Wales & West Utilities

Statement of LDZ Transportation Charges

To apply from 1 April 2012

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LDZ TRANSPORTATION CHARGES TO APPLY FROM 1 APRIL 2012

1.1. Introduction

This publication sets out the LDZ transportation charges which will apply from 1 April 2012 for the use of the Wales & West Distribution Network (DN), 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 Uniform Network Code obligations upon Wales & West Utilities.

For more information on the charges set out below, contact the Transporter's Pricing team on **02920 278838.**

1.1.1.Uniform Network Code

The Uniform 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 Uniform 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. The Uniform Network Code and related documents can be found on the Joint Office of Gas Transporters website (www.gasgovernance.co.uk)

1.1.2.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.

1.1.3.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, via e-mail at **css.billing@xoserve.com**.

1.1.4. The distribution price control formula

Distribution 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 in the following year. Under the revised Licences the normal date for changing any of the charges will be 1 April.

Within the Network price control revenue recovery is split between LDZ system charges and LDZ customer charges. The relative level of these charges is based on the relative level of costs of these areas of activity.

1.1.5. Firm transportation

All Network transportation charges are based on Firm supply only and comprise LDZ capacity and commodity charges plus LDZ customer charges.

1.1.6 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.

1.1.8 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 Connections Charging Methodology Statement.

1.1.9. Relationship of Charges to Price Control Maximum Allowed Revenue

Following determination of the price control for Formula Years 2008/9 to 2012/13, it was estimated that the Maximum Allowed Revenue (MAR) for Wales & West Network for 2012/13 is **£353.3m.**

The transportation charges in place prior to April 2012 were estimated to recover **£336.6m** for FY 2012/13.In order to bring charges into line with the Maximum Allowed Revenue, charges were increased by 5.0**%** from 1st April 2012. The increase of 5.0% allows for a reduction of 3.0% in capacity income between 1st October 2012 and 31st March 2013 resulting from an expected fall in SOQs following the AQ review effective from 1st October 2012. Forecast under/over recovery (K) against MAR at 31st March 2013 is estimated to be zero.

From 1st April 2012, the distribution transportation charges in respect of a typical domestic load consuming 16,000 kWh/annum, was estimated to be **£140.16** per annum excl. VAT.

1.2 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.

1.2.1 **Directly Connected Supply Points**

The unit charges and charging functions used to calculate charges to directly connected supply points are set out in Table 1.2.1 below.

Table 1.2.1 Directly connected supply points

Invoice	Charge
LDZ Capacity	ZCA
LDZ Commodity	ZCO

LDZ Charges	Capacity	Commodity
	Pence per pk day kWh	Pence per kWh
Up to 73,200 kWh per annum	0.1647	0.0272
73,200 to 732,000 kWh per annum	0.1429	0.0236
732,000 kWh per annum and above	$1.2793 \times SOQ ^{-0.2513}$	$0.2750 \times SOQ ^{-0.2775}$
Subject to a minimum rate of	0.0121	0.0019
Minimum reached at SOQ of	107,786,664	58,320,905

1.2.2 Connected Systems

In the calculation of the 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 1.2.2 Connected Systems (CSEPs)

Invoice	Charge Code
ADC Capacity	891
ADC Commodity	893

ADC Charges	CSEP Capacity	CSEP Commodity
	Pence per pk day kWh per	Pence per kWh
Up to 73,200 kWh per annum	0.1647	0.0272
73,200 to 732,000 kWh per annum	0.1429	0.0236
732,000 kWh per annum and above	1.2793 x SOQ ^ -0.2513	0.2750 x SOQ ^ -0.2775
Subject to a minimum rate of	0.0121	0.0019
Minimum reached at SOQ of	107,786,664	58,320.905

1.2.3 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
$902 \times [(SOQ)^{\wedge -0.834}] \times D + 772 \times (SOQ)^{\wedge -0.717}$

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 tariff can be obtained from the Transporter's Pricing team on 02920 278838.**

1.3 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).

