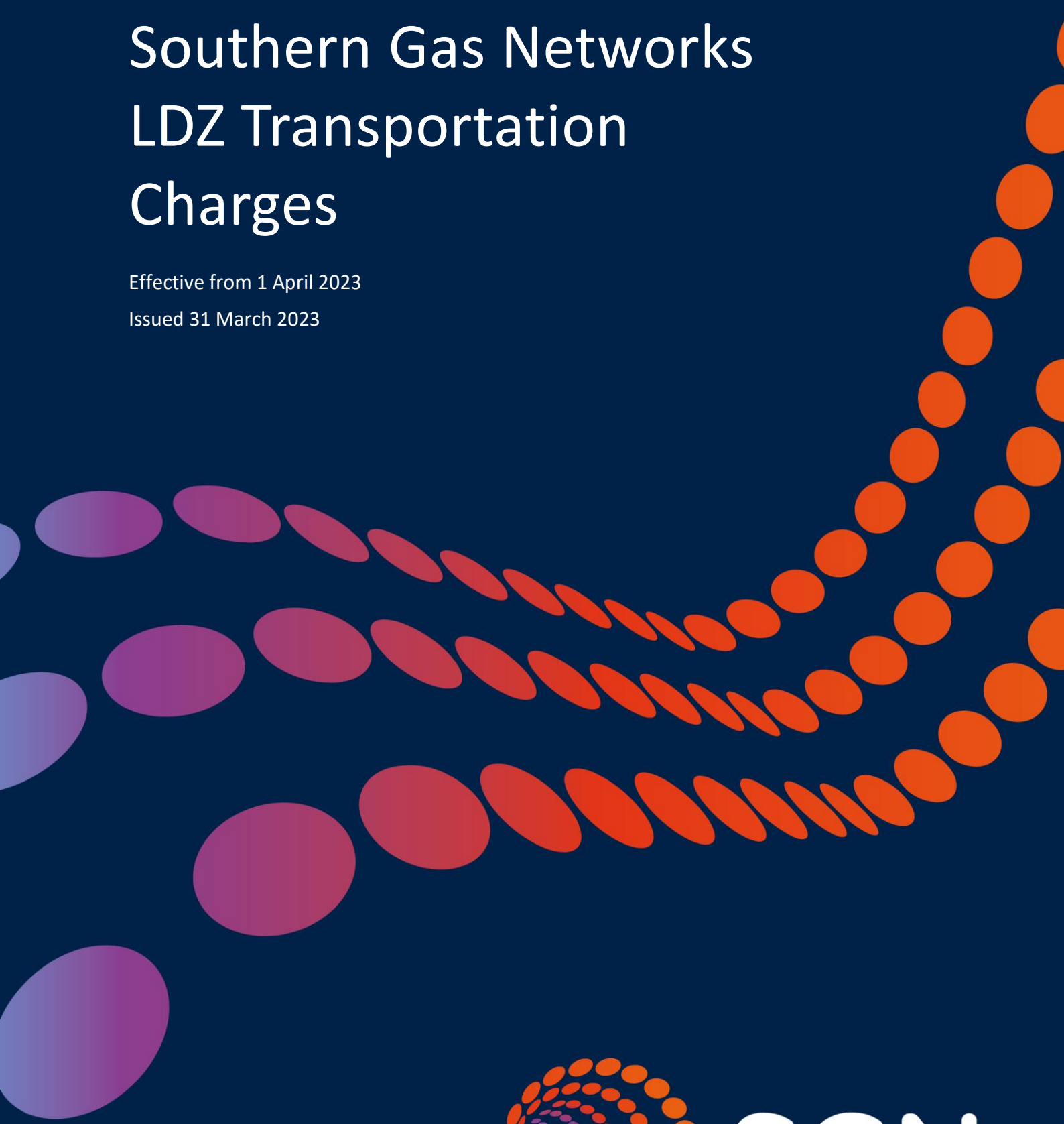
Southern Gas Networks LDZ Transportation Charges

Effective from 1 April 2023

Issued 31 March 2023



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Contents

1 Introduction

Scotia Gas Networks Limited acquired the Scotland and the South of England gas distribution networks from National Grid Transco on 1st June 2005. SGN is the holding company of Scotland Gas Networks and Southern Gas Networks.

Southern Gas Networks is responsible for transporting gas safely and reliably to 4.1 million customers within the Southern distribution network through 48,400km of gas mains. Gas transportation is carried out to meet the needs of the companies that supply gas to domestic, commercial and industrial consumers and to power stations.

This publication sets out the LDZ transportation charges which apply for the use of the Southern Gas Networks pipeline network from 1 April 2023. The charges are set to comply with the price control arrangements from 1 April 2021.

The Southern gas distribution network consisted of two Local Distribution Zones (LDZs), under the previous Transco industry structure. The term LDZ is still used in Billing, in the calculation of load factors and in the Network Code with respect to charges. It is therefore still used in this publication with reference to the charges.

Details of Southern Gas Networks and its activities can be found on the following website:-

www.sgn.co.uk

2 LDZ Transportation Charges Effective from 1 April 2023

2.1 Introduction

This publication gives Notice of the LDZ transportation charges expected to apply from 1 April 2023 for the use of Southern Gas Networks gas distribution network, as required by Standard Special Condition A4 of the Gas Transporter Licence. This document does not override or vary any of the statutory, licence or Network Code obligations upon Southern Gas Networks.

For more information on the charges set out in this document, please contact via email: -

pricing.team@sgn.co.uk

2.1.1 Uniform Network Code

The Network Code is supported by an integrated set of computer systems called UK Link. The charges and formulae in this booklet will be used in the calculation of charges within UK Link, which are definitive for billing purposes.

There are a number of areas of the Network Code that impact upon the cost to shippers of using the transportation network, such as imbalance charges, scheduling charges, capacity over-runs and ratchets, top-up neutrality charges and contractual liability. Reference should be made to the Network Code – as modified from time to time – for details of such charges and liabilities. The Uniform Network Code and related documents can be found on the Joint Office of Gas Transporters website:-

www.gasgovernance.co.uk

2.1.2 Units

- Commodity charges are expressed and billed in pence per kilowatt hour (kWh).
- Capacity charges are expressed and billed in pence per peak day kilowatt hour per day.

- Fixed charges are expressed and billed in pence per day.

