



**Wales & West Utilities**

**Statement of  
LDZ Transportation Charges**

**To apply from 1<sup>st</sup> April 2015**

Wales & West Utilities Ltd  
Spooner Close  
Coedkernew  
Newport NP10 8FZ  
Registered in England and Wales: No 5046791

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## **1. LDZ TRANSPORTATION CHARGES TO APPLY FROM 1st APRIL 2015**

### **1.1. Introduction**

This publication sets out the LDZ transportation charges which will apply from 1<sup>st</sup> April 2015 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 Limited (WWU).

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](http://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](mailto:css.billing@xoserve.com).

#### **1.1.4. The distribution price control formula**

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 Distribution Network operator earn more or less than the maximum permitted revenue in any formula year, a compensating adjustment is made – under the current price control the adjustment would be subject to a two year lag which means that for 2013/14 for example any over or under recovery would be adjusted in 2015/16.

The current formula, known as RIIO GDI runs from 2013/14 through to 2020/21.

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. LDZ Exit Capacity Charges recover 'pass through' NTS Exit Capacity costs.

#### **1.1.5. 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.

#### **1.1.6. 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.

### 1.1.7. Recovery of Maximum Allowed Revenue and Exit Capacity Costs

Following determination of the price control for Formula Years 2013/14 to 2020/21 under RIIO GDI, it was estimated that the Maximum Allowed Revenue for Wales & West Distribution Network, excluding Exit Capacity charges, for 2015/16 was £371.3m.

Transportation charges prior to the increase from 1st April 2015 were estimated to recover £374.5m for FY 2015/16. To achieve the Maximum Allowed Revenue of £371.3m charges were decreased by 0.9% from 1st April 2015. The decrease of 0.9% allows for a reduction of 2.7% in capacity income between 1st October 2015 and 31st March 2016 resulting from an expected fall in SOQs following the AQ review effective from 1st October 2015.

During 2013/14 allowed revenue excluding Exit Capacity was £373.1 however £379.1m was collected resulting in a requirement to reduce Allowed Revenue through an adjustment to the 2015/16 allowed revenue figure by -£6.0m (which is inflated with interest to £6.5m). This adjustment is known as (k), which occurs two years following the period of over / (under) recovery subject to the two year lag under the new Price Control RIIO GD1.

Exit capacity charges, which are cost pass through, are subject to a different pricing structure to other transportation charges and are therefore treated separately for the purposes of calculating the price adjustment. The exit capacity cost allowance for Wales & West Utilities reported in the Final Proposals for 2015/16 was £28.3m. The allowance of £28.3m has since been adjusted by the 'true up' of -£7.0m and k carried forward from 2013/14 of £0.2m resulting in an adjusted allowance of £21.1m. The 'true up' of -£7.0m arose because the allowance exceeded costs in T-2 (2013/14) and is therefore adjusted in 2015/16. Exit capacity charges prior to the increase from April 2015 were estimated to be £27.3m. To recover the cost allowance of £21.1m exit capacity charges were decreased by 22.9%.

From 1st April 2015, the distribution transportation charges in respect of a typical domestic load consuming 13,500 kWh/annum (as published by Ofgem), including Exit Capacity charges, was estimated to be **£138.99** per annum excl. VAT.

### 1.2. LDZ System Charges

The standard LDZ system charges comprise capacity and commodity charges.

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) 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 Description	Capacity	Commodity
Charge Code	ZCA	ZCO
Unit Rate	Pence per peak day kWh per day	Pence per kWh
Up to 73,200 kWh per annum	0.1887	0.0288
73,200 to 732,000 kWh per annum	0.1638	0.0251
732,000 kWh per annum and above	$1.4660 \times \text{SOQ}^{-0.2513}$	$0.2916 \times \text{SOQ}^{-0.2775}$
Subject to a minimum rate of	0.0139	0.0020
Minimum reached at SOQ of	112,360,455	62,708,211

