

Electricity  
Transmission

# Statement of Transmission Owner charges

Issue 5

Applicable from 1<sup>st</sup> April 2023



nationalgrid

# Contents

Our Charging Statement	3	Outage Services	25
Introduction	4	Other Directly Remunerated Services charges	25
Principles	5	Contestable Connection Works	26
Connection and Use of System Boundary	6	De-Energisation and Disconnection Charges	27
Transmission Owner Revenue Restriction	8	Termination Charges	28
Price Indexation	9	Early Replacement	29
Directly Remunerated Services Charges	9	Transmission Operation and Maintenance Costs	29
PART 1	11	Civil Engineering Costs of Connection Sites	29
General System Charges	11	Energy Metering Systems	29
PART 2	12	Appendix 1 : Indicative Connection Asset Charges	30
Site Specific Charges	12	Appendix 2 : Application Fees	32
Capital Charges	12	Appendix 3 : Charge-Out Rates	33
Non-capital Charges	13	Glossary	34
Basic Annual Charge Calculation	15	Revision history	35
Calculation of the Gross Asset Value (GAV) and Net Asset Value (NAV)	16		
Payment Options	17		
Capital Contributions	18		
PART 3	20		
Other Charges	20		
Application Fee	20		
Feasibility Studies	20		
One-Off Costs and Additional Works Requested	21		
Transmission Charges	25		
Miscellaneous Site Specific Charges	25		
Abortive Works Charges	25		



# Our Charging Statement

**This statement is produced by National Grid Electricity Transmission plc (NGET), the Transmission Owner (TO) in England and Wales.**

**It sets out the basis of charges for NGET's provision of transmission services to National Grid Electricity System Operator (NGESO), as specified in the System Operator Transmission Owner Code (STC) and, where relevant, charges made to other parties directly contracted with NGET.**

Subject to Ofgem approval this statement is effective from 1<sup>st</sup> April 2023.

The charges consist of a General System Charge, Site Specific Charges and Other Charges as set out in Parts 1, 2 and 3 respectively.

# Introduction

**NGET is obliged, under Special Condition 9.12 of its electricity Transmission Licence, to prepare a statement approved by the Authority setting out the basis upon which charges will be made for the provision of transmission services.**

**The statement is to be in such form and detail as is necessary to enable NGENSO and other parties directly contract with NGET to make a reasonable estimate of charges to which it would become liable for the provision of NGET's services.**

**These services include the planning, development, construction, maintenance and operation of new and modified connections to the licensee's transmission system.**

Special Condition 9.12 requires that the statement shall in respect of connection to the licensee's (NGET) transmission system include:

- a.** a schedule listing;
  - i. items of significant cost required for connection (at entry or exit points) to the licensee's Transmission System,
  - ii. items for which site specific charges may be made or levied, and
  - iii. indicative charges or, where not practicable, an explanation of the methods by which and the principles in accordance with which the charges will be calculated;
- b.** the methods by which and the principles in accordance with which:
  - i. 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 that required;
  - ii. any charges (including any capitalised charge) will be made for maintenance, replacement and repair required of electric lines, electrical plant or meters provided and installed for making a connection to the licensee's Transmission System; and
  - iii. any charges will be made for disconnection from the licensee's Transmission System and the removal of electrical plant, electric lines and ancillary meters following disconnection; and
- c.** such other matters as are specified in directions issued by the Authority from time to time for the purpose of this condition.

# Principles

**This statement sets out NGET's charges for the provision of transmission services to NGENSO and, where relevant, charges made directly to other counterparties.**

**In order to calculate the charges of providing these services, NGET must apportion its assets to one of three charging categories, General System Charge, Site Specific Charges and Other Charges.**

The General System Charge recovers all costs for providing, replacing and/or refurbishing NGET's transmission infrastructure assets.

Site Specific Charges recover all costs for providing, replacing and/or refurbishing Connection Assets. These charges enable NGET to recover, with a reasonable rate of return, the costs involved in providing the assets, installed solely for and only capable of use by an individual User, that afford connection to the transmission system.

These costs may include civil costs, engineering costs, and land clearance and preparation costs associated with the Connection Assets. No land purchase costs are included.

NGET may, at the request of NGENSO, Users, or other third parties who may contract directly with NGET, carry out other work not covered by General System Charge or Site Specific Charges; including for example, outage rescheduling, dealing with applications for connection, obtaining Consents, contestable construction, diversions. The principles for calculating such Other Charges are also set out in this statement.

# Connection and Use of System Boundary

**In general, Connection Assets are defined as those assets solely required to connect an individual User to the NGET 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 NGET 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 connection agreement.

Where a single User asset becomes shared use then the relevant assets will be recategorized as infrastructure and connection charges for those assets shall cease whilst so categorised.

Where a previously shared use asset ceases to be shared following permanent disconnection of other Users or alteration of NGET’s transmission system leaves a sole User, recategorization of the relevant infrastructure asset to be a single User asset will be made;

- upon replacement at the end of the asset’s book life when the User’s (via NGESO) requirements necessitate the replacement of the relevant assets as single User assets or the User (via NGESO) otherwise requests the replacement when the assets are no longer required for other purposes, or
- upon a User requested modification that requires the relevant assets’ use as single User assets to meet the User’s (via NGESO) requirements as agreed in NGET’s transmission operator connection agreement.

Where a site vacated of Users recommences use with a new single User, the relevant assets required solely for the new User will be recategorized as Connection Assets.

Indicative Gross Asset Values (“GAVs”) of Connection Assets for illustrative purposes are given in Appendix 1.





# Transmission Owner Revenue Restriction

**Special Condition 2.1 of NGET's Transmission Licence establishes the charge restriction that determines the Allowed TO Revenue ( $AR_t$ ) that NGET may earn from its TO services.**

$$AR_t = ADJR_t^* + K_t + LAR_t$$

Where:

$ADJR_t^*$	means adjusted revenue published by the Authority pursuant to Part A of Special Condition 8.2 (Annual Iteration Process for the ET2 Price Control Financial Model) prior to the end of Regulatory Year t;
$K_t$	means the K correction term and is derived in accordance with Part H of this condition; and
$LAR_t$	is derived in accordance with Special Condition 7.1 (Legacy adjustments to revenue).

$$ADJR_t^* = R_t \frac{PI_t}{PI_{2018/2019}} + ADJ_t$$

Where:

$R_t$	means the value of Calculated Revenue calculated in accordance with Part E;
$PI_t$	means the price index derived in accordance with Part F; and
$ADJ_t$	means the AIP adjustment term derived in accordance with Part G.

$$R_t = FM_t + PT_t + DPN_t + RTN_t + RTNA_t + EIC_t + DRS_t + ODI_t + ORA_t + TAX_t + TAXA_t$$

Where:

