STCP 14-1 Issue 009 Data Exchange for Charge Setting

STC Procedure Document Authorisation

Party	Name of Party Representative	Signature	Date
National Grid Electricity System Operator Ltd			
National Grid Electricity Transmission plc			
SP Transmission Ltd			
Scottish Hydro-Electric Transmission			
Offshore Transmission Owners			

STC Procedure Change Control History

Issue 1	22/03/2005	BETTA Go-Live version
Issue 2	04/07/2005	Issue 002 incorporating PA018
Issue 3	25/10/2005	Issue 003 incorporating PA034 & PA037
Issue 4	20/12/2006	Issue 004 incorporating PA047
Issue 5	18/09/2008	Issue 005 incorporating PA053
Issue 6	24/06/2009	Issue 006 incorporating changes for Offshore Transmission
Issue 7	20/11/2013	Issue 007 incorporating PM069
Issue 8	01/04/2019	Issue 008 incorporating National Grid Legal Separation Changes
Issue 9	05/08/2020	Issue 009 Update to STCP14-1 'Data exchange of charge setting' to reflect CUSC Modification CMP306 'Align annual connection charge rate of return at CUSC 14.2.21 to price control cost of capital'

1 Introduction

1.1 Scope

1.1.1 NGESO is responsible for the calculation, development and invoicing of Connection and Transmission Network Use of System (TNUoS) Charges. Connection and TNUoS Charges are set on an annual basis and apply to each Financial Year and NGESO requires information from each TO to calculate these charges in accordance with the GB Charging Methodologies.

1.1.2 This document describes the data exchange process between NGESO and TOs required so that NGESO can calculate these charges in accordance with the GB Charging Methodologies.

1.1.3 This procedure applies to NGESO and TOs. For the purposes of this document, TO means:

- NGET;
- SPT;
- SHETL. and
- All Offshore Transmission Licence holders as appointed by Ofgem

1.2 Objectives

1.2.1 The objective of this document is to provide for effective data exchange between NGESO and TOs to enable NGESO to calculate Connection Charges and Transmission Network Use of System (TNUoS) Charges.

1.2.2 To meet this objective, this document specifies the following:

- the responsibilities of NGESO and TOs in relation to data provision related to the calculation of Connection Charges and TNUoS Charges; and
- the lines of communication to be used.

2 Key Definitions and Interpretation

2.1 For the purposes of STCP14-1:

2.1.1 **GB Charging Methodologies** means the Statement of Use of System Charges, the Statement of the Use of System Charging Methodology and the Statement of the Connection Charging Methodology.

2.1.2 **Transmission Running Costs Factor** determines the component of the Connection Charge which recovers the running costs (e.g. rates, operation, indirect overheads), other than those recovered by Site Specific Maintenance Charges, incurred by the Transmission Licensees which can be attributed to Connection Assets.

2.1.3 **Connection Assets** are those assets solely required to connect an individual User to the National Electricity Transmission System, which are not and would not normally be used by any other connected party (i.e. single-user assets).

2.1.4 **Infrastructure Assets** are those assets of the National Electricity Transmission System which are not Connection (i.e. single-user) Assets.

2.1.5 **Scheme-Based Charges** are Connection Charges based on the indicative total GAV of a Scheme to provide a new or modified connection for a single User, prior to "out-turning" as described in Chapter 4 of the Statement of the Connection Charging Methodology.

2.1.6 **TSP** is defined in Special Condition J8 of the TO licence for SPT.

2.1.7 **TSH** is defined in Special Condition J8 of the TO licence for SHETL.

2.1.8 **OFTOt is defined in Special Condition E12 – J2 of the relevant Offshore TO Licence.**

2.1.9 **December RPI Figure** is the Retail Price Index for the month of December as published by the Office for National Statistics.

3 Procedure

3.1 Overview of Charge Setting Process

3.1.1 An overview of the annual charge setting process is pictorially represented in Appendix A and interfaces between NGESO and TOs is represented in the swim lane diagram in Appendix B.