#### 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 Description	CSEP Capacity	CSEP Commodity
Charge Code	891	893
Unit Rate	Pence per peak day kWh per day	Pence per kWh
Up to 73,200 kWh per annum	0.1887	0.0288
73,200 to 732,000 kWh per annum	0.1638	0.0251
732,000 kWh per annum and above	$1.4660 \times \text{SOQ}^{-0.2513}$	$0.2916 \times \text{SOQ}^{-0.2775}$
Subject to a minimum rate of	0.0139	0.0020
Minimum reached at SOQ of	112,360,455	62,708,211

### 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 Description	Charge Code	Pence per peak day kWh per day
Optional LDZ	881	$902 \times [(\text{SOQ})^{0.834}] \times D + 772 \times (\text{SOQ})^{-0.717}$

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

### 1.2.4. LDZ System Entry Commodity Charge

DN Entry Commodity charges reflect the costs of receiving gas from an entry point at a lower pressure tier. The charge will differ according to the amount of gas entering the network system, the pressure tier at which the gas enters the system and the operational costs resulting from the entry point.

The charge, which comprises the following three elements, is an adjustment to the full transportation charge:

- 1. Lower System Usage:** For the gas received from this source the Shippers will get a credit in recognition that the gas has entered the network at a lower pressure tier, thus using less of the network system.
- 2. Avoidance of Exit Capacity:** The Shipper will receive a credit for the avoidance of exit capacity charges as they have not taken gas which has entered the Wales & West network through the National Transmission offtake point.
- 3. Operational Costs:** The Shipper will be charged an operational cost, principally maintenance, relating to the equipment owned and operated by the Gas Distribution Network.

The sum of the above three components may result in either a credit or a debit to the Shipper. The table below gives the entry commodity unit price for the Entry Point at Springhill Nurseries.

DN Entry Point	Distribution Network	LDZ System Entry Commodity Charge (p/kWh)	Charge / Credit (-)
Springhill Nurseries	Wales & West	0.0092	Charge
Vale Green 2 - Pinvin (AKA Rotherdale Farm)	Wales & West	- 0.0455	Credit
Wessex Water – Avonmouth	Wales & West	- 0.0809	Credit
Penare Farm - Fraddon	Wales & West	- 0.0809	Credit
Wyke Farm	Wales & West	- 0.0771	Credit
Enfield - Exeter	Wales & West	- 0.0372	Credit
Five Fords - Wrexham	Wales & West	- 0.0372	Credit
Cannington Enterprise Ltd - Bridgwater	Wales & West	- 0.0767	Credit
Grundon Landfill - Bishops Cleeve (AKA Wingmore Farm)	Wales & West	- 0.0659	Credit
Bearley Farm - Yeovil	Wales & West	- 0.0355	Credit
Nadder Lane - South Molton	Wales & West	- 0.0659	Credit
Frogmary - South Petherton	Wales & West	- 0.0809	Credit
Netherex Farm - Exeter	Wales & West	- 0.0659	Credit

### 1.3. 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).

#### Tables 1.3.1 LDZ Customer charges

##### Up to 73,200 kWh per annum

Invoice Description	Charge Code	Unit Rate	Amount
Capacity	CCA	Pence per peak day kWh per day	0.0999

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

Invoice Description	Charge Code	Site type	Pence per day fixed charge
Capacity	CFI	Non-monthly read supply points	32.4208
		Monthly read supply points	34.5211

Invoice Description	Charge Code	Unit Rate	Amount
Capacity	CCA	Pence per peak day kWh per day	0.0039

### 732,000 kWh per annum and above

Invoice Description	Charge Code	Unit Rate	Amount
Capacity	CCA	Pence per peak day kWh per day	$0.0789 \times \text{SOQ}^{-0.2100}$

#### 1.4. LDZ Exit Capacity Charges

The Exit Capacity charges are calculated at Exit Zone level and reflect both the peak day capacity bookings for each Exit Zone within Wales & West and the offtake point prices, aggregated at Exit Zone level, published by NationalGrid (NTS).