Table 1.3.1 LDZ Customer charges

Up to 73,200 kWh per annum

Invoice	Charge Code
Capacity	CCA

	Pence per peak day kWh per day
Capacity charge	**0.0867**

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	**28.1273**
Monthly read supply points	**29.9495**

Invoice	Charge Code
Capacity	CCA

	Pence per peak day kWh per day
Capacity charge	**0.0034**

732,000 kWh per annum and above

Invoice	Charge Code
Capacity	CCA

	Pence per peak day kWh per day
Charging function	**0.0684 x SOQ ^ $^{-0.2100}$**

1.4 Other Charges

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

1.4.1 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 within the Wales & West Network but operated by a Gas Transporter other than Wales & West Utilities

The calculation of LDZ charges payable for shipping to CSEPs is explained in section 1.2.2.

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, including interconnectors, 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	**0.1012 pence per day (£0.37 per annum)**

The invoice and charge codes are:

	Invoice	Charge Code
DM CSEP	ADU	883
NDM CSEP	ADC	894

1.4.2 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**

1.5 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 Cardiff, 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**: Table 1.2.1 **Basis:** p / peak day kWh / day	**Volume:** 365 days × 100,000 **(SOQ)** = 36,500,000 **Unit Rate**: 1.2793 × 100,000 **(SOQ)** ^ $^{-0.2513}$ = 0.0709 p / pdkWh / day **Annual Charge: Volume x Unit Rate = £25,787.50**
Plus	
LDZ Commodity **Invoice:** Commodity (ZCO) **See**: Table 1.2.1 **Basis:** p / kWh	**Volume:** 20,000,000 **(AQ)** **Unit Rate**: 0.275 × 100,000 **(SOQ)** ^ $^{-0.2775}$ = 0.0113p / kWh **Annual Charge**: **Volume x Unit Rate = £2,260.50**
Plus	
Customer (Capacity) **Invoice:** LDZ Capacity (CCA) **See**: Table 1.3.1 **Basis:** p / peak day kWh / day	**Volume:** 365 days × 100,000 = 36,500,000 **Unit Rate**: 0.0684 × 100,000**(SOQ)** ^ $^{-0.2100}$ = 0.0061p / pdkWh / day **Annual Charge**: **Volume x Unit Rate = £2,226.50**
Equals	
Total Network Charge	**Total annual network charge = £30,365.00**

Unit Charge: Dividing by the annual load of 20,000,000 kWh gives a unit charge 0.1518 pence per kWh.

Example 2

A shipper has a domestic customer in Plymouth. Suppose the load has an **AQ** of **20,000** kWh per annum. Using the definition of end user categories table in Appendix 2A, this annual load places the end user in category E0801B. 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 West LDZ is 29.7%. The peak daily load **(SOQ)** is therefore 20,000 ÷ (365 × 0.297) = 184 kWh.

Process	**Calculations Used**
LDZ Capacity **Invoice:** LDZ Capacity (ZCA) **See**: Table 1.2.1 **Basis:** p / peak day kWh / day	**Volume:** 365 days × 184 **(SOQ)** = 67,160 **Unit Rate**: 0.1647 p / pdkWh / day **Charge**: **Volume x Unit Rate = £110.61**
Plus	
LDZ Commodity **Invoice:** Commodity (ZCO) **See**: Table 1.2.1 **Basis:** p / kWh	**Volume:** 20,000 **(AQ)** **Unit Rate**: 0.0272p / kWh **Charge**: **Volume x Unit Rate = £5.44**
Plus	
Customer (Capacity) **Invoice:** Capacity (CCA) **See**: Table 1.3.1 **Basis:** p / kWh	**Volume: 365 days x** 184(SOQ) = 67,160 **Unit Rate**: 0.0867 pdkWh / day **Charge**: **£58.23**
Equals	
Total Network Charge	**Total annual network charge = £174.28**

Unit Charge: Dividing by the annual load of 20,000 kWh gives a unit LDZ charge of 0.871 pence per kWh.

