Joint Office of Gas Transporters

Stage 03: Draft Modification Report

0391:

Distributed Gas Charging Arrangements

At what stage is this document in the process?

01 Modification

02 Workgroup Report

03 Draft Modification Report

04 Final Modification Report

Proposes new charging arrangements in respect of Distributed Gas

Responses invited by [ ] 2012.

High Impact:
Shippers, Transporters

Medium Impact:
Customers

Low Impact:
None

Contents

About this document:

This document is a Draft Modification Report, which was issued for consultation responses, at the request of the Panel on 21 June 2012. The close-out date for responses is [] 2012. The Panel will consider the responses and agree whether or not this modification should be made.

Any questions?

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1 Summary

Is this a Self-Governance Modification

The Modification Panel determined that this is not a Self-Governance Modification.

Why Change?

At present, the distribution transportation charges are based on the premise that gas enters the gas distribution system from NTS offtakes. With potentially significant amounts of Distributed Gas available, there is a need for the transportation charges to take account of the different system usage and costs involved.

Solution

Introduction of a new distribution transportation charge, the LDZ System Entry Commodity Charge, which reflects the operating costs associated with the entry of the distributed gas and the benefits in terms of deemed NTS Exit and distribution network usage. The charge could be positive or negative (a credit).

Impacts & Costs

It is expected that the proposed new transportation charge will help facilitate the development of Distributed Gas. The introduction of the new charge will impact on the level of the existing Standard LDZ System charges; however this impact is expected to be small given the relatively small volume of Distributed Gas expected over the next few years. The main cost will be the implementation cost for invoicing the new charge; this is expected to be below £1.5m.

Implementation

While no specific implementation timescale is proposed, it is recommended that the modification is implemented at the earliest opportunity consistent with the timing of changes to transportation charges and development of the new charge invoicing arrangements.

The Case for Change

The modification would result in a distribution transportation charging methodology which better reflects the costs relating to Distributed Gas, would take into account the likely greater development of Distributed Gas in the coming years and could, by better facilitating the development of Distributed Gas, better facilitate effective competition between gas shippers.

Recommendations

All parties are invited to consider whether they wish to submit views regarding this modification.

Distributed Gas

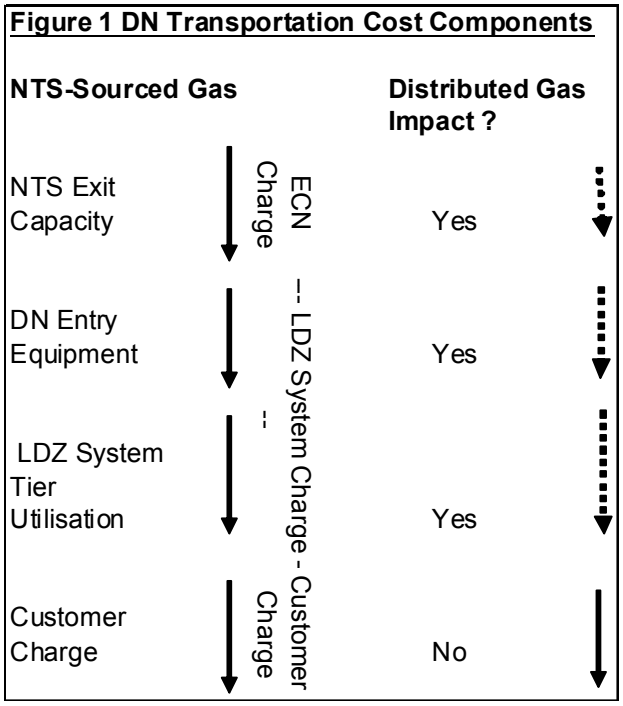
Any gas which enters into the distribution systems from sources not utilising the NTS is referred to as Distributed Gas. This could include biomethane gas, landfill gas and shale gas.

2 Why Change?

Current Transportation Charging Arrangements

Figure 1 shows the conceptual breakdown of DN transportation charges, as from October 2012, when NTS Exit capacity costs will be recovered through a new DN ECN (Exit Capacity NTS) capacity charge. All of the transportation charges, including the new ECN charge, are related to supply point characteristics (i.e. exit-based) since virtually all gas has traditionally been sourced from the NTS and there is no substantial variation in distribution system costs between gas transported from different NTS-DN offtakes through the DN. Supply point capacity is the main driver of the level of DN unit transportation charges since there has been found to be a correlation between it and the amount of distribution system usage. Having supply point-based charges also has the benefit that there is no requirement to define or measure DN entry capacity for individual shippers to form a basis for an entry charge.

