



**Pre Approval**

**STATEMENT OF  
SCOTTISH HYDRO ELECTRIC TRANSMISSION plc  
BASIS OF TRANSMISSION OWNER CHARGES**

**Effective 1 April ~~2014~~2015**

The Gas and Electricity Markets Authority has approved this statement on ~~24 February 2015~~[date to be inserted]

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## **STATEMENT OF SCOTTISH HYDRO ELECTRIC TRANSMISSION plc BASIS OF TRANSMISSION OWNER CHARGES**

This statement is produced by Scottish Hydro Electric Transmission plc (SHE Transmission), the Transmission Owner (TO), which sets out the basis of charges for the provision by SHE Transmission to National Grid Electricity Transmission plc (NGET) (the GB System Operator, GBSO) of transmission services as specified in the Transmission Licence and System Operator Transmission Owner Code (STC).

| This Statement is effective from 1 April ~~2014~~2015.

The charges shall consist of General System Charge, Site Specific Charges and Other Charges as set out in this statement.

## Introduction

SHE Transmission is obliged, under Special Condition 8C of its electricity Transmission Licence, to prepare a statement approved by the Authority setting out the basis upon which charges will be made for provision of transmission services in such form and detail as shall be necessary to enable NGET to make a reasonable estimate of the charges to which it would become liable for the provision of SHE Transmission's services.

Special Condition 8C requires that the statement shall in respect of connection to the licensee's (SHE Transmission) transmission system include:

- a. a schedule listing those items (including carrying out of works and the provision and installation of electrical lines or electrical plant or meters) of significant cost liable to be required for the purposes of connection (at entry and exit points) to the licensee's transmission system for which Site Specific Charges may be made or levied and including (where practicable) indicative charges for each such item and (in other case) an explanation of the methods by which and the principles on which such charges will be calculated ;*
- b. the methods by which and the principles on which Site Specific Charges will be made in circumstances where the electric lines or electrical plant to be installed are (at the licensee's discretion) of greater size or capacity than required;*
- c. the methods by which and the principles on which any charges (including any capitalised charge) will be made for maintenance and repair required of electrical lines or electrical plant or meters provided or installed for making a connection to the licensee's transmission system;*
- d. the methods by which and the principles on which any charges will be made for disconnection from the licensee's transmission system and the removal of electrical plant, electrical lines and ancillary meters following disconnection, and*
- e. such other matters as shall be specified in directions issued by the Authority from time to time.*

## Principles

This statement sets out SHE Transmission's charges for the provision of transmission services to NGET.

In order to calculate the charges of providing these services, SHE Transmission must apportion its assets to one of two charging categories, General System Charge and Site Specific Charges (see below). A third charging category, Other Charges, also applies.

The **General System Charge** relates to SHE Transmission's transmission infrastructure including Pre Vesting connection assets.

**Site Specific Charges** relate to Post Vesting connection assets.

Three types of connection assets defined by the date of installation are referred to in this statement: Pre Vesting (installed before 31 March 1990); Post Vesting, Pre BETTA (installed between 31 March 1990 and 31 March 2005); and Post BETTA (installed after 31 March 2005).

In general, connection assets are defined as those assets solely required to connect an individual User to the transmission system, which are not and would not normally be used by any other connected party (i.e. "single User assets"). For the purposes of this statement, all connection assets at a given location shall together form a connection site.

Connection assets are defined as all those single User assets which:

- a) for double busbar type connections, are those single User assets connecting the User's assets and the first SHE Transmission owned substation, up to and including the double busbar bay;
- b) for teed or mesh connections, are those single user assets from the User's assets up to, but not including, the HV disconnector or the equivalent point of isolation;
- c) for cable and overhead lines at a Transmission Voltage, are those single User connection circuits connected at a Transmission Voltage equal to or less than 2km in length that are not potentially shareable.

Shared assets at a banked connection arrangement will not normally be classed as connection assets except where both legs of the banking are single User assets under the same TO Connection Agreement.

Other definitions of connection assets might apply.

Indicative Gross Asset Values of connection assets for illustrative purposes are given in Appendix 1.

SHE Transmission may at the request of NGET carry out other work, which is not covered by General System Charge or Site Specific Charges, including, for example, outage rescheduling, dealing with applications for connection, or obtaining consents. The principles for calculating such **Other Charges** are also set out in this statement.

The methodology for calculating these three classes of charge, i.e. General System Charge, Site Specific Charges and Other Charges is set out in Parts 1, 2 and 3 of this statement, respectively.

## Transmission Owner Revenue Restriction

The Transmission Price Control review sets a restriction on SHE Transmission's charges for the General System Charge and Site Specific Charges, as described below.