Example 3

Suppose that instead of supplying just one domestic customer in Plymouth (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 × 0.297) = 18,449 kWh
Maximum SOQ (max SOQ)	3,000,000 ÷ (365 × 0.297) = 27,674 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.

Process	**Calculations Used**
LDZ Capacity **Invoice:** ADC (891) **See:** Table 1.2.2 **Basis:** p / peak day kWh / day	**Volume:** 365 days × 18,387**(pre SOQ)** = 6,733,885 **Unit Rate**: 1.2793 × 27,674 (max SOQ) ^ $^{-0.2513}$ = 0.0979 p / pdkWh / day **Charge**: **Volume x Unit Rate = £6,592.47**
Plus	
LDZ Commodity **Invoice:** ADC (893) **See**: Table 1.2.2 **Basis:** p / kWh	**Volume:** 2,000,000 **(pre AQ)** **Unit Rate**: 0.2750 × 27,674 **(max SOQ)** ^ $^{-0.2775}$ = 0.0161p / kWh **Charge**: **Volume x Unit Rate = £322.00**
Plus	
CSEP Administration Invoice: ADC (894) See: Section 1.4.1 Basis: p / supply point / day	**Volume:** 100 houses × 365 days = 36,500 **Unit Rate**: Standard tariff = 0.1012 p /supply point /day **Charge: £36.94**
Equals	
Total Network Charge	**Total annual network charge = £6,951.41**

Unit Charge: Dividing by the annual load of 2,000,000 kWh gives a unit LDZ charge of 0.35 pence per kWh.

Appendix 2A

End User Categories

For non-daily metered (NDM) supply points, the peak daily 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 Wales and the West the relevant load factors are shown in Tables 2A.2 and 2A.3. The data in these tables applies for the gas year 1 October 2011 to 30 September 2012.

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

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:

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

Example

A supply point in Wales South LDZ with an annual consumption of 1,000 MWh per annum.

Assume consumption December to March inclusive is 500 MWh.
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 WS:E1104W02.

For a site in this category, the load factor is 40.2% and the peak daily load is therefore

$$\frac{1000 \times 100}{365 \times 40.2} = 6.82 \text{ MWh}$$

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 WS: E0904B.

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

$$\frac{1000 \times 100}{365 \times 30.4} = 9.01 \text{ MWh}$$

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 Wales & the West Network, South West LDZ, with an annual consumption of 200 MWh per annum, the EUC will be SW:E1102B.

For a site in this category, the load factor is 28.1% and the peak daily load is therefore

$$\frac{200 \times 100}{365 \times 28.1} = 1.950 \text{ MWh}$$

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. Copies are available from the xoserve Supply Point Administration Management team on **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. 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:E1109B is used.

Firm supply points with an AQ above 73.2 MWh pa may, at the shipper's request, be classified as 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). The analysis is presented to users and the Demand Estimation Sub-Committee (a sub-committee of the Network Code Committee) is consulted before publication of the proposals.

* NDM Profiling and Capacity Estimation Algorithms for 2011/12, June 2011.

Appendix 2A Tables - Definition of end user categories

The following tables define the end user categories for Wales and the West Network by reference to annual consumption and winter:annual ratio, applicable from 1 October 2011 to 30 September 2012.