3.2 Connection Charge Setting

3.2.1 As part of the annual process for setting Connection Charges, it is necessary for the TOs to provide NGESO with certain information in order to enable the calculation of Site Specific Maintenance Charges and the Transmission Running Costs Factor.

3.2.2 The data required for the calculation of Site Specific Maintenance Charges are the £m forecasts of maintenance costs relating solely to Connection Assets within each TO area. This figure should be provided to 2 decimal places.

3.2.3 In order to aid this calculation, NGESO will provide a list of Connection Assets to each TO detailing:

- Site
- Customer
- Asset description
- Age
- Commissioning Year

- Current charging year's GAV
- Current charging year's NAV
- Any Scheme-Based Charges applicable in the charging year to be calculated

3.2.4 This list of Connection Assets by each of the three Parties forms the total GB Connection Asset GAV. Any change to a TO's Connection Asset database should be notified to NGESO by the TO at the point of preparation of the TO Construction Offer, in accordance with the process described in STCP18-1, and the resultant amendments to the TO's Charges should be made in accordance with STCP13-1 paragraphs 3.2.1 to 3.2.3, inclusive.

3.2.5 The data required for the calculation of the Transmission Running Costs Factor should take the form of a TO-determined percentage of TO Connection Assets (as referenced in the list provided by NGESO and incorporating any TO amendments), over the TO's total system assets (i.e. Connection Assets + Infrastructure Assets). This percentage should be provided to two decimal places.

3.2.6 Technically, in accordance with the Statement of the Connection Charging Methodology, this data is only required (and would therefore only be used) at the start of each price review period. However, for monitoring purposes, it is important that this information is provided on an annual basis in order to allow for decisions as to whether a "within price control period" change should be undertaken.

3.2.7 As part of the information provision for the charge setting process NGESO and the TOs shall agree;

(a) the RPI indexation to apply to the Gross Asset Values of each Connection Asset (where applicable) and;

(b) the TO's Rate of Return to apply to the Net Asset Values of all the TO's Connection Assets.

where;

Rate of Return applicable to Connection Assets subject to RPI indexation shall be the real pre-tax Weighted Average Cost of Capital for the Relevant Transmission Licensee for year n ($WACC_n$), and.

Rate of Return applicable to Connection Assets subject to MEA indexation shall be the real pre-tax Weighted Average Cost of Capital for the Relevant Transmission Licensee for year n ($WACC_n$ plus 1.5 percentage points).

Where for the year n:

WACCn = (($real\ post\ tax\ cost\ of\ equity$ / (1 − $corporation\ tax\ rate$)) × (1 − $notional\ gearing$ %)) + ($real\ cost\ of\ debt$ × $notional\ gearing$ %)

and the real post-tax cost of equity, notional gearing %, real cost of debt and the corporation tax rate, are as specified in the latest published Ofgem Price Control Financial Model (PCFM) relating to year n, or should Ofgem fail to publish or cease to publish a PCFM, the latest public regulatory determination(s) or decision(s) should be used.

These figures shall be calculated to two decimal places e.g. 3.37%, which is equivalent to a factor of 1.0337.

The TOs shall also document the Rate of Return and the methodology of its derivation in their respective Statement of the basis of transmission owner charges for the applicable charging year

3.2.8 NGESO will e-mail a request to both TOs requesting the data (and incorporating the list of assets referred to in 3.2.3 above) by the 1st October each year. In case of a delay in sending these requests, NGESO will notify the TO charging contact and give an estimated date for sending the request.

3.2.9 Each TO is required to;

(a) provide the data requested by e-mail (along with any amendments which may be required to the list of Connection Assets) by 31st October or one month after receiving the email referred to in 3.2.8 above, and

(b) provide by 25th January any update to their Rate of Return to be applied to the Net Asset Values of all the TO's Connection Assets, as may have occurred on or before 31st December preceding the applicable charging year. The TOs will document any changes to the Rate of Return and the methodology of its derivation in their respective Statement of the basis of transmission owner charges for the applicable charging year.

3.2.10 NGESO shall provide all necessary assistance in response to any reasonable query from the TOs regarding the data request.

