Issue	Revision
12	0

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The Statement of Use of System Charges

Effective from 1 April 2016

Based Upon:

The Statement of the Connection Charging Methodology and
The Statement of the Use of System Charging Methodology

contained within

Section 14 Parts I and II respectively of the Connection and Use of System Code

nationalgrid

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Introduction

This statement is published in accordance with the Transmission Licence of National Grid Electricity Transmission plc (National Grid).

This document sets out the annual tariffs for Transmission Network Use of System charges and the parameters used to calculate these; details of the Balancing Services Incentive Scheme which forms part of the Balancing Services Use of System Charges; and fees charged by National Grid in relation to applications for connection, use of system and engineering works.

Further information on the methods by which and principles upon which National Grid derives Use of System charges is set out in the **Statement of the Use of System Charging Methodology** which is included in Section 14 of the Connection and Use of System Code (CUSC) which is available on our website at:

http://www2.nationalgrid.com/UK/Industry-information/Electricity-codes/CUSC/The-CUSC/

If you require further detail on any of the information contained within this document or have comments on how this document might be improved please contact our **Charging Team**, preferably by email at:

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Schedule 1

Basis of 2016/17 Transmission Network Use of System Charges

The Transmission Network Use of System Charges for 2016/17 found within this document have been calculated using the methodology described in the Statement of Use of System Charging Methodology. Part of the tariff calculation utilises a DC Load Flow (DCLF) Investment Cost Related Pricing (ICRP) transport and tariff model. The following tables provide a summary of some of the parameters utilised to calculate tariffs within this model.

Table 1.1: TNUoS Calculation Parameters

Parameter	Value/Basis		
Transport model network, nodal generation & nodal demand data	Based upon various data sources as defined in Section 14 of the Connection and Use of System Code (CUSC)		
Expansion constant	£ 13.336061/MWkm		
Annuity factor	5.8%		
Overhead factor	1.8%		
Locational onshore security factor	1.8		
Offshore civil engineering discount	£0.418080/kW		

Table 1.2: Onshore Wider Cable and Overhead Line (OHL) Expansion Factors

TO Region	Cable E	Cable Expansion Factor OHL Expa			xpansion	pansion Factor	
	400kV	275kV	132kV	400kV	275kV	132kV	
Scottish Hydro Electric Transmission Ltd	10.20	11.45	20.77	1.00	1.20	2.59	
SP Transmission Ltd	10.20	11.45	22.58	1.00	1.20	2.87	
National Grid Electricity Transmission plc	10.20	11.45	22.58	1.00	1.20	2.87	

Table 1.3 Onshore Local Expansion Factors (All TO Regions)

			132kV			
2dp	400kV	275kV	Single Circuit <200MVA	Double Circuit <200MVA	Single Circuit >=200MVA	Double Circuit >=200MVA
Cable Expansion Factor	10.20	11.45	22.58	22.58	22.58	22.58
OHL Expansion Factor	1.00	1.20	2.867	2.867	2.867	2.867

Table 1.4 Offshore Local Expansion Factors

Offshore Power Station	Local Expansion Factor (to 2 d.p.)
Barrow	95.29
Greater Gabbard & Galloper	43.85, 41.84
Gunfleet	83.15
Gwynt Y Môr	38.88
Lincs	56.30
London Array	44.48
Ormonde	71.32
Robin Rigg East	144.21
Robin Rigg West	144.21
Sheringham Shoal	43.80
Thanet	72.45
Walney I	61.71
Walney 2	59.00
West of Duddon Sands	57.73

Further Local Expansion Factors used to calculate Local Circuit Tariffs applicable to generation connecting to offshore transmission infrastructure during 2016/17 will be published in future revisions of this statement following the completion of the tender process relating to the sale of the relating offshore transmission assets.

Schedule of Transmission Network Use of System Wider Zonal Generation Charges (£/kW) in 2016/17

Table 1.5

The following table provides the Wider Zonal Generation TNUoS tariffs applicable from 1 April 2016.

		System	Shared	Not Shared	Residual
		Peak	Year Round	Year Round	
Zone	Zone Name	Tariff	Tariff	Tariff	Tariff
1	North Scotland	(£/kW) -1.986384	(£/kW) 10.510176	(£/kW) 7.768442	(£/kW) 0.505777
2	East Aberdeenshire	-0.952272	4.161935	7.768442	0.505777
3	Western Highlands	-2.066820	8.304164	7.766442	
4	Skye and Lochalsh	-6.074463	8.304164	8.960467	0.505777 0.505777
5	Eastern Grampian and Tayside			7.202335	
6	Central Grampian	-2.113534	7.474278		0.505777
7	Argyll	0.626145	7.731765	7.351421	0.505777
8	The Trossachs	-0.466457	5.336084	15.889739	0.505777
9	Stirlingshire and Fife	0.107014	5.336084	5.855644	0.505777
	South West Scotlands	-2.125012	2.772336	5.083135	0.505777
10		-0.297439	4.218982	5.408636	0.505777
11	Lothian and Borders	0.687845	4.218982	3.235162	0.505777
12	Solway and Cheviot	-0.735829	2.741524	2.971182	0.505777
13	North East England	0.906080	2.101775	-0.112382	0.505777
14	North Lancashire and The Lakes	1.099994	2.101775	1.848625	0.505777
15	South Lancashire, Yorkshire and Humber	4.009302	1.439013	0.096468	0.505777
16	North Midlands and North Wales	3.876723	0.464195		0.505777
17	South Lincolnshire and North Norfolk	2.242699	0.598940		0.505777
18	Mid Wales and The Midlands	1.608898	0.330039		0.505777
19	Anglesey and Snowdon	4.964300	1.025652		0.505777
20	Pembrokeshire	9.114937	-2.678251		0.505777
21	South Wales & Gloucester	6.245424	-2.648511		0.505777
22	Cotswold	3.191385	3.112061	-5.745202	0.505777
23	Central London	-2.762197	3.112061	-6.320128	0.505777
24	Essex and Kent	-3.497505	3.112061		0.505777
25	Oxfordshire, Surrey and Sussex	-0.989364	-1.516677		0.505777
26	Somerset and Wessex	-1.010022	-2.647562		0.505777
27	West Devon and Cornwall	0.254545	-3.948547		0.505777

The System Peak, Shared Year Round and Not Shared Year Round tariffs are locational elements that reflect the cost of providing incremental capacity to generation on an area of the main integrated onshore transmission system. The non-locational residual element ensures that the appropriate amount of transmission revenue is recovered from generators.

For conventional generation technologies, the wider zonal generation tariff is the sum of the Peak Tariff, the Shared Year Round Tariff scaled by the generator's Annual Load Factor, the Not Shared Year Round Tariff and the Residual Tariff. For intermittent generation technologies, the wider zonal generation tariff is the sum of the Shared Year Round Tariff scaled by the generator's Annual Load Factor, the Not Shared Year Round Tariff and the Residual Tariff.

Schedule of Annual Load Factors for 2016/17

Annual Load Factors for specific generators are listed in Table 1.16. Generators commissioning or re-planting since April 2015 should use the generic Annual Load Factor for their technology in Table 1.17.

Table 1.16

Power Station	Technology	Specific ALF
Aberthaw	Coal	56.3741%
An Suidhe Wind Farm	Onshore_Wind	37.7890%
Arecleoch	Onshore_Wind	33.8135%
Baglan Bay	CCGT_and_CHP	42.1913%
Barrow Offshore Wind Ltd	Offshore_Wind	48.0051%
Barry	CCGT_and_CHP	3.4001%
Beauly Cascade	Hydro	32.7461%
Black Law	Onshore_Wind	26.9404%
Brimsdown	CCGT_and_CHP	26.7322%
Carraig Gheal	Onshore_Wind	42.0083%
Clunie Scheme	Hydro	40.7447%
Clyde (North)	Onshore_Wind	36.0275%
Clyde (South)	Onshore_Wind	33.6380%
Connahs Quay	CCGT_and_CHP	23.5195%
Conon Cascade	Hydro	52.4464%
Corby	CCGT_and_CHP	8.6481%
Coryton	CCGT_and_CHP	24.6490%
Cottam	Coal	61.8678%
Cottam Development Centre	CCGT_and_CHP	31.1348%
Cowes	Oil_and_OCGT	0.1931%
Cruachan	Pumped_Storage	9.2315%
Crystal Rig II	Onshore_Wind	45.8801%
Damhead Creek	CCGT_and_CHP	73.9976%
Deeside	CCGT_and_CHP	24.1708%
Didcot B	CCGT_and_CHP	43.7853%
Didcot GTs	Oil_and_OCGT	0.1008%
Dinorwig	Pumped_Storage	15.0958%
Drax	Coal	81.8042%
Dungeness B	Nuclear	51.3862%
Dunlaw extension	Onshore_Wind	33.9472%
Edinbane Wind	Onshore_Wind	33.3725%
Eggborough	Coal	53.1372%
Errochty	Hydro	22.5136%
Fallago	Onshore_Wind	44.8288%
Farr Windfarm Tomatin	Onshore_Wind	38.6604%
Fasnakyle G1 & G3	Hydro	32.4922%
Fawley	Oil_and_OCGT	0.1679%
Fawley CHP	CCGT_and_CHP	67.9844%
Ferrybridge B	Coal	45.2484%
Ffestiniogg	Pumped_Storage	3.5886%
Fiddlers Ferry	Coal	49.2831%
Finlarig	Hydro	56.4573%

