

Gas Distribution Transportation – Calculation of Charge Rates for April 2014



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Distribution Transportation

Charge Calculation (West Midlands DN)

- Stage 1 – Allowed Revenue
- Stage 2 – Separate out NTS Exit Capacity Allowance
- Stage 3 – Derive target Cost pools
- Stage 4 – Revenue Modelling
- Stage 5 – Scaling to fit Allowed Revenue, Cost Pools and Capacity / Commodity split.
- Charge rates at each stage of process
- Charges per statement

Stage 1 – Allowed Revenue Calculation

1. Allowed Revenue Calculated as:

	Term	Units		Basis
Opening Base Revenue	PU_t	£m (base)	276.3	Appendix 1 of Special Condition 1B of NGGD Licence
MOD Term	MOD_t	£m (base)	-2.2	Ofgem Determination of 29 Nov 2013
RPI True-up	TRU_t	£m (base)	-	Not applicable in 2014-15
Escalator to Forecast RPI for 2014-15	$RPIF_t$	Factor	<u>1.2051</u>	Calculated in accordance with SpCond 1B.7 of NGGD Licence
Base Revenue	BR_t	£m (nom.)	330.3	
Pass Through	PT_t	£m (nom.)	-	} Not applicable in 2014-15
NTS Exit Capacity Revenue Adj	Ex_t	£m (nom.)	-	
Broad Measure of Cust Satisfaction Revenue Adj	BM_t	£m (nom.)	-	
Shrinkage Allowance Rev Adjustment	SHR_t	£m (nom.)	-	
Environmental Emissions Incentive Rev Adj	EEl_t	£m (nom.)	-	
Discretionary Reward Scheme Rev Adj	DRS_t	£m (nom.)	0.1	DN award value determined by Ofgem on 29 Nov 2013
Network Innovation Allowance Rev Adj	NIA_t	£m (nom.)	1.4	NGGD's forecast of NIA expenditure at charge-setting stage
Less: Correction Factor	K_t	£m (nom.)	-	Not applicable in 2014-15
Maximum DN Allowed Revenue	AR_t	£m (nom.)	<u>331.9</u>	<--Top-level TargetRevenue for Apr-14 Charges

Stage 2 Separate out NTS Exit Capacity Allowance

2. Split out NTS Exit Capacity Target Revenue from Total

Base Allowance for NTS Exit Capacity Costs	AEx_t	£m (base)	17.2
Escalator to Forecast RPI for 2014-15	$RPIF_t$	Factor	1.2051
NTS Exit Capacity Cost Allowance			20.7
LDZ Allowed Revenue Element			311.2

Note : For 2014-15 the NTS Exit Capacity cost allowance is based directly on the core Licence value. However, for 2015-16 and beyond, the NTS Exit Capacity target revenue will include ECN K and any NTS Exit Capacity Cost adjustment.

Stage 3 - Derive target Cost pools

3. Determine Revenue Targets by Cost Pool (DN Charging Methodology)

		Target Revenues £m	
3.1 Split Total Revenue Target into System and Customer Elements:	System	74.00%	230.3
	Customer	26.00%	80.9
	Total	100.00%	311.2
3.2 Split System Revenue Target into Capacity / Commodity:	Capacity	95.00%	218.8
	Commodity	5.00%	11.5
	Total System	100.00%	230.3
3.3 Re-state Revenue Target Components by Charge Type:	LDZ Capacity Charge	70.30%	218.8
	LDZ Commodity Charge	3.70%	11.5
	LDZ Customer Charge	26.00%	80.9
	LDZ Charge Total	100.00%	311.2

Splits as per LDZ charging methodology - Section Y of UNC

Stage 4 – Revenue Modelling (LDZ Capacity)