2.1.3 Invoicing

The Xoserve Invoicing team produce and issue the invoices that are derived from the transportation charges shown within this publication. To clarify this link between pricing and invoicing, charge codes and invoice names are included in the tables.

For more information on invoicing, please contact Xoserve: -
www.xoserve.com/contact-us

2.1.4 The Distribution Price Control Formula

Distribution transportation charges are derived in relation to a price control formula set by Ofgem, the gas and electricity market regulator, for the transportation of gas. This formula dictates the maximum revenue that can be earned from the transportation of gas. Should the DN operator earn more or less than the maximum permitted revenue in any formula year, a compensating adjustment is made. Under the revised Licences the normal date for changing any of the charges is 1 April.

Distribution revenue recovery is split between LDZ system charges and customer charges. The relative level of these charges is based on the relative level of costs of these areas of activity. LDZ ECN Charges pass through NTS exit capacity costs.

2.1.5 Firm Transportation

Transportation is provided on a firm transportation basis only.

2.1.6 Theft of Gas

The licensing regime places incentives on transporters, shippers and suppliers to take action in respect of suspected theft of gas. Certain costs associated with individual cases of theft are recovered through transportation charges. The charges reflect these requirements, with the transporter remaining cash neutral in the process.

2.1.7 Isolations and Disconnections

Where a shipper has left a Supply Meter physically connected to the Transporter's network following a UNC Isolation and Withdrawal, 12 months after the effective Withdrawal, the Transporter must take action to disable the flow of gas where the shipper has not undertaken a physical disconnection of the meter. The Transporter is permitted to pass the costs incurred in undertaking the work to the last Registered User. The Transporter will calculate the charge to the shipper on a fully absorbed time and materials basis, consistent with the charging principles set out in the Transporter's 4B Connections Charging Methodology Statement.

2.1.8 Relationship of Charges to Price Control Maximum Allowed Revenue

Based on the price control formula for the Formula Year 2023/24, it is estimated that the Maximum Allowed Revenue for Southern Network will be £922m in comparison to £951m for 2022/23.

From 1 April 2023, the distribution transportation charges in respect of a typical Southern domestic load, consuming 12,900 kWh per annum are on average £167 per annum.

2.2 LDZ System Charges

The standard LDZ system charges consist of capacity and commodity charges with separate functions for directly connected supply points and for Connected System Exit Points (CSEPs). As set out in DNPC08, with effect from 1 April 2012 the separate functions for CSEPs ceased and the same charges apply to CSEPs as to directly connected supply points.

Where the LDZ charges are based on functions, these functions use Supply Point Offtake Quantity (SOQ) in the determination of the charges. At daily metered (Class 1 and 2, historically referred to as DM) supply points the SOQ is the registered supply point capacity. For non-daily metered (Class 3 and 4, historically referred to as NDM) supply points, the SOQ is calculated using the supply point End User Category (EUC) and the appropriate load factor. Details of EUCs and load factors are shown in Appendix 2A of the Charging Statement.

2.2.1 Directly Connected Supply Points and CSEPs

The unit charges and charging functions used to calculate charges to directly connected supply points and CSEPs are set out below.

LDZ System Charge Codes-Directly Connected Supply Points and Connected System

Directly Connected		CSEPS	
Invoice	**Charge Code**	**Invoice**	**Charge Code**
LDZ Capacity	ZCA	ADC Capacity	891
LDZ Commodity	ZCO	ADC Commodity	893

LDZ System Capacity Charges-Directly Connected Supply Points and Connected Systems

Charge Band (kWh/annum)	Capacity p/peak day kWh/day
Up to 73,200	0.2466
73,200 to 732,000	0.1957
>732,000 kWh	2.5712 x SOQ ^ -0.2970
Subject to a minimum rate of	0.0050
Minimum reached at SOQ of	1,344,325,890 kWh

LDZ System Commodity Charges-Directly Connected Supply Points and Connected Systems

Charge Band (kWh/annum)	Commodity p/kWh
Up to 73,200	0.0418
73,200 to 732,000	0.0330
>732,000 kWh	0.4995 x SOQ ^ -0.3129
Subject to a minimum rate of	0.0010
Minimum reached at SOQ of	420,992,641 kWh

2.2.2 CSEPs Charging

LDZ System charges for transportation to Connected System Exit Points (CSEPs) are identical to those for transportation to direct loads.

In the calculation of the LDZ charges payable for CSEPs, the unit commodity and capacity charges are based on the supply point capacity equal to the CSEP peak day load for the completed development irrespective of the actual stage of development.

The SOQ used is therefore the estimated SOQ for the completed development as provided in the appropriate Network Exit Agreement (NExA). For any particular CSEP, each shipper will pay identical LDZ unit charges regardless of the proportion of gas shipped. Reference needs to be made to the relevant NExA or CSEP ancillary agreement to determine the completed supply point capacity.

2.2.3 Optional LDZ Charge

The optional LDZ tariff is available, as a single charge, as an alternative to the standard LDZ system charges. This tariff may be attractive to large loads located close to the NTS. The rationale for the optional tariff is that, for large Network loads located close to the NTS or for potential new Network loads in a similar situation, the standard LDZ tariff can appear to give perverse economic incentives for the construction of new pipelines when Network connections are already available. This could result in an inefficient outcome for all system users. The charge is calculated using the function below:

Invoice	Charge Code	p/peak day kWh/day
CAZ	881	902 x [(SOQ) ^-0.834] x D + 772 x (SOQ) ^-0.717

Where (SOQ) is the Registered Supply Point Capacity, or other appropriate measure, in kWh per day and D is the direct distance, in km, from the site boundary to the nearest point on the NTS. Note that ^ means "to the power of …"

Further information on the optional LDZ tariff can be obtained from the pricing team via email at

pricing.team@sgn.co.uk

2.3 LDZ Customer Charges

For supply points with an AQ of less than 73,200 kWh per annum, the customer charge is a capacity charge. For supply points with an AQ between 73,200 and 732,000 kWh per annum, the customer charge is made up of a fixed charge which depends on the frequency of meter reading, plus a capacity charge based on the registered supply point capacity (SOQ).

For supply points with an AQ of over 732,000 kWh per annum, the customer charge is based on a function related to the registered supply point capacity (SOQ).