Special Condition (SC) 3A of SHE Transmission's Transmission Licence establishes the charge restriction that determines the Allowed TO Revenue ( $TO_t$ ) that SHE Transmission may earn from its TO services:

$$TO_t = BR_t + PT_t + OIP_t + NIA_t + TIRG_t + SHCP_t - K_t$$

where:-

$TO_t$	means the amount of Allowed Transmission Owner Revenue in Relevant Year t
$BR_t$	means the amount of Base Transmission Revenue in Relevant Year t as derived in accordance with the formula set out in Part C of SC 3A
$TIRG_t$	means, for each Relevant Year t, the aggregate of the annual revenue allowances for each transmission investment project specified in Schedule C of Special Condition 3J (Transmission Investment for Renewable Generation), as derived in accordance with that condition
$PT_t$	means the allowed pass-through items revenue adjustment made in Relevant Year t as derived in accordance with Special Condition 3B (Calculation of allowed pass-through items).
$OIP_t$	means the outputs incentive revenue adjustment made in Relevant Year t as derived in accordance with the formula set out in Part D of SC 3A
$NIA_t$	means the revenue adjustment made in Relevant Year t in respect of the Network Innovation Allowance as derived in accordance with Special Condition 3H (The Network Innovation Allowance)
$SHCP_t$	means the Compensatory Payments Adjustment made in Relevant Year t as derived in accordance with Part D of Special Condition 3C (Reliability Incentive Adjustment in Respect of Energy Not Supplied)
$K_t$	means the correction term in Relevant Year t as derived in accordance with SC 3A (Part E)

The Allowed TO Revenue includes the costs associated with Pre Vesting connection assets and Post Vesting, Pre BETTA connection assets.

Special Condition 2N of SHE Transmission's Transmission Licence establishes the charge restriction that determines SHE Transmission's charges for the provision of transmission services (TSH<sub>t</sub>) to NGET:

$$TSH_t = TO_t - EXS_t$$

where:-

TO <sub>t</sub>	Allowed TO Revenue for relevant charging year t
TSH <sub>t</sub>	General System Charge
EXS <sub>t</sub>	Site Specific Connection Charges for Post Vesting, Pre BETTA sites

The methods by which these are calculated are detailed in the following Part 1 and Part 2 of this statement.

## Excluded Services Charges

Special Condition 8B of SHE Transmission's Transmission Licence establishes charging provisions for Excluded Services. These are Other Charges in addition to those specified in SC 2N (described above).

In addition to the charges arising from SHE Transmission's charges for the provision of transmission services (TSH<sub>t</sub>) to NGET (above), SHE Transmission will also invoice Excluded Services Charges monthly to NGET.

These Excluded Services Charges are for Post BETTA connection assets; and for assets at Pre Vesting sites which have replaced time-expired assets, or have replaced non-time expired Pre Vesting assets at the User's request (i.e. as the result of a modification application). These Excluded Services Charges consist of (1) Capital charges, and (2) Transmission Operation and Maintenance charges.

Other Excluded Services Charges will also apply.

The methods by which Other Charges are calculated are detailed in the following Part 3 of this statement.



## PART 1

### General System Charge ( $TSH_t$ )

The General System Charge reflects the cost of installing, operating, replacing, developing and maintaining the SHE Transmission transmission infrastructure and Pre Vesting connection assets. These activities are undertaken to the standards prescribed by SHE Transmission's licence, to provide the capability to allow the flow of bulk transfers of power between connection sites and to provide transmission system security.

| The General System Charge will be set to recover the Allowed TO Revenue ( $TO_t$ ) for [2014-15](#) [2015-16](#) net of Site Specific Charges for Post Vesting, Pre BETTA connections ( $EXS_t$ ).

No service provided by SHE Transmission shall be treated as an excluded service in so far as it relates to the provision of services remunerated under the General System Charge as set out in the STC and associated procedures. In accordance with the STC and associated procedures, SHE Transmission will invoice one twelfth of the General System Charge (which may be subject to amendment) to NGET.

## PART 2

### Site Specific Charges

The Site Specific Charges are set to recover costs associated with Post Vesting connection assets specified in the TO Construction Agreement and/or STC for the relevant connection site.

In accordance with the STC and associated procedures, SHE Transmission will invoice one twelfth of the Site Specific Charges for each connection site (which may be subject to amendment) to NGET.

Site Specific Charges for the Post Vesting connections consist of: (1) Capital charges and (2) Transmission Operation and Maintenance charges.

### Site Specific Charges: (1) Capital charges

Capital charges reflect the cost of purchase and installation of the connection assets.

#### Capital charges for Post Vesting, Pre BETTA connections

For Post Vesting, Pre BETTA connections commissioned before the BETTA Go-Live Date, where the capital costs are recovered through annual connection charges, these charges are based on a rate of return on the Net Asset Value (NAV) plus a depreciation charge based on a 40 year life. The rate of return that will be applied to the NAV is 6.65%. For connection assets where the User has paid 100% (full) capital contribution towards the purchase and installation of the assets, there are no annual capital charges.

#### Capital charges for Post BETTA connections

For assets installed after 1 April 2005, SHE Transmission will recover the cost of connection from NGET by means of either:

- Option (a) A full capital contribution charge; or
- Option (b) Annual capital charge, over the lifetime of the assets; or
- Option (c) A partial capital contribution charge with reduced annual charge.

Where NGET has elected Option (a) or Option (c), SHE Transmission will require the relevant capital contribution charge to be paid in advance of commencement of connection works but this may be phased over the construction period according to a payment schedule as set out in the TO Construction Agreement.

For Option (a) where NGET has requested and paid full capital contribution there will be no annual capital connection charges (i.e. no depreciation and rate of return charges).

For Option (a) the sum quoted in the construction agreement for the connection assets at the relevant site will become the Gross Asset Value of (GAV) of the connection assets for the purposes of calculating the annual Transmission Operation and Maintenance charges for the site.

For Option (c) where NGET has requested and paid partial capital contribution the annual capital connection charge will recover the remaining capital cost. The annual capital connection charge will become payable the day after commissioning of the connection assets or from the day the connection assets become available for use.

