Southern Gas Networks
LDZ Transportation Charges

Effective from 1 October 2006

Issued 1 October 2006

Contents

1. **INTRODUCTION**

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

Southern Gas Networks is responsible for transporting gas safely and reliably to almost four million customers in the South of England. 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 October 2006. The charges are set to comply with the price control arrangements from 1 April 2004.

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

Details of Southern Gas Networks and its activities can be found on its Internet web site at **www.southerngasnetworks.co.uk.** An electronic version of this publication can be found on this web site.

2. LDZ TRANSPORTATION CHARGES EFFECTIVE FROM 1 OCTOBER 2006

2.1 Introduction

This publication sets out the LDZ transportation charges which apply from 1 October 2006 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 below, contact **pricingteam@scotiagasnetworks.co.uk**

2.1.1 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.

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, the invoicing service provider, at **css.billing@xoserve.com**.

2.1.4 The distribution price control formula

Distribution transportation charges are derived in relation to a price control formula which is set by Ofgem, the gas and electricity market regulator, for the transportation of gas. This formula dictates the maximum revenue which 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 in the following year. Under the revised Licences the normal date for changing any of the charges will be 1 October.

Within the distribution price control 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.

2.1.5 Firm transportation

LDZ firm transportation charges comprise LDZ capacity and commodity charges plus customer charges.

2.1.6 Interruptible transportation

Interruptible transportation is available for supply points with Annual Quantities (AQs) of over 5,860 MWh per annum.

For supply points which have been nominated by a shipper as interruptible, the shipper will not be charged the capacity element of the LDZ system charge. The commodity element of the LDZ system charge or, alternatively the optional LDZ charge if appropriate, will continue to apply. Where the transporter nominates a supply point to be interrupted for more than 15 days in a particular year (measured from 1 April to 31 March) there is a transportation charge credit. For each day of interruption over 15 days, a transportation charge credit, equivalent to 1/15 of the annual LDZ system capacity charges avoided by having interruptible rather than firm transportation is payable to the shipper. The transporter has the right to interrupt these supply points for up to 45 days each year. Appendix 2B details the business rules for interruptible supply points.

To help run the network safely and securely the Network Code defines two special types of interruptible supply points. These are Network Sensitive Loads (NSLs) and Transporter Nominated Interruptibles (TNIs). (Network Code G 6.1.3 and G 6.5)

NSLs are supply points where specific interruption may be required to maintain the supply of gas to firm supply points in the same area.

TNIs are supply points where the transporter reserves the right to interrupt for more than 45 days each year.

A number of services related to interruptible supply points are offered:

- Allocation arrangements allow more than one shipper / supplier to supply interruptible gas to sites with AQs in excess of 58,600 MWh per annum. This flexibility of supplier enables the end user to make greater use of the competitive market and allows for alternative provision of gas during commercial interruption. Further details of this service are given in Section 2.4.2.

- The Partial Interruption service is designed to allow shippers to reduce offtake rates at supply points (to predetermined levels agreed between the shipper and the end user) where capacity exists, so that the site remains on a part-load, where otherwise it would have been fully interrupted.

- The Interruptible Supply Point Firm Allowance (IFA) is available to all interruptible supply points. It allows a guaranteed supply of 14,600 kWh per day (this figure can be higher if the capacity is available), where this allowance is subject to normal firm transportation charges. This enables end users to maintain their critical processes when their supply is interrupted.

- Transfer of Firm Offtake Capability. This allows a shipper to release capacity allocated to a firm supply point in order to meet the requirements of an interruptible supply point during an interruption notice. This is subject to system constraints and other eligibility criteria.

Details of all the above interruption services are available from gas suppliers / shippers or from the transporter.

2.1.7 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.

2.2 LDZ System Charges

The standard LDZ system charges comprise capacity and commodity charges, with separate functions for directly connected supply points and for Connected System Exit Points (CSEPs).

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 (DM) firm supply points the SOQ is the registered supply point capacity. For non-daily metered (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 this document.

For interruptible supply points the rule set out in Section B 4.6.5 (Bottom-stop supply point capacity – see also G 5.2.3) of the Network Code applies in the determination of the LDZ charges.

2.2.1 Directly Connected Supply Points

The unit charges and charging functions used to calculate charges to directly connected supply points are set out in Table 2.2.1 below.

Table 2.2.1 Directly connected supply points

Invoice	Charge Code
LDZ Capacity	ZCA
LDZ Commodity	ZCO

	Capacity	Commodity
	pence per pk day kWh per day	pence per kWh
Up to 73,200 kWh per annum	0.0525	0.1402
73,200 to 732,000 kWh per annum	0.0487	0.1297
732,000 kWh per annum and above	$0.2309 \times SOQ^{-0.1806}$	$0.8045 \times SOQ^{-0.2121}$
Subject to a minimum rate of	0.0052	0.0122
Minimum reached at SOQ of	1,324,314,760 kWh	377,508,736 kWh

2.2.2 Connected Systems

A separate charging function for transportation to Connected System Exit Points (CSEPs) was introduced from 1 October 2000. This function reflects the view that transportation to CSEP loads typically makes less use of the distribution system than to other similar-sized loads. In the calculation of LDZ charges payable, 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.

Table 2.2.2 Connected Systems

Invoice	Charge Code
ADC	891
ADC	893

	Capacity	Commodity
	pence per pk day kWh per day	pence per kWh
Up to 73,200 kWh per annum	0.0525	0.1402
73,200 to 732,000 kWh per annum	0.0487	0.1297
732,000 kWh per annum and above	$0.2442 \times SOQ^{-0.1939}$	$0.7677 \times SOQ^{-0.2131}$
Subject to a minimum rate of	0.0052	0.0122
Minimum reached at SOQ of	418,477,963 kWh	276,220,727 kWh

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
ADU	881

Pence per peak day kWh per day
$902 \times [(SOQ)^{-0.834}] \times D + 772 \times (SOQ)^{-0.717}$

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 at **pricingteam@scotiagasnetworks.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 commodity 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).