The unit charges and charging functions used to calculate customer charges to directly connected supply points are as follows:

LDZ Customer Capacity Charges

Charge Code	CCA
Charge Band (kWh/annum)	p/peak day kWh/day
Up to 73,200	0.1146
73,200 to 732,000	0.0046
>732,000 kWh	0.0960 x SOQ ^ -0.2100

In addition to the LDZ customer capacity charges, the following fixed charge applies to supply points with an AQ between 73,200 and 732,000 kWh:

LDZ Customer Fixed Charges

Charge Code	CFI
Supply Point Fixed Charge	Fixed Charge p/day
Non-monthly read	39.5518
Monthly read	42.1142

2.4 Other Charges

Other Charges include administration charges at Connected System Exit Points, Shared Supply Meter Points and Interconnectors.

2.4.1 Connected System Exit Points

A CSEP is a system point comprising one or more individual exit points which are not supply meter points. This includes connections to a pipeline system operated by a Gas Transporter other than Southern Gas Networks.

The calculation of LDZ charges payable for shipping to CSEPs is explained in section 2.2.2.

2.4.2 Shared Supply Meter Point Allocation Arrangements

An allocation service for daily metered supply points with AQs of more than 58,600 MWh per annum is available. This allows shippers / suppliers to supply gas through a shared supply meter point.

The allocation of daily gas flows between the shippers / suppliers can be done either by an appointed agent or by the transporter.

2.4.3 Supplier of Last Resort Charges

Due to the volatility in the gas market and significant increases in wholesale gas prices from second half of 2021 and the first quarter of 2022, there has been a significant number of Suppliers failures. As Ofgem has an obligation to ensure gas continues flowing for all customers, they operate the Supplier of Last Resort (SoLR process). This allows other Suppliers to bid for the customer base of the failed Supplier and if successful and subject to approval from Ofgem, claim associated costs from the wider industry.

It is the responsibility of Southern Gas Network to recover the costs incurred by the SOLR provider and to pass those onto the new Supplier as set out under Standard Special Condition A48 of the transportation licence. Southern Gas Network collects these costs on a volumetric basis as guided by UNC modification 0797. The SoLR

costs impacting 2023/24 charges are £42.1m. These costs are a straight passthrough therefore only reflect the level of costs DNs need to subsequently pass onto the wider shipper community.

LDZ Supplier of Last Resort Charges

Charge Code	LRD & LRI
Supply Point Volume Charge	**Daily Rate p/p KWh**
Domestic	0.0213
I&C	-

2.4.4 LDZ System Entry Commodity Charge

The new methodology relating to Distributed Gas Charging Arrangements as set out in Uniform Network Code Modification 0391 and approved by Ofgem in September 2012 and implemented from 1 April 2013. The LDZ System Entry Commodity Charge 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 rate associated with the LDZ System Entry Commodity Charge is calculated on a site by site basis. There are currently twenty sites located within Southern Gas Networks.

LDZ System Entry Commodity Rate

SGN are aware of new DN entry points that are progressing through their engineering development these may require new DN entry rates to be published within the charging period.

Site Name	GEMINI Reference	Distributed Gas Commodity Rate(p/kWh)
Albury	ALBROS	0.1193 (credit)
Poundbury Biomass	POUNOS	0.1188 (credit)
Portsdown Hill	POR	0.0210 (credit)
Apsley Farm	APSLOS	0.1012 (credit)
Blackpitts Brackley	HELMOS	0.1192 (credit)
Gorebasin Isle of Wight	WIGHOS	0.1192 (credit)
Ickneild Farm	IKNOS	0.1013 (credit)
St Nicholas Court Farm	NICHOS	0.1190 (credit)
Riverside AD Mitcham	MITCOS	0.1191 (credit)
Arla (Olleco) Aylesbury	ARLAOS	0.1193 (credit)
Ebbsfleet Farm	EBBSOS	0.1191 (credit)
Hill Farm Reading	HILLOS	0.1013 (credit)
Banbury PRS	BANBOS	0.0213 (credit)
Newton Longville	NETNOS	0.0213 (credit)

Kemsley	KEMYOS	0.1014 (credit)
Blaise Farm	BLAIOS	0.1013 (credit)
Court Lodge Farm	FAWKOS	0.1191 (credit)
Friday's Farm	FRITOS	0.1192 (credit)
Sheppey	SHEPOS	0.1191 (credit)
Dunsfold	DFLDOS	0.1191 (credit)

2.4.5 Distribution Network (NTS) Exit Capacity Charge (ECN)

Following the implementation of Uniform Network Code Modification 0195AV industry arrangements for the charging of NTS Exit Capacity costs changed on the 1 October 2012. National Grid Transmission will invoice gas Distribution Networks (DNs) for booked NTS Exit Capacity and DNs will invoice gas shippers in line with DNPC06 ("Proposals for LDZ Charges to Recover NTS Exit Capacity Charges). Ofgem have set an allowance for Southern Gas Networks to recover costs associated with NTS Exit Capacity charges.

ECN unit rate charging methodology

Distribution Networks set ECN unit rates to recover their ECN allowed revenue. The ECN allowed revenue is set during the most recent Annual Iteration Process and is made up of:

- ECN base allowance which is a forecast of NTS exit capacity costs, using latest published NTS ECN rates and network capacity bookings;
- ECN cost true up i.e. the difference between actual cost and base allowance in a prior year, which will differ for each network and which can have a significant and material impact on allowed ECN revenue and therefore the final ECN charge; and
- K ECN under or over recovery i.e. the difference between allowed and collected revenue in a prior year

When setting ECN rates, DNs seek to recover their allowed revenue as calculated above, rather than solely costs for the year. For this reason, the ECN rate charged by DNs will not match the NTS postage stamp unit rate in the same year.

To calculate the unit rates for each exit zone within a network the level of NTS cost per exit zone is used to apportion the total ECN allowed revenue across each exit zone. Once the revenue that needs to be recovered from each exit zone is determined, the latest demand snapshot of SOQs is used to calculate a unit rate per exit zone.

Below is an illustrative example showing how the DN ECN unit rates at a set of generic exit zones are calculated. N.b. no actual data has been used.

Scenario: A Distribution Network has an annual network capacity volume booking of 230,000 GWh split across 4 exit zones, leading to costs of £46m using the relevant NTS postage stamp unit rate. Allowed revenue for the year has been calculated as £45m and the latest demand snapshot from Xoserve shows shipper demand at 215,000 GWh.