##### 1.4.1. Exit Capacity Charges by Exit Zone

Invoice Description	Charge Code
Capacity: Directly Connected Supply Points	ECN
Capacity: Connected Systems	C04
Capacity: Unique Sites	901

Exit Zone	pence per peak day kWh per day
SW1	0.0062
SW2	0.0193
SW3	0.0219
WA1	0.0231
WA2	0.0013

#### 1.5. Other Charges

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

### 1.5.1. 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 WWU.

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	0.0910 pence per day (£0.33 per annum)

The invoice and charge codes are:

Invoice Description	Invoice Type	Charge Code
Daily Metered CSEP	ADU	883
Non Daily Metered CSEP	ADC	894

### 1.5.2. 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 Type	Charge Code
ADU	883

		Telemetered	Non-telemetered
Agent Service	Set-up charge	£107.00	£183.00
	Shipper-shipper transfer charge	£126.00	£210.00
	Daily charge	£2.55	£2.96
Transporter Service	Set-up charge	£107.00	£202.00
	Shipper-shipper transfer charge	£126.00	£210.00



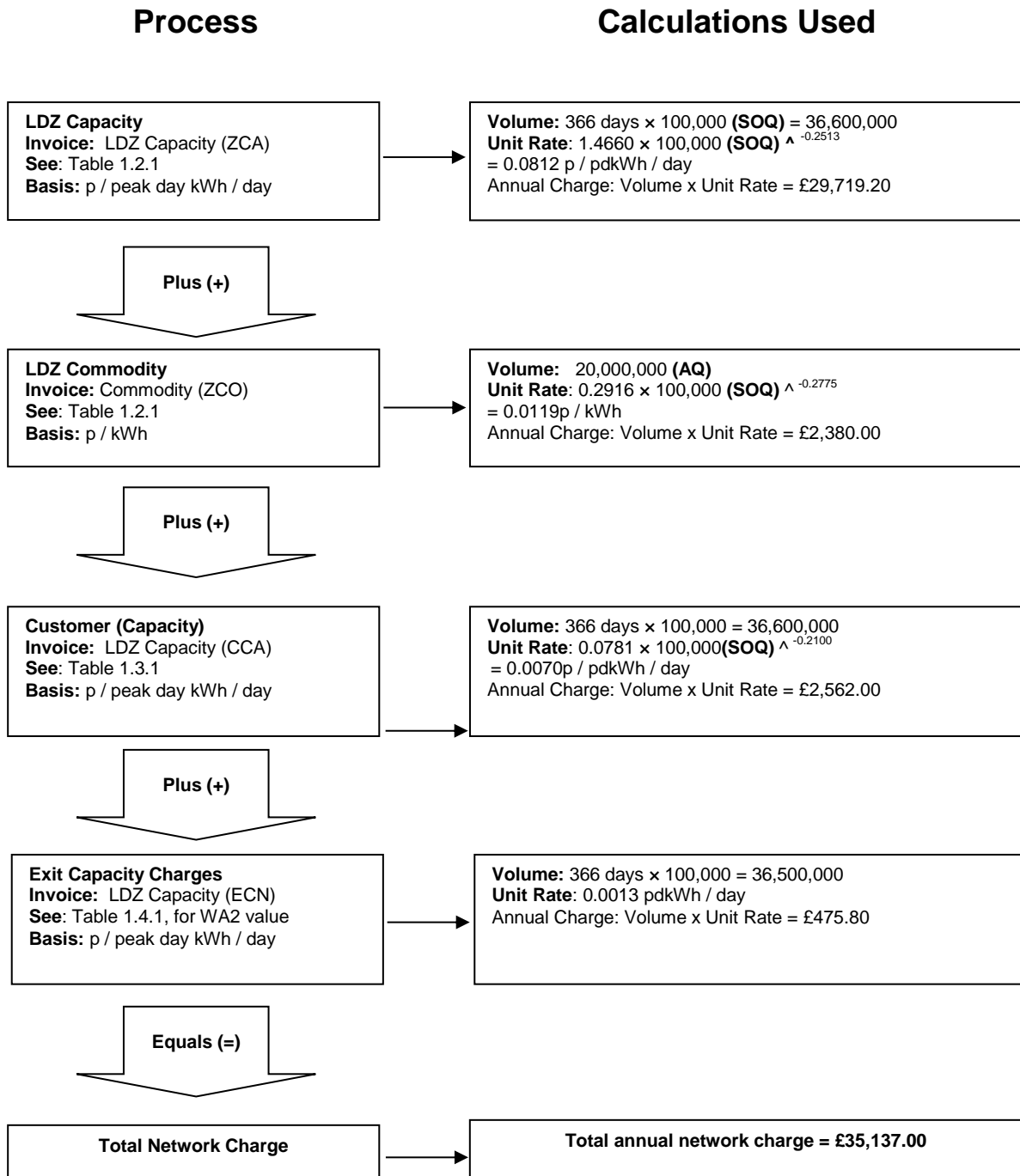
## 1.6. Examples

### Notes

- Charges produced by UK Link are definitive for charging purposes. Calculations below are subject to rounding and should be regarded as purely illustrative.
- 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.

### 1.6.1. Example 1

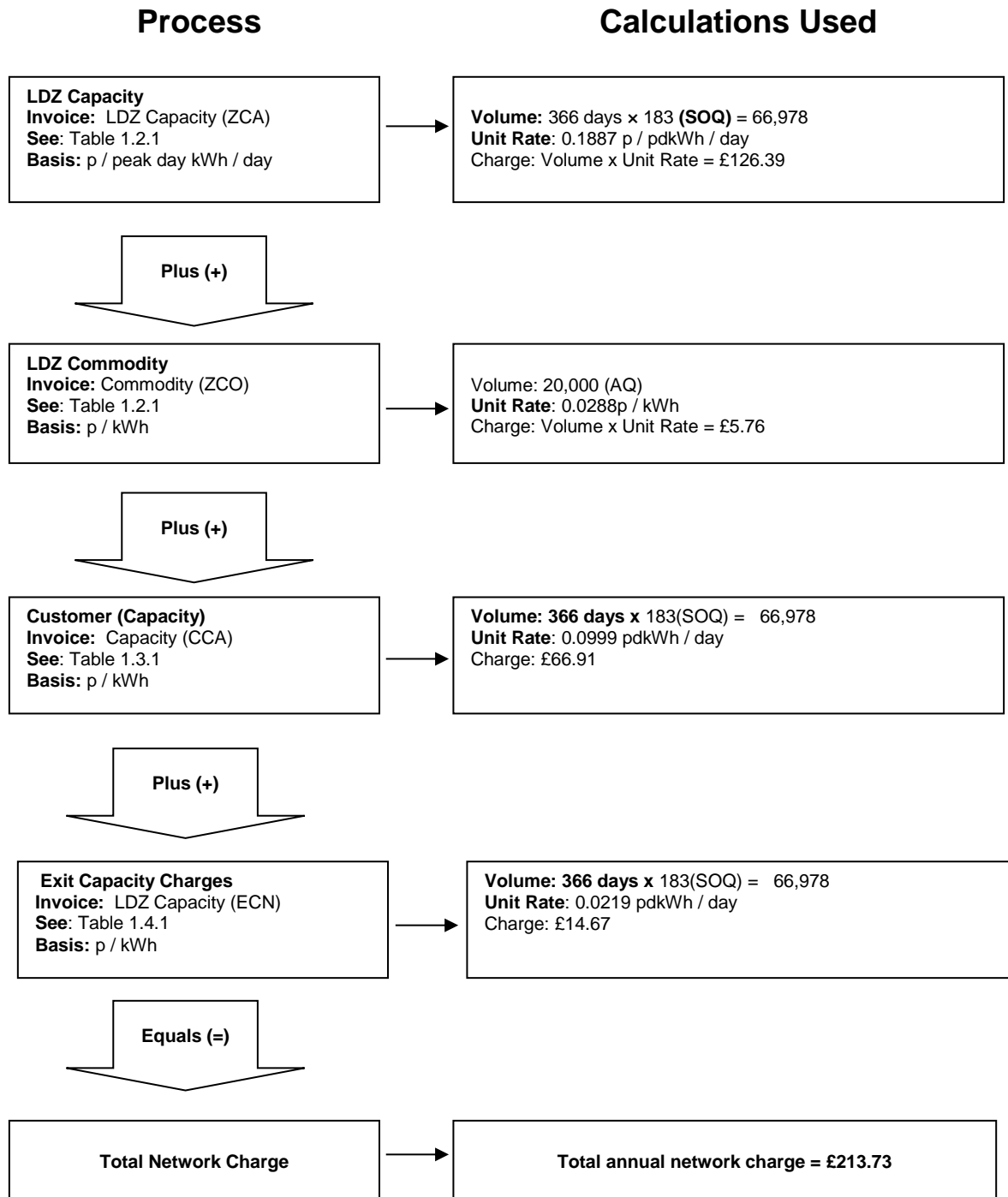
A shipper has a daily metered customer in Cardiff, with an annual consumption (AQ) of 20,000,000 kWh and a registered supply point capacity (SOQ), booked directly by the shipper of 100,000 kWh per day.