Foyers Pumped_Storage 15.3910% Garry Cascade Hydro 56.3043% Glandford Brigg CCGT_and_CHP 1.0230% Glendoe Hydro 16.5615% Glenmoriston Hydro 43.1709% Gordonbush Onshore_Wind 44.0835% Grain CCGT_and_CHP 32.1108% Grangemouth CCGT_and_CHP 61.5971% Great Yarmouth CCGT_and_CHP 61.5971% Great Gabbard Offshore Wind Farm Offshore_Wind 43.5381% Gifflin Wind Onshore_Wind 43.5381% Gunfleet Sands I Offshore_Wind 43.7196% Gunfleet Sands II Offshore_Wind 29.1888% Hadyard Hill Onshore_Wind 29.1350% Harstanes Onshore_Wind 29.5726% Hartlepool Nuclear 75.1903% Heysham Nuclear 75.1903% Hunterston Nuclear 76.0275% Immingham CCGT_and_CHP 54.1890% Keadby CCGT_and_CHP 47.2833	Power Station	Technology	Specific ALF
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Roosecote CCGT_and_CHP 3.1353%			
RIMBIEW E I COOL I KN 494EW	Rugeley B	Coal	60.4345%

Power Station	Technology	Specific ALF
Rye House	CCGT_and_CHP	12.8712%
Saltend	CCGT_and_CHP	79.8744%
Seabank	CCGT_and_CHP	26.1802%
Sellafield	CCGT_and_CHP	17.3391%
Severn Power	CCGT_and_CHP	30.8187%
Sheringham Shoal	Offshore_Wind	44.0744%
Shoreham	CCGT_and_CHP	32.2280%
Sizewell B	Nuclear	81.5598%
Sloy G2 & G3	Hydro	12.8573%
South Humber Bank	CCGT_and_CHP	32.1065%
Spalding	CCGT_and_CHP	45.8371%
Staythorpe	CCGT_and_CHP	54.1112%
Sutton Bridge	CCGT_and_CHP	23.9573%
Taylors Lane	Oil_and_OCGT	0.1242%
Thanet Offshore Wind Farm	Offshore_Wind	38.8172%
Toddleburn	Onshore_Wind	34.8770%
Torness	Nuclear	87.1333%
Uskmouth	COAL	34.4831%
Walney I	Offshore_Wind	51.7868%
Walney II	Offshore_Wind	57.8837%
West Burton	Coal	58.3329%
West Burton B	CCGT_and_CHP	32.7540%
West of Duddon Sands Offshore Wind Farm	Offshore_Wind	41.8272%
Westermost Rough	Offshore_Wind	40.0700%
Whitelee	Onshore_Wind	29.9346%
Whitelee Extension	Onshore_Wind	22.4011%
Wilton	CCGT_and_CHP	9.6552%
Wylfa	Nuclear	82.5139%

Table 1.17

Technology	Generic ALF	Intermittent/ Conventional
Oil_and_OCGT	0.3854%	Conventional
Pumped_Storage	10.8267%	Conventional
Tidal	18.9000%	Intermittent
Biomass	21.1387%	Conventional
Wave	31.0000%	Intermittent
Onshore_Wind	36.7344%	Intermittent
Hydro	38.5139%	Conventional
CCGT_and_CHP	41.9008%	Conventional
Offshore_Wind	46.9601%	Intermittent
Coal	58.0245%	Conventional
Nuclear	74.2383%	Conventional

Wider Generation charges are levied by reference to the Transmission Licensee's substation to which the party is connected or deemed connected. Transmission Licensee's substations are assigned to a generation zone as shown on the zonal maps.

If a party is unclear from looking at the geographical map which zone the relevant National Grid substation is assigned to, then those parties should refer to the electrical version of the map of Generation Use of System Tariff Zones as at 1 April 2016 for clarification. Confirmation of the zoning of a particular generator can be obtained by contacting National Grid's Revenue Team.

Small Generators' Discount

In accordance with Licence Condition C13 in National Grid's Transmission Licence, small generators connected to the 132kV transmission system are eligible for a reduction in the listed Generation TNUoS tariffs. This discount has been calculated in accordance with direction from the Authority and equates to 25% of the combined generation and demand residual components of the TNUoS tariffs. For 2016/17, this figure has been calculated as £11.459901/kW.

Schedule of Transmission Network Use of System Local Substation Generation Charges (£/kW) in 2016/17

Table 1.8 Onshore Local Substation Tariffs (£/kW)

The following table provides the Local Substation Generation TNUoS tariffs applicable to all generation directly connected to the onshore GB Transmission Network from 1 April 2016, which have been updated from the examples listed in the Statement of Use of System Methodology.

		Local Substation Tariff (£/kW)		
Sum of TEC at connecting Substation	Connection Type	132kV	275kV	400kV
<1320 MW	No redundancy	0.181419	0.103783	0.074778
<1320 MW	Redundancy	0.399652	0.247267	0.179833
>=1320 MW	No redundancy		0.325407	0.235335
>=1320 MW	Redundancy		0.534235	0.389947

The above tariffs reflect the cost of the transmission substation equipment provided to facilitate generation connecting to an onshore substation.

Table 1.9 Offshore Local Substation Tariffs (£/kW)

The following table provides the Local Substation Generation TNUoS tariffs applicable to generation connecting to offshore transmission infrastructure from 1 April 2016:

Offshore Power Station	Local Substation Tariff (£/kW)
Barrow	7.310632
Greater Gabbard	13.706576
Gunfleet	15.821789
Gwynt Y Mor	16.692416
Lincs	13.662360
London Array	9.300327
Ormonde	22.600549
Robin Rigg East	-0.418080
Robin Rigg West	-0.418080
Sheringham Shoal	21.836047
Thanet	16.628943
Walney 1	19.505345
Walney 2	19.363488
West of Duddon Sands	7.526580

Further local substation tariffs applicable to generation connecting to offshore transmission infrastructure during 2016/17 will be published in future revisions of this statement following

the completion of the tender process relating to the sale of the relating offshore transmission assets.

Schedule of Transmission Network Use of System Local Circuit Charges (£/kW) in 2016/17

Table 1.10

The following table provides the Local Circuit Generation TNUoS tariffs applicable to directly connected generation not connected to the main integrated onshore GB Transmission Network from 1 April 2016.

Substation Name	(£/kW)	Substation Name	(£/kW)	Substation Name	(£/kW)
Achruach	3.877930	Dinorwig	2.172270	Luichart	0.517906
Aigas	0.590978	Dumnaglass	1.677615	Marchwood	0.345679
An Suidhe	0.854761	Dunlaw Extension	5.366108	Mark Hill	0.791161
Arecleoch	1.877231	Edinbane	6.185278	Millennium	1.650930
Baglan Bay	0.629468	Ewe Hill	1.241717	Moffat	0.172577
Beinneun Wind Farm	1.357822	Fallago	0.895473	Mossford	2.601422
Bhlaraidh Wind Farm	-0.583410	Farr Windfarm	2.036036	Nant	-1.109785
Black Law	1.578926	Ffestiniogg	0.228990	Necton	-0.336322
BlackLaw Extension	3.348316	Finlarig	0.289332	Rhigos	0.065754
Bodelwyddan	0.100411	Foyers	0.680399	Rocksavage	0.015953
Brochloch	1.937078	Galawhistle	0.764740	Saltend	0.307669
Carraig Gheal	3.974548	Glendoe	1.662096	South Humber Bank	0.860302
Carrington	-0.039345	Gordonbush	1.172931	Spalding	0.247667
Clyde (North)	0.099095	Griffin Wind	-0.852308	Strathy Wind	2.441031
Clyde (South)	0.114598	Hadyard Hill	2.501066	Western Dod	0.639511
Corriegarth	3.405676	Harestanes	2.284700	Whitelee	0.095898
Corriemoillie	1.503051	Hartlepool	0.540875	Whitelee Extension	0.266597
Coryton	0.312141	Hedon	0.163612		
Cruachan	1.652623	Invergarry	1.282002		
Crystal Rig	0.332039	Kilbraur	1.044886		
Culligran	1.566105	Kilgallioch	0.950992		
Deanie	2.572887	Kilmorack	0.178454		
Dersalloch	2.176599	Langage	0.594127		
Didcot	0.465661	Lochay	0.330665		

The above tariffs reflect the cost of transmission circuits between the point of connection and the main interconnected transmission system.

Table 1.11

The following table provides the Local Circuit Generation TNUoS tariffs applicable to generation connecting to offshore transmission infrastructure from 1 April 2016:

Offshore Power Station	Local Circuit Tariff (£/kW)
Barrow	38.249221
Greater Gabbard	31.496362
Gunfleet	14.525641
Gwynt Y Mor	16.444092
Lincs	53.491262
London Array	31.676396
Ormonde	42.102705
Robin Rigg East	27.694200
Robin Rigg West	27.694200
Sheringham Shoal	25.608568
Thanet	30.985665
Walney 1	38.844844
Walney 2	39.187069
West of Duddon Sands	37.139008

Further local circuit tariffs applicable to generation connecting to offshore transmission infrastructure during 2016/17 will be published in future revisions of this statement following the completion of the tender process relating to the sale of the relating offshore transmission assets.

Schedule of Transmission Network Use of System STTEC and LDTEC Charges in 2016/17

Table 1.12

The following table provides the Short Term Transmission Entry Capacity (STTEC) and Limited Duration Transmission Entry Capacity (LDTEC) tariffs applicable to generators from 1 April 2016.