Working Example:

Description	Network Capacity Annual Bookings (GWH)	Postage Stamp Price (p/kWh/d)	DN Cost per Exit Zone (£)	Allowed Revenue Apportioned	Shipper Demand snapshot (GWH)	Unit rate (p/kWh/d)
Calculation	Sum of 365 days bookings	NTS postage stamp PS rate	Volume v PS rate	Total x (Exit zone cost / total cost)	From Xoserve 'Snapshot' data	Allowed revenue / demand
Exit Zone 1	70,000	0.0200	14,000,000	13,695,652	63,000	0.0217
Exit Zone 2	20,000	0.0200	4,000,000	3,913,043	19,000	0.0206
Exit Zone 3	90,000	0.0200	18,000,000	17,608,696	87,000	0.0202
Exit Zone 4	50,000	0.0200	10,000,000	9,782,609	46,000	0.0213
Total	230,000		46,000,000	45,000,000	215,000	

Due to the differences by exit zone in the Distribution networks capacity bookings and the shipper demand profile, DN ECN rates can differ across exit zones. Shipper demand can differ to DN capacity bookings for a number of reasons, including the timing of DN bookings v the demand snapshot and any user commitment in place that networks have to consider.

Exit Capacity Charges relating to South East Local Distribution Zone:

When considering the above methodology note that the Local Transmission System in the South East LDZ is highly integrated with customers being supplied by a number of SGN offtakes at various times throughout the gas year.

One of the consequences of this integration is the capacity which is booked at the NTS Offtake into Exit Zone SE2 facilitates gas to flow through to customers located in Exit Zone SE1 in order to operate the network efficiently. NTS Exit charges are now based on the capacity booked by SGN at NTS offtakes which in turn supply LDZ exit zones. SGN have been provided with an allowance by Ofgem for NTS Exit capacity costs which are then charged to shippers based on the relevant LDZ's apportionment of NTS Exit Capacity costs. The nominated or calculated SOQ in the respective Exit Zone is used to calculate the charge to shippers. In the SE LDZ there are two Exit zones, SE1 and SE2. In Exit zone SE2 the capacity booked by SGN with NTS (and the associated charges) is greater than the capacity used in SE2, therefore customers would have to pay higher charges than the actual capacity used within this exit zone. We consider that this is an unintended consequence of the change in the charging methodology and in order to overcome this issue Southern Gas Networks have aggregated all of the NTS exit capacity charges in the SE LDZ (Exit Zones SE1 and SE2) which will result in the ECN charges being calculated using the same ECN rate within these two exit zones reflecting the fact that all NTS exit points provide the required capacity.

The 2023/24 ECN charges for Southern Gas Networks are detailed in the table below:

Invoice	Charge Code
LDZ Capacity	ECN

Exit Zone	ECN Charge Rate (p/peak day/kWh/day)
SO1	0.0187
SO2	0.0232
SE1	0.0213
SE2	0.0213

2.5 Examples

Notes

1. Charges produced by UK Link are definitive for charging purposes. Calculations below are subject to rounding and should be regarded as purely illustrative.
2. The commodity charges in these examples are based on the supply point AQ, but the actual charges would vary depending on the actual consumption of the supply point.

Example 1

A shipper has a daily metered customer in Portsmouth, with an annual consumption **(AQ)** of **20,000,000** kwh and a registered supply point capacity **(SOQ)**, booked directly by the shipper of **100,000** kwh per day.

Process	Calculations Used
LDZ Capacity **Invoice:** LDZ Capacity (ZCA) **See:** Appendix 2A **Basis:** p/peak day Kwh/day	**Volume:** 366 days x 100,000 (SOQ) = 36,600,000 **Unit Rate:** 2.5712 x 100,000 (SOQ) ^-0.2970 = 0.0842p/pd Kwh/day **Annual Charge: £30,817.20**
LDZ Commodity **Invoice:** Commodity (ZCO) **See:** Appendix 2A **Basis:** p/Kwh	**Volume:** 20,000,000 (AQ) **Unit Rate:** 0.4995 x 100,000 (SOQ) ^-0.3129 = 0.0136p/pd Kwh/day **Annual Charge: £2,720.00**
Customer (Capacity) **Invoice:** LDZ Capacity (CCA) **See:** Appendix 2A **Basis:** p/peak day Kwh/day	**Volume:** 366 days x 100,000 (SOQ) = 36,600,000 **Unit Rate:** 0.0960 x 100,000 (SOQ) ^-0.2100 = 0.0086p/pd Kwh/day **Annual Charge: £3,147.60**

LDZ Exit (Capacity) **Invoice:** Exit Capacity (ECN) **See:** Section 2.4.5 **Basis:** p/peak day Kwh/day	**Volume:** 366 days x 100,000 (SOQ) = 36,600,000 **Unit Rate:** 0.0232p/pd Kwh/day **Annual Charge: £8,491.20**
SoLR Charge **Invoice:** SoLR **See:** Section 2.4.3 **Basis:** p/peak day Kwh/day	**Volume:** 366 days x 100,000 (SOQ) = 36,600,000 **Unit Rate:** 0.0000p/pd Kwh/day **Annual Charge: £0.00**
Total Annual Charge	**Total annual charge = £45,176.00**

Unit Charge: Dividing by the annual load of 20,000,000 kWh gives a unit charge **0.2259** pence per kwh.

Example 2

A shipper has a domestic customer in Dover. Suppose the load has an **AQ** of **20,000** kWh per annum. Using the latest End User Categories this annual load places the EUC in **SE: E2201B**. Using the appropriate small NDM supply points table of load factors, it can be seen that the load factor for such a site is **29.5%**. The peak day load (**SOQ**) is therefore 20,000 ÷ (366 × 0.295) = **185** kWh.