Unit Charge: Dividing by the annual load of 20,000,000 kWh gives a unit charge 0.1757 pence per kWh.

### 1.6.2. 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 WW:E1401B. 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 29.9%. The peak daily load (**SOQ**) is therefore  $20,000 \div (366 \times 0.299) = 183$  kWh.



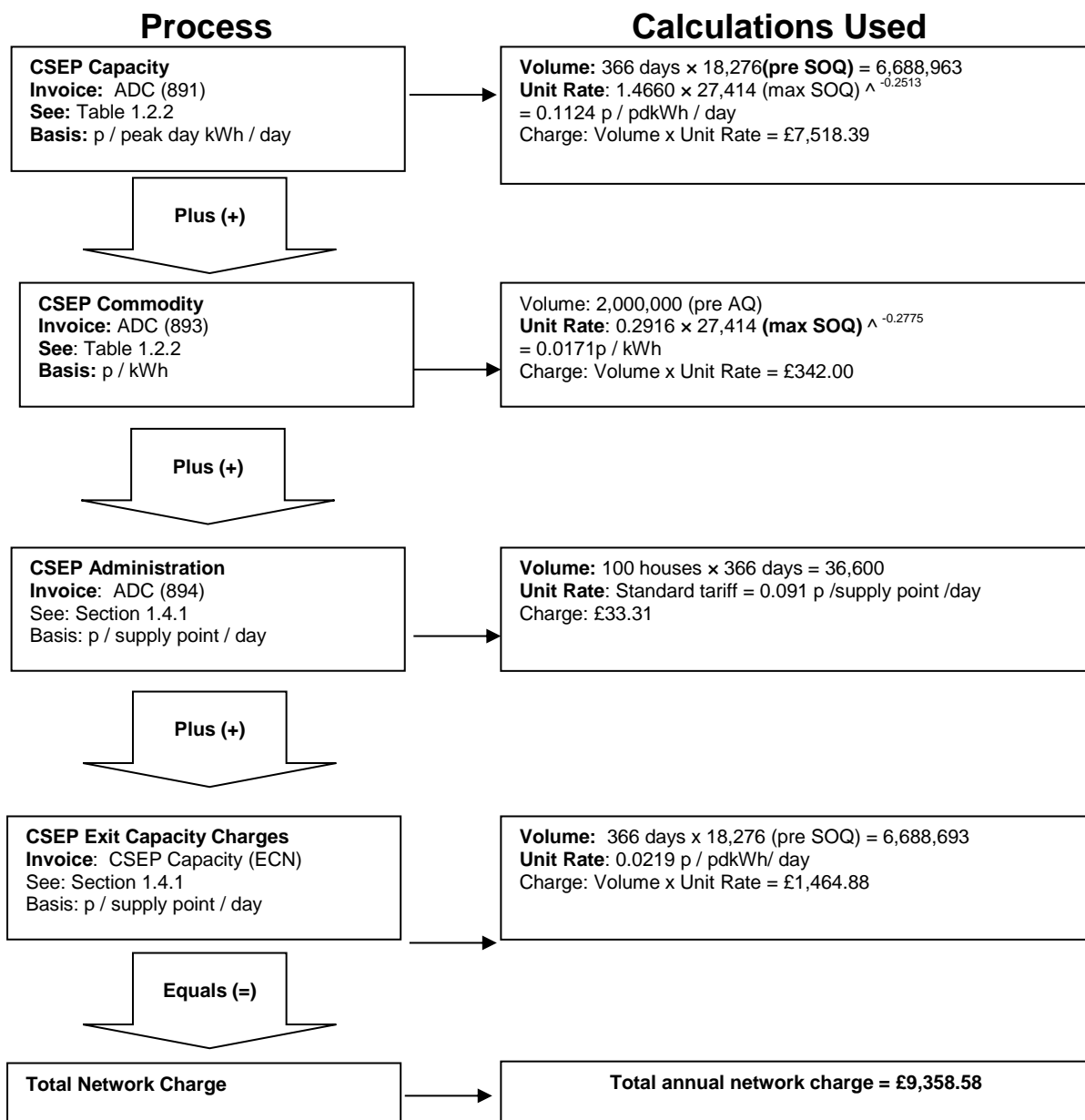
Unit Charge: Dividing by the annual load of 20,000 kWh gives a unit LDZ charge of 1.0686 pence per kWh.