	LDTEC Tariff	LDTEC Tariff (£/kW/Week)		STTEC Tariff (£/kW)		
Power Station	Higher Rate	Lower Rate	28 Days	35 Days	42 Days	
Aberthaw	0.243439	0.017802	0.973756	1.217195	1.460634	
A'Chruach Wind Farm	0.727891	0.053230	2.911564	3.639455	4.367346	
Afton	0.516388	0.037763	2.065552	2.581940	3.098328	
Aigas	0.320802	0.023460	1.283208	1.604010	1.924812	
Aikengall II Windfarm	0.497107	0.036353	1.988428	2.485535	2.982642	
An Suidhe Wind Farm, Argyll (SRO)	0.569175	0.041623	2.276700	2.845875	3.415050	
Arecleoch	0.624467	0.045667	2.497868	3.122335	3.746802	
Baglan Bay	0.261420	0.019117	1.045680	1.307100	1.568520	
Barrow Offshore Wind Farm	2.131810	0.155898	8.527240	10.659050	12.790860	
Beinneun Wind Farm	0.828065	0.060556	3.312260	4.140325	4.968390	
Bhlaraidh Wind Farm	0.726151	0.053103	2.904604	3.630755	4.356906	
Blackcraig Wind Farm	0.454008	0.033201	1.816032	2.270040	2.724048	
Blacklaw	0.546426	0.039960	2.185704	2.732130	3.278556	
Blacklaw Extension	0.037674	0.002755	0.150696	0.188370	0.226044	
BP Grangemouth	0.327402	0.023943	1.309608	1.637010	1.964412	
Burbo Bank Extension Offshore Wind Farm	0.259723	0.018993	1.038892	1.298615	1.558338	
Carraig Gheal Wind Farm	0.732963	0.053601	2.931852	3.664815	4.397778	
Carrington Power Station	0.261827	0.019147	1.047308	1.309135	1.570962	
CDCL	0.274924	0.020105	1.099696	1.374620	1.649544	
Clunie	0.093995	0.006874	0.375980	0.469975	0.563970	
Clyde North	0.464659	0.033980	1.858636	2.323295	2.787954	
Clyde South	0.465473	0.034040	1.861892	2.327365	2.792838	
Connahs Quay	0.274924	0.020105	1.099696	1.374620	1.649544	
Corby	0.128348	0.009386	0.513392	0.641740	0.770088	
Corriegarth	0.468573	0.034266	1.874292	2.342865	2.811438	
Corriemoillie Wind Farm	0.380143	0.027800	1.520572	1.900715	2.280858	
Coryton	0.032146	0.002351	0.128584	0.160730	0.192876	
Cottam	0.274924	0.020105	1.099696	1.374620	1.649544	
Cour Wind Farm	0.535757	0.039180	2.143028	2.678785	3.214542	
Cruachan	0.711949	0.052064	2.847796	3.559745	4.271694	
Crystal Rig 2	0.480881	0.035166	1.923524	2.404405	2.885286	
Culligran	0.371996	0.027204	1.487984	1.859980	2.231976	
Damhead Creek	0.015759	0.001152	0.063036	0.078795	0.094554	
Deanie	0.424852	0.031069	1.699408	2.124260	2.549112	
Deeside	0.274924	0.020105	1.099696	1.374620	1.649544	

	LDTEC Tariff (£/kW/Week)		STTEC Tariff (£/kW)		
Power Station	Higher Rate	Lower Rate	28 Days	35 Days	42 Days
Dersalloch Wind Farm	0.038539	0.002818	0.154156	0.192695	0.231234
Didcot B	0.000000	0.000000	0.000000	0.000000	0.000000
Dinorwig	0.467425	0.034182	1.869700	2.337125	2.804550
Drax	0.338127	0.024727	1.352508	1.690635	2.028762
Dudgeon Offshore Wind Farm	0.158082	0.011560	0.632328	0.790410	0.948492
Dungeness B	0.015759	0.001152	0.063036	0.078795	0.094554
Dunlaw Extension	0.143608	0.010502	0.574432	0.718040	0.861648
Dunmaglass Wind Farm	0.377850	0.027632	1.511400	1.889250	2.267100
Edinbane Wind, Skye	0.346644	0.025350	1.386576	1.733220	2.079864
Enfield	0.019299	0.001411	0.077196	0.096495	0.115794
Errochty	0.093995	0.006874	0.375980	0.469975	0.563970
Ewe Hill	0.000000	0.000000	0.000000	0.000000	0.000000
Fallago Rig Wind Farm	0.510461	0.037330	2.041844	2.552305	3.062766
Farr Wind Farm, Tomatin	0.396667	0.029008	1.586668	1.983335	2.380002
Fasnakyle G1 & G2	0.155135	0.011345	0.620540	0.775675	0.930810
Fawley CHP	0.000000	0.000000	0.000000	0.000000	0.000000
Ffestiniog	0.271922	0.019885	1.087688	1.359610	1.631532
Fiddlers Ferry	0.330636	0.024179	1.322544	1.653180	1.983816
Finlarig	0.274363	0.020064	1.097452	1.371815	1.646178
Foyers	0.923065	0.067503	3.692260	4.615325	5.538390
Freasdail	0.524300	0.038342	2.097200	2.621500	3.145800
Galawhistle Wind Farm	0.000000	0.000000	0.000000	0.000000	0.000000
Galloper Wind Farm	0.128348	0.009386	0.513392	0.641740	0.770088
Glen App Windfarm	0.022822	0.001669	0.091288	0.114110	0.136932
Glendoe	0.242395	0.017726	0.969580	1.211975	1.454370
Glenmoriston	0.155135	0.011345	0.620540	0.775675	0.930810
Gordonbush Wind	0.948923	0.069394	3.795692	4.744615	5.693538
Grain	0.026790	0.001959	0.107160	0.133950	0.160740
Great Yarmouth	0.128348	0.009386	0.513392	0.641740	0.770088
Greater Gabbard Offshore Wind Farm	2.501502	0.182933	10.006008	12.507510	15.009012
Griffin Wind Farm	0.662350	0.048437	2.649400	3.311750	3.974100
Gunfleet Sands II Offshore Wind Farm	1.262476	0.092324	5.049904	6.312380	7.574856
Gunfleet Sands Offshore Wind Farm	1.262476	0.092324	5.049904	6.312380	7.574856
Gwynt Y Mor Offshore Wind Farm	1.999390	0.146214	7.997560	9.996950	11.996340
Hadyard Hill	0.055573	0.004064	0.222292	0.277865	0.333438
Harestanes	0.417311	0.030518	1.669244	2.086555	2.503866
Hartlepool	0.219943	0.016084	0.879772	1.099715	1.319658
Heysham Power Station	0.312171	0.022829	1.248684	1.560855	1.873026
Hinkley Point B	0.000000	0.000000	0.000000	0.000000	0.000000
Humber Gateway Offshore Wind Farm	3.407639	0.249198	13.630556	17.038195	20.445834
Hunterston	0.525829	0.038453	2.103316	2.629145	3.154974
Immingham	0.327096	0.023920	1.308384	1.635480	1.962576
Indian Queens	0.000000	0.000000	0.000000	0.000000	0.000000

	LDTEC Tariff (£/kW/Week)		STTEC Tariff (£/kW)		
Power Station	Higher Rate	Lower Rate	28 Days	35 Days	42 Days
Invergarry	0.222440	0.016267	0.889760	1.112200	1.334640
Keadby II	0.254452	0.018608	1.017808	1.272260	1.526712
Keith Hill Wind Farm	0.143608	0.010502	0.574432	0.718040	0.861648
Kilbraur Wind Farm	0.942201	0.068902	3.768804	4.711005	5.653206
Kilgallioch	0.571763	0.041813	2.287052	2.858815	3.430578
Kilmorack	0.299144	0.021876	1.196576	1.495720	1.794864
Langage	0.000000	0.000000	0.000000	0.000000	0.000000
Lincs Offshore Wind Farm	3.701304	0.270674	14.805216	18.506520	22.207824
Little Barford	0.137789	0.010076	0.551156	0.688945	0.826734
Lochay	0.276533	0.020223	1.106132	1.382665	1.659198
Lochluichart	0.380143	0.027800	1.520572	1.900715	2.280858
London Array Offshore Wind Farm	2.157595	0.157783	8.630380	10.787975	12.945570
Luichart	0.316965	0.023179	1.267860	1.584825	1.901790
Marchwood	0.000000	0.000000	0.000000	0.000000	0.000000
Margree	0.454008	0.033201	1.816032	2.270040	2.724048
Mark Hill Wind Farm	0.563372	0.041199	2.253488	2.816860	3.380232
Medway Power Station	0.026790	0.001959	0.107160	0.133950	0.160740
Millennium Wind (Stage 3), Ceannacroc	0.241809	0.017683	0.967236	1.209045	1.450854
Minnygap	0.000000	0.000000	0.000000	0.000000	0.000000
Mossford	0.426350	0.031179	1.705400	2.131750	2.558100
Nant	0.466036	0.034081	1.864144	2.330180	2.796216
Ormonde Offshore Wind Farm	3.706235	0.271034	14.824940	18.531175	22.237410
Orrin	0.289775	0.021191	1.159100	1.448875	1.738650
Pembroke Power Station	0.384952	0.028151	1.539808	1.924760	2.309712
Pen Y Cymoedd Wind Farm	0.228285	0.016694	0.913140	1.141425	1.369710
Pencloe Windfarm	0.516388	0.037763	2.065552	2.581940	3.098328
Peterhead	0.615885	0.045039	2.463540	3.079425	3.695310
Pogbie Wind Farm	0.143608	0.010502	0.574432	0.718040	0.861648
Race Bank Wind Farm	0.175739	0.012852	0.702956	0.878695	1.054434
Rampion Offshore Wind Farm	0.000000	0.000000	0.000000	0.000000	0.000000
Ratcliffe on Soar	0.148820	0.010883	0.595280	0.744100	0.892920
Robin Rigg East Offshore Wind Farm	1.568836	0.114728	6.275344	7.844180	9.413016
Robin Rigg West Offshore Wind Farm	1.568836	0.114728	6.275344	7.844180	9.413016
Rocksavage	0.259215	0.018956	1.036860	1.296075	1.555290
Rugeley	0.137789	0.010076	0.551156	0.688945	0.826734
Rye House	0.015759	0.001152	0.063036	0.078795	0.094554
Saltend	0.346789	0.025360	1.387156	1.733945	2.080734
Seabank	0.065302	0.004776	0.261208	0.326510	0.391812
Sellafield	0.291699	0.021332	1.166796	1.458495	1.750194
Severn Power	0.228373	0.016701	0.913492	1.141865	1.370238
Sheringham Shoal Offshore Wind Farm	2.648414	0.193677	10.593656	13.242070	15.890484
Shoreham	0.000000	0.000000	0.000000	0.000000	0.000000
Sizewell B	0.137789	0.010076	0.551156	0.688945	0.826734