Process	Calculations Used
LDZ Capacity **Invoice:** LDZ Capacity (ZCA) **See:** Appendix 2A **Basis:** p/peak day Kwh/day	**Volume:** 366 days x 185 (SOQ) = 67,710 **Unit Rate:** 0.2466p/pd Kwh/day **Annual Charge: £166.97**
LDZ Commodity **Invoice:** Commodity (ZCO) **See:** Appendix 2A **Basis:** p/Kwh	**Volume:** 20,000 (AQ) **Unit Rate:** 0.0418 p/Wkh **Annual Charge: £8.36**
Customer (Capacity) **Invoice:** LDZ Capacity (CCA) **See:** Appendix 2A **Basis:** p/peak day Kwh/day	**Volume:** 366 days x 185 (SOQ) = 67,710 **Unit Rate:** 0.1146 /pd Kwh/day **Annual Charge: £77.60**
LDZ Exit (Capacity) **Invoice:** Exit Capacity (ECN) **See:** Section 2.4.5 **Basis:** p/peak day Kwh/day	**Volume:** 366 days x 185 (SOQ) = 67,710 **Unit Rate:** 0.0213 p/pd Kwh/day **Annual Charge: £14.42**

SoLR Charge **Invoice:** SoLR **See:** Section 2.4.3 **Basis:** p/peak day Kwh/day	**Volume:** 366 days x 185 (SOQ) = 67,710 **Unit Rate:** 0.0213p/pd Kwh/day **Annual Charge: £14.42**
Total Annual Charge	**Total annual charge = £281.77**

Unit Charge: Dividing by the annual load of 20,000 kWh gives a unit charge of **1.4089** pence per kwh.

Example 3

Suppose that instead of supplying just one domestic customer in Dover (as in Example 2) the shipper actually supplies a Connected System Exit Point presently comprising 100 domestic customers and the completed Connected System Exit Point will comprise 150 domestic premises. Suppose that each of these premises has the same (AQ) of 20,000 kWh per annum.

Prevailing AQ (pre AQ)	100 houses × 20,000 (AQ) = 2,000,000 kWh
Maximum AQ (max AQ)	150 houses × 20,000 (AQ) = 3,000,000 kWh
Prevailing SOQ (pre SOQ)	2,000,000 ÷ (366 × 0.295) = 18,524 kWh
Maximum SOQ (max SOQ)	3,000,000 ÷ (366 × 0.295) = 27,785 kWh

Note that the prevailing annual and peak day loads of the Connected System Exit Point in effect would change over the year however, for simplicity; these have been assumed as constant in this example.

Process	Calculations Used
LDZ Capacity **Invoice:** LDZ Capacity (ZCA) **See:** Appendix 2A **Basis:** p/peak day Kwh/day	**Volume:** 366 days x 18,524 (SOQ) = 6,779,784 **Unit Rate:** 2.5712 x 27,785 (max SOQ) ^-0.2970 = 0.1231p/pd Kwh/day **Annual Charge: £8,345.91**
LDZ Commodity **Invoice:** Commodity (ZCO) **See:** Appendix 2A **Basis:** p/Kwh	**Volume:** 2,000,000 (pre AQ) **Unit Rate:** 0.4995 x 27,785 (max SOQ) ^-0.3129 = 0.0203p/pd Kwh/day **Annual Charge: £406.00**
LDZ Exit (Capacity) **Invoice:** Exit Capacity (ECN) **See:** Section 2.4.5 **Basis:** p/peak day Kwh/day	**Volume:** 366 days x 18,524 (SOQ) = 6,779,784 **Unit Rate:** 0.213 p/pd Kwh/day **Annual Charge: £1,444.09**
SoLR Charge **Invoice:** SoLR **See:** Section 2.4.3 **Basis:** p/peak day Kwh/day	**Volume:** 366 days x 100,000 (SOQ) = 36,600,000 **Unit Rate:** 0.0213p/pd Kwh/day **Annual Charge: £1444.09**

Total Annual Charge	Total annual charge = £11,640.10

Unit Charge: Dividing by the annual load of 2,000,000 kWh gives a unit charge of **0.5820** pence per kWh.

Appendix 2A

Estimation of Peak Day Load for Non-Daily Metered Supply Points

For non-daily metered (NDM) supply points, the peak day load is estimated using a set of End User Categories (EUCs). Each NDM supply point is allocated to a EUC. In each LDZ each EUC has an associated load factor. For Southern Gas Networks the relevant load factors can be found by accessing the data on the Xoserve SharePoint site. The data in these associated tables applies for the gas year 1 October 2023 to 30 September 2024.

These EUCs depend upon the annual quantity (AQ) of the supply point and, in the case of monthly read sites, the ratio of winter to annual consumption where available.

Monthly Read Sites

It is mandatory for supply points with an annual consumption greater than 293 MWh to be monthly read, however, at the shipper's request; sites below this consumption may also be classified as monthly read.

For monthly read sites where the relevant meter reading history is available, the winter: annual ratio is the consumption from December to March divided by the annual quantity. If the required meter reading information is not available, the supply point is allocated to a EUC simply on the basis of its annual quantity.

The peak load for an NDM supply point may then be calculated as:

$$\frac{AQ \times 100}{366 \times LoadFactor}$$

Example

The example shown below is for a supply point in South East LDZ, with an annual consumption of 1,000 MWh per annum.

Assume consumption December to March inclusive is 500 MWh, hence
Winter: annual ratio = 500 ÷ 1000 = 0.5

For a site with an annual consumption of 1,000 MWh, a ratio of 0.5 falls within winter: annual ratio band WO2 and the site is thus within End User Category **SE: E2204W02**.

For a site in this category, the load factor is **46.3%** and the peak day load is therefore:

$\frac{1000\times100}{366\times46.3}$ = **5.90 MWh**

If the required meter reading information is not available to calculate the winter: annual ratio, the supply point is allocated to a EUC simply on the basis of its annual quantity, in this case **SE: E2204B**.

For a site in this category, the load factor is **37.6%** and the peak day load is therefore:

$\frac{1000\times100}{366\times37.6}$ = **7.27 MWh**

Six Monthly Read Sites

In the case of six monthly read sites, the supply point is allocated to a EUC simply on the basis of its annual quantity.

Example

For a supply point in Southern Gas Networks, with an annual consumption of 200 MWh per annum, the EUC will be **SO: E2202B**.

For a site in this category, the load factor is **36.1%** and the peak daily load is therefore:

$\frac{200\times100}{366\times36.1}$ = **1.51 MWh**

Notes

The term LDZ is applied in the context of its usage with reference to the Network Code daily balancing regime.

For supply points whose consumption is over 73,200 kWh and which include one or more NDM supply meter points, an end user category code can be found in the supply point offer generated by UK Link. This code may be correlated with the end user category by means of a lookup table issued separately to shippers. Copies are available from the Xoserve Supply Point Administration Management team via email at:-

externalrequests.spa@xoserve.com

Daily Metered Supply Points

The SOQ of daily metered sites is known and hence no load factor is required.