3.2.11 Each TO shall provide all necessary assistance in response to any reasonable query from NGESO regarding the data submitted by that TO.

3.3 Charge Setting Parameter Review

3.3.1 The GB Charging Methodologies may contain parameters used in the calculation of charges which are normally fixed but which may be reviewed at regular intervals, e.g. for the start of a new price control period. Additional data may be required by NGESO in order to undertake a review of a charging parameter.

3.3.2 Where such information is required, NGESO will endeavour to provide 30 days notice before a formal request is made.

3.3.3 Each TO will endeavour to provide the data requested by e-mail within 30 days of receipt of the data request or within timescales agreed by both NGESO and the TO.

3.4 TNUoS Charge Setting

3.4.1 By 1 November each year, the TOs will provide NGESO with a best forecast of either TSP, TSH or OFTOt as appropriate, for the following Financial Year. The TOs will update and provide a final forecast of TSP, TSH and OFTOt by 25 January, after the December RPI Figure has been released.

3.5 TNUoS Charge Setting – Expansion Constant data requirements

3.5.1 At the start of a price control period it is necessary for the TOs to supply NGESO with certain information to enable the calculation of the Expansion Constant as used in the Transport Model to calculate TNUoS tariffs. The expansion constant expressed in £/MWkm, represents the annuitised value of the transmission infrastructure capital investment required to transport 1MW over 1km. For further information see the GB Charging Methodologies.

3.5.2 To calculate the Overhead Line £/MW.km, each TO is required to supply their cost of construction per route km and the amount of route km's installed over the last 10 years broken down into:

- Operating Voltage,
- Tower type,
- Winter Continuous Rating
- Conductor count/type

- Operating temperature.

3.5.3 To calculate the Cable £/MW.km, each TO is required to supply their average transmission cable length and the predicted cost of construction (both rural and urban and cable sealing ends) broken down into:

- Operating Voltage,
- Winter Continuous Rating.

3.5.4 To calculate the Annuity factor which is used to convert the £/MWkm figure into an annual figure, each TO is required to supply their average asset life for their circuit routes.

3.5.5 To calculate the TO specific expansion factors, each TO is required to identify their total circuit route km split by voltage and identify how much of it is planned on being uprated to 275 or 400kV.

3.5.6 Each TO is required to provide the requested data by e-mail by the 31st October in the year prior to the start of a new price control. NGESO will give 60 days notice of this information requirement.

3.5.7 Appendix C details pro-formas with sample data for Overhead Line, Cable and Other.

3.5.8 The TO will endeavour to provide the data based on the assumptions set out in Appendix D. However, it is recognised that the data will only be available based on the particular operating practices of the TO.

3.6 Accommodating the transition between regulatory price control periods

~~3.5.8~~3.6.1 In the Financial Year preceding the next regulatory price control period, NGESO and the Onshore Transmission Owners may notify one another and agree (on a unanimous basis only), any reasonable temporary adjustments to the provisions in clause 3 to allow them to be fulfilled. E.g. data substitutions, submission date changes.

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4 Use of Substitute Data

4.1.1 Where no data is provided by the TO or the data is subject to dispute, NGESO shall use, for the purposes of calculating the transmission charges to apply to its customers, the data that it believes to be the most accurate until NGESO is satisfied with the data provided or any dispute has been resolved.

4.1.2 For the avoidance of doubt, the use of substitute data as referred to in paragraph 4.1.1 will not affect the invoicing of NGESO by the TO for the purposes defined in STCP 13-1.

4.1.3 Where NGESO has used substitute data, NGESO shall notify the relevant TO(s).

4.1.4 If applicable, once any dispute has been resolved, charges shall be revised on the basis of the appropriate data.

Appendix A: Overview of Annual Charge Setting Process

Note that the Process Diagrams shown in this Appendix A are for information only. In the event of any contradiction between the process represented in this Appendix and the process described elsewhere in this STCP, then the text elsewhere in this STCP shall prevail.