Where NGET has elected Option (b) or (c) the capital costs recovered through annual charges are based on a rate of return on the Net Asset Value (NAV) plus a depreciation charge based on a 40 year life. The rate of return that will be applied to the NAV is 6.65%. The depreciation period for Post BETTA connection assets may, by mutual agreement, be less than 40 years but never more than 40 years.

| SHE Transmission's connection offer to NGET will be based on one of the following price bases and payment terms will reflect either Option (a), (b) or (c) above.

(i) Fixed price offer

Upon receipt of NGET's formal application for a connection, SHE Transmission will submit a fixed price offer within three months of the effective application date. The fixed price offer option is available for a connection application where the planned connection completion date is generally within 18 months from the offer date; or

(ii) Indicative price offer

Upon receipt of NGET's formal application for a connection, SHE Transmission will submit an indicative price offer within three months of the effective application date. When SHE Transmission has obtained sufficient information to determine the price, SHE Transmission will confirm or amend the indicative price to a fixed price. This will be at least six months prior to date of commencement of any works (as stated in the indicative offer). The indicative price offer will, in practice, only become a fixed price offer when SHE Transmission is in a position to forecast with reasonable accuracy what the total costs of the project will actually be. This may be, for example, when the scope of works has been finalised and prices from sub-contractors have been obtained.

(iii) Indicative price offer with outturn price reconciliation

Once the works required to provide a new or modified connection are completed and the costs finalised, the connection scheme is "outturned". SHE Transmission reconciles the monies paid by NGET on the indicative charge basis against the charges that would have been payable based upon the actual costs incurred in delivering the project along with any relevant interest charges. This process requires a new charging GAV (the initial asset cost: see page 13 of this Statement) to be agreed with NGET in line with the "Calculation of the Gross Asset Value" (p13 of this Statement).

NGET will indicate in its formal application for a connection to SHE Transmission which price offer (fixed price offer, or indicative price offer, or indicative price offer with outturn price reconciliation) and payment Option (a), (b) or (c) it requires.

SHE Transmission reserves the right to make an offer of terms on a different price basis if SHE Transmission is aware that the choice exercised by NGET is not the same choice being ~~exercised~~ exercised by the party requesting the connection ("the User") in its relationship with NGET.

Where SHE Transmission installs assets of greater size and/or capacity than the minimum that would be required for that connection using standard equipment ratings, the costs in excess of that minimum normally shall be borne by SHE Transmission.

Where a User has already accepted a Post Vesting, Pre BETTA offer based on capital contributions but construction will not be completed before the BETTA Go-Live Date, SHE Transmission will in the first instance submit an offer to NGET based on Option (a).

If SHE Transmission considers that assets require to be replaced prior to the end of their normal economic lifetime (normally 40 years), the replacement costs will be borne by SHE Transmission within the remaining economic life of the original assets. On expiry of the expected lifetime of the original assets, the connection capital charge will be recalculated taking account of the NAV of the replacement connection assets, together with the normal provision for depreciation.

If a connection asset at a Pre Vesting site is replaced the cost will be recovered as Site Specific Charges, as appropriate.

Where a modification to the existing connection occurs at NGET's request or due to developments to the transmission system, ~~the~~the connection charges will reflect any additional connection assets that are necessary to meet NGET's requirements. Charges will continue to be levied for existing assets that remain in service. Termination charges as described below will be charged for any existing connection assets made redundant as a result of the modification.

### **Site Specific Charges: (2) Transmission Operation and Maintenance charges**

The Transmission Operation and Maintenance Site Specific Charges in respect of connections provided by SHE Transmission is not limited to the routine maintenance of assets in accordance with specified maintenance frequencies, but also includes the following:

- a proportion of the cost of operating the transmission business;
- total site care, covering site safety, security and environmental protection, local liaison, notably with statutory authorities, wayleave grantors and members of the public;
- payment of local authority charges, electricity, water and telephone charges associated with the connection site; and
- standby and out-of-hours service throughout the year.

For Options (a), (b) or (c) above as relevant and for Post Vesting, Pre BETTA connections, the Transmission Operation and Maintenance annual charges will be calculated as set out below.

The Transmission Operation and Maintenance annual charges are divided into two parts;

(a) Site Specific Maintenance charge

The Site Specific Maintenance annual charge recovers the on-going maintenance (including repairs) of the connection asset and is based on a percentage of the GAV of the connection asset. The annual Site Specific Maintenance charge is 0.5% of the connection asset GAV. For the avoidance of doubt, there will be no reconciliation of the Site Specific Maintenance charge.

(b) Transmission Running charge

The Transmission Running charge is calculated each year to reflect the appropriate amount of other transmission operation costs (rates, operation, indirect overheads) incurred by SHE Transmission function that should be attributed to connection assets. This charge is based on a percentage of the GAV of the connection asset. The Transmission Running charge is 1.5% of GAV. For the avoidance of doubt, there will be no reconciliation of the Transmission Running charge.