Figure 1 DN Transportation Cost Components



Current Connection Charging Arrangements for DN-Embedded Entry connections

Under the Distribution Network Owners' Connection Charging methodologies, entry connection costs are fully chargeable to the connectee and payable through an up-front one-off charge. Where the entry connection requires reinforcement of the distribution system, the costs of such reinforcement are charged to the connectee as part of the connection charge. This treatment of reinforcement costs is different from that for system exit connections where, subject to the Economic Test, part of the Specific Reinforcement cost may be funded by the DN.

The Economic Test compares the cost of distribution network reinforcement and additional operating costs of accommodating the new load with the additional distribution transportation capacity revenue from the new load. To the extent that the cost exceeds the net present value of the transportation revenue over the assessed period then a contribution to the reinforcement cost is payable, otherwise no contribution is required.

Since the current distribution transportation charges are wholly related to exit point characteristics (supply point capacity and throughput, etc.) the connection of a new Distributed Gas entry load will not give rise to any additional transportation charges. Thus if the current Economic Test were to be applied to entry connections it would lead to all the Specific Reinforcement costs being chargeable to the connectee.

Specific Reinforcement

Specific Reinforcement is reinforcement required to enable the connection of identified new customers, or to permit an increase in flow rate in respect of an existing consumer or to allow an existing consumer to change from interruptible to firm transportation

Rationale for Review Now

The current arrangements have been developed during a time when the vast majority of distribution gas arrives via the NTS and there are very few Distributed Gas connections.

With biomethane now being encouraged through incentives in the UK, as part of the framework for a low carbon energy supply, it is envisaged that significant numbers of biomethane facilities may look to connect to the distribution systems. DECC has set a target of 7 TWh/a of biomethane gas by 2020. Assuming a typical biomethane facility produces around 500 m^3/h biomethane, meeting this target could require approximately 150 biomethane connections nationwide. It is also possible that developers of other types of gas facility, such as landfill or shale gas, may look to connect directly to the distribution systems. This modification is applicable to all forms of Distributed Gas.

With these potential changes to the sources of gas within the distribution systems it is important that the connection and transportation charging regimes relating to Distributed Gas are reviewed to ensure that they remain appropriate. This modification is concerned with the transportation charging regime; however, the impact on the connection charging arrangements also needs to be considered since it is appropriate to review whether the current boundary defining the costs reflected in each charging regime remains appropriate. However, any changes proposed to the DNs' connection charging regimes will ultimately be managed by each DN and are outside the scpe of this modification.

3 Solution

As Figure 1 illustrates, there are potentially differences in the costs and system utilisation in respect of Distributed Gas which relate to the LDZ System Charges and to the ECN charges due to be implemented from October 2012. It is not considered that Distributed Gas should have any impact on the Customer Charges. The issues in respect of network entry equipment opex, LDZ system utilisation, and ECN charges are each considered separately. It is proposed that a LDZ System Entry Commodity Charge be introduced which would be calculated as:

Unit Rate for Opex Costs + Unit Rate for LDZ System Credit + Unit Rate for ECN Credit

The Opex Costs unit rate will always be zero or a positive amount whereas the other unit rates, being credits, would always be negative or zero, and so the overall commodity charge could be either positive (a charge) or negative (a credit).

The existing Supply Point-based DN transportation charges would continue to apply as at present.

Network Entry Equipment – Unit Rate for Opex Costs

For the Distributed Gas entry into the DN system there will be a need for gas quality monitoring, metering, odourisation, and other equipment. The issue of which equipment is provided and operated by the Transporter and which by the connectee is the subject of separate ongoing discussions. However, the treatment of any such costs (or, indeed, the absence of such costs) incurred by the Transporter for charging purposes needs to be considered.

This proposal does change the boundary determining the capital costs which the connectee would be charged for at the time of connection i.e. the current deep connection regime would continue to apply.

However, it is proposed to reflect the particular level of entry-related equipment operating costs for each Distributed Gas entry point in the level of the element of the unit entry commodity charge rate relating to opex costs.

This unit rate will be determined from the forecast operating costs relating to the entry facilities operated by the DN and any "deep" network assets directly relating to the entry flows and from the forecast entry gas flow for the same period. No reconciliation to actual operating costs and gas flows will be done after any period.