Supply points with annual consumptions greater than 58,600 MWh should be daily metered in line with UNC Section M (DM mandatory sites). However, a handful of sites remain as non-daily metered as a result of difficulties installing the daily read equipment. In such cases in Southern the end user category code SE or SO: **E2209B** is used.

Firm supply points with an AQ above 73.2 MWh pa but below the mandatory threshold may, at the shipper's request, be classified as daily metered (DM Voluntary supply points.) However, from 1 October 2013 and in line with the implementation of UNC Modification 0345, no new DM Voluntary supply points may be created. Existing DM Voluntary sites will transfer to Non – Daily Metered supply points from specific dates as outlined in the UNC commencing 1 April 2014. The Daily Metered Elective option (introduced in line with UNC Modification 0224) is available for Shippers wishing to continue with a Daily Metered service.

Consultation on End User Categories

Section H of the Network Code requires the transporter to publish NDM Profiling and Capacity Estimation Algorithms by the end of June each year, its demand estimation proposals for the forthcoming supply year. These proposals comprise end user category definitions, NDM profiling parameters (ALPs and DAFs), and capacity estimation parameters (EUC load factors). Analysis is presented to users and the Demand Estimation Sub-Committee (a sub-committee of the Network Code Committee) is consulted before publication of its proposals.

A full list of the latest WAR bands and End User Categories can be found by accessing the data on the Xoserve SharePoint site.

3.0 Application of the LDZ Charging Methodology

3.1 Introduction

Standard Special Condition A4 of the Gas Transporter (GT) Licence requires the licensee to establish a methodology showing the methods and principles on which transportation charges are based. The present charging methodology was introduced in 1994 and it has been modified from time to time in accordance with the GT Licence.

3.1.1 Maximum Allowed Revenue

The Maximum Allowed Revenue which a Network is allowed to collect in a Formula Year is determined by a number of factors including:

- The Base Allowed Revenue for 2023/24 which was determined through the RIIO GD2 Price Control which governs the period 2021/22 through to 2026/27. This is inflated by an indexation factor which reflects the forecast CPIH as published by Office of National Statistics. The forecast is subsequently adjusted for the actual inflation rate.
- The impact of a number of Incentives and Pass-Through items as set out in our Licence; and
- GD1 lagged items including passthrough and incentive items are inflated used RPI in line with the GD1 licence;
- For GD2 any under- or over-recovery (the “K” factor in the formula) can be forecast within year (t+1) with actuals true up in t+2. In the case of 2023/24, a forecast of under or over recovery can be included in 2024/25 (t+1) tariffs, with the final impact included in 2025/26 (t+2)

The “K” factor is necessary because the level of charges set for any formula year depends on forecasts of some of the above elements. The K factor enables the allowed revenue in the following formula year to be adjusted to take this variance into account.

3.1.2 Objectives of the Charging Methodology

The transportation charging methodology has to comply with objectives set out in the Licence under Standard Special Condition A5 paragraph 5. These are that:

- Compliance with the charging methodology results in charges which reflect the costs incurred by the licensee in its transportation business, and, so far as is consistent with this,
- Compliance with the charging methodology facilitates effective competition between gas shippers and between gas suppliers; and
- The charging methodology properly takes account of developments in the transportation business;

In addition to these Licence objectives Southern Gas Networks has its own objectives for the charging regime. These are that the distribution charging methodology should:

- Promote efficient use of the distribution system;
- Generate stable charges;
- Be easy to understand and implement.

Before the transporter makes any changes to the methodology it would raise a UNC Modification Proposal in line with the UNC procedures and in accordance with Standard Special Condition A5 of the Licence. Ofgem has the right to veto any proposed changes to the methodology.

3.1.3 Structure of Charges

Under the existing structure Network LDZ charges are split between charges which reflect system costs and those which reflect customer related costs. Until April 2010 the target split of revenue recovery was 70% system and 30% customer, based on a national analysis of costs done prior to Network Sales by National Grid Transco. This analysis has now been done on a Network basis by Scotia Gas Networks, and following consultation in conjunction with the other DNs the revised revenue recovery target split which takes effect from 1st April 2010 is shown below:

Table 3.1.3: Southern Network Revenue Recovery Target Split

System %	Customer %	Total %
72.8	27.2	100

Having established the target revenue to be derived from each main category of charge, the next step is to structure the charges within each of these charge categories across the load bands such that they reasonably reflect the costs imposed on the system by different sizes of loads. The methodologies used to do this are described in the following sections.

3.2 LDZ System Charges Methodology

3.2.1 Introduction

The LDZ system charges effective from 1 April 2013 are based on the methodology described in the Pricing Consultation paper DNPC08 - Review of LDZ Transportation Charges. This methodology is described below and was based on an analysis of Network costs and system usage and a 95:5 capacity/commodity split.

Table 3.2.1a Network Pressure Tiers

The distribution network contains a series of pipe networks split into four main pressure tiers:

Pressure Tier	Operating Pressure
Local transmission System (LTS)	7 - 38 bar
Intermediate Pressure System (IPS)	2 - 7 bar
Medium Pressure System (MPS)	75 mbar - 2 bar
Low Pressure System (LPS)	Below 75 mbar

In Southern the Low-Pressure System itself accounts for 40,000 km out of the total 48,000 km of Network pipeline. In order to provide a more cost reflective basis for charging, the LPS is sub-divided on the basis of pipe diameter into eight sub-tiers as shown below.

Table 3.2.1b LPS Sub Tiers

Pipe Diameter
>24"
>18"-24"
>12"-18"
10"-12"
8"-9"
6"-7"
4"-5"
<=3"

The principle underlying the LDZ charging methodology is that charges should reflect the average use of the network made by customers in a given AQ load band, rather than the actual use made by a particular customer which would be too complex to be a practical basis of charging. Analysis has shown that there is a good correlation between supply point size and the offtake tier to which the supply point is connected. Large supply points are typically connected to the higher-pressure tiers and small supply points to the lower pressure tiers.

3.2.2 Outline of Methodology

The methodology calculates the average unit cost of utilisation for each of the main pressure tiers of the distribution system. Combining this with the probability of loads within an AQ band using that pressure tier generates a tier cost for an average load within that band. The summation of these tier costs gives the total cost for a load within the AQ band to use the distribution system. The methodology uses average costs rather than marginal costs to reflect the total costs of using the system. The detail below describes the derivation of the capacity charge function and is therefore based on peak daily flows. A similar calculation, based on annual flows, is carried out to determine the commodity charge function. The data used is that from the most recent reviews carried out in 2009/10 and 2010/11.