	LDTEC Tariff (£/kW/Week)		STTEC Tariff (£/kW)		
Power Station	Higher Rate	Lower Rate	28 Days	35 Days	42 Days
Sloy G2 and G3	0.027617	0.002020	0.110468	0.138085	0.165702
South Humber Bank	0.372262	0.027223	1.489048	1.861310	2.233572
Spalding	0.198183	0.014493	0.792732	0.990915	1.189098
Staythorpe C	0.274924	0.020105	1.099696	1.374620	1.649544
Strathy North and South Wind	0.417929	0.030563	1.671716	2.089645	2.507574
Sutton Bridge	0.185181	0.013542	0.740724	0.925905	1.111086
Taylors Lane	0.000000	0.000000	0.000000	0.000000	0.000000
Thanet Offshore Wind Farm	2.545246	0.186132	10.180984	12.726230	15.271476
Toddleburn Wind Farm	0.143608	0.010502	0.574432	0.718040	0.861648
Torness	0.463449	0.033892	1.853796	2.317245	2.780694
Ulzieside	0.516388	0.037763	2.065552	2.581940	3.098328
Uskmouth	0.236373	0.017286	0.945492	1.181865	1.418238
Walney I Offshore Wind Farm	3.355084	0.245355	13.420336	16.775420	20.130504
Walney II Offshore Wind Farm	3.365603	0.246124	13.462412	16.828015	20.193618
West Burton A	0.274924	0.020105	1.099696	1.374620	1.649544
West Burton B	0.274924	0.020105	1.099696	1.374620	1.649544
West of Duddon Sands Offshore Wind Farm	2.636642	0.192816	10.546568	13.183210	15.819852
Westermost Rough Offshore Wind Farm	2.659187	0.194464	10.636748	13.295935	15.955122
Whitelee	0.526871	0.038530	2.107484	2.634355	3.161226
Whitelee Extension	0.535833	0.039185	2.143332	2.679165	3.214998
Wilton	0.191547	0.014008	0.766188	0.957735	1.149282
Windy Standard II (Brockloch Rig 1) Wind Farm	0.618084	0.045200	2.472336	3.090420	3.708504

The above tariffs apply to levels of STTEC or LDTEC access that is agreed during the charging year.

STTEC can be arranged in 4, 5, or 6 week blocks, with the tariff for applicable duration applying.

The LDTEC tariff is applied at two rates during the year. The higher LDTEC rate applies to the first 17 weeks of access within a charging year (whether consecutive or not), and the lower LDTEC rate applies to any subsequent access within the year.

Further LDTEC and STTEC tariffs applicable to generation connecting to offshore transmission infrastructure during 2016/17 will be published in future revisions of this statement following the completion of the tender process relating to the sale of the relating offshore transmission assets.

Schedule of Pre-Asset Transfer Related Embedded Transmission Use of System Charges in 2016/17

Table 1.13

The following table provides the Pre-Asset Transfer Related Embedded Transmission Use of System (ETUoS) tariffs applicable to embedded transmission connected offshore generation from 1 April 2016. The relating charge is used to recover the element of the Offshore Transmission Operator's Revenue that relates to distribution charges paid during in the development of the offshore transmission network.

Offshore Power Station	Pre-Asset Transfer ETUoS Tariff (£/kW)
Barrow	0.949781
Gunfleet	2.714926
Ormonde	0.335523
Robin Rigg East	8.583708
Robin Rigg West	8.583708
Sheringham Shoal	0.556655
Thanet	0.745934

Please note that in addition to the charges listed above, any enduring distribution charges made to the NETSO will be passed through to the relating generator in the form of an ETUoS charge.

Further Pre-Asset Transfer Related ETUoS tariffs applicable to generation connecting to offshore transmission infrastructure during 2016/17 will be published in future revisions of this statement following the completion of the tender process relating to the sale of the relating offshore transmission assets.

Schedule of Transmission Network Use of System Demand Charges (£/kW) and Energy Consumption Charges (p/kWh) for 2016/17

Table 1.14

The following table provides the Zonal Demand and Energy Consumption TNUoS tariffs applicable from 1 April 2016.

Demand Zone	Zone Area	Demand Tariff (£/kW)	Energy Consumption Tariff (p/kWh)
1	Northern Scotland	40.966038	5.767784
2	Southern Scotland	40.244453	6.206960
3	Northern	42.927953	6.765895
4	North West	42.828015	5.688026
5	Yorkshire	42.493827	6.543088
6	N Wales & Mersey	42.678395	6.479380
7	East Midlands	44.724594	6.375320
8	Midlands	45.738925	6.354311
9	Eastern	46.543113	6.352770
10	South Wales	42.306722	6.403050
11	South East	49.204313	6.652677
12	London	51.870233	6.508025
13	Southern	50.078028	6.485453
14	South Western	48.580421	6.877890

A demand User's zone will be determined by the GSP Group to which the User is deemed to be connected.

The Demand Tariff is applied to Demand User's average half-hourly metered demand over the three Triad periods, as described in the Statement of Use of Charging Methodology. Demand Tariffs are a combination of a locational element that reflects the cost of providing incremental capacity to demand on an area of the main integrated onshore transmission system, and a non-locational residual element which ensures that the appropriate amount of transmission revenue is recovered from demand Users. For 2016/17 the demand residual element to two decimal places is £45.33/kW.

In the case of parties liable for both generation and demand charges, the demand tariff zone applicable in respect of that party's demand will be that in which the Transmission Licensee's substation to which the party is connected is geographically located. For example, if a power station were connected at a Transmission Licensee's substation that is geographically located within demand zone 1, it would pay the zone 1 demand tariff.

The energy consumption tariff is based on the annual energy consumption during the period 16:00 hrs to 19:00 hrs (i.e. settlement periods 33 to 38 inclusive) over the relevant financial year.

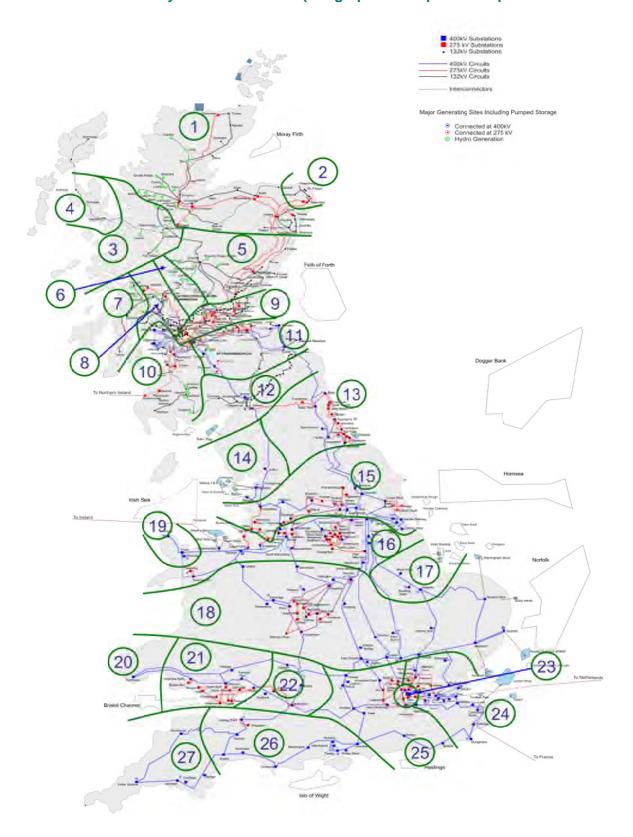
Small Generators Discount

In accordance with Standard Licence Condition C13 governing the adjustments to use of system charges for the small generators discount, a unit amount of £0.530453/kW to the demand tariff and 0.074454p/kWh to the energy consumption tariff has been included on a non-discriminatory and non-locational basis.