Table 2.3 LDZ Customer charges

Up to 73,200 kWh per annum

Invoice	**Charge Code**
Commodity	CCO

	Pence per kWh
Commodity charge	0.1562

73,200 kWh up to 732,000 kWh per annum

Invoice	**Charge Code**
Capacity	CFI

Fixed charge	Pence per day
Non-monthly read supply points	16.4533
Monthly read supply points	17.5192

Invoice	**Charge Code**
Capacity	CCA

	Pence per peak day kWh per day
Capacity charge	0.0018

732,000 kWh per annum and above

Invoice	**Charge Code**
Capacity	CCA

	Pence per peak day kWh per day
Charging function	$0.0400 \times SOQ^{-0.2100}$

2.4 Other Charges

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

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.

There is no customer charge payable for connected systems, however separate administration processes are required to manage the daily operations and invoicing associated with CSEPs for which an administration charge is made.

The administration charge which applies to CSEPs containing NDM and DM sites is:

CSEP administration charge

Charge per supply point	0.1534 pence per day (£0.56 per annum)

The invoice and charge codes are:

	Invoice	Charge Code
DM CSEP	ADU	883
NDM CSEP	ADC	894

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 up to four (six for VLDMCs) 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.

The administration charges which relate to these arrangements are shown below. Individual charges depend on the type of allocation service nominated and whether the site is telemetered or non-telemetered.

The charges are (expressed as £ per shipper per supply point):

Invoice	Charge Code
ADU	883

Agent Service

	Telemetered	Non-telemetered
Set-up charge	£107.00	£183.00
Shipper-shipper transfer charge	£126.00	£210.00
Daily charge	£2.55	£2.96

Transporter Service

	Telemetered	Non-telemetered
Set-up charge	£107.00	£202.00
Shipper-shipper transfer charge	£126.00	£210.00
Daily charge	£2.55	£3.05

2.4.3 Must Reads

If a shipper is unable to provide meter readings in compliance with the Network Code, the transporter may initiate processes to obtain a meter read, referred to as a 'must read'. A charge will be made for each must read and will depend on the number of meters at a supply point requiring a must read at the same time. If there is one meter at the supply point, the charge will be £40, for two meters the charge will be £60 and for three or more meters the charge will be £80. These charges are based on the typical cost of such reads which may include multiple visits to the site and obtaining and executing a warrant of entry.