### 1.6.3. 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 x 20,000 (AQ) = 2,000,000 kWh
Maximum AQ (max AQ)	150 houses x 20,000 (AQ) = 3,000,000 kWh
Prevailing SOQ (pre SOQ)	2,000,000 ÷ (366 x 0.299) = 18,276 kWh
Maximum SOQ (max SOQ)	3,000,000 ÷ (366 x 0.299) = 27,414 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 0.47 pence per kWh.

## Appendix 1A

### 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 1A.1. The data in these tables applies for the gas year 1 October 2014 to 30 September 2015.

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

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 =  $500 \div 1000 = 0.5$

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 WS: E1404W03.

For a site in this category, the load factor is 27.3% and the peak daily load is therefore

$$\frac{1000 \times 100}{366 \times 27.3} = 10.01 MWh$$

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: E1404B.

For a site in this category, the load factor is 30.3% and the peak daily load is therefore

$$\frac{1000 \times 100}{366 \times 30.3} = 9.02 MWh$$

#### 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 & West Network, South West LDZ, with an annual consumption of 200 MWh per annum, the EUC will be SW:E1402B.

For a site in this category, the load factor is 31.3% and the peak daily load is therefore

$$\frac{200 \times 100}{366 \times 31.3} = 1.75 MWh$$

#### 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 below 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](mailto: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 WW:E1409B is used.

Firm supply points with an AQ above 73.2 MWh per annum 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.

### Appendix 1A 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 2014 to 30 September 2015.

**Table 1A.1 End User Categories**

AQ (MWh)	EUC Code	WO1	WO2	WO3	WO4
< 73.2	ww:E1401WOy	-	-	-	-
73.2 - 293	ww:E1402WOy	-	-	-	-
293 – 732	ww:E1403WOy	0.00 - 0.43	0.43 - 0.49	0.49 - 0.56	0.56 - 1.00
732 - 2,196	ww:E1404WOy	0.00 - 0.43	0.43 - 0.49	0.49 - 0.56	0.56 - 1.00
2,196 - 5,860	ww:E1405WOy	0.00 - 0.40	0.40 - 0.46	0.46 - 0.53	0.53 - 1.00
5,860 - 14,650	ww:E1406WOy	0.00 - 0.36	0.36 - 0.42	0.42 - 0.50	0.50 - 1.00
14,650 - 29,300	ww:E1407WOy	0.00 - 0.35	0.35 - 0.38	0.38 - 0.45	0.45 - 1.00
29,300 - 58,600	ww:E1408WOy	0.00 - 0.35	0.35 - 0.38	0.38 - 0.45	0.45 - 1.00
> 58,600	ww:E1409WOy	-	-	-	-