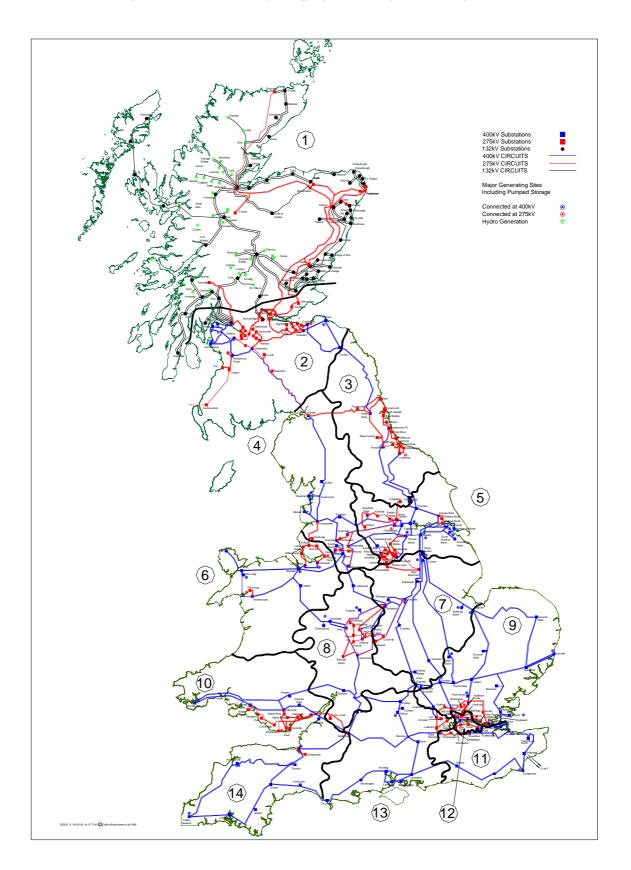
Standard Licence Condition C13 requires the small generators discount mechanism to be revenue neutral over the period of its operation so that the net effect on revenue of the licence condition is zero. It will therefore be necessary to manage any under or over recovery associated with the small generators discount separately from the under/over recovery mechanism within National Grid's main revenue restriction. National Grid calculates the unit amount added to the demand tariffs using a forecast of the total discount payable to eligible generators, and a forecast of the demand charging base. If either of these factors outturns differently from the original forecast then an under/over recovery would occur. The amount of any under/over recovery would be added to the revenue recovery used to derive the unit amount in subsequent years.

Zonal Maps Applicable for 2016/17

Generation Use of System Tariff Zones (Geographical map as at 1 Aprill 2016



Demand Use of System Tariff Zones (Geographical map as at 1 April 2016



Schedule 2

Detail of the External Incentive Scheme for the Balancing Services Use of System Charges for 2016/17

The Balancing Services Use of System (BSUoS) Charges for 2016/17 calculated in accordance with the methodology described in the Statement of Use of System Charging Methodology are made up of External BSUoS Charges and Internal BSUoS Charges. The External BSUoS Charges includes External Costs and an Incentive Scheme. Included here are details of how the Incentive outlined in the Transmission Licence is accommodated into BSUoS Charges.

External Incentive Structure and Payments for 2016/17

The forecast External incentive payment for the duration of the External incentive scheme (FYIncpayEXT_d) is calculated as the difference between the External Scheme target (M_t) and the Incentivised Balancing cost (IBC) subject to sharing factors (SF_t) and a cap/collar (CB_t).

$$FYIncpayEXT_d = SF_t * (M_t - IBC_d) + CB_t$$

The relevant value of the External incentive payment (FYIncPayEXT_d) is calculated by reference to the table below by the selection and application of the appropriate selection factors and offset dependent upon the value of the Incentivised Balancing Services cost (IBC) and the Incentive Target Cost (ITC).

Table 2.1: BSIS for 2016/17

Incentivised Balancing Cost (IBC) £m	M _t £m	SF _t £m	CB _t £m
IBC _t < (Incentive Target Cost _t – 100)	0	0	30
(Incentive Target Cost _t – 100) <= IBC _t < (Incentive Target Cost _t)	Incentive Target Cost _t	30%	0
(Incentive Target Cost _t) = IBC _t	IBC _t	0	0
(Incentive Target Cost _t) <= IBC _t < (Incentive Target Cost _t + 100)	Incentive Target Cost _t	30%	0
$IBC_t >= (Incentive Target Cost_t + 100)$	0	0	-30

In respect of each Settlement Day d, the forecast incentivised Balancing Cost (FBC_d) will be calculated as follows:

$$FBC_{d} = \frac{\sum_{k=1}^{d} IBC_{k}}{\sum_{k=1}^{d} PFT_{k}} * NDS$$

Where:

NDS: Number of days in Scheme

The Daily Incentivised Balancing Cost for a Settlement Day (IBC_d) is calculated as follows:

$$IBC_{d} = \sum\nolimits_{j \in d} CSOBM_{jd} + BSCCV_{jd} + BSCCA_{d} - OM_{d} - RT_{d} - BSFS_{d}$$

Wind Forecast Incentive (RFIIR)

The wind forecast incentive is an incentive scheme on the performance of National Grid with regards to its level of accuracy in forecasting the levels of wind generation on the system at the day ahead stage.

The monthly wind generation forecasting incentive revenue (MRFI_m) in respect of the relevant month m is calculated as follows:

Condition	Monthly wind generation forecasting incentive revenue (MRFI _m)
$\frac{RFIO_m}{RFIIF_m} \le 1.25$	$RFICAP_{m}\left[1-rac{RFIO_{m}}{RFIIF_{m}} ight]$
$\frac{RFIO_m}{RFIIF_m} > 1.25$	$MAX \left[-0.25RFICAP_m - 0.5millionLOG10 \left(\frac{RFIO_m}{1.25RFIIF_m} \right), RFIFLO_m \right]$

Where RFIO_m is the average hourly wind generation forecasting error in month m, and:

	1 April 2016 to 30 September 2016	1 October 2016 to 31 March 2017
RFIIF _m	0.0325	0.0475
RFICAP _m	£0.20m	£0.30m
RFIFLO _m	-£0.20m	-£0.30m

Schedule 3

Application Fees for Connection and Use of System Agreements

Application fees are payable in respect of applications for new connection agreements, certain use of system agreements and for modifications to existing agreements based on reasonable costs incurred by National Grid including where appropriate, charges from the Transmission Owners (TO's) in accordance with their charging statements. The application process and options available are set out in the Statement of the Use of System Charging Methodology which is included in Section 14 of the Connection and Use of System Code (CUSC).

The application fee is dependent upon size, type and location of the applicant's scheme as shown on the map and tables on the next page. Users can opt for a variable price application and pay an advance of the Engineering Charges based on the fixed prices shown, which will be reconciled once the actual costs have been calculated using the charge out rates contained in Schedule 3. Alternatively, onshore Users can opt to pay a fixed price application fee in respect of New and Modified Bilateral Agreements. In some circumstances, where a given application is expected to involve significant costs over and above those normally expected (e.g. substantial system studies, special surveys, investigations, or where a Transmission Owner varies the application fee charged to National Grid from the standard fee published in their charging statements) to process an offer of terms, National Grid reserves the right to remove the option for a fixed price application fee.

The map divides GB into three zones based on the Boundary of Influence map defined in Schedule 4 of the STC (SO-TO Code). Zone A maps onto the area NGC South, Zone B maps to NGC North and SPT South, and Zone C maps to SPT North, SHE T South and SHE T North.

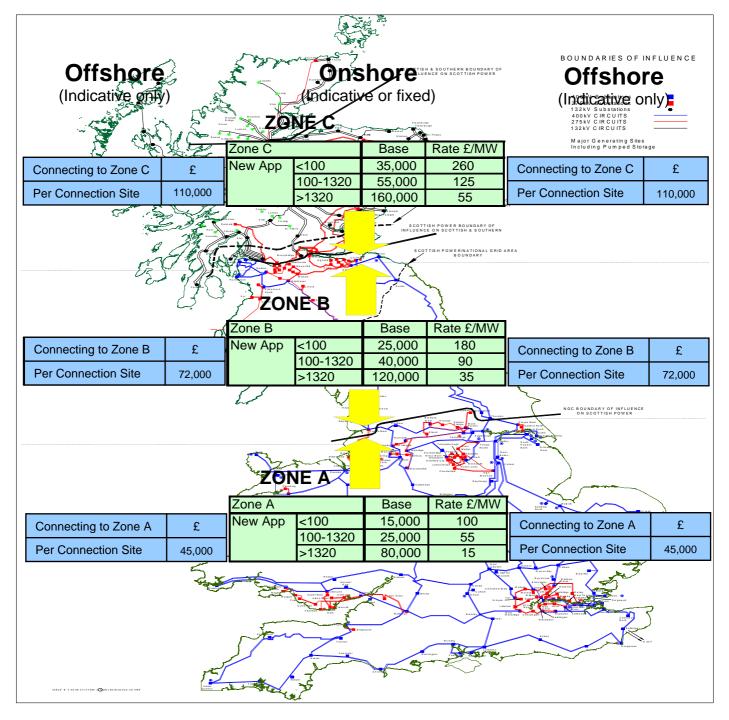
The application fees indicated will be reviewed on an annual basis and reflect any changes to the Boundaries of Influence. It should be noted that the zone to which a particular user is applying is determined by the location of the connection to the National Electricity Transmission System and not by the geographical location of the User's plant and equipment.

All application fees are subject to VAT and are capped at £400,000 + VAT.

Reconciliation and Refunding of Application Fees for Connection and Use of System Agreements

Application Fees will be reconciled and / or refunded In accordance with Section 14 of the Connection and Use of System Code (CUSC).

Entry Application Fees for New Bilateral Agreements



- 1. New Onshore Application Fee = Base + (MW * Rate)
- 2. TEC Increase¹ = Base + (TEC Increase * Rate)
- 3. New Offshore Application Fee = Number of offshore Connection Sites * Fee

¹ The base value and Rate used are the values associated with the change in TEC not the resulting total TEC being applied for.