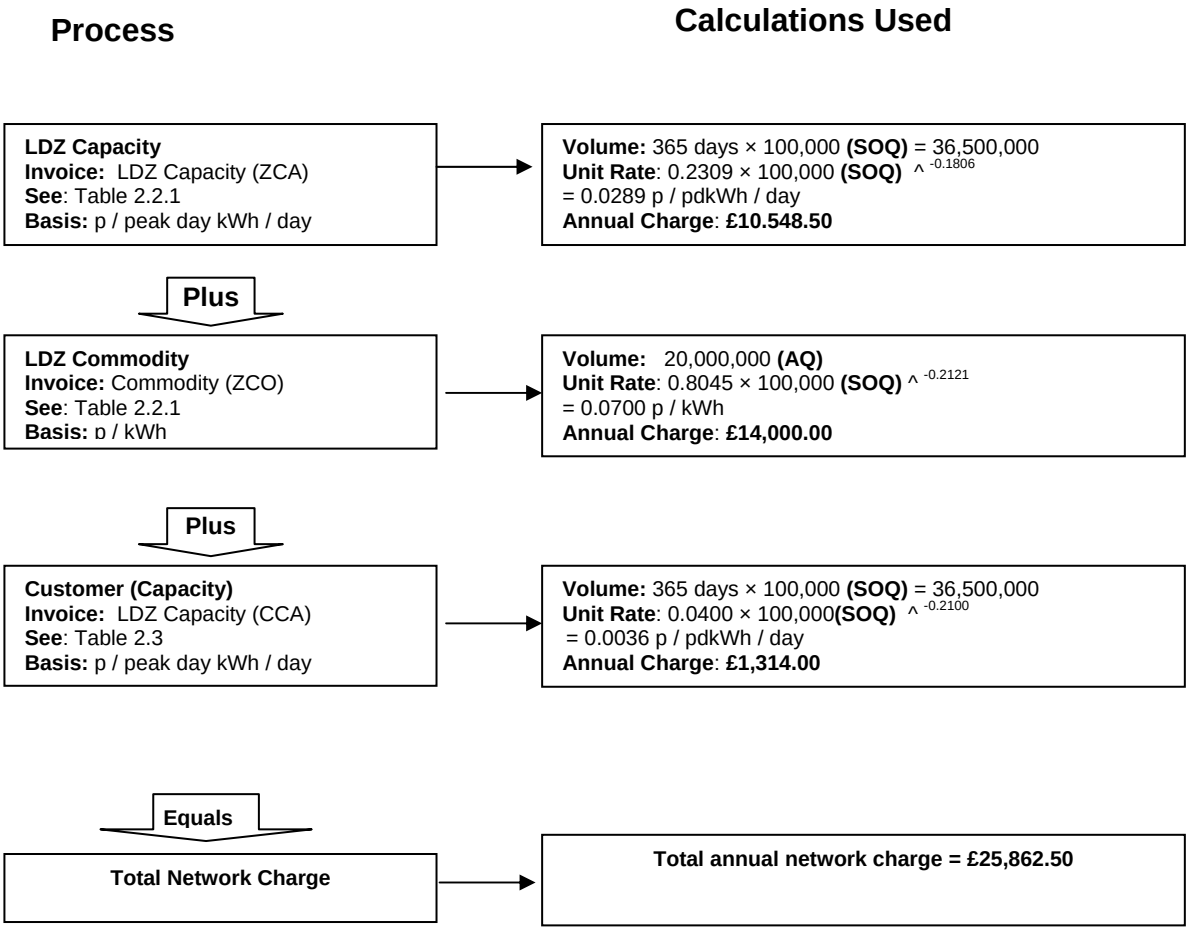
2.5 Examples

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

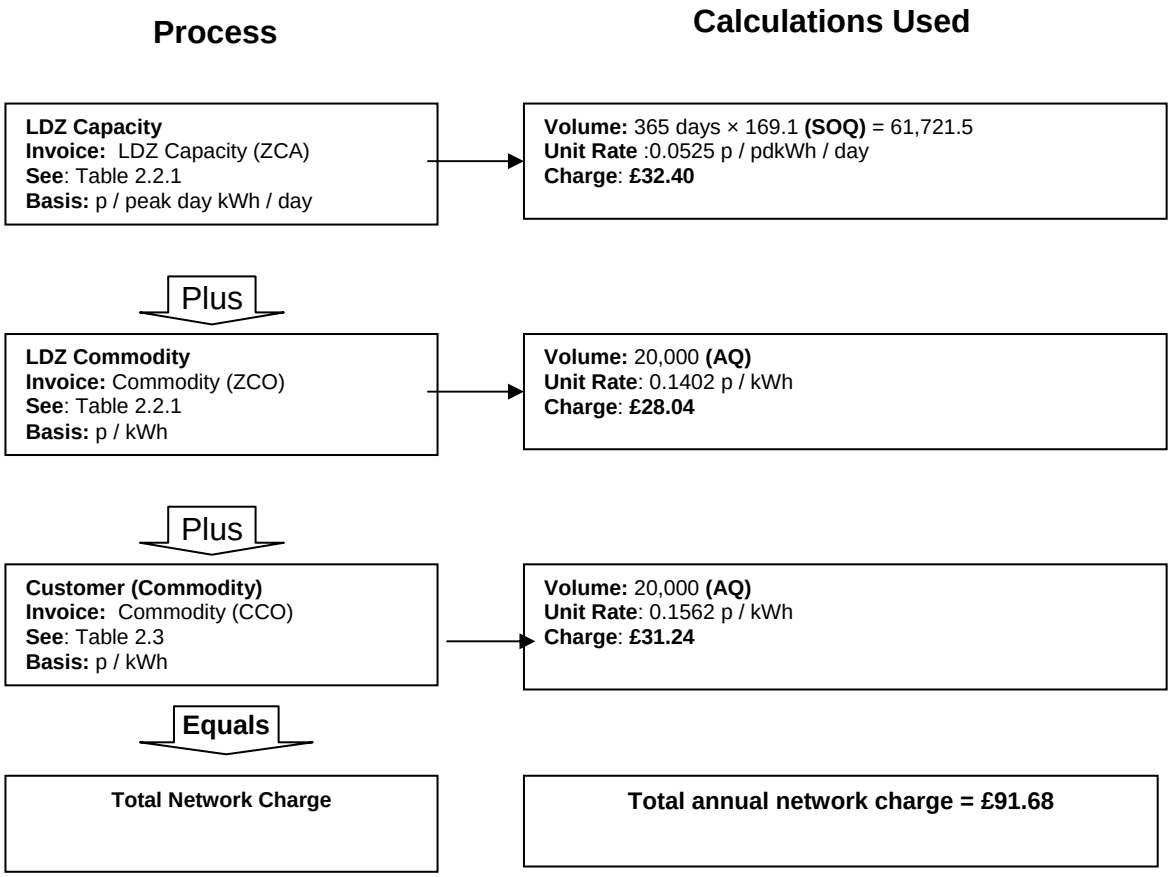
A shipper has a daily metered customer in Folkestone, with an annual consumption **(AQ)** of **20,000,000** kWh and a registered supply point capacity **(SOQ)**, booked directly by the shipper of **100,000** kWh per day.



Unit Charge: Dividing by the annual load of 20,000,000 kWh gives a unit charge 0.1293 pence per kWh. If the above example was an interruptible load, the LDZ capacity charges would not be payable. This would reduce the total charge for a shipper nominated interruptible load by £10,548.50 to a new total of £15,314.00. For each additional day of interruption over 15 days, the LDZ Charge Credit would be £703.23 per day. (There would also be an NTS credit based on the exit capacity charge which is not included in these figures.)

Example 2

A shipper has a domestic customer in Croydon. Suppose the load has an **AQ** of **20,000** kWh per annum. Using Table 2A.1, End User Categories, in Appendix 2A,, this annual load places the end user in category E0501B. Using the appropriate small NDM supply points table of load factors, it can be seen that the load factor for such a site in the South East LDZ is 32.4%. The peak day load **(SOQ)** is therefore 20,000 ÷ (365 × 0.324) = 169.1 kWh



