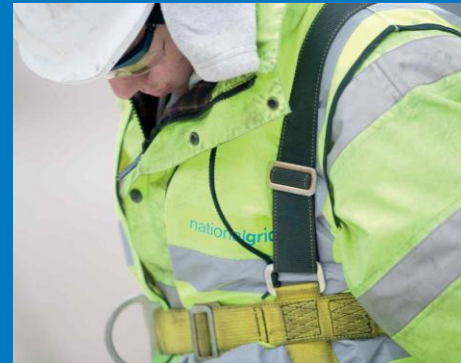


# ECN Charge Setting DCMF



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27th Jan 2015

## ECN Charge

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The ECN charge comprises three elements:

- ECN cost allowance for year  $t$ 
  - $AEX_t \times RPIF_t$
- ECN cost revenue adjustment for  $t-2$ 
  - $[(ExC_{t-2} / RPIA_{t-2}) - AEx_{t-2}] \times PVF_{t-2} \times PVF_{t-1} \times RPIF_t$
- ECN K from  $t-2$ 
  - Collected ECN income  $t-2$  – Exit Capacity allowed revenue  $t-2$  (adj for ECN K)

Our NTS charges differ by offtake, however the above cost elements are known only at DN level.

There is therefore a process we follow to fairly apportion these costs at Exit Zone level, allowing the ECN charge to be fully cost reflective.

# ECN Charge Calculation Process

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- Stage 1 – Calculate aggregate annual demand (registered SOQ) at EZ level
- Stage 2 – Calculate NTS Exit Capacity cost at Offtake level
- Stage 3 – Calculate implied unit charges by scaling up offtake charges to EZ level
- Stage 4 – Calculate NTS charges recovery profile at EZ level
- Stage 5 – Calculate ECN revenue target at EZ level
- Stage 6 – Calculate scaled charges p/pdkWh/d to 4dp
- Stage 7 – Calculate % change on existing ECN rates
- Published charges in Jan-15 statement

# **Worked example using West Midlands DN**

# Stage 1 – Calculate aggregate annual demand (registered SOQ) at EZ level

Registered SOQ by Exit Zone using BOPRI Data at 24 Oct 2014

Data: BOPRI Report 24 Oct 2014 - Total Booked SOQ by Exit Zone			Data: Unique Sites in RDNs 14 Oct 2014				Data: CSEPs data 16-Oct 2014		Assumed SOQ Reduction from Oct-15		Aggregate Registered SOQ by Exit Zone	
	SOQ (kWh)	SOQ (GWh)	BOPRI	Unique Sites	CSEPs	Total				Adjusted Total		
WM1	94,289,124	94.3	94,289,124	7,957,923	5,116,359	107,363,406	-2.4%	-1.2%	106.2			
WM2	181,797,450	181.8	181,797,450		7,164,503	188,961,953		-1.2%	186.8			
WM3	78,561,574	78.6	78,561,574		5,414,032	83,975,606		-1.2%	83.0			
	354,648,148		354,648,148	7,957,923	17,694,894	380,300,965			376.0			

- Take annual demand data from:
  - Sites & Meters report
  - Unique Sites report
  - CSEPs report

# Stage 1 – Calculate aggregate annual demand (registered SOQ) at EZ level

Registered SOQ by Exit Zone using BOPRI Data at 24 Oct 2014

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	SOQ (kWh)	SOQ (GWh)	BOPRI	Unique Sites	CSEPs	Total				Adjusted Total		
WM1	94,289,124	94.3	94,289,124	7,957,923	5,116,359	107,363,406	-2.4%	-1.2%	WM1	106.2		
WM2	181,797,450	181.8	181,797,450		7,164,503	188,961,953		-1.2%	WM2	186.8		
WM3	78,561,574	78.6	78,561,574		5,414,032	83,975,606		-1.2%	WM3	83.0		
	354,648,148		354,648,148	7,957,923	17,694,894	380,300,965				376.0		

Set at half the expected level of reduction at Oct-15 to maintain constant price for Formula Year 2015-16

- Apply SOQ reductions (half year to maintain constant price for formula year)
- Evidence of growth in CSEPs

