Indicative Wider Generation Tariff and Charge Calculator under CMP213 Diversity 1

Feb 2015

Purpose

The charge calculator has been designed to allow customers liable for Generation Transmission Network Use of System (TNUoS) charges to work out their indicative Wider Generation TNUoS charges. It uses the charging methodology under CUSC Modification CMP213 Working Group Alternative Modification 1. This methodology has a System Peak Tariff, Shared Year Round Tariff, Not Shared Year Round Tariff and Residual Tariff which together make up the Wider Generation TNUoS Tariff. This methodology was approved by Ofgem in July 2014 for application from April 2016[1].

For further assistance please contact Dave Corby at David.Corby@nationalgrid.com or 01926 654912

Overview of Diversity 1

CMP213 was raised because the electricity transmission network is increasingly planned using a cost-benefit approach[2] which reflects year round operation of the system as well as ensuring it is robust for peak demand. Implicit within this, some sharing of the network also takes place between generators.

The methodology splits the locational part of tariffs into a System Peak Tariff and a Year Round Tariff. The Peak Tariff reflects the fact that the network is planned for Peak Security conditions and this element is multiplied by a generator's capacity (MW). Intermittent[3] generators are not assumed to contribute to Peak Security and therefore are not exposed to this element.

The Year Round Tariff reflects the fact that the network is increasingly planned on a cost–benefit basis. An individual generator's Annual Load Factor (ALF)[4] is used as a proxy for its impact on transmission network investment. Also, the relationship between load factors and constraint costs deteriorates in areas with little diversity between generation plant types, i.e. most of the generation is either conventional or intermittent. This is particularly the case in areas with large amounts of low carbon generation, where the cost of constraining off generation can be expensive compared to conventional generation. The methodology limits sharing on the system when diversity behind a transmission boundary reduces by splitting the Year Round element into a Shared Year Round and Not-Shared Year Round Tariffs. The Shared Year Round Tariff is multiplied by an individual generator's ALF whilst the Not-Shared Year Round Tariff is multiplied by a generator's capacity.

The Peak Security, Shared Year Round and Not-Shared Year Round Tariffs do not recover the allowed revenue for transmission networks in Great Britain. Therefore a Residual Tariff is applied which is multiplied by the generator's capacity to recover or refund the difference.

[1] https://www.ofgem.gov.uk/publications-and-updates/project-transmit-decision-proposals-change-electricity-transmission-charging-methodology

[2] This is when network investments are made on the basis that they are a more cost-effective option than paying to constrain generation – linked to SQSS modification GSR009.

[3] An **Intermittent** generator is one whose primary source of power is not considered controllable, e.g. wind, wave or solar.

[4] **Annual Load factor (ALF)** = annual running hours of the unit/ 24 hours a day, 365 days of the year (i.e 8,760 hours)

Using the Calculator

To use the charge calculator, you need to input appropriate values from the drop down lists in the orange cells (and where appropriate input to the blue user defined cells) as follows:

1. Select the Generation Charging Zone (please refer to the Appendix for the Generation Charging Zones).
2. Input the Transmission Entry Capacity (TEC) of the generator in MW.
3. Select the Generator Technology from the drop down list. This will populate whether the generator is Conventional or Intermittent. If your technology is not listed, select 'Other' and in the blue user defined field select whether Conventional or Intermittent should be applied.
4. Select the Annual Load Factor for you generator. This can be either the generic load factor for the chosen technology or the specific load factor for your generator. If you have selected 'Other' under technology then there is no generic annual load factor and you should select Specific. If you have selected Specific then specify the annual load factor in percent in the blue user defined field.
5. Select whether you wish to use National Grid's Residual Tariff or user defined values. If you select user defined the enter the residual tariff in £/kW for each year in the blue user defined fields.

The calculator displays the factors which make up the Indicative Tariff in the "base tariff" column, namely System Peak Tariff, Shared Year Round Tariff, Not Shared Year Round Tariff and Residual Tariff. As explained above, these elements are treated differently depending on the generator and this is shown in the "applicable tariff" column. The Indicative Tariff (£/kW) is the sum of the applicable tariffs. The Indicative Tariffs is multiplied by TEC to give the Indicative Charge (£).

Indicative 2016/17 CMP 213 Diversity 1 Tariff Calculator
Based on 28 January 2015 Five Year Forecast