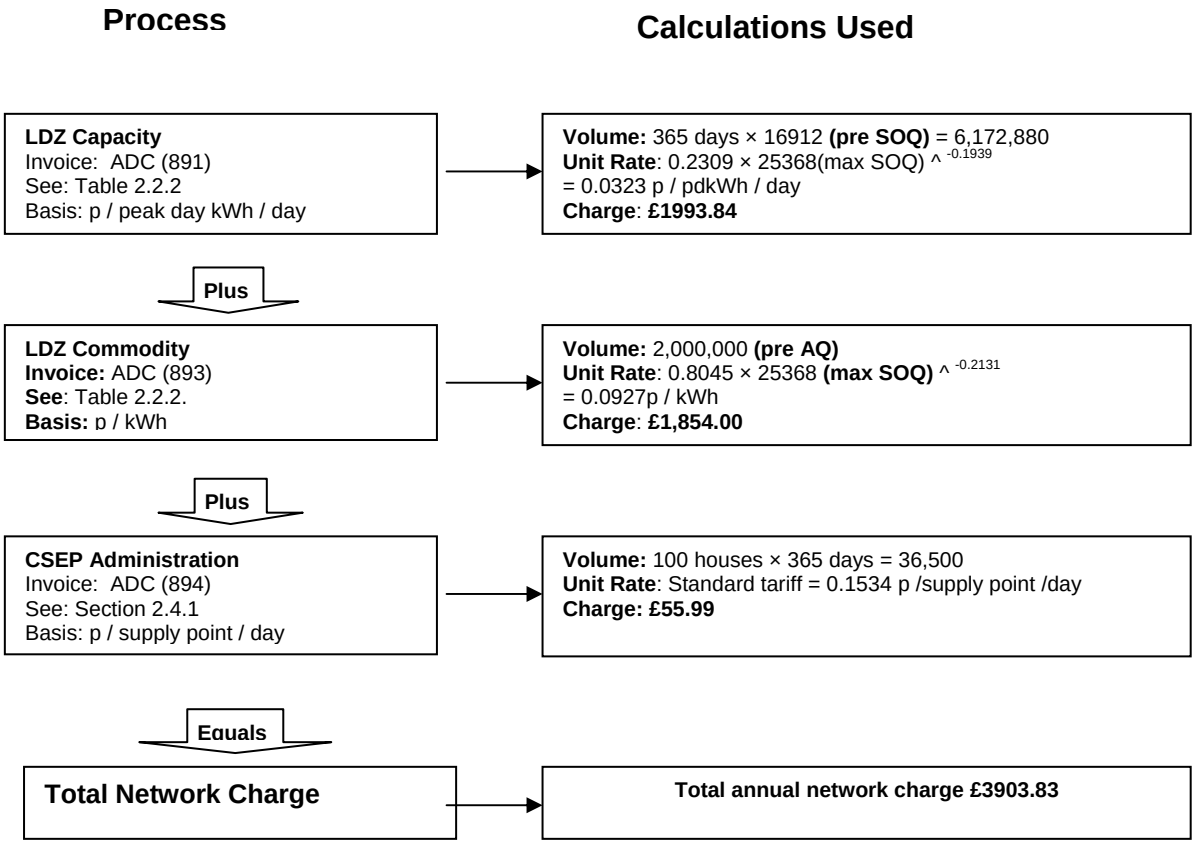
Unit Charge: Dividing by the annual load of 20,000 kWh gives a unit LDZ charge of 0.4584 pence per kWh.

Example 3

Suppose that instead of supplying just one domestic customer in Croydon (as in Example 2) the shipper actually supplies a connected system presently comprising 100 domestic customers and the completed connected system 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 ÷ (365 × 0.324) = 16912 kWh
Maximum SOQ (max SOQ)	3,000,000 ÷ (365 × 0.324) = 25368 kWh

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



Unit Charge: Dividing by the annual load of 2,000,000 kWh gives a unit LDZ charge of 0.1952 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 an EUC. In each LDZ each EUC has an associated load factor, as listed in Tables 2A.2 and 2A.3 for Southern Gas Networks. The data in these tables applies for the gas year 1 October 2006 to 30 September 2007.

In the tables 'XX' refers to the LDZ Code (e.g. SE).

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 an EUC simply on the basis of its annual quantity.

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

$$\frac{AQ \times 100}{365 \times LoadFactor}$$

Example

For a supply point in Southern Gas Networks, 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 WO3 and the site is thus within End User Category SE:E0604W03.

For a site in this category, the load factor is 32% and the peak day load is therefore

$$\frac{1000 \times 100}{365 \times 32} = 8.56 \text{ MWh}$$

If the required meter reading information is not available to calculate the winter: annual ratio, the supply point is allocated to an EUC simply on the basis of its annual quantity, in this case SE:E0604B.

For a site in this category, the load factor is 35.5% and the peak day load is therefore

$$\frac{1000 \times 100}{365 \times 35.5} = 7.72 \text{ MWh}$$

Six monthly read sites

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

Example

For a supply point in Southern Gas Networks, Southern LDZ, with an annual consumption of 200 MWh per annum, the EUC will be SO:E0602B.

For a site in this category, the load factor is 30.4% and the peak day load is therefore

$$\frac{200 \times 100}{365 \times 31.2} = 1.76 \text{ MWh}$$

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 codes shown in Table 2A.1 by means of a lookup table issued separately to shippers.

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. However, a handful of sites remain as non-daily metered as a result of difficulties installing the daily read equipment. In such cases the end user category code XX:E0609B is used.

Firm supply points with an AQ above 73.2 MWh pa may, at the shipper's request, be classified as daily metered. All interruptible supply points are daily metered.

Consultation on end user categories

Section H of the Network Code requires the transporter to publish, * 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.

* NDM Profiling and Capacity Estimation Algorithms for 2006/07, June 2006.

Appendix 2A Tables - Definition of end user categories

Table 2A.1 below defines the end user categories for each of the two LDZs which make up the Southern Network by reference to annual consumption and winter:annual ratio, applicable from 1 October 2006 to 30 September 2007.