Table 2A.1 End User Categories

AQ (MWh)	EUC Code	WO1	WO2	WO3	WO4
< 73.2	ww:E1101WOy	-	-	-	-
73.2 - 293	ww:E1102WOy	-	-	-	-
293 – 732	ww:E1103WOy	0.00 - 0.50	0.50 - 0.59	0.59 - 0.70	0.70 - 1.00
732 - 2,196	ww:E1104WOy	0.00 - 0.50	0.50 - 0.59	0.59 - 0.70	0.70 - 1.00
2,196 - 5,860	ww:E1105WOy	0.00 - 0.44	0.44 - 0.54	0.54- 0.66	0.66 - 1.00
5,860 - 14,650	ww:E1106WOy	0.00 - 0.38	0.38 - 0.49	0.49 - 0.60	0.60 - 1.00
14,650 - 29,300	ww:E1107WOy	0.00 - 0.36	0.36 - 0.42	0.42 - 0.57	0.57 - 1.00
29,300 - 58,600	ww:E1108WOy	0.00 - 0.35	0.35 - 0.39	0.39 - 0.49	0.49 - 1.00
> 58,600	ww:E1109WOy	-	-	-	-

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

WW	WN (%)	WS (%)	SW (%)
ww:E1101B	33.9	32.1	29.7
ww:E1102B	31.5	28.5	28.1
ww:E1103B	31.5	27.4	28.3
ww:E1103W01	54.3	54.6	55.2
ww:E1103W02	40.2	40.2	41.3
ww:E1103W03	27.0	27.6	28.5
ww:E1103W04	21.6	20.6	21.0
ww:E1104B	35.3	30.4	32.0
ww:E1104W01	54.3	54.6	55.-29
ww:E1104W02	40.2	40.2	41.3
ww:E1104W03	27.0	27.6	28.5
ww:E1104W04	21.6	20.6	21.0

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

WW	WN (%)	WS (%)	SW (%)
ww:E1105B	38.5	37.7	37.4
ww:E1105W01	62.4	67.0	66.7
ww:E1105W02	46.1	46.3	45.8
ww:E1105W03	32.8	34.0	34.6
ww:E1105W04	22.3	22.8	23.1
ww:E1106B	46.9	44.7	43.7
ww:E1106W01	77.2	75.2	75.2
ww:E1106W02	55.2	56.8	56.4
ww:E1106W03	40.7	39.9	40.7
ww:E1106W04	26.4	26.4	26.4
ww:E1107B	51.6	43.9	43.9
ww:E1107W01	85.7	85.8	85.8
ww:E1107W02	65.7	64.9	64.6
ww:E1107W03	46.8	45.4	44.9
ww:E1107W04	29.5	28.5	29.0
ww:E1108B	60.4	49.3	49.2
ww:E1108W01	90.0	90.1	90.0
ww:E1108W02	72.9	72.4	72.1
ww:E1108W03	57.9	56.8	56.8
ww:E1108W04	34.1	32.7	33.3
ww:E1109B	60.7	60.8	60.4

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

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

- The Core Allowed Revenue for 2012/13 which was determined through the Price Control Review 2008/9 to 2012/13;
- By an indexation factor which reflects the movement in the RPI between the base year 2005 (average monthly RPI for the period July to Dec 04) and 2012/13 (average monthly RPI for the period July to Dec 2011);
- By a range of incentives as set out in our Licence, Part E;
- 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 some of the above elements. The actual will inevitably differ from the forecast, thus giving rise to variances between the amounts 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 Wales & the West Utilities 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

The structure of the Network's LDZ charges are split between system related activities and customer related activities.

Whilst total LDZ revenue is determined by the relevant price control, the share of this revenue to be recovered from the LDZ system charges and the LDZ customer charges respectively is based on the relative cost of each area of activity. The current split is shown in the table below.

Table 3.1.3: % Split of LDZ System and LDZ Customer Charges in Wales & West

Year	System Related (%)	Customer Related (%)	Total (%)
2012	71.8	28.2	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 2012 are based on the methodology fully described in consultation paper DNPC08- Review of LDZ Transportation Charges. This methodology is based on an analysis of costs and system usage at a Gas Distribution Network 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 comprises the major part of the Network pipeline system. 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
>600mm
450- 600mm
310-450mm
250-310mm
180-250mm
125-180mm
75-125mm
<=75mm
Total

The principle underlying the Network 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 2010.

3.2.3 Determination of Costs

The costs relating to each pressure tier were derived from the DNPC08 analysis. These costs were split into capacity and commodity elements under DNPC08.