**Table 1A.2 Small NDM Supply Points (Up to 2,196 MWh per annum)**

WW	WN (%)	WS (%)	SW (%)
ww:E1401B	34.10%	31.80%	29.90%
ww:E1402B	32.20%	30.20%	31.30%
ww:E1403B	31.40%	26.60%	26.70%
ww:E1403W01	55.10%	55.70%	55.20%
ww:E1403W02	41.40%	39.40%	38.80%
ww:E1403W03	29.10%	27.30%	27.80%
ww:E1403W04	22.30%	20.90%	20.60%
ww:E1404B	35.30%	30.30%	32.20%
ww:E1404W01	55.10%	55.70%	55.20%
ww:E1404W02	41.40%	39.40%	38.80%
ww:E1404W03	29.10%	27.30%	27.80%
ww:E1404W04	22.30%	20.90%	20.60%

**Table 1A.3 Large NDM Supply Points ( >2,196 Mwh per annum)**

WW	WN (%)	WS (%)	SW (%)
ww:E1405B	39.80%	37.10%	37.70%
ww:E1405W01	63.80%	64.30%	64.30%
ww:E1405W02	48.50%	47.00%	46.60%
ww:E1405W03	35.70%	34.20%	34.40%
ww:E1405W04	23.30%	23.50%	23.30%
ww:E1406B	49.30%	48.20%	46.20%
ww:E1406W01	78.90%	77.20%	78.20%
ww:E1406W02	58.00%	58.60%	58.20%
ww:E14106W03	42.20%	41.40%	41.00%
ww:E1406W04	30.20%	27.70%	27.90%
ww:E1407B	59.50%	51.10%	50.70%
ww:E1407W01	83.90%	84.90%	85.10%
ww:E1407W02	69.90%	70.30%	70.10%
ww:E1407W03	54.70%	52.00%	51.70%
ww:E1407W04	35.30%	34.20%	34.20%
ww:E1408B	65.10%	59.20%	58.70%
ww:E1408W01	87.50%	88.60%	88.80%
ww:E1408W02	74.00%	74.40%	74.20%
ww:E1408W03	58.90%	56.20%	56.20%
ww:E1408W04	35.40%	34.50%	34.50%
ww:E1409B	68.00%	66.70%	66.30%

## 2. APPLICATION OF THE LDZ CHARGES METHODOLOGY

### 2.1. 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.

#### 2.1.1. Price Control Formulae

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

- The Base Allowed Revenue for 2015/16 which was determined through the Price Control RIIO GD1 from 2013/14 to 2020/21;
- By an indexation factor which reflects the forecast RPI using the report published by HM Treasury in November of each year. The forecast is subsequently adjusted for the actual inflation rate.
- By a range of incentives as set out in our Licence; and
- And from 2015/16 any under or over-recovery brought forward from year T-2 (in the case of 2015/16, T-2 will be 2013/14). For 2014/15, therefore there will be no under/over recovery from the previous formula year (the “K” factor in the formula).

The “K” factor is necessary because the level of income collected may differ to the maximum allowed revenue for the year. The K factor enables these variances to be corrected by adjusting either upwards or downwards the maximum level of allowed revenue (which is also subject to an adjustment for interest).

#### 2.1.2. 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 Wales & 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; and
- 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.

#### 2.1.3. 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 2.1.3: % Split of LDZ System and LDZ Customer Charges in WWU**

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.

**2.2. LDZ System Charges Methodology**

**2.2.1. 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 2.2.1a 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:

- 1) >600mm
- 2) 450-600mm
- 3) 310-450mm
- 4) 250-310mm
- 5) 180-250mm
- 6) 125-180mm
- 7) 75-125mm
- 8) <=75mm

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.

**2.2.2. 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.

**2.2.3. 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 2.2.3a Determination of Tier Costs**

Pressure Tier	% Total	Cost (£m)	
		Total	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 2.2.3b Determination of LPS Costs**

LPS Sub Tier (Diameter Inches)	% Total Cost	Cost (£m)	
		Total	Capacity (95%)
LP8 >24	0.3%	0.4	0.4
LP7 450->18-24	2.1%	2.9	2.8
LP6 >12-18	3.1%	4.3	4.1
LP5 10-12	10.8%	15.2	14.5
LP4 8-9	19.1%	26.8	25.5
LP3 6-7	15.3%	21.5	20.4

**2.2.4. 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 2.2.4 System Usage Probability Matrix**

Consumption Band (MWh)	Network Tiers			LPS Sub Tiers							
	LTS	IPS	MPS	LP8	LP7	LP6	LP5	LP4	LP3	LP2	LP1
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 2.2.4 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.