$FM_t$	means fast money and has the value set out in the revenue sheet of the ET2 Price Control Financial Model;	$DRS_t$	means Directly Remunerated Services and has the value set out in the revenue sheet of the ET2 Price Control Financial Model;
$PT_t$	is derived in accordance with Special Condition 6.1 (Pass-through items);	$ODI_t$	is derived in accordance with Special Condition 4.1 (Total output delivery incentive performance);
$DPN_t$	means depreciation and has the value set out in the revenue sheet of the ET2 Price Control Financial Model;	$ORA_t$	means other revenue allowances and is derived in accordance with Special Condition 5.1 (Total other revenue allowances);
$RTN_t$	means return and has the value set out in the revenue sheet of the ET2 Price Control Financial Model;	$TAX_t$	has the value set out in the revenue sheet of the ET2 Price Control Financial Model; and
$RTNA_t$	means return adjustment and is derived in accordance with Special Condition 2.3 (Return Adjustment);	$TAXA_t$	means the tax allowance adjustment term and has the value zero, unless the Authority directs otherwise under Special Condition 2.2 (Tax allowance adjustment).
$EIC_t$	means equity issuance costs and has the value set out in the revenue sheet of the ET2 Price Control Financial Model;		

Special Licence Condition 2.11 of NGET's Licence establishes the charge restriction that determines NGET's charges for the provision of transmission services ( $TNGET_t$ ) to NGESO where:

$$TNGET_t \leq AR_t$$

Where:

$$TNGET_t = \text{General System Charge}$$

$$AR_t = \text{Allowed TO Revenue for Relevant Year } t$$

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

## Price Indexation

The indexation of Connection Asset Gross Asset Values to 31<sup>st</sup> March 2023 in preparation for charges made in 23/24 will be in accordance with the CPIH indexation requirements applying during the RII0-T2 price control period.

## Directly Remunerated Services Charges

Part C of Special Condition 9.7 of NGET's Transmission Licence establishes charging provisions for Directly Remunerated Services.

In addition to the charges arising from NGET's provision of transmission services (Allowed TO Revenue) to NGESO, referred to as Other Charges, NGET will also invoice Directly Remunerated Services charges monthly to NGESO for Connection Assets (which for the avoidance of doubt includes both Pre-Vesting and Post-Vesting assets), including asset replacement.

These Directly Remunerated Service charges consist of capital charges and maintenance charges that have not otherwise been recovered under Allowed TO Revenue.

NGET may also invoice other parties contracted directly with NGET for Directly Remunerated Services that are not charged to NGESO and not recovered under Allowed TO Revenue.



International Grid

Power Systems Research Center

# PART 1

## General System Charges

The General System Charge recovers all costs for providing, replacing and/or refurbishing NGET's transmission infrastructure assets. These activities are undertaken to the standards prescribed by NGET'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 is set to recover the Allowed TO Revenue which is remunerated under Special Condition 2.1.

No service provided by NGET shall be treated as a Directly Remunerated 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, NGET will each month invoice NGESO the General System Charge sum that has been advised by NGESO.

Any under or over-recovery of the General System Charge by NGESO will be corrected through NGET revising its General Service Charges in the following charging years in accordance with its licence.

# PART 2

## Site Specific Charges

Site Specific Charges are set to recover costs associated with Connection Assets specified in the TO construction agreement and/or the connection site specification for the relevant connection site.

In accordance with the STC, these are the capital costs of providing new connections or modifying existing connections to NGET's transmission system and the non-capital maintenance costs of Connection Assets that will be recovered from NGESO.

NGET utilise Connection Assets of the minimum or lowest suitable standard ratings to meet User's needs. Any capability headroom afforded by minimum sized equipment is incidental and not required by NGET and the Connection Assets will be funded solely by the relevant User.

Where NGESO requests Connection Assets are installed with a higher capability than the minimum required for the User's contracted capacity needs, then One-Off Charges will be applied to additional costs as explained in Part 3 'One-Off Costs and Additional Works Requested'.

## Capital Charges

Capital charges reflecting purchase and installation cost of Connection Assets comprises two parts:

## Depreciation

This is the charge recovering a fixed fraction of the Gross Asset Value on an annual basis, for example 1/40<sup>th</sup> of a 40-year book life asset charged each year for 40 years.

Where an asset has been refurbished or updated such that the asset's value increases a new Gross Asset Value and an appropriate depreciation period reflecting the anticipated remaining life will be agreed between NGET, NGESO and the User.

The Gross Asset Value is uplifted by CPIH inflation or Modern Equivalent Asset value change prior to the current year's depreciation being determined.

## Rate of Return

The rate of return charged in respect of Connection Assets, Capital Contributions, One-Off Works, Miscellaneous Charges and used in respect of financing costs will be the annual rate prevailing at the time of the relevant transaction.

The rate of return upon capital employed by NGET is applied to the inflated Net Asset Value of Connection Assets, i.e. the amount of the original Gross Asset Value that has not yet been depreciated or otherwise reduced by capital contributions from NGESO, in accordance with industry codes.

For Connection Asset values subject to CPIH indexation and in respect of Capital Contributions, One-Off Works, Miscellaneous Charges and Financing Costs, NGET's rate of return will be the real pre-tax Weighted Average Cost of Capital in our licence for year n of WACC<sub>n</sub>.

For year ending 31st March 2024 the rate of return is **4.00%** and where a User (via NGESO) has nominated the Modern Equivalent Asset (MEA) re-evaluation method for their GAVs, the rate of return for their Capital Charges is **5.50%**

Where for the year n:

$$\begin{aligned} WACC_n = & ((\text{real post tax cost of equity}/(1-\text{corporation} \\ & \text{tax rate})) \times (1-\text{notional gearing \%})) \\ & + \\ & (\text{real cost of debt} \times \text{notional gearing \%}) \end{aligned}$$

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) available at time of production of this statement.

For the year ending 31<sup>st</sup> March 2024:

$$\begin{aligned} WACC_n & = (( 4.910\%/100\% - 25\% ) \times ( 100\% - 55\% )) \\ & + ( 1.920\% \times 55\% ) \\ & = 4.00\% \end{aligned}$$

## Non-capital Charges

Non-capital charges cover maintenance costs applicable to Connection Assets and One-Off capital connection and infrastructure assets, provided to NGESO and include;

- A proportion of costs of operating NGET's 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.

These costs are charged across two component charges:

### Site Specific Maintenance (SSM)

**The current SSM factor is 0.39%**

This is a percentage factor applied to the re-indexed Gross Asset Values of the Connection Assets to recover a fair proportion of NGET's maintenance costs as a Site Specific Maintenance Charge. The SSM factor is derived in accordance with the STC and is based on the cost of NGET planned maintenance of Connection Assets divided by NGET's total Connection Asset Gross Asset Value.

### Transmission Running Cost (TRC)

**The current TRC factor is 1.06%**

The 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 attributable to Connection Assets. The TRC factor is calculated by NGESO 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' sum total of Connection Assets as a function of their total business GAVs. This cost factor is therefore expressed as a percentage of an asset's GAV. This cost factor is applied to the re-indexed Gross Asset Values of the Connection Assets to recover a fair proportion of transmission running costs as a Transmission Running Cost Charge. For the avoidance of doubt, there will be no reconciliation of the Transmission Running Cost charge component.