4. Calculate Projected Recovery in 2014-15 using existing (April 2013) Charges

4.1 Calculate LDZ Capacity Charge Recovery

Assumed SOQ change at 01-Oct in Year t+1

Data source: Xoserve "BOPRI" report run after 01-Oct SOQ update in Year t

Charge Band MWh/a	Total SOQ (MWh)		Customer Numbers		Avg SOQ (kWh)		Existing (Apr-13) LDZ Capacity Charges				Forecast Recovery				
							Const 1	Const 2	Charge Rate p/pdkWh/d	Charge Rate p/pdkWh/d	Days 183	Days 182	2014-15 365		
														H1	H2
Min	Max	H1	H2	Numbers	H1	H2									
-	73	247,841	241,091	1,928,727	129	125			0.1773	0.1773	80.4	77.8	158.2		
73.2	205	9,774	9,484	10,100	968	939			0.1596	0.1596	2.9	2.8	5.6		
205	337	10,912	10,586	5,482	1,991	1,931			0.1596	0.1596	3.2	3.1	6.3		
337	468	7,630	7,401	2,147	3,554	3,447			0.1596	0.1596	2.2	2.1	4.4		
468	600	5,428	5,265	1,143	4,748	4,606			0.1596	0.1596	1.6	1.5	3.1		
600	732	4,325	4,196	704	6,144	5,960			0.1596	0.1596	1.3	1.2	2.5		
732	2,196	20,382	19,771	1,879	10,847	10,522	1.9574	-0.2817	0.1429	0.1441	5.3	5.2	10.5		
2,196	2,931	4,182	4,057	215	19,451	18,868	1.9574	-0.2817	0.1212	0.1222	0.9	0.9	1.8		
2,931	5,860	8,367	8,116	291	28,752	27,890	1.9574	-0.2817	0.1086	0.1095	1.7	1.6	3.3		
5,860	14,650	8,628	8,369	157	54,956	53,307	1.9574	-0.2817	0.0905	0.0912	1.4	1.4	2.8		
14,650	29,300	8,015	7,775	69	116,166	112,681	1.9574	-0.2817	0.0733	0.0739	1.1	1.0	2.1		
29,300	58,600	8,676	8,416	43	201,776	195,722	1.9574	-0.2817	0.0627	0.0632	1.0	1.0	2.0		
58,600	293,000	12,435	12,062	27	460,565	446,748	1.9574	-0.2817	0.0497	0.0501	1.1	1.1	2.2		
293,000	1,465,000	3,850	3,735	2	1,925,000	1,867,250	1.9574	-0.2817	0.0332	0.0335	0.2	0.2	0.5		
1,465,000	999,999,999	-	-	-	-	-	1.9574	-0.2817	0.0000	0.0000	0.0	0.0	0.0		

LDZ Capacity: Direct Connected Total

104.3 101.0 205.3

Add in projected LDZ Capacity recovery from the following (modelled in same way as above)

CSEPs	3.6	3.5	7.1
Unique Sites	0.4	0.4	0.8

LDZ Capacity Recovery Total

108.3 104.9 213.2

Stage 4 – Revenue Modelling (LDZ Commodity)

4.2 Calculate LDZ Commodity Charge Recovery

(NB: Ignores detailed monthly profiling, which is used for forecasting through the year)