3.2.3 Estimation of Costs

DNPC05, implemented on 1 April 2009, reviewed the split of DN costs between LDZ System costs and Customer costs on an individual DN basis. The LDZ System charges methodology is designed to reflect the LDZ system costs under the DNPC05 methodology. The costs used in the analysis are based on DN Regulatory Reporting Pack submissions which all the DNs submit to Ofgem every year.

The LDZ System costs include:

1. The cost of all assets upstream of the service pipe, including the gas mains to which the service pipes are connected. The cost of the asset's include, regulatory depreciation, business rates and

the allowed rate of return. These costs are allocated across the tiers and sub-tiers using the detailed split across asset categories available within the accounting depreciation schedules.

2. Operational expenditure for all activities upstream of service pipes relating to the maintenance, emergency, replacement, system control and repair of mains and larger pipes, as well as energy management work such as on storage.
3. An allocation of indirect operational expenditure relating to employee overheads and work management costs in supporting LDZ System cost activities. This allocation is either directly identified or based on direct LDZ System costs relative to direct Customer costs.
4. All odorant and Shrinkage costs excluding service pipe leakage.
5. All other business related costs and pass through costs allocated in proportion to LDZ System costs and Customer costs in aggregate.

The costs in categories 2-5 are allocated across the pressure tiers and sub-tiers directly where possible, but otherwise using a variety of indicators, such as pipe length, pipe cost weighted by length, supply point numbers, AQs and SOQs, etc.

Table 3.2.3a Relative Size of Tier Costs

Pressure Tier	% Cost
LTS	8.2%
IPS	5.7%
MPS	18.2%
LPS	67.9%
Total	**100.0%**

Table 3.2.3b Relative Size of LPS Sub-tier Costs

LPS Sub Tier	% of LTS Cost
>24"	0.9%
>18"-24"	2.3%
>12"-18"	4.4%
10"-12"	13.8%
8"-9"	9.3%
6"-7"	18.7%
4"-5"	25.7%
<=3"	24.9%
TOTAL	**100%**

3.2.4 Probability of Pressure Tier / Sub Tier Usage

The second part of the methodology is to estimate the probability that a unit of gas, supplied to a supply point within a given load band, will have passed through the various pressure tiers/sub tiers within the distribution network. This estimation is based on a survey of the pressure tier/sub tier at which supply points of different sizes tend to be connected to the network along with network analysis which shows how gas flows through the system from tier to tier and through the sub-tiers.

Table 3.2.4 System Usage Probability Matrix

AQ Band (MWh)	Network Tiers			LPS Sub Tiers							
	LTS	IPS	MPS	>24"	18-24"	12-18"	10-12"	8-9"	6-7"	4-5"	<=3"
0-73.2	100.0%	71.1%	81.0%	15.1%	29.9%	52.0%	65.1%	79.0%	72.5%	48.9%	12.7%
73.2 - 146.5	100.0%	70.7%	82.1%	15.4%	30.4%	52.1%	61.1%	68.0%	58.1%	35.7%	8.1%
146.5 – 293	100.0%	70.6%	82.3%	15.8%	31.6%	52.3%	59.8%	63.3%	53.1%	31.7%	7.3%
293 – 439	100.0%	70.5%	82.5%	15.8%	30.7%	51.9%	59.8%	62.1%	51.1%	29.0%	6.7%
439 – 586	100.0%	70.5%	82.7%	15.0%	30.0%	51.5%	59.7%	62.1%	51.0%	31.0%	4.4%
586 – 732	100.0%	70.5%	82.6%	16.3%	32.5%	49.6%	55.5%	63.6%	52.7%	29.2%	3.2%
732 - 2,931	100.0%	70.1%	83.6%	15.3%	30.0%	49.2%	55.7%	57.3%	45.9%	23.6%	2.2%
2,931 - 14,654	100.0%	69.3%	86.0%	11.4%	22.7%	36.9%	39.0%	40.1%	23.5%	6.1%	0.0%
14,654 - 58,614	100.0%	62.2%	71.1%	1.0%	2.0%	3.0%	3.5%	3.9%	1.9%	0.7%	0.0%
58,614 - 293,071	100.0%	63.5%	46.7%	0.9%	1.8%	3.2%	1.5%	2.0%	2.0%	2.1%	0.0%
>293,071	100.0%	5.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 3.2.4 shows that for the 0-73.2MWh AQ band, 100% of the total peak offtake for this consumption band goes through the LTS, 71.1% goes through the IPS, and 81.0% through the MPS.

3.2.5 Cost per Unit of Capacity Utilised

The unit cost of providing capacity utilised on the peak day within each pressure tier/sub tier is calculated by the division of the capacity related costs by the volume of capacity utilised as shown in Table 3.2.5 below.

Table 3.2.5 Cost per Unit of Capacity Utilised

	Network Tiers			LPS Sub Tiers							
	LTS	IPS	MPS	>24"	18-24"	12-18"	10-12"	8-9"	6-7"	4-5"	<=3"
Capacity Cost (£m)	30.5	21.3	67.7	2.2	5.8	11.0	34.8	23.6	47.3	65.2	62.9
Capacity Utilised (GWhs)	887	581	660	116	229	395	483	570	509	331	82
Unit Cost (p/pdkWh/pd)	0.0094	0.0101	0.0281	0.0052	0.0070	0.0077	0.0198	0.0113	0.0255	0.0539	0.2112

3.2.6 Average Cost of Utilisation

The costs calculated in Table 3.2.5 represent the cost per unit of capacity utilised within each pressure tier/sub tier. The average cost of utilising a particular pressure tier/sub tier for supply points in each load band is calculated by multiplying the unit cost of utilising the tier by the probability that the tier is utilised by supply points in that load band. This is illustrated in Table 3.2.6a below for the MPS.