## 2.2.5. 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 2.2.5 Peak Daily Capacity Utilisation (GWh)**

Consumption Band (MWh)	Network Tiers			LPS Sub Tiers							
	LTS	IPS	MPS	LP8	LP7	LP6	LP5	LP4	LP3	LP2	LP1
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

## 2.2.6. 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 2.2.6 Cost per Unit of Capacity Utilised**

	Network Tiers			LPS Sub Tiers							
	LTS	IPS	MPS	LP8	LP7	LP6	LP5	LP4	LP3	LP2	LP1
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)	0.0143	0.0145	0.0249	0.0113	0.0199	0.0122	0.0177	0.0250	0.0180	0.0407	0.1178

## 2.2.7. 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 2.2.7a 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	0.0249	71.07%	0.0177
73.2 - 146.5	0.0249	71.96%	0.0179
146.5 - 293	0.0249	72.62%	0.0181
293 - 439	0.0249	73.25%	0.0183
439 - 586	0.0249	73.25%	0.0183
586 - 732	0.0249	73.29%	0.0183
732 - 2,931	0.0249	74.17%	0.0185
2,931 - 14,654	0.0249	75.97%	0.0189
14,654 - 58,614	0.0249	75.98%	0.0189
58,614 - 293,071	0.0249	54.98%	0.0137
>293,071	0.0249	0.01%	0.0000

Table 2.2.7b below summarises the average cost, by consumption band, of using the complete network system.

**Table 2.2.7b Average Cost of Network Utilisation by Consumption Band**

Consumption Band (MWh)	Pence / peak day kWh / Annum											Total
	LTS	IPS	MPS	LP8	LP7	LP6	LP5	LP4	LP3	LP2	LP1	
0 - 73.2	0.0133	0.0080	0.0177	0.0002	0.0017	0.0026	0.0094	0.0170	0.0141	0.0261	0.0216	0.1317
73.2 - 146.5	0.0133	0.0080	0.0179	0.0003	0.0021	0.0030	0.0091	0.0147	0.0113	0.0194	0.0161	0.1153
146.5 - 293	0.0133	0.0080	0.0181	0.0003	0.0021	0.0028	0.0089	0.0146	0.0111	0.0190	0.0184	0.1165
293 - 439	0.0133	0.0080	0.0183	0.0002	0.0018	0.0026	0.0086	0.0148	0.0115	0.0199	0.0181	0.1171
439 - 586	0.0133	0.0080	0.0183	0.0002	0.0019	0.0025	0.0085	0.0148	0.0111	0.0195	0.0124	0.1106
586 - 732	0.0133	0.0080	0.0183	0.0003	0.0021	0.0026	0.0084	0.0135	0.0104	0.0181	0.0109	0.1059
732 - 2,931	0.0133	0.0079	0.0185	0.0003	0.0018	0.0023	0.0081	0.0135	0.0103	0.0172	0.0064	0.0997
2,931 - 14,654	0.0133	0.0081	0.0189	0.0001	0.0009	0.0015	0.0060	0.0098	0.0062	0.0056	0.0007	0.0711
14,654 - 58,614	0.0133	0.0084	0.0189	0.0001	0.0006	0.0010	0.0025	0.0038	0.0011	0.0020	0.0000	0.0517
58,614 - 293,071	0.0133	0.0079	0.0137	0.0000	0.0003	0.0004	0.0009	0.0011	0.0006	0.0014	0.0000	0.0396
>293,071	0.0133	0.0037	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0176

### 2.2.8. 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.

### 2.3. 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.

### **2.3.1. 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: service pipes; or emergency works.
- 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.

### **2.3.2. 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.

### **2.3.3. 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).