Table 2A.1 End User Categories

EUC Code	Annual Load (MWh)	Winter:Annual Ratios (WAR)			
		W01	W02	W03	W04
xx:E0601B	0 to 73.2	-	-	-	-
xx:E0602B	73.2 to 293	-	-	-	-
xx:E0603B	293 to 732	0.00 - 0.42	0.42 - 0.49	0.49 - 0.57	0.57 - 1.00
xx:E0604B	732 to 2,196	0.00 - 0.42	0.42 - 0.49	0.49 - 0.57	0.57 - 1.00
xx:E0605B	2,196 to 5,860	0.00 - 0.39	0.39 - 0.46	0.46 - 0.54	0.54 - 1.00
xx:E0606B	5,860 to 14,650	0.00 - 0.34	0.34 - 0.42	0.42 - 0.50	0.50 - 1.00
xx:E0607B	14,650 to 29,300	0.00 - 0.33	0.33 - 0.40	0. 40 - 0.48	0.48 - 1.00
xx:E0608B	29,300 to 58,600	0.00 - 0.32	0.32 - 0.35	0.35 - 0.42	0.42 - 1.00
xx:E0609B	> 58,600	-	-	-	-

Table 2A.2 Load Factors for Small NDM Supply Points (Up to 2,196 MWh per annum)

xx: = LDZ	South East	Southern
xx:E0601B	32.4%	29.8%
xx:E0602B	32.8%	31.2%
xx:E0603B	31.8%	30.5%
xx:E0603W01	57.8%	54.1%
xx:E0603W02	44.1%	40.8%
xx:E0603W03	32.0%	29.7%
xx:E0603W04	24.3%	21.5%
xx:E0604B	35.5%	31.6%
xx:E0604W01	57.8%	54.1%
xx:E0604W02	44.1%	40.8%
xx:E0604W03	32.0%	29.7%
xx:E0604W04	24.3%	21.5%

Table 2A.3 Load Factors for Large NDM Supply Points (2,196 and above MWh per annum)

xx: = LDZ	South East	Southern
xx:E0605B	37.7%	35.0%
xx:E0605W01	62.8%	60.7%
xx:E0605W02	48.5%	44.9%
xx:E0605W03	37.2%	33.3%
xx:E0605W04	26.3%	23.3%
xx:E0606B	44.1%	37.9%
xx:E0606W01	76.3%	74.3%
xx:E0606W02	54.8%	52.0%
xx:E0606W03	42.1%	38.7%
xx:E0606W04	29.4%	27.1%
xx:E0607B	49.1%	42.1%
xx:E0607W01	77.3%	76.7%
xx:E0607W02	60.5%	58.4%
xx:E0607W03	43.5%	40.7%
xx:E0607W04	31.3%	28.8%
xx:E0608B	58.2%	55.2%
xx:E0608W01	88.7%	88.7%
xx:E0608W02	74.2%	72.7%
xx:E0608W03	56.2%	53.8%
xx:E0608W04	37.3%	34.6%
xx:E0609B	66.0%	63.7%

Appendix 2B

Business rules for interruptible supply points

1. Introduction

1.1. Contracted interruptible exit capacity remains unchanged at 45-day standard. Sites nominated by the transporter as TNI can be interrupted for a greater period.

1.2. All interruptible supply points continue to avoid the NTS (TO) exit capacity charge and the capacity element of the LDZ standard system charge. The optional LDZ charge, if chosen as an alternative to the standard LDZ charge, continues to be payable for interruptible supply points.

1.3. For each occurrence of nominated interruption beyond 15 days an additional credit will be offered. The transporter conducts determination of cumulative occurrences of nominated interruption on a site-specific basis.

1.4. These business rules became effective on 1 October 2002 and refer to additional interruption credits for above 15-day interruption.

2. Calculation of Payment

2.1. The credit will be calculated in accordance with the existing Pricing Methodology as established in PC74.

2.2. The charge quantity will be determined from the supply point registered interruptible exit capacity (SOQ) at the point of interruption multiplied by those qualifying occurrences of interruption in excess of 15 days as specified in sections 3 and 4 of this Appendix but subject to:

2.2.1. The charge quantity of any Partial interruptible site, including shared supply points, being limited to that quantity (kWh rate) of exit capacity tranche(s) that was actually requested by the transporter for interruption.

2.2.2. Subject to 2.2.1 above, such shared supply point tranche(s) charge quantity will, where more than one interruptible shared user holds interruptible exit capacity at the shared supply point, be split by each user in ratio to such user's interruptible initial (D-1) gas flow nomination as a percentage of the total aggregate interruptible initial (D-1) gas flow nomination for the shared supply point.

2.2.3. The charge quantity of any IFA site being limited to that supply point registered interruptible exit capacity net of any firm exit capacity entitlement specified within each site IFA agreement.

2.3. For the avoidance of doubt, a shared user's interruptible supply point capacity (SOQ), or such tranche under 2.2.1 above, will be used for charge quantity purposes, and not the shared supply point aggregate interruptible capacity (SSP SOQ).

2.4. User proposed ratios as alternatives to mechanisms described under 2.2.2 above will not be allowed.

2.5. Supply point data at the point of interruption will be used for charge calculation purposes.

2.6. Payment constructed from charge quantities determined in accordance with this section 2 will not be the subject of later reconciliation should any component capacity subsequently change prospectively within the formula year.

2.7. The registered shipper at the point of interruption will be the qualifying shipper for receipt of any payment.

3. Count of Interruptible Days

3.1. A count of interruption occurrence will be maintained for each site within each formula year, with each day or part day of interruption representing an increment of 1.