## PART 2

### Basic Annual Charge Calculation

Annual charges, for a given year n from date of Connection Asset commissioning, are calculated as follows:

$$\text{Annual Connection Charge}_n = \text{PCCF} \times (\text{DEPGAV}_n + (\text{R}_n \times \text{NAV}_n)) + (\text{SSM}_n \times \text{TOPIGAV}_n) + (\text{TRC}_n \times \text{GAV}_n)$$

#### Where:

Gross Asset Value <sub>n</sub> (GAV <sub>n</sub> ) <sup>1</sup>	= Gross Asset Value for year n either TOPI indexed OR Modern Equivalent Asset Value indexed
TOPIGAV <sub>n</sub>	= TOPI <sub>n</sub> Indexed Gross Asset Value for year n, as utilised for the Site Specific Maintenance charge component for both price indexed and MEA indexed assets.
Depreciation Charge (DEPGAV <sub>n</sub> )	= GAV <sub>n</sub> x 1/asset book life
Net Asset Value <sub>n</sub> (NAV <sub>n</sub> ) <sup>2</sup>	= GAV <sub>n</sub> x $\frac{(\text{asset book life} - 0.5 - \text{Asset Age})}{\text{asset book life}}$
Return Charge	= Return x NAV <sub>n</sub>
Return (R <sub>n</sub> )	= WACC <sub>n</sub> for price indexed Connection Assets = WACC <sub>n</sub> + 1.5% for MEA indexed Connection Assets.
Partial Capital Contribution Factor (PCCF)	= A factor applied to the Depreciation and Rate of Return charge components to reflect any capital contribution payment made by NGESO to NGET for the Connection Assets deployed, being calculated as follows;  = $\frac{(\text{GAV}_n - \text{capital contribution payments from NGESO})}{\text{GAV}_n}$
Asset Age	= Age at 1 <sup>st</sup> April each year, rounded up to the nearest year
TOPI <sub>n</sub>	= $\frac{(\text{May to October average CPIH Index in year n-1})}{(\text{May to October average CPIH Index in year n-2})}$
SSM <sub>n</sub>	= Site Specific Maintenance factor as previously described.
TRC <sub>n</sub>	= Transmission Running Costs factor as previously described.

The Depreciation Period for Connection Assets will not be more than 40 years but may, by mutual agreement, be less than. This is applicable for electronics and metering assets, but also where refurbished assets are deployed for new connections with prior agreement with NGESO and the User.

<sup>1</sup> Indexed annually by CPI<sub>n</sub> if CPI indexed asset or by MEA revaluation if MEA indexed asset.

<sup>2</sup> NAV<sub>n</sub> is based on a revalued GAV<sub>n</sub>



## PART 2

### Calculation of the Gross Asset Value (GAV) and Net Asset Value (NAV)

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

- Construction costs – costs of bought in services
- NGET Engineering – Allocated equipment and direct engineering costs
- Interest During Construction – Financing Cost based on our Weighted Average Cost of Capital (WACC) as specified in Part 2 Rate of Return.
- Liquidated damages premium – an optional premium providing additional cover to NGET from NGET for delays caused by NGET.

The GAV of an asset is re-evaluated each year normally using the average of the Consumer Price Index (CPIH)<sup>3</sup> between May and October, i.e.  $GAV_n = GAV_{n-1} \times CPIH_n$

$$\text{Where } CPIH_n = \frac{(\text{May to October average CPIH Index in year } n-1)}{(\text{May to October average CPIH Index in year } n-2)}$$

Where the asset is indexed as a Modern Equivalent Asset, the year n GAV is set as the relevant MEA value for year n. CPIH is not used in the indexation of the capital components of the connection charge for MEA indexed Connection Assets, but a separate CPIH indexed GAV value is recalculated for the purposes of calculating the Site Specific Maintenance portion of Non-capital charges for MEA indexed Connection Assets.

The NAV of each asset for year n, used for charge calculation, is the average (mid-year) depreciated GAV of the asset and is calculated as shown below.

$$\text{Where } NAV_n = GAV_n \times \frac{(\text{asset book life} - 0.5 - \text{Asset Age})}{\text{asset book life}}$$

<sup>3</sup> Please see the 'Price Indexation' section on Page 9 for more details.

# PART 2

## Payment Options

The capital cost of constructing or modifying Connection Assets, including overheads, can be paid in one of two ways as set out below, with the option to pay for the Connection Assets' capital value to reduce annual capital charges.

NGET will consider on a case-by-case basis a combination of the options. It should also be noted that all offers made by NGET, in response to a new or modified connection application by NGENSO, will initially be made on an indicative basis. Should a firm price offer be requested, a fixed connection charge will only be provided at a later date after tender returns for major plant items and other material expenditure have been received.

The following two options are NGET's standard basis of offers. NGENSO may require charges to be based on alternative basis such as;

- depreciation periods other than the standard 40 years or 15 years in the case electronic metering assets;
- annuity based charging;
- indexation of GAVs based on principles other than MEA revaluation and CPIH indexation.

Should NGENSO wish to agree to one or more of the options detailed above, instead of the standard connection terms, the return elements charged by the transmission licensee may also vary to reflect the re-balancing of risk between NGET and NGENSO. For example, if NGENSO choose a different indexation method, an appropriate rate of return for such indexation method will be derived.

### Option 1 Annual Charges, Indicative Price

The Annual Connection Charges are based upon forecast Gross Asset Values for the cost of construction up to the requested connection date. Calculations are based on the planned investment profile. This is called Indicative Charging.

After completion of construction and delivery of the connection, the actual out-turned costs of construction will be assessed and revised Gross Asset Values and revised Annual Connection Charges advised to NGENSO.

A reconciling adjustment will be made as necessary, in the form of invoicing or credit noting of NGENSO, in respect of the difference between Indicative Charges already levied to NGENSO compared to the revised Annual Charges that would have been levied based on actual out-turned Gross Asset Values along with any relevant interest.

### Option 2 Annual Charges, Firm Price

The Connection Price is based on a firm price estimate of the costs of the connection works, and is calculated as in Option 1, except that the firm price may include a risk margin to allow for possible variances above the estimate, which might occur for any reason.

Due to the potential for lead times for new connections (e.g. the transmission outage programmes and the expected time to obtain planning Consents), it may not be feasible for NGET to offer firm prices and NGET reserved the right to decline to offer on this basis.

## PART 2

### Capital Contributions

NGESO may elect to pay in advance for the Connection Assets required for a connection and can do so for either an Indicative Price offer or a Firm Price offer.

NGET's cost of financing of its construction costs prior to commissioning will be reduced or waived according to the extent of payments that NGESO make in advance of NGET's construction expenditure.