Charge Band MWh/a		Total AQ (MWh)		Customer Numbers	Avg AQ (kWh)		Existing (Apr-13) LDZ Commodity Charges				Forecast Recovery			
							Const 1	Const 2	Charge Rate p/kWh	Charge Rate p/kWh	2014-15			
Min	Max	H1	H2		H1	H2				H1	H2	FY		
-	73	6,908,700	22,602,752	1,928,727	3,582	11,719			0.0283	0.0283	2.0	6.4	8.4	
73.2	205	239,370	831,634	10,100	23,700	82,340	Index value remains fixed as per LDZ charging methodology		0.0253	0.0253	0.1	0.2	0.3	
205	337	264,627	919,375	5,482	48,272	167,708		0.0253	0.0253	0.1	0.2	0.3		
337	468	180,365	626,634	2,147	84,008	291,865		0.0253	0.0253	0.0	0.2	0.2		
468	600	135,665	471,335	1,143	118,692	412,367		0.0253	0.0253	0.0	0.1	0.2		
600	732	107,727	374,273	704	153,021	531,638		0.0253	0.0253	0.0	0.1	0.1		
732	2,196	601,026	1,482,974	1,879	319,865	789,236	0.3394	-0.2911	0.0227	0.0229	0.1	0.3	0.5	
2,196	2,931	143,046	352,954	215	665,332	1,641,645	0.3394	-0.2911	0.0192	0.0193	0.0	0.1	0.1	
2,931	5,860	309,742	764,259	291	1,064,404	2,626,318	0.3394	-0.2911	0.0171	0.0172	0.1	0.1	0.2	
5,860	14,650	564,620	713,380	157	3,596,308	4,543,819	0.3394	-0.2911	0.0142	0.0143	0.1	0.1	0.2	
14,650	29,300	553,134	698,866	69	8,016,429	10,128,499	0.3394	-0.2911	0.0114	0.0115	0.1	0.1	0.1	
29,300	58,600	721,901	912,099	43	16,788,400	21,211,600	0.3394	-0.2911	0.0097	0.0098	0.1	0.1	0.2	
58,600	293,000	927,338	1,171,662	27	34,345,859	43,394,882	0.3394	-0.2911	0.0076	0.0077	0.1	0.1	0.2	
293,000	1,465,000	291,588	368,412	2	145,794,000	184,206,000	0.3394	-0.2911	0.0050	0.0051	0.0	0.0	0.0	
1,465,000	999,999,999	0	0	-	-	-	0.3394	-0.2911	0.0000	0.0000	0.0	0.0	0.0	
LDZ Commodity: Direct Connected Total		Data source: Xoserve "BOPRI" report run after 01-Oct SOQ update in Year t. AQ values broken into monthly allocations using load profiles from Demand Statements (NTS via Dist'n Network)										2.7	8.1	10.8
Add in projected LDZ Capacity recovery from the following (calculated in same way as above)										CSEPs	0.1	0.3	0.4	
										Unique Sites	0.0	0.0	0.1	
LDZ Commodity Recovery Total											2.8	8.5	11.3	

Stage 4 – Revenue Modelling (LDZ Customer)

4.3 Calculate LDZ Customer Charge Recovery

4.3.1 Customer Fixed Charge

Charge Band		Customer Numbers	Charge Rate		Forecast Recovery		
Min	Max		p/day	p/day	Days	Days	2014-15
			H1	H2	H1	H2	FY
73.2	205	10,100	26.4939	26.4939	0.5	0.5	1.0
205	337	5,482	26.4939	26.4939	0.3	0.3	0.5
337	468	2,147	28.2099	28.2099	0.1	0.1	0.2
468	600	1,143	28.2099	28.2099	0.1	0.1	0.1
600	732	704	28.2099	28.2099	0.0	0.0	0.1
Customer Fixed Charge Total		19,576			1.0	1.0	1.9