3.2. The count will include such occurrence of qualifying interruption as defined within section 4 below.

3.3. The count will start from zero on 1 April of each formula year beginning at April 2002.

3.4. The count will end on 31 March of each formula year.

3.5. This count will be used solely for determining the level of credit due, if any, for each site where the frequency of nominated interruption exceeds 15

days within any formula year, monitoring of transportation contract interruption will be maintained separately for each gas year (1 October-30 September).

4. Qualifying Interruption

4.1. The count of qualifying interruptible days under section 3 above will increment, but subject to 4.3 below, where curtailment of gas supply was due to:

4.1.1. interruption arising from an NTS or Network constraint within a transporter's transportation system;

4.1.2. interruption arising for Test purposes as described within the Network Code section G 6.7.3 (b).

4.2. The count of qualifying interruptible days under section 3 above will not increment where curtailment of gas supply was due to:

4.2.1. emergency interruption [emergency cessation of gas supply];

4.2.2. any form of commercial interruption instigated by a shipper.

4.3. The transporter's determination of a site for interruption will increment that site's count of interruptible days under section 3 above.

4.4. Where the transporter has called interruption, a User can request that an alternative site(s) should be interrupted as described in section G 6.8.2 of the Network Code. In such circumstances the transporter will, for the purposes of section 3 above, maintain a count based on the site the transporter originally nominated for interruption.

4.5. Failure to interrupt of the transporter proposed site or shipper proposed alternative site(s), will result in a reduction by 1 (to a minimum of zero) of the site count of interruptible days determined under 4.3 above and such that:

4.5.1. no payment will be made for the transporter proposed and shipper accepted site that subsequently fails to interrupt;

4.5.2. no payment will be made for the transporter proposed site where shipper substituted for a matched target volume site that subsequently fails to interrupt;

4.5.3. where multiple sites are substituted by a shipper, the payment(s) made to transporter proposed site(s) will be reduced by that shipper substituted target volume identified as failing to interrupt, with such volume reduction being applied in site highest unit charge rate ranked order.

5. Unit Rate

5.1. The unit rate will be expressed in pence per kWh of peak day capacity and will be the rate as determined by Pricing Methodology PC74.

5.2. NTS and LDZ unit rates will be 1/15th of the annual (daily rate × 365) NTS (TO) exit capacity rates and Network standard capacity rates valid at the point of interruption, and will be site-specific rates applied to occurrences of qualifying interruption in excess of 15 days.

5.3. Payment constructed from unit rates determined in accordance with this section 5 will not be the subject of later reconciliation should firm NTS (TO) exit capacity rates or LDZ standard capacity rates, or any peak capacity component contained within such rate calculation, subsequently change within the formula year.

5.4. For the avoidance of doubt, User election of the optional LDZ tariff excludes such sites from qualification for LDZ payments in respect of interruption in excess of 15 days, such sites will still be eligible for receipt of any NTS component.

6. Invoice

6.1. Payment of all credits accrued in a calendar month will be made within the following month.

6.2. Subject to 4.5 above, Transco will not issue a payment where it has reasonable grounds to believe that such payment is dependent upon the outcome of failure to interrupt investigation. Payment will be released as soon as practically possible should such failure to interrupt be disproved.

7. Information Provision

7.1. 7.1 The transporter will publish the count of interruptible days as specified within section 3

above where that supply point count exceeds 12 days, publication will be at an aggregate Network or aggregate NTS level. The information in 7.1 will be published on the transporter's web site and updated on a weekly basis.

3. APPLICATION OF THE LDZ CHARGES 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 Price Control Formulae

With effect from 1 April 2004 the transportation price control regime was changed to give each of the eight Networks which comprised Transco's distribution system its own allowed revenue. With effect from 1 June 2005 Southern Gas Networks will have its own Licence for the Southern Network which will set out the price controls and incentives which determine the maximum revenue that the licensee may derive from gas transportation activities in a formula year, that is 1 April to 31 March.

The Maximum Allowed Revenue in the licence is determined by a number of factors including:

- The initial level of core allowed revenue written into the licence;
- The volume of gas transported to supply points in various consumption bands within the network;
- The RPI-X indexation factor - Core allowed revenue is adjusted each year by a factor equal to two percentage points less than the rate of inflation, measured on a prescribed historical basis by reference to the Retail Price Index (RPI -2);
- Actual performance of the network in mains replacement relative to the original mains replacement allowance in the price control formula (known as the Repex Adjustment).
- Any under- or over-recovery brought forward from the previous formula year (the "K" factor in the formula).

The "K" correction factor is necessary because the level of charges set for any formula year depends on forecasts of some of the above elements. The actuals will inevitably differ from the forecasts, thus giving rise to variances between the amount of revenue generated from the charges and the amount allowed under the formula. The K factor enables these variances to be corrected by adjusting either upwards or downwards the maximum level of allowed revenue in the following formula year (taking interest 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,
- That compliance with the charging methodology facilitates effective competition between gas shippers and between gas suppliers; and
- That 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 consults with the industry 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 LDZ charges are split between charges which reflect system costs and those which reflect more customer related costs. The table below shows that, based on the national ABC cost analysis system related costs accounted for about 70% of network costs and customer related costs the remaining 30% in recent years.

Table 3.1.3: Network Cost Breakdown based on national ABC model

Year	System	Customer	Total
	%	%	%
2002	70.9	29.1	100
2003	71.8	28.2	100

Charges are therefore set to recover approximately 70% of the revenue from the system related charges and 30% of the revenue from the customer related charges.

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 charges effective from 1 October 2006 are based on the methodology fully described in consultation paper PC68 - Review of LDZ Transportation Charges. This methodology is based on an analysis of costs and system usage at a national level.