Application Fees for New Bilateral Agreements and Modifications to existing Bilateral Agreements

Table 3.1.1: Application Fees in Zone A, when NG South is Host TO

This table details the adjustments applicable for certain scenarios to be taken into consideration when calculating the value of an Application Fee.

Application Type	MW	Base Fee (£	Ξ)	Rate (£/MW)
New Onshore Application (Entry)	<100MW 100 - 1320MW >1320MW	15,000 25,000 80,000		100 55 15
New Onshore Supply Point (Exit)	<100MW >100MW	37,000 37,000		- -
New Offshore Application (Indicative Only) (Per connection site)	•	45,000		-
Onshore Modification Application to Existing Supply Point (Exit)	<100 >100	28,000 28,000		-
Statement of Works (Exit)	-	2,750		-
Modification Application Following Statement Of Works (Project Progression) (Exit)	-	7,500 or 15,000		-
TEC Increase	<100MW 100 - 1320MW >1320MW	15,000 25,000 80,000		100 55 15
Application Type				raction of New pplication Fee
Onshore Modification Application (Entry)				0.75
Offshore Modification Application (Entry)			0.75	
Embedded Generation New Application (Entry) BEGA / BELLA			0.5	
Embedded Generation Modification Application (Entry) BEGA / BELLA				0.4
Design Variation in addition to Standard Offer (Entry)			1.5	

Table 3.1.2: Application Fees in Zone B, when SPT South is Host TO

Application Type	MW	Base Fee (£) Rate (£/	MW)
New Onshore Application (Entry)	<100MW 100 - 1320MW >1320MW	25,000 40,000 120,000	180 90 35	
New Onshore Supply Point (Exit)	<100MW >100MW	41,000 52,000		
New Offshore Application (Indicative Only) (Per connection site)	-	72,000	-	
Onshore Modification Application to Existing Supply Point (Exit)	<100 >100	31,000 39,000	-	
Statement of Works (Exit)	-	3,000	0 -	
Modification Application Following Statement Of Works (Project Progression) (Exit)	-	8,500 or 16,500	-	
TEC Increase	<100MW 100 - 1320MW >1320MW	25,000 40,000 120,000	180 90 35	
Application Type			Fraction of N Application	
Onshore Modification Application (Entry)			0.75	
Offshore Modification Application (Entry)			0.75	
Embedded Generation New Application (Entry) BEGA / BELLA			0.5	
Embedded Generation Modification Application (Entry) BEGA / BELLA			0.4	
Design Variation in addition to Standard Offer (Entry)			1.5	

Table 3.1.3: Application Fees in Zone B, when NG North is Host TO

Application Type	MW	Base Fee ((£) Rate (£/MW)
New Onshore Application (Entry)	<100MW 100 - 1320MW >1320MW	25,000 40,000 120,000	180 90 35
New Onshore Supply Point (Exit)	<100MW >100MW	41,000 52,000	
New Offshore Application (Indicative Only) (Per connection site)	-	72,000	-
Onshore Modification Application to Existing Supply Point (Exit)	<100 >100	31,000 39,000	-
Statement of Works (Exit)	-	3,000	-
Modification Application Following Statement Of Works (Project Progression) (Exit)	-	8,500 or 16,500	-
TEC Increase	<100MW 100 - 1320MW >1320MW	25,000 40,000 120,000	180 90 35
Application Type			Fraction of New Application Fee
Onchara Madification Application (Entwi	.		0.75

Application Type	Fraction of New Application Fee
Onshore Modification Application (Entry)	0.75
Offshore Modification Application (Entry)	0.75
Embedded Generation New Application (Entry) BEGA / BELLA	0.5
Embedded Generation Modification Application (Entry) BEGA / BELLA	0.4
Design Variation in addition to Standard Offer (Entry)	1.5

Table 3.1.4: Application Fees in Zone C, when SHE Transmission is Host TO

Application Type	MW	Base Fee (£)	Rate (£/MW)
New Onshore Application (Entry)	<100MW 100 - 1320MW >1320MW	35,000 55,000 160,000		260 125 55
New Onshore Supply Point (Exit)	<100MW >100MW	38,000 60,000		- -
New Offshore Application (Indicative Only) (Per connection site)	-	110,000		-
Onshore Modification Application to Existing Supply Point (Exit)	<100 >100	29,000 45,000		-
Statement of Works (Exit)	-	1,000		-
Modification Application Following Statement Of Works (Project Progression) (Exit)	-	4,500 or 17,200		-
TEC Increase	<100MW 100 - 1320MW >1320MW	35,000 55,000 160,000		260 125 55
Application Type				action of New oplication Fee
Onshore Modification Application (Entry)				0.75
Offshore Modification Application (Entry)				0.75
Embedded Generation New Application (Entry) BEGA / BELLA				0.5
Embedded Generation Modification Application (Entry) BEGA / BELLA				0.4
Design Variation in addition to Standard Offer (Entry)				1.5

Table 3.1.5: Application Fees in Zone C, when SPT North is Host TO

Application Type	MW	Base Fee (£	E) Rate (£/MW)
New Onshore Application (Entry)	<100MW 100 - 1320MW >1320MW	35,000 55,000 160,000	260 125 55
New Onshore Supply Point (Exit)	<100MW >100MW	38,000 60,000	-
New Offshore Application (Indicative Only) (Per connection site)	-	110,000	-
Onshore Modification Application to Existing Supply Point (Exit)	<100 >100	29,000 45,000	-
Statement of Works (Exit)	-	1,000	-
Modification Application Following Statement Of Works (Project Progression) (Exit)	-	4,500 or 17,200	-
TEC Increase	<100MW 100 - 1320MW >1320MW	35,000 55,000 160,000	260 125 55
Application Type			Fraction of New Application Fee
Onshore Modification Application (Entry)			0.75
Offshore Modification Application (Entry)		0.75	
Embedded Generation New Application	0.5		
Embedded Generation Modification Application (Entry) BEGA / BELLA			0.4
Design Variation in addition to Standard Offer (Entry)			1.5

Table 3.1.6: Other Application Fees:

Application Type		Zone B	Zone C
TEC Exchange Request (no system works)	£10,000	£10,000	£17,000
Request for STTEC or SNSTF	£10,000		
Directly Connected Reactive Only Service Provider	£20,000 £21,000 £22,000		£22,000
Suppliers and Interconnector Users	£5,000		
Assign, transfer or novate a bilateral agreement or minor admin changes	£3,000		

If applying for a combination of changes after making an initial application and this is prior to the completion of works associated to the initial application, such as a change to works or completion date that also includes a TEC Change, the Application Fee will be the higher of the TEC Change Fee or Modification Application Fee.

*Where the developer requests national Grid to identify the transmission reinforcement works and the works at the GSP (mod notice process), the application fee will be indicative only.

<u>Table 3.2</u>

Limited	d Duration TEC (LDTEC)	Duration of LDTEC (t)	Zone	£ (£'000)	Agreement Type (as Table C)
		t <= 3 months		10 + VAT	
	Basic request fee for duration t (applicable to all	3 months < t <= 6 months		15 + VAT	
	requests for LDTEC Offers)	6 months < t <= 9 months		20 + VAT	
		t > 9 months		30 + VAT	
		t <= 3 months		1 + VAT	
14	Additional fee for rolling assessment	3 months < t <= 6 months	All	1.5 + VAT	Bilateral Connection
	(applicable to a request for an LDTEC Indicative Block Offer)	6 months < t <= 9 months	All	2 + VAT	Agreement / BEGA
		t > 9 months		3 + VAT	
	Additional fee for	t <= 3 months		5 + VAT	
	combined applications (applicable to a	3 months < t <= 6 months		7.5 + VAT	
	combined request for an LDTEC Block Offer and an LDTEC Indicative	6 months < t <= 9 months		10 + VAT	
	Block Offer)	t > 9 months		15 + VAT	

<u>Table 3.3</u>

Temporary TEC Exchange Rate Request Fees		Duration of Temporary Exchange period (t)	£
		t <= 3 months	15,000
	Application fee for Temporary TEC	3 months < t <= 6 months	25,000
15	Exchange Rate Requests	6 months < t <= 9 months	30,000
		t > 9 months +	45,000

Examples

1. Entry Application Fee for a New Bilateral Agreement onshore

300MW Generator wishing to connect to the transmission system in Zone A Application Fee = £25,000 + (300 * 55) = £41,500

2. Entry Application Fee for a New Bilateral Agreement offshore

2000MW Generator wishing to connect to the transmission system in Zone B Two Connection Sites Application Fee = 2 * £72,000 = £144,000

3. Entry Application Fee for a Modification to an existing Bilateral Agreement offshore

2000MW Generator in Zone B seeking to alter a commissioning date where there are 2 affected transmission interface sites

This would be a Modification Application

Fee = 0.75 * (2 * £72,000) = £108,000

4. Entry Application Fee for a Modification to an existing Bilateral Agreement

300MW Generator in Zone A seeking to alter commissioning date This would be a Modification Application Fee = 0.75 * (£25,000 + (300 * 55)) = £31,125

5. Entry Application Fee for an embedded generator (BEGA/ BELLA)

300MW embedded generator requesting a BEGA in Zone A Fee = 0.5 * (£25,000 + (300 * 55)) = £20,750

6. Entry Application Fee for a TEC Increase

400MW generator in Zone A wishes to increase TEC by 20MW to 420MW Application Fee = £15,000 + (20 * 100) = £17,000

7. Entry Application Fee for a change to completion date

500MW generator in Zone B wishes to change their completion date by moving it back by 12 months

Application Fee = 0.75 * (£40,000 + (500 * 90)) = £63,750

8. Entry Application Fee for a Decrease TEC

600MW generator in Zone C wishes to decrease TEC by 100MW to 500MW Application Fee = 0.75 * (£55,000 + (100 * 125)) = £50,625

Table 3.6: Bilateral Agreement Types

Bilateral Agreement Type	Description
Bilateral Connection Agreement	In respect of Connection Sites of Users.
Bilateral Embedded Licence Exemptable Large Power Station Agreement (BELLA)	For generators that own or are responsible for embedded exemptible large power stations (another party may be responsible for the output under the CUSC and BSC).
Bilateral Embedded Generation Agreement (BEGA)	For generators and BSC parties with embedded power stations, excluding those which are exempt (unless they otherwise choose to be), who are responsible for the output onto a Distribution System.
Construction Agreement	In respect of parties that are applying for new or modified agreements up until the time of commissioning.