4.3.2 Customer Capacity

Charge Band		Total SOQ (MWh)		Customer Numbers	Avg SOQ (kWh)		Existing (Apr-13) LDZ Customer Charges		Forecast Recovery				
Min	Max	H1	H2		H1	H2	Const 1	Const 2	Charge Rate	Charge Rate	Days	Days	2014-15
							p/pdkWh/d	p/pdkWh/d	H1	H2	H1	H2	FY
-	73	247,841	241,091	1,928,727	129	125			0.0838	0.0838	38.0	36.8	74.8
73.2	205	9,774	9,484	10,100	968	939			0.0028	0.0028	0.1	0.0	0.1
205	337	10,912	10,586	5,482	1,991	1,931			0.0028	0.0028	0.1	0.1	0.1
337	468	7,630	7,401	2,147	3,554	3,447			0.0028	0.0028	0.0	0.0	0.1
468	600	5,428	5,265	1,143	4,748	4,606			0.0028	0.0028	0.0	0.0	0.1
600	732	4,325	4,196	704	6,144	5,960			0.0028	0.0028	0.0	0.0	0.0
732	2,196	20,382	19,771	1,879	10,847	10,522	0.0641	-0.2100	0.0091	0.0092	0.3	0.3	0.7
2,196	2,931	4,182	4,057	215	19,451	18,868	0.0641	-0.2100	0.0081	0.0081	0.1	0.1	0.1
2,931	5,860	8,367	8,116	291	28,752	27,890	0.0641	-0.2100	0.0074	0.0075	0.1	0.1	0.2
5,860	14,650	8,628	8,369	157	54,956	53,307	0.0641	-0.2100	0.0065	0.0065	0.1	0.1	0.2
14,650	29,300	8,015	7,775	69	116,166	112,681	0.0641	-0.2100	0.0055	0.0056	0.1	0.1	0.2
29,300	58,600	8,676	8,416	43	201,776	195,722	0.0641	-0.2100	0.0049	0.0050	0.1	0.1	0.2
58,600	293,000	12,435	12,062	27	460,565	446,748	0.0641	-0.2100	0.0041	0.0042	0.1	0.1	0.2
293,000	1,465,000	3,850	3,735	2	1,925,000	1,867,250	0.0641	-0.2100	0.0031	0.0031	0.0	0.0	0.0
1,465,000	999,999,999	-	-	-	-	-	0.0641	-0.2100	0.0000	0.0000	0.0	0.0	0.0
Customer Capacity: Direct Connected Total											39.1	37.8	76.9
Add in projected LDZ Capacity recovery from the following (calculated in same way, but without SOQ reduction assumption)										Unique Sites	0.0	0.0	0.1
Customer Capacity Total											39.1	37.9	77.0

4.3.3 CSEPs Admin Charge

Supply Point Numbers	Rate Calculated by Xoserve and input direct	Charge Rate p/d/sp	Days	Days	2014-15
			H1	H2	FY
123,624	0.0935	0.0935	0.0	0.0	0.0

LDZ Customer Charge Total

40.1 38.8 79.0

Stage 5 (1) - Scaling to fit LDZ Allowed Revenue

5. Setting of Updated Charges

5.1.1 Scaling Step 1 - Overall scaling

Allowed Revenue Target	Model Projected Recovery	Scaling Factor
£m	£m	%
LDZ Total 311.2	303.415	102.6%

NB: Truncation of charge rate calculation to 4 d.p. prevents precise scaling of revenues, hence 1.025 used to avoid a very small over-recovery.

5.1.2 Apply Stage 1 Top-level Scaling Factor to Existing Unit Charges

Existing	change	Stage 1 Scaled	Scaling Ratio Applied
£m	%	£m	
LDZ Capacity 213.2	2.48%	218.5	1.0250
Recovery by LDZ Commodity 11.3	2.47%	11.6	1.0250
Charge Type LDZ Customer 79.0	2.51%	80.9	1.0250
LDZ Total 303.4	2.49%	311.0	1.0250

Stage 5 (2) - Scaling to fit Cost Pools and Cap / Com split.

5. Setting of Updated Charges

5.2 Scale to match System / Customer Split

Element	Methodology	from Stage 1 £m	Stage 1 Split %	Stage 2 Scaled £m	Stage 2 Split %	Scaling Ratio Applied
LDZ Capacity		218.5		218.6		
LDZ Commodity		11.6		11.6		
LDZ System	74.0%	230.0	74.0%	230.2	74.0%	1.0004
LDZ Customer	26.0%	80.9	26.0%	80.8	26.0%	0.9989
LDZ Total	100.0%	311.0	100.0%	311.0	100.0%	