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

Table 3.2.1a Network 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

Each Network has a similar proportion of LTS, MPS and LPS pipelines but some Networks contain less IPS pipelines. The Low Pressure System itself accounts for 223,000 km out of the total 273,000 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 six sub-tiers as shown below.

Table 3.2.1b LPS Sub Tiers

Pipe Diameter
>355mm
250- 355mm
180-250mm
125-250mm
90-125mm
<=90mm
Total

The principle underlying the LDZ charging methodology is that charges should reflect the average use of the network made by customers of a given size, rather than the actual use made by a particular customer. The latter methodology would be too complex to be a practical basis of charging. Analysis has shown that there is a good correlation between customer size and offtake tier. Large customers are typically supplied from higher-pressure tiers and small customers from lower pressure tiers. Such an approach avoids inconsistencies that may arise if neighbouring sites of similar size are actually connected to different pressure tiers.

3.2.2 Outline of Methodology

The methodology calculates the average cost of utilisation for each of the main pressure tiers of the distribution system. Combining this with the probability of loads within a consumption band using that pressure tier generates a tier charge for an average load within that band. The summation of these tier charges gives the total charge for a load within the consumption 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 review carried out in 2001.

3.2.3 Determination of Costs

The costs related to each pressure tier were derived from the Activity Based Cost (ABC) model. These costs are split 50:50 into capacity and commodity elements.

Table 3.2.3a Determination of Tier Costs

Pressure Tier	LPS Sub Tier	% Total ABC	Cost (£M) Total	Capacity (50%)
LTS		15.7%	196.3	98.1
IPS		5.4%	66.9	33.5
MPS		16.2%	201.4	100.7
LPS		62.7%	782.4	391.2
TOTAL		100.0%	1247.0	623.5

The split of LPS costs down to sub-tier level is based on year 2000 replacement cost data.

Table 3.2.3b Determination of LPS Costs

LPS Sub Tier		% Total 2000 Replacement Cost	Cost (£M) Total	Capacity (50%)
LP1	>355mm	12.3%	96.2	48.1
LP2	250-355mm	12.7%	99.4	49.7
LP3	180-250mm	10.5%	82.2	41.1
LP4	125-180mm	15.8%	123.6	61.8
LP5	90-125mm	26.1%	204.2	102.1
LP6	<90mm	22.6%	176.8	88.4
TOTAL		100%	782.4	391.2

3.2.4 Probability of Pressure Tier / Sub Tier Usage

The probability of a unit of gas, supplied to a customer of given size, having passed through the various pressure tiers / sub tiers within the distribution network is estimated. This estimation is based on the results from a survey of the pressure tier / sub tier at which individual supply points are attached to the pipeline system in conjunction with the results of network analysis.

Table 3.2.4 System Usage Probability Matrix

Consumption Band (MWh)	Network Tiers			LPS Sub Tiers					
	LTS	IPS	MPS	LP1	LP2	LP3	LP4	LP5	LP6
0-73.2	97.8%	44.7%	94.4%	56.3%	76.7%	83.7%	77.5%	54.7%	17.1%
73.2 - 146.5	97.7%	44.6%	94.6%	55.5%	73.7%	76.7%	66.7%	42.7%	15.4%
146.5 – 293	97.8%	44.7%	94.2%	59.0%	78.2%	79.8%	67.8%	43.8%	17.2%
293 – 439	97.6%	45.0%	94.0%	52.8%	70.5%	72.8%	61.4%	40.0%	16.6%
439 – 586	97.6%	44.9%	94.1%	52.9%	70.3%	72.3%	61.4%	40.2%	16.8%
586 – 732	97.7%	44.6%	94.6%	55.0%	73.2%	73.9%	62.3%	43.1%	16.9%
732 - 2,931	97.5%	45.3%	93.7%	50.4%	66.8%	68.3%	57.2%	36.2%	13.4%
2,931 - 14,654	97.2%	44.6%	94.3%	43.1%	56.8%	54.9%	41.4%	20.9%	6.9%
14,654 - 58,614	96.7%	45.7%	91.3%	24.8%	31.8%	26.1%	15.2%	6.8%	0.0%
58,614 - 293,071	96.5%	50.0%	78.0%	10.3%	12.4%	6.5%	6.8%	4.1%	1.4%
>293,071	97.5%	49.1%	41.1%	1.2%	1.7%	1.6%	1.3%	1.0%	1.0%

Table 3.2.4 shows that for the 0-73.2MWh consumption band 97.8% (3,117 GWh from Table 3.2.5) of the total peak offtake for this consumption band (3,191 GWh) goes through the LTS, 44.7% goes through the IPS, and 94.4% through the MPS.

3.2.5 Pressure Tier / Sub Tier Usage Volumes

The application of usage probabilities to the network peak day offtake volumes provides an estimate of the extent to which the different load bands make use of capacity across the pressure tiers.

Table 3.2.5 Peak Daily Capacity Utilisation (GWh)

	Network Tiers			LPS Sub Tiers					
Consumption Band (MWh)	LTS	IPS	MPS	LP1	LP2	LP3	LP4	LP5	LP6
0-73.2	3,117	1,425	3,010	1,794	2,446	2,668	2,472	1,745	545
73.2 - 146.5	178	81	172	101	134	140	122	78	28
146.5 - 293	159	73	153	96	127	130	110	71	28
293 - 439	82	38	79	44	59	61	52	34	14
439 - 586	64	29	62	35	46	47	40	26	11
586 - 732	53	24	51	30	40	40	34	23	9
732 - 2,931	191	89	184	99	131	134	112	71	26
2,931 - 14,654	183	84	177	81	107	103	78	39	13
14,654 - 58,614	123	58	116	32	41	33	19	9	0
58,614 - 293,071	87	45	70	9	11	6	6	4	1
>293,071	69	35	29	1	1	1	1	1	1
Total	4,306	1,981	4,104	2,322	3,143	3,364	3,046	2,101	676

3.2.6 Cost per Unit of Capacity Utilised

The cost of providing capacity utilised on the peak day within each pressure tier / sub tier per unit of capacity is calculated by the division of capacity related costs, set out in section 3.2.2, by the volume of capacity utilised. In these calculations the LPS is not treated as a single entity but rather as individual sub tiers.