In order to reduce the administration costs of re-estimating these values each year, it is proposed that, after initial determination, the unit rate for future years would normally be determined by applying an RPI inflation factor based rather than through redetermination from the underlying factors. However, the methodology allows for redetermination from the underlying factors for any future period so as to handle situations where the forecast costs or flows would be expected to differ substantially from those last utilised due perhaps to changes to entry facility equipment or operating processes or to network utilisation or configuration changes impacting on within-network compression usage.

LDZ System Utilisation– Unit Rate for LDZ System Credit

The rationale for this credit is that the Standard LDZ System capacity and commodity charges are based on analysis of the utilisation of the different LDZ System tiers entry flows by Supply Points of different sizes which reflects gas entering the DN system

from the NTS. Gas from LDZ System entry points may enter directly into a lower pressure tier than the Local Transmission System and so may utilise fewer tiers of the system than gas entering from the NTS typically would. Since the exit-based LDZ System charges assume transportation of NTS-sourced gas it is appropriate to provide a utilisation credit for LDZ System entry flows so that the net (lower) transportation charge in respect of gas transported from a LDZ System entry point to a DN Supply Point reflects the different typical system utilisation.

The latest LDZ System charges (post-April 2012) are based on the methodology consulted on within DNPC08 and reflect analysis of LDZ System tier costs and usage for each DN individually. The derived charges are based on tier costs for each of the main tiers (and sub-tiers for the Low Pressure tier) and so it is proposed that these main tier costs are used as the credits for LDZ System entry points, appropriately scaled.

Since it is proposed that the unit credits are commodity based it is appropriate to base them on the commodity unit costs of each tier in the DNPC08 analysis scaled to the LDZ System charges for the appropriate period. In addition, the unit commodity costs from the DNPC08 analysis were based on the LDZ System commodity charges recovering 5% of the LDZ System revenue and so since the credits are based 100% on commodity it is necessary to scale the DNPC08 unit commodity costs by 20 times to give 100% revenue equivalent levels.

The DNPC08 analysis showed that the typical use of the different pressure tiers varied with the size of the Supply Point. However, most of the variation is in the use of the Low Pressure tier and the use of the MP, IP and LTS tiers is fairly stable across most of the Supply Point sizes. It is appropriate therefore to use the typical costs for these tiers as the basis for the credits.

Using West Midlands DN as an example, the tier costs in the DNPC08 analysis which underlie the domestic commodity rate are as shown below, scaled to the level of the April 2012 charges, and multiplied by a factor of 20.

Unit Cost of each System Tier		
	At 5% level	**At 100% level**
	p/kWh	p/kWh
LTS	0.0026	0.0520
IP	0.0006	0.0114
MP	0.0042	0.0840
LP	0.0200	0.4005
Total	**0.0274**	**0.5480**

The Unit Rate for LDZ System Credit would be calculated as:

Highest Utilisation Tier	**Unit Rate Credit**
LTS	Zero
IP	LTS Utilisation Rate
MP	IP plus LTS Utilisation Rates
LP	MP plus IP plus LTS Utilisation Rates

For the West Midlands DN example, the credits would therefore be as shown below.

LDZ System Credit	
LDZ System Entry Point Highest Utilisation Tier	p/kWh
LTS	Zero
IP	0.0520
MP	0.0634
LP	0.1475

where the Highest Utilisation Tier is defined as the higher (in terms of pressure) of:

- the tier at which gas enter into the LDZ system from the LDZ System Entry Point;
- the tier which gas from the LDZ System Entry Point is, via within-network compression, moved to (this is not applicable for gas which is not subject to within-network compression).

This example illustrates that, since the costs attributed to the Low Pressure tier typically make up at least 70% of the LDZ System tier costs, the maximum LDZ System utilisation credit would be no more than 30% of the equivalent LDZ System commodity charge rate if scaled to recover 100% of the LDZ System revenue.

NTS Exit Capacity / ECN Charges – Unit Rate for ECN Credit

From October 2012, the cost incurred by the Distribution Network Owner in respect of NTS Exit capacity will be recovered through a new LDZ ECN (Exit Capacity NTS) transportation capacity charge, payable for transportation to all DN supply points and linked to the supply point characteristics (i.e. not linked just to gas entering the DN from the NTS).

The rationale for the ECN credit is that LDZ System entry flows, if dependable, provide an alternative means to NTS Exit capacity for the DN to ensure the capability to flow gas into the DN network at peak times. In practice it will be impractical to link particular LDZ System entry points to NTS Exit capacity booking levels at particular offtakes and so it is proposed that the credit is valued by reference to the average DN ECN charge for a period, since the ECN charge will be the DNs' means of passing through the NTS Exit capacity costs. The degree to which LDZ System entry flows can be depended upon for system planning purposes, so as to provide an alternative to booking NTS Exit capacity, is factored into the calculation through a Dependability Factor.