### Site Specific Charges: Calculation of the Gross Asset Value (GAV) and Net Asset Value (NAV)

The GAV represents the initial total cost of a connection asset to SHE Transmission. For a new connection asset it will be the costs incurred by SHE Transmission in the provision of that connection asset. Typically the GAV is made up of the following components:

- Construction costs - costs of bought in services
- SHE Transmission engineering - allocated equipment and engineering costs including overheads
- Interest during construction – financing cost

The GAV of an asset is re-valued each year normally using the average of the Retail Price Index (RPI) between May and October,

$$\text{i.e. } GAV_n = GAV_{n-1} * RPI_n$$

where  $RPI_n = (\text{May} - \text{October average RPI Index in year } n-1) / (\text{May} - \text{October average RPI Index in year } n-2)$ .

The NAV of each asset for year n, used for charge calculation, is the average (mid year) depreciated GAV of the asset. The following formula calculates the NAV of an asset with a 40 year life, where  $A_n$  is the age of the asset (number of completed charging years old) in year n:

$$NAV_n = GAV_n * (39.5 - A_n) / 40$$

## PART 3

### Other charges

Over and above the General System Charge and Site Specific Charges mentioned above, SHE Transmission may incur other costs, including, but not limited to:

- costs associated with processing applications for connection to the system
- one-off costs associated with new connections
- cost of rearranging outages at NGET's request

Any costs incurred by SHE Transmission as a result of NGET's requirements that are not otherwise recoverable through General System Charge or Site Specific Charges will be charged to NGET according to the following principles.

### Other charges: Application Fees

SHE Transmission will charge NGET an application fee at the time of each application for a new or modified connection to SHE Transmission's transmission system. This fee is intended to cover engineering costs and other expenses involved in preparing an offer of terms.

NGET can opt to pay a fixed price application fee in respect of their application or pay a variable application fee, which is based on the actual costs incurred. The fixed price fees for applications are detailed in Appendix 2. If NGET chooses to pay a variable application fee, SHE Transmission will charge NGET the fixed price fee in the appropriate table detailed in Appendix 2 and carry out reconciliation once the actual engineering and out-of-pocket expenses have been established. Actual costs will be based on the SHE Transmission charge-out rates detailed in Appendix 3. Where actual costs exceed the advance, SHE Transmission will issue an invoice for the excess. Conversely, where SHE Transmission does not use the whole of the advance, the balance will be refunded.

Should NGET notify SHE Transmission of changes in the planning assumptions after receipt of an application fee, SHE Transmission may levy an additional charge.

In exceptional circumstances where NGET has requested an application which involves significant costs over and above normally expected (e.g. substantial system studies, specialist surveys, investigations) to process an offer of terms then SHE Transmission reserves the right to vary the applicable fixed fee quoted in Table A and Table B. Under these circumstances, SHE Transmission will following discussion with NGET, advise the appropriate indicative applicable fee. Such an application fee will be treated as a variable application fee, and reconciled in the manner detailed above once the actual costs are known.

SHE Transmission will refund application fees and consent payments either on commissioning or against the charges payable in the first three years of the new or modified agreement. The following conditions apply:

- The refund will be net of external costs;
- Where a new or modified agreement is signed and subsequently modified at NGET's request before any charges become payable, SHE Transmission will refund the original application fee. SHE Transmission will not refund the fees in respect of the subsequent modification(s).

### **Other charges: Feasibility Studies**

If NGET requests a feasibility study in connection with alterations to or extension of the SHE Transmission network a fee is payable based on an advance of SHE Transmission engineering and out-of pocket expenses. The fee payable by NGET will vary according to the size of the study and the amount of work involved. Where actual engineering and out-of pocket expenses exceed the advance, SHE Transmission will issue an invoice for the excess. Conversely, where SHE Transmission does not use the whole of the advance, the balance will be refunded.

A schedule of charge-out rates for different classes of SHE Transmission staff is attached at Appendix 3.

### **Other charges: One-Off Works**

To provide or modify a connection, SHE Transmission may need to carry out works on the transmission system, which although directly attributable to the connection, may not give rise to additional connection assets. These works are defined as "one-offs". Liability for one-off works charges is established with reference to the principles laid out below:

- Where a cost cannot be capitalised into either a connection or infrastructure asset, typically a revenue cost
- Where a non-standard incremental cost is incurred as a result of NGET's request, irrespective of whether the cost can be capitalised
- Termination charge associated with the write-off of connection assets at the connection site.

The one-off works charge is a charge equal to the cost of the works involved.

The calculation of the one-off works charge for write-off of assets is outlined below:

Write-off Charge = 100% of remaining NAV of redundant assets

The costs of diversion of transmission lines or cables, in connection with an application for a new or modified connection, including removal or relocation of towers will be recovered as one-off charge.

The costs of Category 1 and 3 inter-tripping schemes for generator connections (as defined in the Grid Code and the CUSC) will be recovered as one-off works charge.

The costs of abortive transmission construction works will be recovered as one-off works charge as set out in this statement.

One-off works charges are payable upon alteration or completion of the works.

### **Other charges: Miscellaneous Site Specific Charges**

Other contract specific charges may be payable by NGET for a specific site, these will be set out in the TO Construction Agreement and/or STC.

### **Other charges: Abortive Works Charges**

Following a User's modification application, if in SHE Transmission's reasonable opinion, the User has required SHE Transmission to make the amendment to the transmission construction works and SHE Transmission has previously carried out transmission construction works some or all of which are now no longer required ("Abortive Works"), NGET shall be required to make a payment to SHE Transmission in respect of all fees, expenses and costs of whatever nature reasonably and properly incurred by SHE Transmission in respect of the Abortive Works for which SHE Transmission is responsible or may otherwise become liable in respect of the Abortive Works.