Table 3.7: Generator Types

The definitions provided below have been extracted from the Grid Code and are provided for ease of reference within this document.

Type of Plant	Definition
Embedded	Having a direct connection to a User System or the System of any other User to which Customers and/or Power Stations are connected, such connection being either a direct connection or a connection via a busbar of another User or of a Transmission Licensee (but with no other connection to the National Electricity Transmission System).
Small Power Station	A Power Station in NGET's Transmission Area with a Registered Capacity of less than 50MW, a Power Station in SPT's Transmission Area with a Registered Capacity of less than 30MW or a Power Station in SHE T's Transmission Area with a Registered Capacity of less than 10 MW.
Medium Power Station	A Power Station in NGET's Transmission Area with a Registered Capacity of 50MW or more, but less than 100MW.
Large Power Station	A Power Station in NGET's Transmission Area with a Registered Capacity of 100MW or more or a Power Station in SPT's Transmission Area with a Registered Capacity of 30 MW or more; or a Power Station in SHE T's Transmission Area with a Registered Capacity of 10 MW or more.

<u>Glossary</u>

Affected TO

A TO who owns or operates a transmission system which is

electrically impacted by a User's connection to a Host TO's

transmission system

Authority The Gas and Electricity Markets Authority (GEMA) established

under Section 1 of the Utilities Act 2000

Bilateral Connection

Agreement

An agreement between the SO and the User covering the

connection to the TO's transmission system.

CUSC Connection and Use of System Code

Entry A point of connection at which electricity may be exported from a

User's installation onto the Transmission System, i.e.

Generation

Exit A point of connection at which electricity may flow from the

Transmission System to the User's installation, i.e. Demand

Host TOThe TO which will electrically connect the User to a transmission

system which is owned or operated by that TO

NGET National Grid Electricity Transmission plc

Post-Vesting Means after 31 March 1990

Price Control As set out in the TO's Licence

Retail Price Index Table 36: RPI: All items index 1947-2013 "CHAW" published by

the Office for National Statistics and as amended monthly

SO System Operator. This being NGET

STC The System Operator-Transmission Owner Code

TO An onshore or offshore Transmission Owner. This being [TO

name plc]

Transmission

Interface Site

The site at which the Transmission interface point is located

Transmission

Licence

Transmission licence granted or treated as granted under

section 6(1)(b) of the Act

User A generation or demand customer connected to the TO's

transmission system and party to SO's bilateral agreement(s).

Schedule 4

Charge-Out Rates for Engineering Charges for Variable Price Applications

Appropriately qualified staff will be appointed to process applications and feasibility studies and carry out work in relation to the development of the National Electricity Transmission System. Travel, subsistence and computing costs will also be charged on an actual basis. It should be noted that these rates only apply to work carried out by the Transmission Licensee's in relation to licensed transmission activities. Different rates may apply when asked to quote for other work.

<u>Table 4.1</u>

	£/day		
	National Grid	SPT	SHE T
Section Manager Internal Solicitor	1010	1026	971
Principal Power System Engineer	803	785	817
Senior Power System Engineer Project Manager Account Manager Senior Wayleave Officer	651	655	681
Power System Design Engineer Draughtsman	515	551	543
Graduate Engineer	440	438	459
Administrative Support	349	346	359

Article II.

Schedule 5

Non-Capital Components applicable for Maintenance and Transmission Running Costs in Connection Charges for 2016/17

The non-capital component of the connection charge is divided into two parts, as set out below.

Part A: Site Specific Maintenance Charges

Site-specific maintenance charges will be calculated each year based on the forecast total site specific maintenance for GB divided by the total GAV of the transmission licensees GB connection assets, to arrive at a percentage of total GAV. For 2016/17 this will be 0.47%.

Part B: Transmission Running Costs

The Transmission Running Cost (TRC) factor is calculated at the beginning of each price control to reflect the appropriate amount of other Transmission Running Costs (rates, operation, indirect overheads) incurred by the transmission licensees that should be attributed to connection assets.

The TRC factor is calculated by taking a proportion of the forecast Transmission Running Costs for the transmission licensees (based on operational expenditure figures from the latest price control) that corresponds with the proportion of the transmission licensees' total connection assets as a function of their total business GAV. This cost factor is therefore expressed as a percentage of an asset's GAV and will be fixed for the entirety of the price control period. For 2013/14 to 2020/21 this will be 1.47%.

To illustrate the calculation, the following example uses the average operating expenditure from the published price control and the connection assets of each transmission licensee expressed as a percentage of their total system GAV to arrive at a GB TRC of 1.47%:

Example:

Connection assets as a percentage of total system GAV for each TO:

Scottish Power Transmission Ltd	18.6%
Scottish Hydro Transmission Ltd	7.5%
National Grid	16.3%

Published current price control average annual operating expenditure (£m):

Scottish Power Transmission Ltd	43.4
Scottish Hydro Transmission Ltd	33.1
National Grid	317.9

Total GB Connection GAV = £3.38bn

GB TRC Factor = (18.6% x £43.4m + 7.5% x £33.1m + 16.3% x £317.1m) / £3.38bn

GB TRC Factor = 1.84%

Net GB TRC Factor = Gross GB TRC Factor - Site Specific Maintenance Factor*

Net GB TRC Factor = 1.84% - 0.37% = 1.47%

Illustrative Connection Asset Charges

An indication of First Year Connection Asset Charges for new connection assets using estimates of Gross Asset Values are outlined in Appendix 1. Additional examples of connection charge calculations are included in Appendix 2 of this Statement to provide some general illustrations of how connection charge calculations are applied.

^{*} Note – the Site Specific Maintenance Factor used to calculate the TRC Factor is that which applies for the first year of the price control period or in this example, is the 2013/14 Site Specific Maintenance Factor of 0.37%.

Appendix 1: Illustrative Connection Asset Charges

2016/17 First Year Connection Charges based on the RPI Method (6% rate of return)

The following table provides an indication of typical charges for new connection assets. Before using the table, it is important to read through the notes below as they explain the assumptions used in calculating the figures.

Calculation of Gross Asset Value (GAV)

The GAV figures in the following table were calculated using the following assumptions:

- Each asset is new
- The GAV includes estimated costs of construction, engineering and Liquidated Damages premiums.
- The GAV does not include Interest During Construction but does include a 5% risk factor to compensate for this.

For details of the Calculation of the Gross Asset Value, see Chapter 2 of The Statement of the Connection Charging Methodology (Section 14 Part I of the Connection and Use of System Code).

Calculation of first year connection charge

The first year connection charges in the following table were calculated using the following assumptions:

- The assets are new
- The assets are depreciated over 40 years
- The rate of return is assumed to be 6% for RPI indexation
- The connection charges include maintenance costs at the 2016/17 rate of 0.47% of the GAV
- The connection charges include Transmission Running Costs at the 2016/17 rate of 1.47% of the GAV

For details of the Basic Annual Connection Charge Formula, see Chapter 2 of The Statement of the Connection Charging Methodology (Section 14 Part I of the Connection and Use of System Code).

Please note that the actual charges will depend on the specific assets at a site. Charges applicable to specific works will be detailed in the User's Bilateral Connection Agreement. Agreement specific GAVs and NAVs for each User will be made available on request.

Notes on Assets

Common Inclusions

The estimates include Design, Project management, Site setup, equipment transportation to site, installation, commissioning

Common exclusions

VAT, Inflation, costs associated with planning, site complexities such as ecology, environmental, archeology, contamination, land purchase and management, Site access including road crossings, rivers, etc.,

Notes and Assumptions

Transformers

- Plant: The above SGT cost estimates have been developed based on standard NG specifications and ordered in bulk quantities (part of bulk procurement framework).
 However SGT equipment cost depends heavily on the site specific specification & requirements, number of units ordered, metal prices index, forex and various other conditions driven by the market.
- **Civil**: Based on nominal base sizes, good ground condition, no piling, no contamination, shallow/ deep bund, Firewall (generic brick wall) on one side with standard height of 8m.

Exclusions

- Plant: Bay protection, control and SCADA system, below ground earthing, auxilliary supplies such as AC/DC system (all considered under part of the Bay Cost estimate).
- **Civil**: Trenching/Ducting and pilling, Noise enclosure, access works, oil containment drainage.

Single/Double Busbar bay

<u>Assumptions</u>

- Plant: The bay cost estimate is based on from NG standard bay drawing 41/177344.
 Indicative prices provided for bay protection, control, cabling, auxiliary systems, earthing are based on various assumptions (i.e. location of equipment, type of equipment, trench layout, ratings, etc.,) and can vary based on site specific conditions and requirements. Air insulated switchgear (AIS) technology is used in costing and it can vary if Gas insulated switchgear (GIS) technology is used.
- Civil: Nominal base sizes, dimensions of concrete footings, good ground condition.