Table 3.2.3a Determination of Tier Costs

Pressure Tier	% Total	Cost (£M) Total	Cost (£M) Capacity (95%)
LTS	13.0%	28.2	26.8
IPS	7.3%	16.0	15.2
MPS	15.3%	33.3	31.6
LPS	64.4%	140.4	133.4
TOTAL	100.0%	217.9	207.0

The split of LPS costs down to sub-tier level is based on year 2010 DNPC08 analysis.

Table 3.2.3b Determination of LPS Costs

LPS Sub Tier		% Total Cost	Cost (£M) Total	Cost (£M) Capacity (95%)
LP1	>600mm	0.3%	0.4	0.4
LP2	450-600mm	2.1%	2.9	2.8
LP3	310-450mm	3.1%	4.3	4.1
LP4	250-310mm	10.8%	15.2	14.5
LP5	180-250mm	19.1%	26.8	25.5
LP6	125-180mm	15.3%	21.5	20.4
LP7	75-125mm	27.6%	38.8	36.8
LP8	<=75mm	21.7%	30.5	28.9
TOTAL		100%	140.4	133.4

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.

The calculation carried out under DNPC08 were based upon a 95:05 Capacity:Commodity split of LDZ System revenue. The LDZ System Capacity charges are scaled such that 95% of the target revenue will be recovered by the LDZ System Capacity charges and 5% will be recovered from the LDZ System Commodity charges. DNPC03 gives full details of the charging methodology revision.

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	LP7	LP8
0-73.2	92.88%	55.49%	71.07%	1.84%	8.69%	21.22%	53.07%	67.89%	78.07%	63.96%	18.33%
73.2 - 146.5	92.90%	55.28%	71.96%	2.30%	10.67%	24.42%	51.54%	58.83%	62.87%	47.64%	13.67%
146.5 – 293	92.92%	55.07%	72.62%	2.28%	10.43%	23.15%	50.10%	58.25%	61.82%	46.59%	15.61%
293 – 439	92.94%	54.92%	73.25%	2.11%	8.96%	20.96%	48.54%	59.35%	63.86%	48.94%	15.33%
439 – 586	92.93%	54.97%	73.25%	2.19%	9.33%	20.77%	47.87%	59.38%	61.50%	47.93%	10.55%
586 – 732	92.93%	55.02%	73.29%	2.95%	10.57%	21.51%	47.26%	54.10%	57.84%	44.31%	9.24%
732 - 2,931	92.94%	54.87%	74.17%	2.22%	8.81%	19.16%	45.53%	53.99%	57.34%	42.22%	5.47%
2,931 - 14,654	92.83%	55.69%	75.97%	1.00%	4.72%	12.10%	33.70%	39.09%	34.19%	13.85%	0.57%
14,654 - 58,614	92.59%	57.69%	75.98%	0.69%	3.24%	8.28%	14.04%	15.33%	6.03%	4.79%	0.00%
58,614 - 293,071	93.06%	54.58%	54.98%	0.27%	1.31%	3.37%	4.84%	4.30%	3.31%	3.52%	0.00%
>293,071	96.88%	25.42%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 3.2.4 shows that for the 0-73.2MWh consumption band 92.9% (297.9 GWh from Table 3.2.5) of the total peak offtake for this consumption band (320.7 GWh) goes through the LTS, 55.5% goes through the IPS, and 71.07% 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	LP7	LP8
0-73.2	297.9	178.0	227.9	5.9	27.9	68.1	170.2	217.7	250.4	205.1	58.8
73.2 - 146.5	13.3	7.9	10.3	0.3	1.5	3.5	7.4	8.4	9.0	6.8	2.0
146.5 - 293	13.0	7.7	10.1	0.3	1.5	3.2	7.0	8.1	8.6	6.5	2.2
293 - 439	8.1	4.8	6.4	0.2	0.8	1.8	4.2	5.2	5.6	4.3	1.3
439 - 586	6.3	3.7	5.0	0.1	0.6	1.4	3.2	4.0	4.2	3.2	0.7
586 - 732	5.0	2.9	3.9	0.2	0.6	1.1	2.5	2.9	3.0	2.3	0.5
732 - 2,931	28.8	17.0	23.0	0.7	2.7	5.9	14.1	16.8	17.8	13.1	1.7
2,931 - 14,654	25.2	15.1	20.6	0.3	1.3	3.3	9.2	10.6	9.3	3.8	0.2
14,654 - 58,614	25.4	15.9	20.9	0.2	0.9	2.3	3.9	4.2	1.7	1.3	0.0
58,614 - 293,071	32.6	19.1	19.3	0.1	0.5	1.2	1.7	1.5	1.2	1.2	0.0
>293,071	57.6	15.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	513.2	287.2	347.4	8.3	38.2	91.8	223.4	279.4	310.7	247.7	67.3