It is proposed that the unit rate is based on the average ECN charge for the whole DN multiplied by a Dependability Factor and then converted into a commodity equivalent charge

i.e. $\text{Unit Rate}_{\text{capacity}} = \text{ECN}_{\text{(p/pdkWh/d)}} * D$, where D is Dependability Factor

To convert to a commodity equivalent charge, multiply by daily capacity for entry point (SOQ) and 365 (days), divide by Annual Quantity (throughput) for supply point

i.e. $\text{Unit Rate}_{\text{commodity}} = \text{Unit Rate}_{\text{capacity}} * SOQ * 365 / AQ$

But Load Factor, $LF = AQ / (365*SOQ)$

So $\text{Unit Rate}_{\text{commodity}} = \text{Unit Rate}_{\text{capacity}} / LF = \text{ECN}_{\text{(p/pdkWh/d)}} * D / LF$

Thus if Dependability Factor, D, is set equal to Load factor, LF, then

$\text{Unit Rate}_{\text{commodity}} = \text{ECN}_{\text{(p/pdkWh/d)}}$

For example, if the average ECN rate for a DN is 0.0150 p/pdkWh/d then the Unit Rate for ECN Credit for any LDZ System Entry Point in the DN would be 0.0150 p/kWh for the same period.

Although basing the Dependability Factor on the load factor may seem simplistic, an entry flow with a higher load factor, producing closer to its peak supply on each day, may, in the absence of other information, be considered to be more dependable for planning purposes than a supply point with a more variable flow i.e. with a lower load factor.

Another advantage of this credit determination basis is that it avoids the need to obtain an estimate of the load factor characteristic of each LDZ System Entry Point.

It is worth noting that the use of the load factor for an entry point as an estimate of its dependability, and the preference for commodity-based rather than capacity-based rebates, is already established within the methodology for determining DNO credits for embedded electricity generation.

4 Relevant Objectives

Benefits against the Code Relevant Methodology Objectives	
Description of Relevant Objective	Identified impact
a) save in so far as paragraphs (aa) or (d) apply, that compliance with the charging methodology results in charges which reflect the costs incurred by the licensee in its transportation business;	Positive
aa) that, in so far as prices in respect of transportation arrangements are established by auction, either: (i) no reserve price is applied, or (ii) that reserve price is set at a level - (I) best calculated to promote efficiency and avoid undue preference in the supply of transportation services; and (II) best calculated to promote competition between gas suppliers and between gas shippers;	Not applicable
b) that, so far as is consistent with sub-paragraph (a), the charging methodology properly takes account of developments in the transportation business;	Positive
c) that, so far as is consistent with sub-paragraphs (a) and (b), compliance with the charging methodology facilitates effective competition between gas shippers and between gas suppliers; and	Positive
d) that the charging methodology reflects any alternative arrangements put in place in accordance with a determination made by the Secretary of State under paragraph 2A(a) of Standard Special Condition A27 (Disposal of Assets).	Not applicable
e) 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

The introduction of a new entry transportation charge (or credit) for Distributed Gas, recognises that gas entering the system relatively close to the point of demand will not utilise all system tiers. In order to be cost reflective, transportation charges take account of the system tiers utilised. This modification ensures this principle is applied in the context of distributed gas and hence that the appropriate costs are reflected in transportation charges. In addition, the modification will ensure that specific costs associated with supporting a particular entry point are reflected in the charges levied upon Shippers entering gas at that point, and so will be more cost reflective than if no such provision was introduced. By better reflecting the costs associated with distributed gas, implementation of the modification would support compliance with the

charging methodology resulting in charges which reflect the costs incurred by the licensees in their transportation business.

The desire for Distributed Gas to be allowed to enter distribution networks is a new development. Developing a charging regime that takes account of this development supports achievement of the relevant objective to take account of developments in the transportation business.

A charging methodology that better reflects the cost impacts of Distributed Gas helps to ensure that costs are appropriately allocated within the GB gas market. Ensuring costs are appropriately targeted supports the development of effective competition. In addition, developing proposals at this stage provides confidence to potential entrants about the charging regime that will be faced by Distributed Gas, and this certainty and appropriate allocation of costs may facilitate the development of such gas sources. This could in turn better facilitate effective competition between gas shippers since additional sources of gas will be available to the market.