For connections where NGESO elects to pay for the installation costs either partially or in full, NGESO will make milestone payments, based on fair and reasonable estimate of the value of work to be done at each stage. The final payment will be made by NGESO on completing the Connection Assets, with a reconciliation of the actual costs and financing costs incurred after commissioning the connection.

The capital contribution will comprise construction costs, inclusive of financing costs (subject to payments ahead of commissioning as mentioned above), plus NGET's Rate of Return percentage for the Charging Year in which the Capital Contribution is made at the value stated in Part 2 Rate of Return of this statement at time of invoicing.

The Gross Asset Value to be recovered through depreciation and the Net Asset Value will be reduced by applying the calculated Partial Capital Contribution Factor (PCCF) previously described. Where NGESO pays fully in advance for the Connection Assets and the related rate of return, the depreciation and rate of return components within the annual charge will be zero.

Capital contributions may also be made after commissioning in subsequent years. For a capital contribution to take account at the start of the relevant charging year n, NGESO may, at most once per year, make a full or partial capital contribution of at least 10% of the NAV prevailing as of 31<sup>st</sup> March in year n-1. NGESO shall notify NGET of the capital contribution amount no later than 1 September in year n-1, and pay the capital contribution 45 days prior to the start of the charging year n which will be applied to the NAV prevailing at the start of year n.



UK  
Power  
Networks

UK  
Power  
Networks

# PART 3

## Other Charges

Over and above the General System Charge and Site Specific Charges mentioned above, NGET may incur other costs, which include amongst other things:

- Costs associated with processing applications for connection to the system
- One-off costs whether associated with connections assets or infrastructure
- One-off charge associated with User instigated delays to the construction of connection assets or infrastructure works, so-called “Delayed Delivery Charges”
- One-off charges associated with delivery of Connection Assets or infrastructure
  - at a User’s request earlier than the timeframe in which NGET would efficiently choose to deliver, so-called “Early Use Charges”
  - at a User’s request delay of use after efficient completion of assets, so-called “Deferred Use Charges”
- Directly Remunerated Services Charges arising from a request that is not related to a new connection or modification of an existing connection, for example to pay for standalone diversionary works or to pay NGET to carry out operations in a non-standard work pattern to reduce impact of outages to a counterparty.

Any costs incurred by NGET as a result of NGESO’s requirements that are not otherwise recoverable through General System Charge or Site Specific Charges will be charged to NGESO or other party directly contracted with NGET according to the principles overleaf.

## Application Fee

Application fees are payable in respect of NGESO applications received for new or modified connections to NGET’s transmission system. The application fee is intended to cover engineering costs and other expenses involved in preparing an offer of terms and is dependent upon the size, type and location of the User’s scheme as shown on the map in Appendix 2.

With the exception of offshore applications, NGESO can elect to pay a fixed price application fee in respect of their application. Alternatively, onshore applications can elect to pay a variable price application fee which is based on the actual costs incurred. Both are chargeable by NGET to NGESO when an associated TO Construction Offer is signed by NGESO, or when the TO Construction Offer lapses.

The fixed price fees for applications are detailed in Appendix 2.

Variable price fees will consist of actual costs incurred by NGET, making reference to the charge-out rates detailed in Appendix 3.

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

NGET 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 NGESO’s request before any charges become payable, NGET will refund the original application fee. NGET will not refund the fees in respect of the subsequent modification(s).

## Feasibility Studies

If NGESO or a User requests a Feasibility Study in connection with alterations to or extension of the NGET network, a fee is payable based on an advance of NGET engineering and out-of-pocket expenses. The fee payable by NGESO or a User will vary according to the size of the study and the amount of work expected to be involved.

NGESO can elect to pay a fixed price Feasibility Study fee, or alternatively can elect to pay a variable price fee.

In the instance of a variable price fee, where actual engineering and out-of-pocket expenses exceed the advance, NGET will issue an invoice for the excess on completion of the Feasibility Study work. Conversely, where NGET does not use the whole of the advance the balance will be refunded.

In the instance of a fixed price fee, no reconciliation to the advance fee paid prior to the commencement of Feasibility Study work will take place.

A schedule of charge-out rates applicable for variable price fee Feasibility Study for different classes of NGET staff is attached at Appendix 3.

# PART 3

## One-Off Costs and Additional Works Requested

To provide or modify a connection NGET 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.

As a result of NGESO requirements, NGET may have to install connection or infrastructure assets;

- that differ or are enhanced above minimum standard scheme design requirements, or
- that incur revenue expense, including additional maintenance costs where additional assets are installed, or
- write off asset value.

Such costs, falling within the criteria set out below, are defined as One-Off costs;

- 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 a NGESO's request, irrespective of whether the cost can be capitalised.
- Termination Charges associated with the write-off of Connection Assets at the connection site.

Where these costs cannot be justified by planning standards and are incurred as a direct result of NGESO's construction application, they will be included in the TO Construction Offer as One-Off costs on an indicative basis and charged accordingly. A reconciling adjustment will be made as necessary, in the form of invoicing or credit noting of NGESO, for any difference between indicative One-Off cost already levied to NGESO compared to the revised out-turned One-Off cost along with any relevant interest.

The incremental costs of additional infrastructure related works above the minimum scheme required to connect a User would always be recovered as a One-Off Charge or subject to NGET agreement charged as a Transmission Charge.

The calculation of the One-Off works charge for asset write-off is outlined below:

$$\text{Write-off Charge} = 100\% \text{ of remaining NAV of redundant assets}$$

Requests for diversions of transmission lines or cables in connection with an application for a new or modified connection, including removal or relocation of towers, will be treated as One-Off costs.

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 costs.<sup>4</sup>

The calculation of One-off Charges is as follows;

$$\text{One-off Charge} = (\text{Construction Costs} + \text{Engineering Charges}) \times (1 + \text{Return \%}) + \text{IDC} + \text{LD Premium}$$

Where:

$$\text{Engineering Charges} = \text{"Engineering Charge"} \times \text{job hours}$$

$$\text{Return \%} = \text{As stated in Part 2 Rate of Return}$$

$$\text{IDC} = \text{Interest During Construction}$$

$$\text{LD Premium} = \text{The Company Liquidated Damages Premium (if applicable)}$$

## One-Off Assets - Site Specific Annual Maintenance (OAMF)

**The OAMF for 23/24 is 0.39%**

Where NGESO's requirements lead to additional capital assets over those normally required, the capital value is paid for by a One-Off Charge.

The additional One-Off capital assets require maintenance on a regular basis as is the case with Connection Assets.

The OAMF is a percentage factor applied to the re-indexed One-Off capital asset values to recover a reasonable proportion of NGET's maintenance costs on an annual basis.

The OAMF factor is derived from the annual cost of NGET planned maintenance of One-Off capital assets and Connection Assets divided by NGET's total Gross Asset Value of One-Off capital assets and Connection Assets.