### **Other charges: Contestable Connection Works**

The above principles are relevant for transmission connections where SHE Transmission procures and installs all necessary transmission connection assets on behalf of the User. However, it is also possible for the User themselves to procure and install certain transmission connection assets as contestable connection works. Such arrangements would be subject to the assets being designed and installed to SHE Transmission's technical standards to ensure the ongoing security and operability of the transmission system. SHE Transmission may also require other agreements and indemnities to mitigate any undesirable consequences for other Users of the transmission system that may arise as a result of a User's decision to "self-build".

We advise that SHE Transmission's self-build arrangements are under development and are subject to modification to reflect the requirements of a particular self-build scheme. In the event a User should wish to consider the option of their self-building certain transmission connection assets and works, they should advise NGET of this intention when making their formal application to NGET. Following such indication of intent SHE Transmission provide the User with the necessary specifications and agreements covering the self build works.



SHE Transmission would adopt the User's self-build transmission connection assets, free of charge, subject to the User complying with the requirements and obligations of a Transmission Adoption Agreement ("TAA") in respect of the transmission connection assets and other requirements. The TAA shall be between SHE Transmission and the User.

### **Other charges: Energy Metering Systems**

The charges to NGET for the provision of energy metering systems will be on a similar basis as other SHE Transmission connection assets. The electronic components of the energy metering system have a 10 year replacement and depreciation period whilst the non-electronic components normally retain a 40 year replacement and depreciation period.

### **Other charges: Outage Services Charges**

Where prearranged outages are rearranged at NGET's request or where NGET require additional services for planned or unplanned outages over and above the normal service provided under General System Charge, NGET will be liable for outage service charges. These charges reflect the costs incurred by SHE Transmission in accommodating NGET's request. They include, but are not limited to:

- Costs (including where appropriate, liquidated damages) of standing down contractors until outage starts. Costs will be derived from contractors' invoices and, in the case of liquidated damages, from the relevant agreement(s).
- Costs of overtime working to reduce outage time such as to reduce NGET's costs in maintaining system security. Cost will be based on overtime hours worked on the particular outage.
- Costs of installing additional equipment, such as bypass arrangements.

Where an outage is rearranged at NGET's request, SHE Transmission will use all reasonable endeavours to minimise the charge to NGET by redeploying staff onto other work.

Charge-out rates to assess indicative costs for overtime working are given at Appendix 3.

### **Other charges: De-Energisation and Disconnection Charges**

Where NGET wishes a supply to be permanently de-energised, a minimum of two business days notice (or such other period as may be specified in the TO Construction Agreement and/or STC) to that effect should be given to SHE Transmission. SHE Transmission will arrange to de-energise the supply and read the metering equipment, where appropriate, for billing purposes. An additional charge will be made for this service if undertaken outside normal working hours.

Temporary de-energisation (and subsequent re-energisation) resulting from the failure by NGET to comply with the terms of their relevant agreement, or carried out at the request of NGET will be at the expense of NGET.

Where it becomes necessary to disconnect a customer (at the request of NGET), that is to have SHE Transmission's equipment removed from site, for any reason, any payments outstanding in first providing that connection will become due forthwith.

If NGET requests disconnection, this should be requested in writing. On receipt of such a request SHE Transmission will take all reasonable steps to remove the equipment in accordance with the NGET's reasonable requirements. SHE Transmission should be consulted at an early stage and a programme for the removal of equipment will be subject to individual assessment.

On termination SHE Transmission retains the right to remove its equipment. Where it is cost effective to do so SHE Transmission will remove such equipment, and no charge will be made to NGET. For assets where it is not cost effective to recover (e.g. buried cables) will normally be made safe and left on site, but if NGET requires SHE Transmission to remove them, the cost of removal, will be payable by NGET. All such equipment will remain the property of SHE Transmission until otherwise agreed in writing with SHE Transmission.

### **Other charges: Termination Charge**

Where NGET decides prior to the expiry of the normal 40 year replacement period of the assets involved, that all or part of a connection is no longer required and either applies to modify the agreement, or serves notice of a termination, a termination amount is payable to SHE Transmission, except where the full capital charge has been paid in advance. The termination charge is calculated on the basis of the Net Asset Value (NAV) of the assets involved, with due allowance for any financing contribution made by NGET plus all reasonable costs associated with removal of the assets.

The termination charge payable by NGET will be calculated as follows:

Where the connection assets are made redundant as a result of the termination or modification to the TO Construction Agreement and/or STC, NGET will be liable to pay an amount equal to the NAV of such assets as at the end of the financial year in which termination or modification occurs, plus:

- The reasonable costs of removing such assets. These costs being inclusive of the costs of making good the condition of the connection site.
- If a connection asset is terminated before the end of a financial year, the connection charge for the full year remains payable.
- For assets which SHE Transmission has determined to replace upon the expiry of the relevant replacement period in accordance with the provisions set out in the STC and in respect of which a notice to disconnect or terminate has been served in respect of the connection site at which the assets were located; and due to the timing of the replacement of such assets, no Site Specific

Charges will have become payable in respect of such assets by NGET by the date of termination; the termination charges will include the reasonable costs incurred by SHE Transmission in connection with the installation of such assets.

- Previous capital contributions will be taken into account.