The modification does not conflict with paragraphs 2, 2A and 3 of Standard Special Condition A4 of the Transporter's Licence since any change in charges would be applied based on the methodology prevailing at the time.

5 Impacts and Costs

Consideration of Wider Industry Impacts

The modification is likely to have a beneficial impact on the development of Distributed Gas schemes and in particular on the development and usage of biomethane, supporting Government targets in this respect.

Costs

Indicative industry costs – User Pays
Classification of the modification as User Pays or not and justification for classification
Transporters would need to ensure invoice calculations reflect their obligations – Xoserve has estimated this will cost no more than £1.5m to implement. This is a Transporter responsibility and therefore this is not a User Pays modification.
Identification of Users, proposed split of the recovery between Gas Transporters and Users for User Pays costs and justification
Not applicable
Proposed charge(s) for application of Users Pays charges to Shippers
Not applicable
Proposed charge for inclusion in ACS – to be completed upon receipt of cost estimate from Xoserve
Not applicable

Impacts

Impact on Transporters' Systems and Process	
Transporters' System/Process	Potential impact
UK Link	Requirement for new charge type (up to £1.5m implementation cost)
Operational Processes	Potential impact on the process for handling new Distributed Gas connection enquiries
User Pays implications	None

Impact on Users	
Area of Users' business	Potential impact
Administrative and operational	Low
Development, capital and operating costs	Impacts through revised transportation charges

Impact on Users	
Contractual risks	Low
Legislative, regulatory and contractual obligations and relationships	Impacts through revised transportation charges

Impact on Transporters	
Area of Transporters' business	Potential impact
System operation	No immediate impact
Development, capital and operating costs	No immediate impact
Recovery of costs	No immediate impact
Price regulation	The transportation charging methodologies would be modified
Contractual risks	The proposals could impact on the contractual risks relating to Distributed Gas developments
Legislative, regulatory and contractual obligations and relationships	The proposals could impact on the regulatory and contractual obligations and relationships relating to Distributed Gas developments
Standards of service	None

Impact on Code Administration	
Area of Code Administration	Potential impact
Modification Rules	None
UNC Committees	None
General administration	None

Impact on Code	
Code section	Potential impact
Section Y	Change to charging methodology in respect of Distributed Gas

Impact on UNC Related Documents and Other Referenced Documents	
Related Document	Potential impact
Network Entry Agreement (TPD I1.3)	None

Impact on UNC Related Documents and Other Referenced Documents	
Network Exit Agreement (Including Connected System Exit Points) (TPD J1.5.4)	None
Storage Connection Agreement (TPD R1.3.1)	None
UK Link Manual (TPD U1.4)	None
Network Code Operations Reporting Manual (TPD V12)	None
Network Code Validation Rules (TPD V12)	None
ECQ Methodology (TPD V12)	None
Measurement Error Notification Guidelines (TPD V12)	None
Energy Balancing Credit Rules (TPD X2.1)	None
Uniform Network Code Standards of Service (Various)	None

Impact on Core Industry Documents and other documents	
Document	Potential impact
Safety Case or other document under Gas Safety (Management) Regulations	None
Gas Transporter Licence	None

Other Impacts	
Item impacted	Potential impact
Security of Supply	The modification, by facilitating the development of Distributed Gas, may indirectly enhance the security of supply.
Operation of the Total System	The modification, by facilitating the development of Distributed Gas, may indirectly impact the operation of the Total System.
Industry fragmentation	None

Terminal operators, consumers, connected system operators, suppliers, producers and other non code parties	The modification, by facilitating the development of Distributed Gas, may impact on potential producers of Distributed Gas. The modification, by facilitating the development of Distributed Gas, may help to deliver the UK target reductions in CO_2 equivalent emissions to the longer-term benefit of consumers.

6 Implementation

While no specific implementation timescale is proposed, it is recommended that the modification is implemented at the earliest opportunity consistent with the timing of changes to transportation charges and development of the new charge invoicing arrangements.

7 The Case for Change

None in addition to that identified above.

8 Legal Text

The Legal Text for this modification has been published alongside this Report at www.gasgovernance.co.uk/0391.

9 Recommendation

All parties are invited to consider whether they wish to submit views regarding this modification. The close-out date for responses is [ ] 2012, which should be sent to enquiries@gasgovernance.co.uk. A response template which you may wish to use is at: www.gasgovernance.co.uk/0391.

Consultation Ends

On [ ] 2012