5.3 Scale to match System Commodity / System Capacity Split

Element	Methodology	from Stage 2 £m	Actual %	Stage 3 Scaled £m	Stage 3 %	Scaling Ratio Applied
LDZ Capacity	95.0%	218.6	95.0%	218.6	95.0%	1.0000
LDZ Commodity	5.0%	11.6	5.0%	11.6	5.0%	1.0000
LDZ System Total	100.0%	230.2	100.0%	230.2	100.0%	
				80.8		
				311.0		

Charge Rates at each Stage

Information: Changes to Unit LDZ Charge Rates at each Stage

				Existing		Stage 1	Stage 2		Stage 3	
				Apr-13		1.0250	System	1.0004	Capacity	1.0000
						Scaled	Customer	0.9989	Commodity	1.0000
Charge Type	Load band (MWh/a)	Units	Value	Change (%)	Value	Change (%)	Value	Change (%)	Final Value	
LDZ System	Commodity	< 73.2	p/kwh	0.0283	2.47%	0.0290	0.00%	0.0290	0.00%	0.0290
		73.2 - 732	p/kwh	0.0253	2.37%	0.0259	0.00%	0.0259	0.00%	0.0259
		> 732	multiplier	0.3394	2.50%	0.3479	0.03%	0.3480	0.00%	0.3480
			peak ^	-0.2911	0.00%	-0.2911	0.00%	-0.2911	0.00%	-0.2911
			Minumum	0.0023	4.35%	0.0024	0.00%	0.0024	0.00%	0.0024
	Capacity	< 73.2	p/pdkwh/d	0.1773	2.48%	0.1817	0.06%	0.1818	0.00%	0.1818
		73.2 - 732	p/pdkwh/d	0.1596	2.51%	0.1636	0.06%	0.1637	0.00%	0.1637
		> 732	multiplier	1.9574	2.50%	2.0063	0.04%	2.0071	0.00%	2.0071
			peak ^	-0.2817	0.00%	-0.2817	0.00%	-0.2817	0.00%	-0.2817
			Minumum	0.0174	2.30%	0.0178	0.00%	0.0178	0.00%	0.0178
LDZ Customer	Capacity	< 73.2	p/kwh	0.0838	2.51%	0.0859	-0.12%	0.0858	N/A	0.0858
	Fixed	Bi-annual read	p/d	26.4939	2.50%	27.1562	-0.11%	27.1266	N/A	27.1266
		Monthly read	p/d	28.2099	2.50%	28.9151	-0.11%	28.8836	N/A	28.8836
	Capacity	73.2 - 732	p/pdkwh/d	0.0028	3.57%	0.0029	0.00%	0.0029	N/A	0.0029
		> 732	multiplier	0.0641	2.50%	0.0657	-0.15%	0.0656	N/A	0.0656
			peak ^	-0.2100	0.00%	-0.2100	0.00%	-0.2100	N/A	-0.2100

Published Charges in Apr-14 Statement

Table 2.1 Directly connected supply points

Charge Code	Firm Capacity
ZCA	pence per peak day kWh per day
Up to 73,200 kWh per annum	0.1818
73,200 to 732,000 kWh per annum	0.1637
732,000 kWh per annum and above	$2.0071 \times \text{SOQ}^{-0.2817}$
Subject to a minimum rate of	0.0178

Charge Code	Commodity
ZCO	pence per kWh
Up to 73,200 kWh per annum	0.0290
73,200 to 732,000 kWh per annum	0.0259
732,000 kWh per annum and above	$0.3480 \times \text{SOQ}^{-0.2911}$
Subject to a minimum rate of	0.0024

Published Charges in Apr-14 Statement

Table 3 LDZ Customer charges

Up to 73,200 kWh per annum

Invoice	Charge Code
LDZ capacity	CCA
	Pence per peak day kWh per day
Capacity charge	0.0858

73,201 kWh up to 732,000 kWh per annum

Invoice	Charge Code
LDZ capacity	CFI
Fixed charge	pence per day
Non-monthly read supply points	27.1266
Monthly read supply points	28.8836

Invoice	Charge Code
LDZ Capacity	CCA
	Pence per peak day kWh per day
Capacity charge	0.0029