The calculation of termination charge for financial year n is as follows:

$$\text{Termination charge}_n = C_n + \text{NAV}_{an} + R - \text{CC}$$

where:

$C_n$  = Outstanding connection charge for year

$\text{NAV}_{an}$  = NAV of the relevant assets as at 31 March of financial year n

R = Reasonable costs of removal of redundant assets and making good

CC = An allowance for previously paid capital contributions

Examples of reasonable costs of removal for terminated assets and making good the condition of the site include the following:

- If SHE Transmission terminates a circuit breaker as a result of a User leaving a site, this may require modifications to the protection systems.
- If an asset were terminated and its associated civils had been removed to 1m below ground then the levels would have to be made up. This is a common condition of planning consent.

### **Other charges: Early Termination of Transmission Reinforcement Works**

When a TO Construction Agreement for a connection is terminated by NGET prior to completion of the works then, in addition to the costs incurred at the time of termination for connection assets, NGET must pay to SHE Transmission the costs incurred at the time of termination for any transmission reinforcement works which were required as a direct consequence of NGET's application for a connection as included in Appendix H1.

### **Other charges: Miscellaneous Charges**

If NGET request any other work by SHE Transmission not covered by General System Charge, Site Specific Charges or other charges specified above, SHE Transmission will provide terms for the requested work.

## Glossary

<b>Affected TO</b>	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
<b>Allowed TO Revenue</b>	As set out in TO's Transmission Licence
<b>Authority</b>	The Gas and Electricity Markets Authority (Ofgem).
<b>BETTA</b>	British Electricity Trading and Transmission Arrangements.
<b>BETTA Go-Live Date</b>	1 April 2005.
<b>Bilateral Connection Agreement</b>	An agreement between the SO and the User covering the connection to SHE Transmission's transmission system.
<b>Consents</b>	In relation to any transmission system and/or connection works:- <ul style="list-style-type: none"> <li>a) all such planning (including Public Inquiry) and other statutory consents; and</li> <li>b) all wayleaves, easements, rights over or interests in land or any other consent; or for commencement and carrying on of any activity proposed to be undertaken at or from such works when completed.</li> <li>c) permission of any kind as shall be necessary for the construction of the works.</li> </ul>
<b>CUSC</b>	Connection and Use of System Code
<b>Entry</b>	A point of connection at which electricity may be exported from a User's installation onto the transmission system i.e Generation
<b>Excluded Services Charges</b>	As defined in Special Condition 8B of the TO's Transmission Licence
<b>Exit</b>	A point of connection at which electricity may flow from the transmission system to the User's installation i.e. Demand
<b>Host TO</b>	The TO which will electrically connect the User to a transmission system which is owned or operated by that TO

<b>NGET</b>	National Grid Electricity Transmission plc
<b>Post BETTA</b>	On and after 1 April 2005
<b>Post Vesting</b>	After 30 March 1990 and before 1 April 2005
<b>Price Control</b>	As set out in the TO's Transmission Licence
<b>Pre BETTA</b>	Before 1 April 2005
<b>Pre Vesting</b>	On or before 31 March 1990.
<b>Retail Price Index</b>	Table 36: RPI: All items index 1947 – "CHAW" published by the Office for National Statistics and as amended monthly
<b>SO</b>	System Operator. This being NGET.
<b>STC</b>	the System Operator Transmission Owner Code.
<b>TO</b>	An onshore or offshore Transmission Owner. This being Scottish Hydro Electric Transmission plc
<b>Transmission Interface Point</b>	the electrical point of connection between the offshore transmission system and onshore transmission system
<b>Transmission Interface Site</b>	the site at which the Transmission Interface Point is located
<b>Transmission Licence</b>	Transmission licence granted or treated as granted under section 6(1)(b) of the Act
<b>Transmission Voltage</b>	In Scotland usually voltages at 132kV or above
<b>User</b>	A generation or demand customer connected to the TO's transmission system and party to SO's bilateral agreement(s).

**APPENDIX 1 INDICATIVE ILLUSTRATIVE CONNECTION ASSET CHARGES**

The Schedule below gives typical costs excluding VAT for additions to SHE Transmission’s transmission system. The costs shown are current at the time of publication, are subject to change without notice and may vary upon system configuration, Consents, site conditions etc.

Description	£000s			
	275kV	132kV	33kV	11kV
Single Busbar bay	1,976.297	1,487.090	644.209	335
Double Busbar bay	2,285.1427	1,616.215	667.214	359
Single circuit Trident £/km		355.370		
Double circuit Steel Tower £/km	1,403.496	793.1132		
Transformer Cables per km (inc terminations)	2,365.360	1,374.026	627	478
275/132kV 240MVA transformer	5,024.967			
275/33kV 120MVA transformer	5,029			
132/33kV 90MVA transformer	-	3,920		
132/33kV 30 MVA transformer	3,606	3,366		
132/11kV 3060 MVA transformer		2,891.502		
		2,355		

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**FACTORS WHICH CAN INFLUENCE COSTS AND CHARGES**

**Calculation of Gross Asset Value (GAV)**

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

- Each asset is new
- The GAV includes estimated costs of construction, engineering and liquidated damages premiums.