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	IPS	MPS	LP1	LP2	LP3	LP4	LP5	LP6	LP7	LP8
Capacity Cost (£m)	26.8	15.2	31.6	0.4	2.8	4.1	14.5	25.5	20.4	36.8	28.9
Capacity Utilised (PD GWhs)	513.2	287.2	347.4	8.3	38.2	91.8	223.4	279.4	310.7	247.7	67.3
Unit Cost (p / pdkWh/year)	5.22	5.29	9.10	4.14	7.28	4.47	6.47	9.12	6.58	14.87	42.98

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 / year) of Utilisation of MPS by Load Band

Consumption Band (MWh)	Utilisation Cost	Probability of Use %	Average Cost
0-73.2	9.10	71.07%	6.47
73.2 - 146.5	9.10	71.96%	6.55
146.5 - 293	9.10	72.62%	6.61
293 - 439	9.10	73.25%	6.67
439 - 586	9.10	73.25%	6.67
586 - 732	9.10	73.29%	6.67
732 - 2,931	9.10	74.17%	6.75
2,931 - 14,654	9.10	75.97%	6.91
14,654 - 58,614	9.10	75.98%	6.91
58,614 - 293,071	9.10	54.98%	5.00
>293,071	9.10	0.01%	0.00

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	LP7	LP8	Total
0 - 73.2	4.85	2.94	6.47	0.08	0.63	0.95	3.43	6.19	5.14	9.51	7.88	48.06
73.2 - 146.5	4.85	2.92	6.55	0.10	0.78	0.94	3.33	5.37	4.14	7.08	5.88	42.08
146.5 - 293	4.85	2.91	6.61	0.09	0.76	0.98	3.24	5.31	4.07	6.93	6.71	42.52
293 - 439	4.85	2.91	6.67	0.09	0.65	0.89	3.14	5.41	4.20	7.28	6.59	42.72
439 - 586	4.85	2.91	6.67	0.09	0.68	0.88	3.10	5.42	4.05	7.13	4.54	40.35
586 - 732	4.85	2.91	6.67	0.12	0.77	0.90	3.06	4.93	3.81	6.59	3.97	38.64
732 - 2,931	4.85	2.90	6.75	0.09	0.64	0.83	2.95	4.92	3.77	6.28	2.35	36.37
2,931 - 14,654	4.85	2.95	6.91	0.04	0.34	0.67	2.18	3.57	2.25	2.06	0.24	25.93
14,654 - 58,614	4.83	3.05	6.91	0.03	0.24	0.32	0.91	1.40	0.40	0.71	0.00	18.85
58,614 - 293,071	4.86	2.89	5.00	0.01	0.10	0.08	0.31	0.39	0.22	0.52	0.00	14.45
>293,071	5.06	1.34	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	6.40

3.2.8 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 and Cseps 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. As is the case for capacity charges, the functions used for commodity charges are the same for CSEPs and directly connected supply points.

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 that 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 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.

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 the Transporter'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).