One-Off Asset maintenance charges will be applied annually on a 1/12<sup>th</sup> monthly basis and applied pro-rata for the first month and first partial year following commissioning. Other payment terms can be agreed.

<sup>4</sup> Category 1 schemes are those which have been initiated by the User, either as a result of a variation to the design or to allow early connection of generation, which would otherwise be delayed until infrastructure works can be completed.

Category 3 are schemes which the User has elected to utilise as an alternative to reinforcement of a distribution network or third party connection affected by the User's generation connection.

## One-Off Assets Running Cost (OARC)

### The current OARC factor is 0.92%

As with OAMF, where NGESO's requirements lead to additional capital assets over those normally required, the capital value is paid for by a One-Off Charge.

The additional One-Off capital assets require maintenance on a regular basis as is the case with Connection Assets.

The OARC is a percentage factor applied to the re-indexed One-Off capital asset values to recover a reasonable proportion of NGET's business running costs.

The OARC factor will be calculated once at the beginning of each price control to reflect the appropriate amount of other Transmission Running Costs (rates, operation, indirect overheads) incurred by NGET attributable to One-Off Assets but at a rate common to that applied to Connection Assets.

The OARC factor is calculated by NGET by taking a proportion of the forecast NGET Transmission Running Costs (based on operational expenditure figures from the latest price control) that corresponds with the proportion of NGET's sum total of One-Off capital assets and Capital Connection Assets works as a function of NGET's total business Gross Asset Value.

One-Off Asset maintenance charges will be applied annually on a 1/12<sup>th</sup> monthly basis and applied pro-rata for the first month and first partial year following commissioning. Other payment terms can be agreed.

# PART 3

## Delayed Delivery Charges

A User (via NGESO) can request changes at any point in a design and construction programme. Where a request to change a required Charging Date (i.e. prior to NGET’s asset delivery date) to a later date leads to additional costs a **Delayed Delivery Charge** may apply as One-off Works Charges.

It is therefore critical that NGET is informed by NGESO of any potential delay to their project as soon as possible to enable NGET to avoid or mitigate these costs as much as possible.

Where no additional costs arise from a request to delay the Charging Date **no charge** will be made.

**Delayed Delivery Charges** will only apply to those assets not yet completed.

Where a User (via NGESO) requests a delay but it is lower cost for NGET to continue its works to the originally contracted Charging Date, NGET will not delay the works if they can continue. However a charge may apply for any use of asset life from the actual delivery date in accordance with **Deferred Use Charges** set out on page 25.

Where specific assets have already been installed before NGESO’s requested delay then **Deferred Use Charges** will apply.

Any **Delayed Delivery Charges** will be detailed in a variation to the NGET construction agreement and paid on acceptance of NGET’s variation.

Delayed or rescheduled activity may result in extra capital or non-capital costs to NGET, for example:

- Extra design stage work, or
- Tendering changes, or
- De-mobilisation and re-mobilisation, or
- Additional consents, or
- Abortive costs, or
- The need for a revised construction period depending upon available resource, procurement, construction and available outage windows.

Delayed delivery costs will include the incremental financing of infrastructure and connection assets under construction, accounting for any spend profile changes, to the point of completion at the revised Charging Date, based on simple interest at NGET’s prevailing Rate of Return specified in Part 2 at the time the offer is made

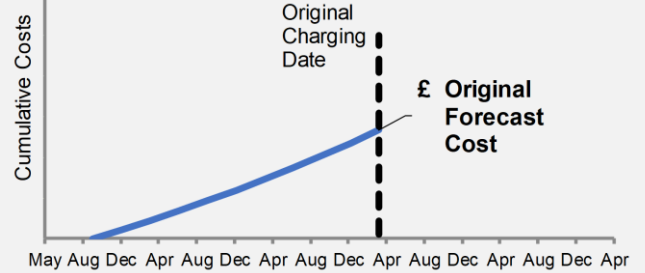
The **Delayed Delivery Charges** calculation is for the total additional forecast costs, including financing, is;

$$£ \text{ Max } \left( 0, \begin{matrix} \text{revised} & \text{original} \\ \text{forecast} & \text{forecast} \\ \text{costs} & \text{costs} \end{matrix} \right)$$

The examples below illustrate **Delay Delivery Charge** calculation for a capital asset under construction.

1. **Original agreed efficient baseline delivery.**

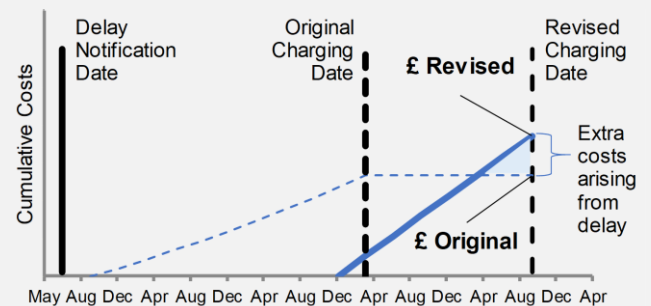
No **Delayed Delivery Charges** will be levied.



2. **Delay is notified prior to investment start.**

In this scenario faster investment is needed in the available construction or outage timeframe to meet NGESO’s revised Charging Date requirement.

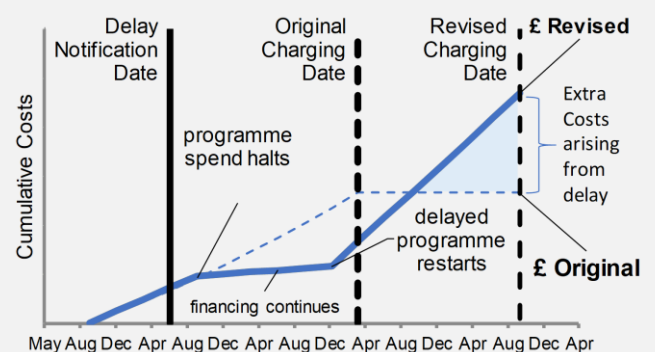
**Delay Delivery Charges = revised forecast spend minus the original forecast spend in current price base.**



3. **Delay is notified after investment started.**

In this scenario a request for delay occurs after NGET’s investment has started. Pausing investment at a suitable point may be some time after the request and faster investment may be needed in the available construction or outage timeframes to meet NGESO’s revised Charging Date.

**Delay Delivery Charges = revised forecast spend minus the original forecast spend in current price base.**

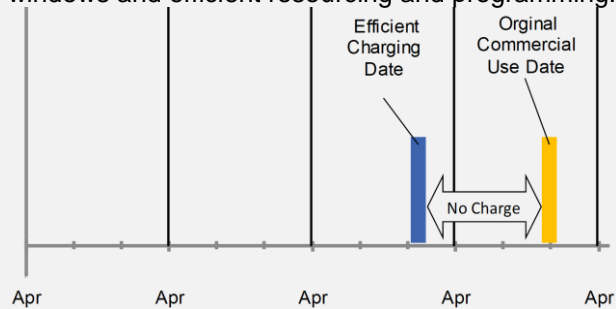




### Early Use and Deferred Use Charges

Where NGET deliver infrastructure or connection assets to an efficient Charging Date<sup>5</sup> in preparation for commercial use, as shown below, no additional User charges for early delivery are made.<sup>6</sup>

The efficient Charging Date will vary from project to project according to available system outage windows and efficient resourcing and programming.