**Notes on Assets**

**Busbar Bays – Assumptions:**

- Plant – the bay is constructed from SHE Transmission standard bay drawings and tendered prices provided for protection, cabling, auxiliary systems, earthing are based on various assumptions.
- Everything is based on an assumed value per bay
- Civil – nominal base sizes & dimensions of concrete footings, good ground condition, includes landscaping. Access works and drainage costs elsewhere

**Busbar Bays – Exclusions:**

- Plant – overall substation protection, main control and SCADA systems.
- Auxiliary supplies including LV AC & DC systems
- Electrical design costs
- Local authority/statutory planning consents

**Transformer Cables – Assumptions (All based on 1 circuit of 1 core per phase,1000m circuit length on a flat and unimpeded route):**

- XLPE lead/ali sheathed cable supply, install, commission
- High voltage AC and sheath testing
- Earth Continuity Cable (ECC) & link boxed supply, installation and connection included
- Fibre optic including terminal boxes – installed with cable only
- Cable installed in ducts/trenching
- Connection and modifications to earth mat.
- Excavation waste disposal, site establishment/prelims, security and access costs included
- Cable installation will be treated as a standalone installation project
- Costs do not allow for any small quantity/MOQ surcharge that may be levied by cable supplier
- Others – VAT and inflation

**Transformers – Assumptions:**

- Plant – costs include for procurement, delivery and commissioning of Grid and SG transformers.
- Civil – nominal base sizes with good ground conditions, include for a bund. Access, oil containment
- Transformer protection, control, cabling, auxiliary systems varies based on site specifications and requirements
- Earthing is based on an assumed value per bay

**Transformers – Exclusions**

- HV & LV switchgear
- Bay protection, control and SCADA system, (considered under part of the busbar bay costs)
- Auxiliary supplies including LV AC & DC systems
- Civil – piling
- Site drainage
- Electrical design costs
- Fire protection systems
- Local authority/statutory planning consents
- Others – VAT and Inflation

### **Factors Which Can Influence Costs And Charges**

- Standards governing the system.
- Special security of supply requirements
- Length of cable/line required from existing system.
- Size of Exit point / Entry point capacity requirements in relation to available capacity of existing network, including the age of the assets and the condition of the network.
- Whether any extension or reinforcement of the existing network is by underground cable or overhead lines.
- Type of ground requiring excavation; type and extent of reinstatement necessary, including New Roads and Street Works Act requirements; need for road crossings.
- Availability of wayleaves/easements for cables and lines including any planning consents.
- Availability of suitable substation sites including any necessary planning consents.
- Necessity of overtime working.

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### **Illustrative list of Abnormal Services which may be reflected in the Site Specific Charges**

Illustrative list of abnormal services which may be reflected in the connection charge:

- progression of work required other than in an orderly fashion in accordance with normal engineering policies and practices thus imposing additional costs;

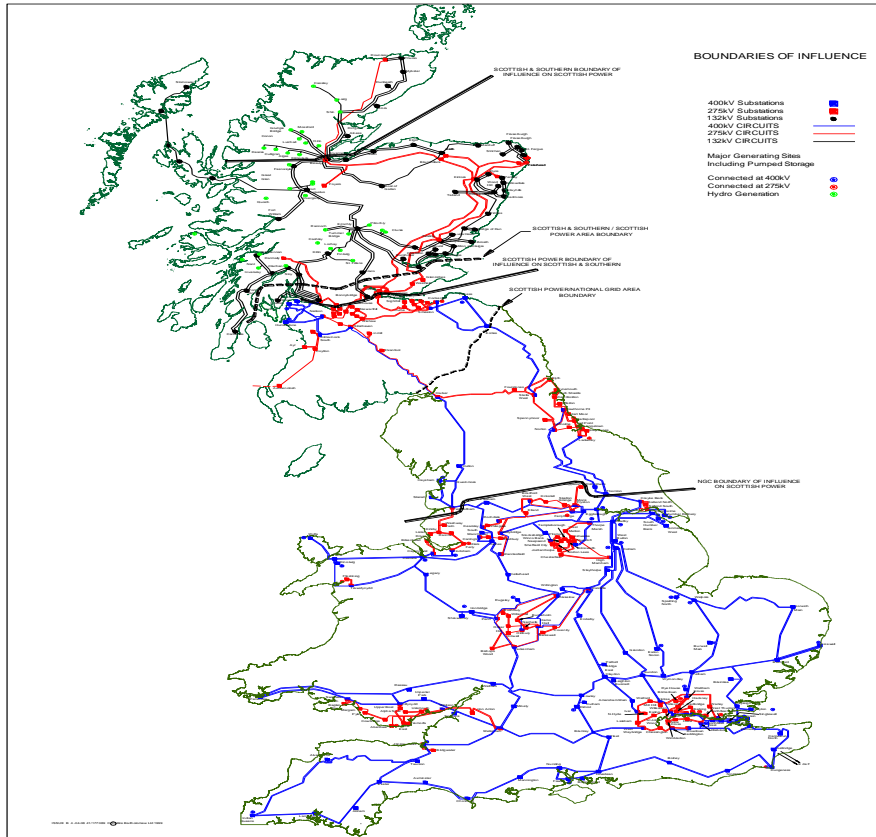
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- transformer/-substation sites not provided to the Company in suitable locations at normal prices or rents, taking account both of cable access and access by personnel;
- loads with abnormal characteristics, which affect the security and standard of service on the system, for example, arc welders and large motors.

## APPENDIX 2 – APPLICATION FEES

### Transmission Licensees' Boundaries of Influence Map



Fees will be applied depending on which zone the connection will be constructed. See Table A or B below. The boundaries of influence are set out in detail in the NGET's Electricity Ten Year Statement.

