil
Shipper Communications in Incidents of CO Poisoning, Gas Fire/Explosions and Local Gas Supply Emergency	• Nil
Standards of Service Query Management Operational Guidelines	• Nil
Network Code Validation Rules	• Nil
OAD	Potential Impact
Measurement Error Notification Guidelines (TPD V12)	• Nil
EID	Potential Impact
Moffat Designated Arrangements	• Nil
IGTAD	Potential Impact
	• Nil

Impact on UNC Related Documents and Other Referenced Documents	
DSC / CDSP	Potential Impact
Change Management Procedures	• Nil
Contract Management Procedures	• Nil
Credit Policy	• Nil
Credit Rules	• Nil
UK Link Manual	• Potential impact depending on option

Impact on Core Industry Documents and other documents	
Document	Potential impact
Safety Case or other document under Gas Safety (Management) Regulations	• Nil
Gas Transporter Licence	• Nil

Other Impacts	
Item impacted	Potential impact
Security of Supply	• Nil
Operation of the Total System	• Nil
Industry fragmentation	• Possible impact depending on option.
Terminal operators, consumers, connected system operators, suppliers, producers and other non code parties	• Nil

3 Terms of Reference

Background

The secondary legislation relating to the calculation of energy values of gas was originally drafted when there was one gas transporter in Great Britain, albeit the legislation was subsequently amended and does reference Public Gas Transporter legal obligations. The UNC OAD document recognises distribution and transmission obligations relating to the calculation of daily CVs. In a world where there is one transmission transporter, four GDNs as well as IGTs it is not immediately clear whether one or more than one gas transporter has the obligation or part of the obligation. In addition, the advent of bio-methane injection into a distribution network and potentially the National Transmission System has resulted in many more sites providing data. Directional gas flows have also changed over the years, with gas entering from different sources and locations. On the basis that only NGG currently have access to the most appropriate measurement points (which may be located within another GDN's network or on the NTS) on any given day to attribute CVs for another offtake point, access to this data needs also to be considered. Data is being used in ways not originally envisaged by the

current arrangements in the OAD for example NGG use some of the data to calculate the value of gas used in NTS compressors.

Topics for Discussion

- Understanding the objective

The objective is to determine the least cost, most efficient and least industry impact option for the calculation of energy values given legal obligations under the thermal energy regulations and recent developments in a multi-transporter and multi gas source industry.

- Assessment of alternative means to achieve objective

Are there any other options in addition to those identified?

- Development of Solution

Fully scoping the options including estimates of costs, identifying timescales and other impacts such as resource or budget constraints.

- Selection of preferred solution.
- Development of project plan for preferred solution.
- Development of UNC modification required for preferred solution.
- Assessment of legal text of modification.

Outputs

Produce a Workgroup Report for submission to the Modification Panel, containing the assessment and recommendations of the Workgroup including a draft modification to implement the preferred solution (if necessary).

Composition of Workgroup

The Workgroup is open to any party that wishes to attend or participate.

A Workgroup meeting will be quorate provided at least two GDN and one NTS representatives are present.

Meeting Arrangements

Meetings will be administered by the Joint Office and conducted in accordance with the Code Administration Code of Practice.

4 Recommendations

Proposer's Recommendation to Panel

The Proposer invites the Panel to:

- DETERMINE that Request 0719R progress to the Offtake Arrangements Workgroup for review.