# Stage 2 – Calculate NTS Exit Capacity cost at Offtake level

Prices Input		Final	Indicative charges per 14th Nov 2014 Statement
		2014-15	
Offtake Points (Listed in the order published in NTS charging Statement)	Exit Zone		
Alrewas (WM)	WM2	0.0185	0.0151
Aspley	WM1	0.0218	0.0184
Audley (WM)	WM1	0.0236	0.0203
Austrey	WM2	0.0178	0.0143
Leamington Spa	WM3	0.0146	0.0110
Lower Quinton	WM3	0.0129	0.0093
Milwich	WM1	0.0204	0.0170
Ross (WM)	WM3	0.0073	0.0035
Rugby	WM3	0.0157	0.0122
Shustoke	WM2	0.0191	0.0157
Stratford-upon-Avon	WM3	0.0131	0.0095

Projected Daily Energy Bookings		H1	H2
2015-16			
Offtake Points (Listed in the order in NTS Exit Bookings model)	Exit Zone	GWh/d	GW/d
Aspley	WM1	50.992	50.992
Audley (WM)	WM1	15.331	15.331
Milwich	WM1	18.950	18.950
Alrewas (WM)	WM2	72.670	72.670
Austrey	WM2	59.601	59.601
Shustoke	WM2	1.095	1.095
Leamington Spa	WM3	2.586	2.586
Lower Quinton	WM3	26.684	26.684
Ross (WM)	WM3	10.003	10.003
Rugby	WM3	63.017	63.017
Stratford-upon-Avon	WM3	3.735	3.735
		324.664	324.664

NTS Exit Capacity Cost		01/04/2015	01/10/2015	
		30/09/2015	31/03/2016	
£m	Exit Zone	183	183	2015-16
Aspley	WM1	2.034	1.717	3.751
Audley (WM)	WM1	0.662	0.570	1.232
Milwich	WM1	0.707	0.590	1.297
Alrewas (WM)	WM2	2.460	2.008	4.468
Austrey	WM2	1.941	1.560	3.501
Shustoke	WM2	0.038	0.031	0.070
Leamington Spa	WM3	0.069	0.052	0.121
Lower Quinton	WM3	0.630	0.454	1.084
Ross (WM)	WM3	0.134	0.064	0.198
Rugby	WM3	1.811	1.407	3.217
Stratford-upon-Avon	WM3	0.090	0.065	0.154
		10.577	8.517	19.094

- Final NTS charges for H1 and latest indicative charges for H2 \* projected capacity bookings per offtake

# Stage 3 – Calculate implied unit charges by scaling up offtake charges to EZ level

		Bookings	Projected Actual NTS Exit Cap Cost	Implied NTS Charges at EZ Level
WM	EZ	GWh/d	£m	p/pdkWh/d
	WM1	85.3	6.280	0.0202
	WM2	133.4	8.039	0.0165
	WM3	106.0	4.775	0.0123
<b>WM Totals</b>		<b>324.7</b>	<b>19.094</b>	<b>0.0161</b>

- Sum total bookings and projected cost per EZ
- Divide cost through by booked GWh/day, and convert to a rate in pence per kWh



# Stage 4 – Calculate NTS charges recovery profile at EZ level

		Implied NTS Charges at EZ Level	Registered SOQ	NTS Exit Recovery Profile	
WM	EZ	p/pdkWh/d	GWh/d	Recovery: NTS Charges at EZ Level x Reg's SOQ	
				£m	
	WM1	0.0202	106.2	7.818	
	WM2	0.0165	186.8	11.261	
	WM3	0.0123	83.0	3.740	
<b>WM Totals</b>		0.0161	<b>376.0</b>	<b>22.819</b>	

- Take implied NTS charge at EZ, multiply by aggregate demand (step 2) to create recovery profile

# Stage 5 – Calculate ECN revenue target at EZ level

		NTS Exit Recovery Profile	A	B	C	ECN Revenue Targets
		Recovery: NTS Charges at EZ Level x Reg's SOQ	AEXt x RPIFt	ECN K (13/14)	EXC Cost Adj (13/14)	Sum of A, B & C
WM	EZ	£m	£m	£m	£m	£m
	WM1	7.818				7.229
	WM2	11.261				10.413
	WM3	3.740				3.458
<b>WM Totals</b>		<b>22.819</b>	<b>20.730</b>	<b>0.238</b>	<b>0.132</b>	<b>21.101</b>

- Sum of ECN charge elements A, B & C at LDZ level.