Table 3.2.6a Example - Average Cost (pence/pk day kWh /pd) of Utilisation of MPS by Load Band

AQ Band (MWh)	Utilisation Cost p/day	Probability of Use %	Average Cost p/day
0-73.2	0.0281	81.00%	£0.02
73.2 – 146.5	0.0281	82.10%	£0.02
146.5 – 293	0.0281	82.30%	£0.02
293 – 439	0.0281	82.50%	£0.02
439 – 586	0.0281	82.70%	£0.02
586 – 732	0.0281	82.60%	£0.02
732 – 2,931	0.0281	83.60%	£0.02
2,931 – 14,654	0.0281	86.00%	£0.02
14,654 - 58,614	0.0281	71.10%	£0.02
58,614 - 293,071	0.0281	46.70%	£0.01
>293,071	0.0281	0.00%	£0.00

Table 3.2.6b Average Cost of Network Utilisation by Consumption Band

The table below summarises the average cost, by consumption band, of using the complete network system.

AQ	Pence per peak day kWh per day											
Band (MWh)	LTS	IPS	MPS	>24"	18-24"	12-18"	10-12"	8-9"	6-7"	4-5"	<=3"	Total
0 - 73.2	0.0094	0.0071	0.0228	0.0008	0.0021	0.0040	0.0129	0.0090	0.0185	0.0264	0.0268	**0.1396**
73.2 - 146.5	0.0094	0.0071	0.0231	0.0008	0.0021	0.0040	0.0121	0.0077	0.0148	0.0192	0.0170	**0.1174**
146.5 - 293	0.0094	0.0071	0.0231	0.0008	0.0022	0.0040	0.0118	0.0072	0.0135	0.0171	0.0155	**0.1118**
293 - 439	0.0094	0.0071	0.0232	0.0008	0.0021	0.0040	0.0118	0.0071	0.0130	0.0156	0.0142	**0.1083**
439 - 586	0.0094	0.0071	0.0232	0.0008	0.0021	0.0039	0.0118	0.0070	0.0130	0.0167	0.0093	**0.1044**
586 - 732	0.0094	0.0071	0.0232	0.0008	0.0023	0.0038	0.0110	0.0072	0.0134	0.0157	0.0067	**0.1007**
732 - 2,931	0.0094	0.0071	0.0235	0.0008	0.0021	0.0038	0.0110	0.0065	0.0117	0.0127	0.0047	**0.0932**
2,931 - 14,654	0.0094	0.0070	0.0242	0.0006	0.0016	0.0028	0.0077	0.0045	0.0060	0.0033	0.0000	**0.0671**
14,654 - 58,614	0.0094	0.0063	0.0200	0.0001	0.0001	0.0002	0.0007	0.0004	0.0005	0.0004	0.0000	**0.0381**
58,614 - 293,071	0.0094	0.0064	0.0131	0.0000	0.0001	0.0002	0.0003	0.0002	0.0005	0.0011	0.0000	**0.0315**
>293,071	0.0094	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	**0.0100**

3.2.7 CSEPs

In the Charging Methodology prior to DNPC08 there were separate functions for CSEPs with an AQ above 732MWh. However, in the cost analysis which was done for DNPC08 it was concluded that there was no evidence that the costs of providing transportation to CSEPs were any different from the costs of providing transportation to other similar-sized loads. Therefore, in the Methodology which takes effect from 1 April 2012 CSEPs there are no separate charging functions for CSEPs.

3.2.8 Setting the Charging Functions

To provide a workable basis for charging individual supply points in different load bands the total average costs of utilising each tier of the distribution network are plotted. For the capacity charges these costs are the total costs detailed in 3.2.6b above. Functions are fitted to the data points such that the error term is minimised. The functions found to best fit the underlying average cost data are in the form of fixed unit rates applied to the supply point SOQ for the <73.2 MWh and the 73.2 to 732 MWh AQ bands and a variable unit rate based on a power of the supply point SOQ for loads with an AQ above 732MWh.

These functions are scaled so that when applied to all supply points connected to the distribution network they will generate the target allowed revenue.

3.3 LDZ Customer and Other Charges Methodology

Customer charges reflect supply point costs, namely costs relating to service pipes and emergency work relating to supply points.

3.3.1 Customer Charge Methodology

The customer charge methodology is based on an analysis of the extent to which service pipe and emergency service costs vary with supply point size. This analysis is used to determine the allocation of the recovery of the target revenue (based on Table 3.1.3 - Network Cost Breakdown) from supply points grouped in broad load bands. This is described in more detail below.

1. Using ABC cost analysis, the customer cost pool is sub-divided into the following cost pools:
   i. service pipes
   ii. emergency work
2. Each cost pool is then divided among a number of consumption bands based on weighted consumer numbers by consumption band. The consumption bands are based on the annual quantity of gas consumed. The weightings are derived from an analysis of how the costs of providing each of the services listed in point one above varies with consumption size.

3. For each cost pool, an average cost per consumer is then calculated for each consumption band by dividing by the number of consumers in that consumption band.
4. A total average cost per consumer is then calculated for each consumption band by adding the unit costs of each service, which are service pipes and emergency work.
5. Finally, using regression analysis, functions are developed that best fit the relationship between consumption size and total average cost per consumer.

Since April 2008 charges for supply points consuming below 73,200kWh (mainly domestic) consist of just a capacity-related charge. Charges for smaller I&C supply points, consuming between 73,200 and 732,000 kWh per annum, are based on a capacity-related charge and a fixed charge which varies with meter-reading frequency. Charges for larger I&C supply points are based on a function that varies with supply point capacity.

3.3.2 Charging for Connected Systems (CSEPs)

The standard customer charge is not levied in respect of supply points within CSEPs. However, a CSEP administration charge is levied to reflect the administration costs related to servicing these loads. The methodology for setting this charge was established in 1996 and is based on the same methodology described in 3.3.3 below for setting Other Charges.

3.3.3 Other Charges

There are other charges applied to services which are required by some shippers but not by all, for example special allocation arrangements. It is more equitable to levy specific cost reflective charges for these services on those shippers that require them. Income from these charges is included in the regulated transportation income. These charges include charges for the administration of allocation arrangements at shared supply meter points and Interconnectors.

The methodology used to calculate the appropriate level of these charges is based on an assessment of the direct costs of the ongoing activities involved in providing the services. The costs are forward looking and take into account anticipated enhancements to the methods and systems used. A percentage uplift based on the methodology described in Transco's background paper "Charging for Specific Services - Cost Assignment Methodology" (May 1999) is added to the direct costs to cover support and sustaining costs. The latest level of the uplift was published in PD16, Section 5, (November 2002).