All Fees subject to other additional costs covering any other special design requirements e.g. subsea survey, advance wayleaving etc being payable or underwritten by NGET.

All fees are subject to the addition of VAT.

No application fee is payable for SHE Transmission initiated works.

The MW value is the final value applied for.

**Table A – Application Fees in Zone C, where SHE Transmission is Host TO**

<i>Application Type</i>	<b>MW</b>	<i>Base Fee (£)</i>	<i>Rate £/MW</i>
New Onshore Application (Entry)	<100	25,455	189
	100 – 1320	40,005	92
	>1320	116,380	40
New Onshore supply Point (Exit)	<100	24,245	-
	>100	48,490	-
New Offshore Application ( <i>Indicative Only</i> )	-	63,750	-
Statement of Works (1) (Exit)	-	500	-
Modification Application (2) following Statement of Works (Project Progression) (Exit)	-	2,300 or 10,000	-
TEC Increase	<100	25,455	189
	100 – 1320	40,005	92
	>1320	116,380	40
<i>Application Type</i>	<i>MW</i>	<i>Base Fee</i>	<i>Factor</i>
Onshore Modification Application (Entry)	<100	25,455	0.75
	100 – 1320	40,005	
	>1320	116,380	
Onshore Modification Application to Existing Supply Point (Entry)	<100	18,740	-
	>100	24,245	-
Offshore Modification Application (Entry)	<100	25,455	0.75
	100 – 1320	40,005	
	>1320	116,380	
Embedded Generation Application (1) (Entry)	<100	25,455	0.3
	100 – 1320	40,005	
	>1320	116,380	
Embedded Modification Generation Application (1) (Entry)	<100	25,455	0.2
	100 – 1320	40,005	
	>1320	116,380	
Design Variation in addition to Standard Offer (Entry)	<100	25,455	1.5
	100 – 1320	40,005	
	>1320	116,380	

**Table B – Application Fees in Zone C, when SHE Transmission Affected TO**

<i>Application Type</i>	<b>MW</b>	<i>Base Fee (£)</i>	<i>Rate £/MW</i>
New Onshore Application (Entry)	<100	6,560	48
	100 – 1320	10,305	23
	>1320	29,980	9
New Onshore Supply Point (Exit)	<100	11,020	-
	>100	24,245	-
New Offshore Application ( <i>Indicative Only</i> )	-	35,600	-
Statement of Works (1) (Exit)	-	500	-
Modification Application (2) following Statement of Works (Project Progression) (Exit)	-	2,300 or 10,000	-
TEC Increase	<100	6,560	48
	100 – 1320	10,305	23
	>1320	29,980	9
<i>Application Type</i>	<i>MW</i>	<i>Base Fee (£k)</i>	<i>Factor</i>
Modification Application (Entry)	<100	6,560	0.75
	100 – 1320	10,305	
	>1320	29,980	
Modification Application to Existing Supply Point (Entry)	<100	7,720	-
	>100	11,020	-
Offshore Modification Application (Entry)	<100	6,560	0.75
	100 – 1320	10,305	
	>1320	29,980	
Embedded Generation Application (Entry)	<100	6,560	0.3
	100 – 1320	10,305	
	>1320	29,980	
Embedded Modification Generation Application (Entry)	<100	6,560	0.2
	100 – 1320	10,305	
	>1320	29,980	
Design Variation in addition to Standard Offer (Entry)	<100	6,560	1.5
	100 – 1320	10,305	
	>1320	29,980	

**Notes for Tables A and B:-**

Application fees are calculated on the following basis:

New Onshore Application	= Base Fee + (MW * Rate/MW)
TEC Increase	= Base Fee + (TEC Increase MW * Rate/MW)
New Offshore Application	= Number of offshore connection sites * Base Fee
Onshore Modification Application	= Base Fee * Factor

Offshore Modification Application	= Base Fee * Number of Transmission Interface Sites * Factor
Embedded Generation Application	= Base Fee * Factor
Embedded Generation Modification App	= Base Fee * Factor

Notes:

(1) In response to any Statement of Works request, SHE Transmission will provide a Statement of Works response which will inform only whether there are any transmission system works required. No formal terms of offer will be provided.

(2) In the event the Statement of Works response provided by SHE Transmission to NGET show that the transmission works are required by the embedded distribution connection, NGET will be required to submit a formal Modification Application.

a. For in area offers where SHE Transmission is the Host TO and where no significant network assessment is required the fee applicable for this Modification Application is £2,300. Where significant network assessment is required the applicable fee for this Modification Application is £10,000.

b. For out of area offers where SHE Transmission is the Affected TO and where no significant network assessment is required, the applicable fee for this Modification Application is £2,300. Where there is significant network assessment required, the applicable fee for this Modification Application is £10,000.

**APPENDIX 3 CHARGE-OUT RATES**

<b>Grade</b>	<b>Rate (£/day)</b>
Section manager or Internal Solicitor	<del>920942</del>
Principal Power Systems Engineer	<del>775793</del>
Senior Power Systems Engineer, Project Manager or Senior Wayleave Officer	<del>645660</del>
PS Engineer or Draughtsman	<del>545527</del>
Graduate Engineer	<del>435445</del>
Craftsman (linesman, cable jointer, substation fitter)	<del>390399</del>
Admin support	<del>340</del> <del>348</del>

All fees are subject to the addition of VAT.