Table 3.2.6 Cost per Unit of Capacity Utilised

	Network Tiers			**LPS Sub Tiers**					
	LTS	**ITS**	**MPS**	**LP1**	**LP2**	**LP3**	**LP4**	**LP5**	**LP6**
Capacity Cost (£m)	98.1	33.5	100.7	48.1	49.7	41.1	61.8	102.1	88.4
Capacity Utilised (PD GWhs)	4,306	1,981	4,104	2,322	3,143	3,364	3,046	2,101	676
Unit Cost (p / pdkWh / a)	2.28	1.69	2.45	2.07	1.58	1.22	2.03	4.86	13.08

3.2.7 Average Cost of Utilisation

The costs calculated in Table 3.2.6 represent the cost per unit of capacity utilised within each pressure tier / sub tier. Charging however is based on the average expected use made of each tier of the pipeline system. The average cost, for customers in each load band, of utilising a particular pressure tier / sub tier, is calculated by multiplying the unit cost of utilising the tier by the probability that the tier is utilised by customers in the load band. This is illustrated in Table 3.2.7a below for the MPS.

Table 3.2.7a Example - Average Cost (p / pd kWh / a) of Utilisation of MPS by Load Band

Consumption Band (MWh)	Utilisation Cost	Probability of Use %	Average Cost
0-73.2	2.45	94.4%	2.32
73.2 - 146.5	2.45	94.6%	2.32
146.5 - 293	2.45	94.2%	2.31
293 - 439	2.45	94.0%	2.31
439 - 586	2.45	94.1%	2.31
586 - 732	2.45	94.6%	2.32
732 - 2,931	2.45	93.7%	2.30
2,931 - 14,654	2.45	94.3%	2.31
14,654 - 58,614	2.45	91.3%	2.24
58,614 - 293,071	2.45	78.0%	1.91
>293,071	2.45	41.1%	1.01

Table 3.2.7b below summarises the average cost, by consumption band, of using the complete network system.

Table 3.2.7b Average Cost of Network Utilisation by Consumption Band

Consumption Band (MWh)	Pence / peak day kWh / Annum									
	LTS	IPS	MPS	LP1	LP2	LP3	LP4	LP5	LP6	Total
0 - 73.2	2.23	0.75	2.32	1.17	1.21	1.02	1.57	2.66	2.23	15.17
73.2 - 146.5	2.23	0.75	2.32	1.15	1.17	0.94	1.35	2.08	2.01	14.00
146.5 - 293	2.23	0.76	2.31	1.22	1.24	0.98	1.38	2.13	2.25	14.49
293 - 439	2.22	0.76	2.31	1.10	1.11	0.89	1.25	1.95	2.18	13.76
439 - 586	2.22	0.76	2.31	1.10	1.11	0.88	1.25	1.95	2.20	13.79
586 - 732	2.23	0.75	2.32	1.14	1.16	0.90	1.26	2.09	2.22	14.07
732 - 2,931	2.22	0.76	2.30	1.04	1.06	0.83	1.16	1.76	1.75	12.89
2,931 - 14,654	2.22	0.75	2.31	0.89	0.90	0.67	0.84	1.02	0.90	10.50
14,654 - 58,614	2.20	0.77	2.24	0.51	0.50	0.32	0.31	0.33	0.00	7.19
58,614 - 293,071	2.20	0.85	1.91	0.21	0.20	0.08	0.14	0.20	0.18	5.96
>293,071	2.22	0.83	1.01	0.02	0.03	0.02	0.03	0.05	0.13	4.33

3.2.8 CSEPs

It has been suggested that CSEPs may use less of the distribution system when compared with standard supply points of the same peak daily consumption, and hence separate charging functions have been generated. CSEP specific connection data is used to compile a CSEP connection probability matrix in place of Table 3.2.4.

The costs calculated earlier in Table 3.2.6 represent the cost per unit of capacity utilised within each pressure tier / sub tier of the network by all loads. CSEP charging is based on the average expected cost, in each consumption band, for a CSEP utilising a particular pressure tier / sub tier. It is calculated by multiplying the unit cost of utilising each tier (Table 3.2.6) by the probability that the tier is utilised by CSEPs within a consumption band (CSEP replacement table for Table 3.2.4). The summation of each of these tier / sub-tier costs gives a total network cost as in Table 3.2.7b.

3.2.9 Setting the Charging Functions

To provide a workable basis for charging individual customers of differing sizes the total average costs of utilising each tier of the distribution network are plotted. For the capacity charges for directly connected supply points these costs are the total costs detailed in 3.2.7b 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 a power of the peak daily load (SOQ) with straight-line elements for the domestic (<73.2 MWh / annum) consumption band and the small I&C consumption band (73.2 to 732 MWh / annum). These functions must then be scaled so that when applied to all supply points connected to the distribution network they are expected to generate the desired target revenue. For CSEPs and standard supply points less than 732 MWh / annum, the functions for capacity charges are the same as are the functions for commodity charges.

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 1. above vary 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 is 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.

Charges for supply points consuming below 73,200kWh (mainly domestic) consist of just a commodity-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 3.4.3 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;
- charges for Transco supplied meter reads (Must Reads) where a shipper has been unable to provide meter readings in compliance with the Network Code;

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).