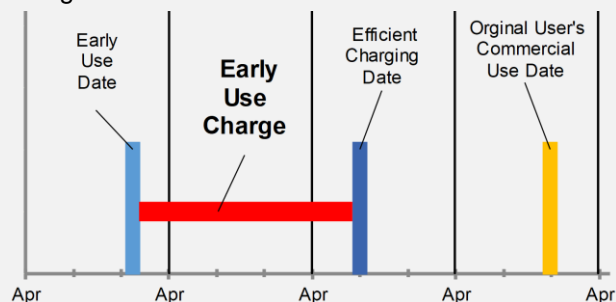
When a User requests delivery of assets earlier or later than NGET’s economic and efficient delivery programme then **Early Use Charges** or **Deferred Use Charges** will be applied as One-Off Works Charges charged on a monthly basis over the early use or deferred use period. Both charges are based on the **Annual Asset Use Charge Calculation**.

#### Early Use

Where NGESO requests delivery of infrastructure assets earlier than NGET would choose to deliver at lowest cost for a given Charging Date, then **Early Use Charges** may apply.

The Early Use Charges will be based on the relevant infrastructure asset’s forecast gross value which will be detailed in the TO Construction Offer and Construction Agreement.

The early use of asset life between the Early Use Date and NGET’s Efficient Charging Date will be charged as shown.



A partial first year of Early Use Charges will be calculated applying the Annual Early Asset Use Charge prorated to the duration in days from Early Use Date to the 31<sup>st</sup> March of the same year.

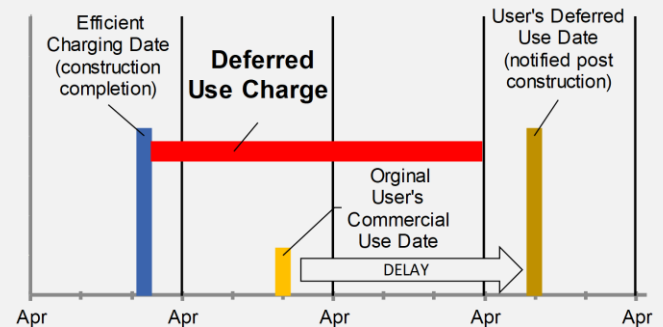
#### Deferred Use

Where a NGESO requests a deferral of the Charging Date, after the required assets have already been delivered efficiently, then **Deferred Use Charges** may apply.

In respect of Connection Assets, Connection Charges will commence from time of NGET delivery to the agreed Charging Date.

In respect of Infrastructure Assets use of asset life will now occur prematurely in advance of NGESO’s requested revised Charging Date. Deferred Use Charges will be based on the relevant infrastructure asset’s forecast gross value which will be detailed in the offered variation to the TO Construction Agreement.

The installed asset’s life between the Efficient Charging Date and 31<sup>st</sup> March of the year preceding the Deferred Use Date will be charged as shown.



A partial first year of Deferred Use Charges will be calculated applying the Annual Asset Use Charge prorated to the duration in days from Efficient Charging Date to the 31<sup>st</sup> March of the same year.

#### Annual Asset Use Charge Calculation

A full year of Asset Use Charge will be calculated as: -

$$\text{Annual Asset Use Charge}_n = D (\text{GAV}_n) + R (\text{NAV}_n)$$

Where:

$\text{GAV}_n$  = Gross Asset Value of the relevant assets for year n uplifted by price indexation.

$\text{NAV}_n$  = Net Asset Value of the relevant assets and is the mid-year value for year n based on  $\text{GAV}_n$  uplifted by price indexation.

$n$  = the year to which charge relates within the Depreciation Period

$D$  = Depreciation rate 2.5% (equal to 1/40 of GAV of a 40year book life asset)

$R$  = NGET’s rate of return as set out in Part 2 Rate of Return

<sup>5</sup> Defined by the completion of Transmission Works in NGESO’s Construction Agreement with the User.

<sup>6</sup> Unless the User requests triggers a One-Off works charges, such as from earlier/faster construction.

# PART 3

## Transmission Charges

Arrangements may be agreed between NGET and NGESO to pay for One-Off works over a longer period. If One-Off works are paid over a longer period, they are termed a **Transmission Charge**.

Transmission Charges are usually a depreciating finance charge or annuity based charge with a rate of return element and a maintenance element and may include agreement on a schedule of termination payments if the agreement is terminated before the end of the agreed charge recovery period. The charge is usually inflated annually by the same Price Indexation figure that is used to inflate GAVs, though NGESO can request alternative indexation methods.

### Miscellaneous Site Specific Charges

Other contract specific charges may be payable by NGESO for a specific site. These will be set out in the TOCA and/or STC where appropriate.

An example is where a direct connection to NGET's transmission system is not the most economic scheme and NGESO maintains their request for a transmission connection, the full costs of providing the transmission connection will be charged as a miscellaneous site specific charge.

### Abortive Works Charges

If as a result of a modification application, received after commencement of the transmission construction works, NGET is required to make amendment to the transmission construction works and has previously carried out some or all of the said works which are now no longer required ("Abortive Works") NGESO shall be required to make a payment to NGET in respect of all fees, expenses and costs of whatever nature reasonably and properly incurred or due by NGET in respect of the Abortive Works for which NGET is responsible or has or may otherwise become liable in respect of the Abortive Works.

### Outage Services

Where pre-arranged outages are re-arranged at NGESO's request, or where NGESO require additional services for planned or unplanned outages over and above the normal service provided under General System Charge, NGESO will be liable for outage service charges.

These charges reflect the costs incurred by NGET in accommodating NGESO's request. They include, but are not limited to:

- Costs 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 NGESO's costs in maintaining system security. Costs will be based on overtime hours worked on the particular outage;
- Costs of installing additional equipment, such as bypass arrangements; and
- Knock on costs which are incurred by other agreed outages which are directly attributable to the change requested by NGESO.

Where an outage is re-arranged at NGESO's request, NGET will use all reasonable endeavours to minimise the charge to NGESO by redeploying staff onto other work.

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

### Other Directly Remunerated Services charges

Where NGESO or any other counterparty, independent of any new connection or connection modification, requests NGET to conduct activity that is not covered by General Service Charges, Site Specific Charges or One-Off connection related charges, NGET will recover the cost that arises.