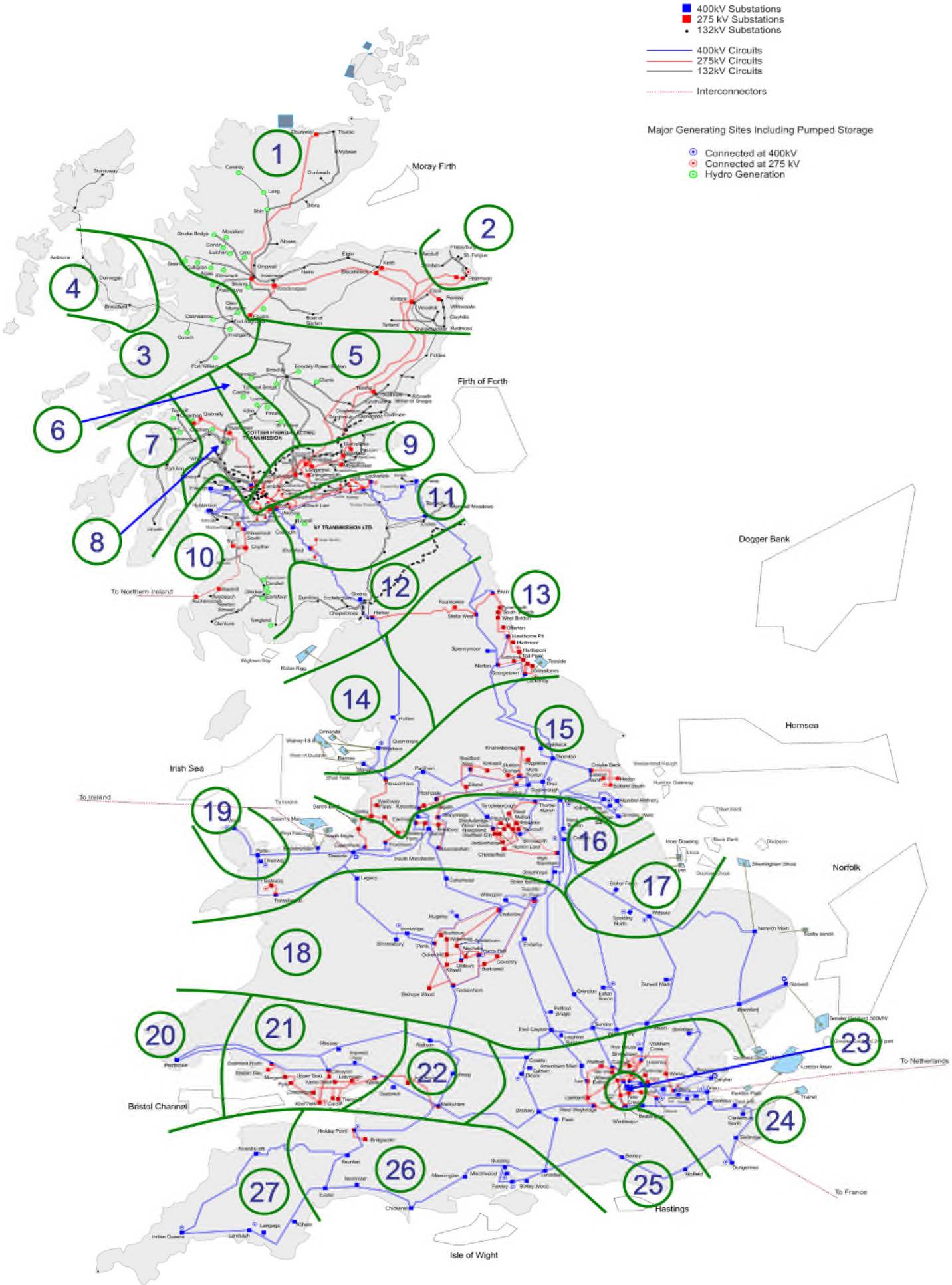
	Inputs	User Defined				Applied Values
Generation Charging Zone	1					1
TEC (MW)	100					100
Technology	Oil_and_OCGT					Oil_and_OCGT
Conventional/Intermittent		Conventional				Conventional
Annual Load Factor (%)	Generic	50.00%				0.59%
		2016-17	**2017-18**	**2018-19**	**2019-20**	
Residual (£/kW)	National Grid	1.00	1.00	1.00	1.00	1,1,1,1

	2016-17		2017-18		2018-19		2019-20	
	base tariff	**applicable tariff**	**base tariff**	**applicable tariff**	**base tariff**	**applicable tariff**	**base tariff**	**applicable tariff**
System Peak Tariff (£/kW)	2.84	2.84	2.77	2.77	1.92	1.92	1.53	1.53
Shared Year Round (£/kW)	13.26	0.08	19.05	0.11	17.00	0.10	16.43	0.10
Not Shared Year Round (£/kW)	7.19	7.19	12.55	12.55	21.01	21.01	21.83	21.83
Residual Tariff (£/kW)	1.31	1.31	0.45	0.45	-1.34	-1.34	-2.97	-2.97
Indicative Tariff (£/kW)		**£ 11.43**		**£ 15.89**		**£ 21.69**		**£ 20.49**
Indicative Charge (£)		**£ 1,142,562.92**		**£ 1,588,580.23**		**£ 2,169,202.92**		**£ 2,048,745.43**

NB: Generator technology types which are classified as **intermittent** include: onshore wind, offshore wind, solar, tidal
Generator technology types which are classified as **conventional** include: nuclear, OCGT, CCGT, coal-fired, oil-fired, hydro, pumped storage

Appendix – Generation Charging Zones

Zone	Zone Name
1	North Scotland
2	East Aberdeenshire
3	Western Highlands
4	Skye and Lochalsh
5	Eastern Grampian and Tayside
6	Central Grampian
7	Argyll
8	The Trossachs
9	Stirlingshire and Fife
10	South West Scotlands
11	Lothian and Borders
12	Solway and Cheviot
13	North East England
14	North Lancashire and The Lakes
15	South Lancashire, Yorkshire and Humber
16	North Midlands and North Wales
17	South Lincolnshire and North Norfolk
18	Mid Wales and The Midlands
19	Anglesey and Snowdon
20	Pembrokeshire
21	South Wales & Gloucester
22	Cotswold
23	Central London
24	Essex and Kent
25	Oxfordshire, Surrey and Sussex
26	Somerset and Wessex
27	West Devon and Cornwall


400kV Substations
275 kV Substations
132kV Substations
400kV Circuits
275kV Circuits
132kV Circuits
Interconnectors
Major Generating Sites Including Pumped Storage
Connected at 400kV
Connected at 275 kV
Hydro Generation
Moray Firth
Firth of Forth
Dogger Bank
Hornsea
Norfolk
Irish Sea
To Ireland
To Northern Ireland
Bristol Channel
Isle of Wight
Hastings
To Netherlands
To France
SP TRANSMISSION LTD
SCOTTISH HYDRO-ELECTRIC TRANSMISSION
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