# Stage 5 – Calculate ECN revenue target at EZ level

		NTS Exit Recovery Profile	A	B	C	ECN Revenue Targets
		Recovery: NTS Charges at EZ Level x Reg's SOQ	AEXt x RPIFt	ECN K (13/14)	EXC Cost Adj (13/14)	Sum of A, B & C
WM	EZ	£m	£m	£m	£m	£m
	WM1	7.818				7.229
	WM2	11.261				10.413
	WM3	3.740				3.458
<b>WM Totals</b>		<b>22.819</b>	<b>20.730</b>	<b>0.238</b>	<b>0.132</b>	<b>21.101</b>

- Apportion ECN revenue target to each EZ by using EZ recovery profile.
- WM1 revenue target = £21.1m \* (£7.8m / £22.8m)

# Stage 6 – Calculate scaled charges p/pdkWh/d to 4dp

			ECN Revenue Targets	Apr-15 Unit Charges
WM	EZ	Registered SOQ GWh/d	EZ Revenue target £m	Scaled Charges p/pdkWh/d
	WM1	106.2	7.229	0.0187
	WM2	186.8	10.413	0.0153
	WM3	83.0	3.458	0.0114
<b>WM Totals</b>		<b>376.0</b>	<b>21.101</b>	<b>0.0154</b>

- Divide EZ revenue by EZ demand (stage 2) to calculate a unit charge, and convert to a rate in pence per kWh

# Stage 7 – Calculate % change on existing ECN rates

			Used only to calculate change in charge levels		Apr-15 Unit Charges		Percentage Change on Existing ECN rates
WM	EZ	Registered SOQ GWh/d	Apr-14 ECN Charges p/pdkWh/d	Projected Recovery £m	Scaled Charges p/pdkWh/d	Recovery: NTS Charges at EZ Level x Reg's SOQ £m	%
	WM1	106.2	0.0182	7.052	0.0187	7.246	2.7%
	WM2	186.8	0.0151	10.297	0.0153	10.433	1.3%
	WM3	83.0	0.0104	3.153	0.0114	3.456	9.6%
<b>WM Totals</b>		<b>376.0</b>	0.0149	<b>20.501</b>	0.0154	<b>21.134</b>	<b>3.1%</b>

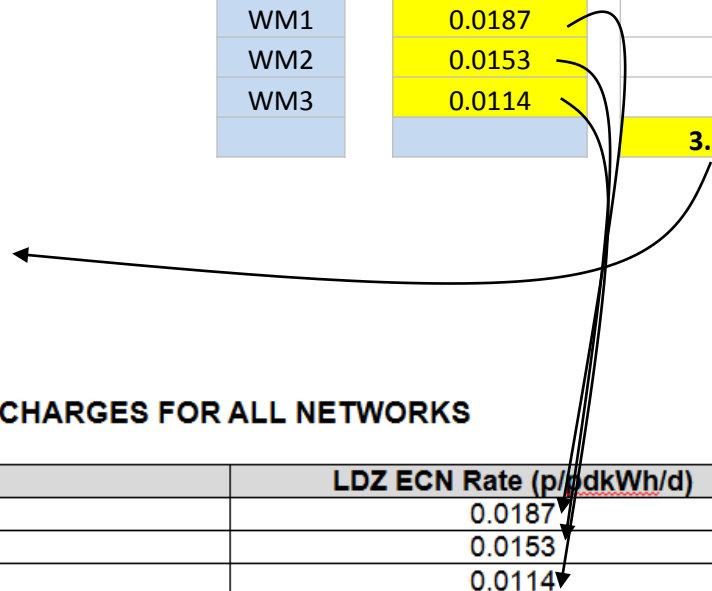
- Calculate EZ collectable income (slight difference to revenue target due to 4dp scaled charges)
- Divide by projected recovery for Apr-14 charges

# Published Charges in Jan-15 Statement

**Table 2. Average Changes to Different Charge Types**

By Charge Type	West Midlands
LDZ System Capacity Charges	██████
LDZ System Commodity Charges	██████
Customer Charges	██████
<b>LDZ Total Charges (excl. ECN)</b>	██████
LDZ ECN Charges	3.1%
<b>Total Distribution Transportation</b>	██████

EZ	Scaled Charges p/pdkWh/d	Percentage Change on Existing ECN rates
WM1	0.0187	
WM2	0.0153	
WM3	0.0114	
		<b>3.1%</b>



**Appendix 2: LDZ ECN CHARGES FOR ALL NETWORKS**

West Midlands DN	LDZ ECN Rate (p/pdkWh/d)
WM1	0.0187
WM2	0.0153
WM3	0.0114