Not exhaustively, such instances include;

- Statutory diversion requests,
- Non-statutory diversion requests,
- Telecommunications and information technology infrastructure services,
- Acceleration of transmission maintenance outages on expedited working patterns for the benefit of the counterparty,
- the provision of any other service (including the provision of electric lines or electrical plant) that:
  - (a) is for the specific benefit of any third party who requests it; and
  - (b) is not made available by the licensee as a normal part of the activities of its Transmission Business Activities.
 e.g. expedited out-of-hours working.

Financing charges will be applied to net expenditure incurred prior to counterparty payment(s), based on our Weighted Average Cost of Capital (WACC) as specified in Part 2 Rate of Return.

A return element shall be included in the final amount charged for the requested works, and this will also be based on our WACC as specified in Part 2 Rate of Return.

## Contestable Connection Works

NGESO's Users may elect to carry out certain contestable areas of transmission connection works.

Such arrangements would be subject to the assets being designed and installed to NGET's technical standards to ensure the ongoing security and operability of the transmission system.

NGET may also require other agreements and indemnities with NGESO to ensure that there are no adverse consequences for other Users of the transmission system as a result of the NGESO's User's decision to "self-build".

A User wanting to make use of the self-build option should make this clear in their formal application to NGESO. NGET will work with NGESO and the User to facilitate this option.

The scope of contestable works will be agreed before the application is deemed competent. Infrastructure works are non-contestable to avoid any potential impact on other Users.

NGET will agree directly with the User the price for adopting the User's self-build assets.

NGET will, via NGESO, agree both the indicative and out-turned Gross Asset Value of the contestable Connection Assets, which will include;

- NGET's project management, design approval, inspection and testing costs to establish that the assets are suitable for adoption by NGET and related financing costs to facilitate User self-build.
- NGET's cost of adopting the User's self-build assets and NGET's financing charges upon the asset adoption cost to NGET, from adoption to point of Connection Charging. (The User's own financing costs up to point of adoption will be included within the negotiated asset adoption price)

Following commissioning NGET will revise its connection charges to NGESO accordingly.

Subject to these arrangements, NGET will adopt the self-built assets and assume responsibility for their ongoing maintenance and will levy annual connection charges for the adopted assets, for the avoidance of doubt including a return element.

Any wish on the part of the User to contribute, fully or partly, to the capital cost of the self-built Connection Assets should be declared to NGET, via NGESO, in advance. For the avoidance of doubt any capital contribution to the Connection Asset value includes a return element,

# PART 3

## De-Energisation and Disconnection Charges

Where NGESO 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 NGET.

NGET 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 NGESO to comply with the terms of their relevant agreement or carried out at the request of NGESO will be at the expense of NGESO.

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

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

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

# PART 3

## Termination Charges

### Early Termination of Commissioned Connections

Costs of new connections will be fully recoverable from NGESO in all circumstances, including the liability to pay a termination amount where a connection agreement is terminated by NGESO.

If a connection charge is paid by annual charges and NGESO gives notice of termination of the connection agreement prior to the expiry of the economic life of the Connection Assets, NGET will require NGESO to pay a Termination Amount. This will recover the Net Asset Value (NAV) of the Connection Assets plus the cost of removing the Connection Assets if required.

The Termination Amount will be calculated as follows:

- NGESO will be liable to pay an amount equal to the NAV of such Connection Assets as at the end of the financial year in which termination or modification occurs, plus:
- The reasonable costs of removing such Connection Assets. These costs being inclusive of the costs of making good the condition of the connection site; and
- If a Connection Asset is terminated before the end of a financial year, the connection charges for the full year remains payable.

The calculation of termination amounts for financial year n is as shown below:

$$\text{Termination Charge}_n = \text{OCC}_n + (\text{NAV}_n \times \text{PCCF}) + \text{RCA}$$

Where:

OCC <sub>n</sub>	= Outstanding Connection Charge for year n
NAV <sub>n</sub>	= NAV of Connection Assets at 31 <sup>st</sup> March of financial year n
Partial Capital Contribution Factor (PCCF)	= A factor applied to the Gross Asset Value to reflect any capital contribution payment made by NGESO to NGET for the Connection Assets deployed, being calculated as follows;
	$\text{PCCF} = \frac{(\text{GAV}_n - \text{capital contribution payments from NGESO})}{\text{GAV}_n}$
RCA	= Reasonable costs of removal of redundant Connection Assets and making good

Reasonable costs of removal for terminated Connection Assets and making good the condition of the site include but are not limited to:

- modifications to protection systems should a circuit breaker be decommissioned as a result of a User leaving a site, and
- civil engineering works associated with restoring ground levels as a result of removing Connection Assets.

### Re-Use of Connection Assets after Early Termination

Should Connection Assets be re-used from a previously terminated connection, such that NGET receives connection charges as a result of their use, part of the termination charge will be refunded to NGESO. The amount refunded will depend on the proportional extent to which the original income stream is replaced. The refund will be based on the NAV at the time the asset is brought back into use, less the cost of maintaining and storing the asset whilst out of service.

A partial refund of the termination payment will be made provided clear financial evidence of payment of such termination amount is provided by NGESO.

# PART 3

## Early Termination of Transmission Reinforcement Works

When a TO construction agreement for a connection is terminated by NGESO prior to completion of the works, in addition to the costs incurred at the time of termination for Connection Assets, then NGESO must also pay to NGET the costs incurred at the time of termination for any transmission works which were required as a direct consequence of the NGESO Construction Application.

## Early Replacement

If NGET considers that Connection Assets require to be replaced prior to the end of their normal economic lifetime, the replacement costs will be borne by NGET within the remaining economic life of the original Connection Assets. On expiry of the expected lifetime of the original Connection Assets, the connection charge will be recalculated taking account of the NAV of the replacement Connection Assets, together with the normal provision for depreciation.

## Transmission Operation and Maintenance Costs

Operating and Maintenance charges for all standard transmission assets, (i.e. excluding Connection Assets, One-Off works and transmission charged assets) will be collected through General System Charges and are not addressed in this statement.

Operation and Maintenance costs related to Connection Assets are recovered through the Site-Specific Maintenance (SSM) factor and the Transmission Running Cost (TRC) factor in the non-capital component of the connection charge.

Operation and Maintenance costs related to One-Off works and transmission charged One-Off works are recovered through the One-Off Asset Maintenance (OAMF) factor and the One-Off Asset Running Cost (OARC) factor set out in this statement.

## Charges for Land Purchase, Consents and Wayleaves

Any capital costs incurred in providing a new or modified connection relating to planning and other statutory Consents; all wayleaves, easements, servitude rights, rights over or interests in land or any other consent; and permission of any kind as required for the construction of the connection shall be paid to NGET by NGESO.

These costs will cover all of NGET's engineering charges and out-of-pocket expenses incurred.

These out-of-pocket expenses may include planning inquiries or appeals; the capital costs together with reasonable legal and surveyors' costs of landowners or occupiers in acquiring permanent easements, or other rights over land, in respect of any electric line or underground cable forming part of the new transmission connection.