Exclusions

Civil: Trenching / Ducting and piling

Cable

Assumptions - All based on 1 circuit of 1 cable per phase, 100m straight, flat and unimpeded route within substation environment.

- Standard AIS CI3 terminations on steel AIS supports, c/w SVL's, anti-touch shrouds, corona rings, arc horns and solar protection as required.
- XLPE Lead/Ali sheathed cable supply, Install, commission with High Voltage AC & Sheath Testing
- Earth Continuity Cable (ECC) & Link Boxes supply, Install & Connection included
- DTS c/w terminations into Fibre Optic Terminal boxes on AIS support on 400 & 275kV only
- PD Monitoring/Testing on 400 & 275kV only
- Full Design Verification & Assurance to NG Standards and Specifications
- Cable Installed in new precast concrete troughs, flat formation, secured in CBS, with cleats to prevent movement under fault conditions, 5T/11T loading standard concrete lids, Connection & Modifications to earth mat
- P&C Duct (1 x 90mm) Included (Max 100m excluding cable(s))
- Excavation Waste disposal, Site Establishment / prelims, security & Access costs Included

- Standalone project(s) with its own design/project team
- Water Management (if required)
- Costs do not allow for any small quantity/MOQ surcharge that may be levied by cable supplier

Exclusions

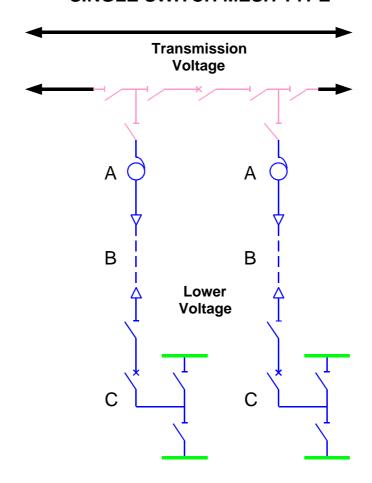
- Civils: Piling
- Plant: Oil works, pilot cabling (within substation scope)

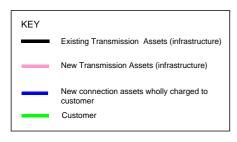
			£000)'s		
	40	0kV	27	5kV	1;	32kV
	GAV	Charge	GAV	Charge	GAV	Charge
Double Busbar Bay	2541	263	2046	212	1221	127
Single Busbar Bay	2231	231	1761	182	1108	115
Transformer Cables 100m						
(incl. Cable sealing ends)						
120MVA			2178	226	1271	132
180MVA	2337	242	2178	226	1286	133
240MVA	2340	243	2185	227	1292	134
750MVA	2413	250	2228	231		
Transformers						
45MVA 132/66kV					1900	197
90MVA 132/33kV					1900	197
120MVA 275/33kV			3771	391		
180MVA 275/66kV			3975	412		
180MVA 275/132kV			4301	446		
240MVA 275/132kV			4301	446		
240MVA 400/132kV	4912	509				

Connection Examples

Example 1

NEW SUPERGRID CONNECTION SINGLE SWITCH MESH TYPE

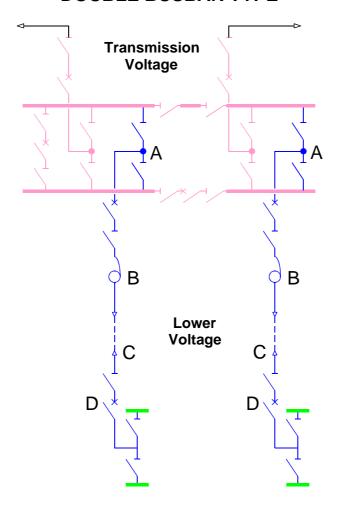




	SCHEDULE FOR NEW			
	275/132kV		400/132kV	
Ref	Description	First Year Charges (£000s)	Description	First Year Charges (£000s)
А	2 x 180MVA	892	2 x 240MVA	1018
В	2 x 100m 180MVA	452	2 x 100m 240MVA	486
С	2 x 132kV Double Busbar Transformer Bays	254	2 x 132kV Double Busbar Transformer Bays	254
	Total	1598	Total	1758

Example 2

NEW SUPERGRID CONNECTION DOUBLE BUSBAR TYPE

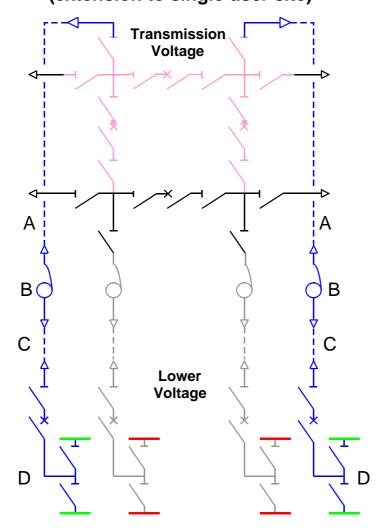


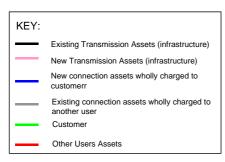
W=\/	Ref	Description
Existing Transmission Assets (infrastructure)	А	2 x 275kV Double Bu Transformer Bays
New Transmission Assets (infrastructure)	В	2 x 18
New connection assets wholly charged to customer	С	2 x 100m 180
Customer	D	2 x 132kV Double Bu Transformer Bays

	SCHEDULE FOR NEW CONNECTION			
	275/132kV		400/132kV	
Ref	Description	First Year Charges (£000s)	Description	First Year Charges (£000s)
А	2 x 275kV Double Busbar Transformer Bays	424	2 x 400kV Double Busbar Transformer Bays	526
В	2 x 180MVA	892	2 x 240MVA	1018
С	2 x 100m 180MVA	452	2 x 100m 240MVA	486
D	2 x 132kV Double Busbar Transformer Bays	254	2 x 132kV Double Busbar Transformer Bays	254
	Total	2022	Total	2204

Example 3

EXTENSION OF SINGLE SWITCH MESH TO FOUR SWITCH MESH (extension to single user site)





	SCHEDULE FOR NEW			
	275/132kV		400/132kV	
Ref	Description	First Year Charges (£000s)	Description	First Year Charges (£000s)
А	2 x 100m 180MVA	452	2 x 100m 240MVA	486
В	2 x 180MVA	892	2 x 240MVA	1018
С	2 x 100m 180MVA	452	2 x 100m 240MVA	486
D	2 x 132kV Double Busbar Transformer Bays	254	2 x 132kV Double Busbar Transformer Bays	254
	Total	2050	Total	2244

Appendix 2: Examples of Connection Charge Calculations

The following examples of connection charge calculations are intended as general illustrations.

Example 1

This example illustrates the method of calculating the first year connection charge for a given asset value. This method of calculation is applicable to indicative price agreements for new connections, utilising the RPI method of charging, and assuming:

- i) the asset is commissioned on 1 April 2016
- ii) there is no inflation from year to year i.e. GAV remains constant
- the site specific maintenance charge component remains constant throughout the 40 years at 0.47% of GAV
- iv) the Transmission Running Cost component remains constant throughout the 40 years at 1.47% of GAV
- v) the asset is depreciated over 40 years
- vi) the rate of return charge remains constant at 6% for the 40 year life of the asset
- vii) the asset is terminated at the end of its 40 year life

For the purpose of this example, the asset on which charges are based has a Gross Asset Value of £3,000,000 on 1 April 2016.

Charge	Calculation	
Site Specific Maintenance Charge (0.47% of GAV)	3,000,000 x 0.47%	£14,100
Transmission Running Cost (1.47% of GAV)	3,000,000 x 1.47%	£44,100
Capital charge (40 year depreciation 2.5% of GAV)	3,000,000 x 2.5%	£75,000
Return on mid-year NAV (6%)	2,962,500 x 6%	£177,750
TOTAL		£310,950

The first year charge of £310,950 would reduce in subsequent years as the NAV of the asset is reduced on a straight-line basis, assuming a zero rate of inflation.

This gives the following annual charges over time (assuming no inflation):

Year	Charge
1	£310,950
2	£306,450
10	£270,450
40	£135,450

Based on this example, charges of this form would be payable until 31 March 2056.

Example 2

The previous example assumes that the asset is commissioned on 1 April 2016. If it is assumed that the asset is commissioned on 1 July 2016, the first year charge would equal 9/12th of the first year annual connection charge i.e. £233,212.50

This gives the following annual charges over time:

Year	Charge
1	£233,212.50 (connection charge for period July 2016 to March 2017)
2	£306,450
10	£270,450
40	£135,450

Example 3

In the case of a firm price agreement, there will be two elements in the connection charge, a finance component and a running cost component. These encompass the four elements set out in the examples above. Using exactly the same assumptions as those in example 1 above, the total annual connection charges will be the same as those presented. These charges will not change as a result of the adoption of a different charging methodology by National Grid, providing that the connection boundary does not change.

Example 4

If a User has chosen a 20-year depreciation period for their Post Vesting connection assets and subsequently remains connected at the site beyond the twentieth year their charges are calculated as follows.

For years 21-40 they will pay a connection charge based on the following formula:

Annual Connection Charge_n = SSF_n (RPIGAV_n)+ TC_n (GAV_n)

The NAV will be zero and the asset will be fully depreciated so there will be no rate of return or depreciation element to the charge.

Index to the Statement of Use of System Charges Revisions

Issue 10	Description	Modifications
10.1	2014/15 Publication	-
11.0	2015/16 Publication	-
12.0	2016/17 Publication	CMP213 Transmit Application fee tables