Appendix B: Detailed Flow Diagram

Note that the Process Diagrams shown in this Appendix B are for information only. In the event of any contradiction between the process represented in this Appendix and the process described elsewhere in this STCP, then the text elsewhere in this STCP shall prevail.

Appendix C: Expansion Constant Tables

Expansion Constants OHL

Cost of Construction (£/km)

Voltage	Tower Type	Conductor & count	Temp	Route MVA (winter)	£(000)/km Double Circuit	Cct Length (km) <10 Yrs old	Notes
400kV	L12	2 x 700mm AAAC	75°C	5040	£600	170	
275kV	L66	2 x 300mm AAAC	65°C	1350	£410	30	
132kV	L7	1 x 300mm AAAC	75°C	482	£350	0	

Assumptions

1. Costs are estimated costs per km of new overhead lines assuming a normal route of 30km or more in length with 70 percent of towers of the suspension type
2. Rating is as per TGN26, winter post-fault. Note it is ROUTE, ie 2* circuit rating.
3. Assume no road, motorway, dual carriageway, railway, powerline or canal crossings.
4. Assume no requirement for extra height towers.
5. Exclude land costs
6. Exclude bay costs

Note: Data is example data

Expansion Constants CABLE

Cost of Construction (£/km)

Voltage	Cables equivalent to double circuit overhead line construction type	Route MVA (winter)	£(000)/km RURAL	£(000)/km URBAN	Cable Sealing End (Both)	Notes
400kV	1320MVA Double Cct	2640	£2,100	N/A	£1,400	
275kV	1320MVA Double Cct	2640	£1,700	N/A	£1,200	
132kV	1 x 630mm Cu	160	£250	£1,000	£420	

Assumptions

1. Cable ratings have assumed to correspond to the post-fault continuous winter rating of the equivalent overhead line
2. Route profiles have been taken to be reasonably flat and requiring only one stop-joint bay per 2km
3. Cable sealing end costs include test charges and other fixed items such as oil tanks, link pillars and boxes
4. Joint costs include link boxes/pillars and associated bonding leads, structures and foundations and stop joins costs include for oil tanks
5. Cable costs include joints at the normal maximum drum length interval for the size of cable, plus auxiliary cables, bonding leads and associated contractors engineering and design costs
6. For cable installations where it is necessary to adopt forced cooling to meet the specified power transmission rating, the route interval between cooling stations has assumed to be 2km and the estimates include system pipe work, pumping and heat exchanger equipment, associated sundries, also civil and land costs for the cooling stations
7. Ignore costs of minor works such as diversion of services and obtaining consents over public and private property.
8. Assume no railway or river crossings
9. Assume no SF6 cable sealing ends
10. Assume XLPE cable for 132kV
11. Excludes bay costs

Note: Data is example data

Expansion Constants OTHER

Supplementary data:

Q1 What is the average asset life for your OHL and Cable routes? **50 years OHL & Cables**

Q2 Please populate the following table:

132kV

Summary	Total 132kV cct km	Total 132kV due to be uprated to (as per SYS) 400kV	275kV
SPT	1,803	0	0
SHETL	3,290	1,021	0

New 275kV GB table

Summary	Total 275kV cct km	Total 275kV capable of being uprated to 400kV
SPT	1,711	1,540
SHETL	1,562	1,206

Note: Data is example data

Appendix D: Abbreviations & Definitions

Abbreviations

GAV	Gross Asset Value
NAV	Net Asset Value
SHETL	Scottish Hydro-Electric Transmission Limited
SPT	SP Transmission Limited
STC	System Operator –Transmission Owner Code
STCP	System Operator –Transmission Owner Code Procedure
TNUoS	Transmission Network Use of System
TO	Transmission Owner

Definitions

STC definitions used:

Financial Year
National Electricity Transmission System
NGESO
NGET
Party

Transmission Licensee
Transmission Owner
User

CUSC definitions used:

Connection Charges
Gross Asset Value
Net Asset Value
Site Specific Maintenance Charges
Transmission Network Use of System Charges

Definitions used from other STCPs:

Scheme	As defined in STCP19-2 Construction Process & Scheme Closure