Charges for legal costs associated with land purchase or access Consents would be due under the TO construction agreement for connection applications. Costs of this work will be charged in accordance with the charge-out rates in Appendix 3.

For the avoidance of doubt no land purchase costs will be included in Connection Charges.

## Civil Engineering Costs of Connection Sites

Where a substation site may accommodate infrastructure assets in one area of the building or outdoor compound, and sole-use Connection Assets for one or more Users in another area of the same substation site, the civil engineering costs including that share of the costs of preparing a level, drained site for the accommodation of the sole-use Connection Assets would be included in the connection costs. This share of civil engineering costs will be allocated based on the "substation footprint" of the sole-use Connection Assets at the substation site.

## Energy Metering Systems

The charges to NGESO for the provision of metering systems will be on a similar basis as other NGET Connection Assets. The electronic components of the energy metering system normally have a 15-year replacement and depreciation period whilst the non-electronic components normally retain a 40-year replacement and depreciation period.

# Appendix 1 : Indicative Connection Asset Charges

This schedule provides an indication of typical costs, exclusive of VAT, for additions to NGET's transmission system. The costs shown are current at the time of

publication only and are subject to change without notice and may also vary depending upon system configuration, Consents, site conditions etc.

## Illustrative Connection Asset Gross Asset Values and Annual Connection Charges

	£k					
	400kV		275kV		132kV	
	GAV	Annual Charge	GAV	Annual Charge	GAV	Annual Charge
Double Busbar Bay	2419	191	1986	157	1173	93
Single Busbar Bay	2068	163	1690	134	1058	84
<b>Transformer Cables 100m (incl. Cable sealing ends)</b>						
120MVA						
180MVA			1598	126	1187	94
240MVA	1721	136	1598	126	1201	95
750MVA	1723	136	1608	127	1209	96
<b>Transformers</b>						
45MVA 132/66kV					5085	402
90MVA 132/33kV					5354	423
120MVA 275/33kV			5550	438		
180MVA 275/66kV			6130	484		
180MVA 275/132kV			6631	524		
240MVA 275/132kV			6793	537		
240MVA 400/132kV	7093	560				

Factors which can affect these charges are:

- Standards governing the system,
- Length of cable/line required from existing system,
- 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,
- Generation capacity characteristics,
- Exit Point demand and characteristics,
- Special security of supply requirements – greater or less than NGET licence standards,
- Availability of wayleaves/easements for cables and lines including planning Consents,
- Availability of suitable substation sites including any necessary planning Consents,
- Circuit routing difficulties, substation site conditions and access to routes and sites, and
- Necessity of overtime working

# Appendix 1 : Indicative Connection Charges

## Notes on Assets

<b>Busbar Bays Assumptions</b>	<b>Plant</b>	- the bay is considered from NGET standard bay drawings and tendered prices provided for protection, cabling, auxiliary systems, earthing are based on various assumptions.
	<b>Civil</b>	- Normal base sizes & dimensions of concrete footings, good ground condition, includes landscaping but access works and drainage costs elsewhere.
<b>Busbar Bays Exclusions</b>	<b>Plant</b>	- Overall Substation Protection, Main Control and SCADA systems. Auxiliary supplies such as AC/DC system and electrical design costs.
<b>Transformer Cables Assumptions</b>	<b>Assumptions - All based on 1 circuit of 1 cable per phase, 100m straight, flat and unimpeded route</b>	
	XLPE Lead/AlI sheathed cable supply, install, commission with High Voltage AC & Sheath Testing	
	Earth Continuity Cable (ECC) & Link Boxes supply, Installation & Connection included.	
	DTS c/w terminations into Fibre Optic Terminal boxes on AIS support - on 275kV only.	
	Cable installed in ducts/trenching	
	Connection & Modifications to earth mat.	
	P&C Duct (1x90mm) included (Max 100m excluding cable(s))	
	Excavation waste disposal, site establishment/preliminary works, security & access costs included.	
	Standalone project(s) with its own design/project team.	
	Costs do not allow for any small quantity/MOQ surcharge that may be levied by cable supplier.	
	Others - VAT and inflation	
<b>Transformers Assumptions</b>	1) Costs include supply & installation of:	
	- Auto/grid transformer	
	- Auxiliary/earthing transformer (where applicable)	
	- Neutral earthing resistor (where applicable)	
	- HV disconnecter bay (combined with associated equipment)	
	- LV circuit breaker (combined with associated equipment)	
	- Protection upgrade modifications	
	- LV cabling works (where applicable)	
	2) Civil works to include the following:	
	- Transformer plinth/bund	
	- Disconnecter Bay civils	
	- Earthing upgrade works	
<b>Transformers Exclusions</b>	<b>Plant</b>	- Bay protection, control and SCADA system, (considered under part of the Busbar Bay costs) auxiliary supplies such as AC/DC system (considered under part of the Busbar Bay Costs)
	<b>Civil</b>	- Piling
	<b>Others</b>	- VAT and Inflation



## Appendix 2 : Fixed Application Fees

Fees will be applied based on whether the connection is made directly to NGET's system (as Host TO) or connected to another party's system (with NGET being an Affected TO).

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 NGESO. All fees are subject to the addition of VAT. No application fee is payable for any NGETTO initiated works.

The MW (Mega-Watt) value is the final value applied for.

Application Type	MW	Host TO	Affected TO
New Onshore Application (Entry) / TEC change	<100MW	£24,000	£12,000
	100MW-249MW	£38,213	£19,107
	250MW-1800MW	£67,981	£33,991
	>1800MW	£116,092	£58,046
New Onshore Supply Point (Exit) or New Onshore Modification Application to Existing Supply Point (Exit)	<=100MW	£28,899	£14,450
	>100MW	£37,669	£18,835
New Offshore Application (Indicative Only) (Per connection site)	-	£61,231	£30,616
Statement of Works (Exit)	-	£2,874	£1,437
Project Progression (Exit)	-	£16,832	£8,416
New Onshore Application BEGA/BELLA	-	£8,623	£4,312
Mod App Admin Change (All)	-	£2,791	
Storage	-	Not used	
Application Modification Rates			% Rate
Modification Application (Exit)			0.75
Modification Application BEGA / BELLA			0.75
Offshore Modification Application			0.75
Onshore Modification Application			0.75
Other Application Types			Charge
Reactive Only Service Provider (e.g. Pathfinder)			£11,163

### Statement of Works

In response to any Statement of Works request, NGET 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. In the event the Statement of Works response provided by NGET to NGESO show that transmission works are required by the embedded distribution connection, NGESO will be required to submit a formal Modification Application as follows.

## Appendix 3 : Charge-Out Rates

Role/Seniority	Rate (£/day)
1 - Senior Management ; Legal	959
2 - Departmental Management	895
3 - Senior members of staff (Engineering; Commercial)	840
4 - Standard (Engineering; Commercial)	708
5 - Junior staff	657
6 - Support staff	593
7 - Admin staff	530

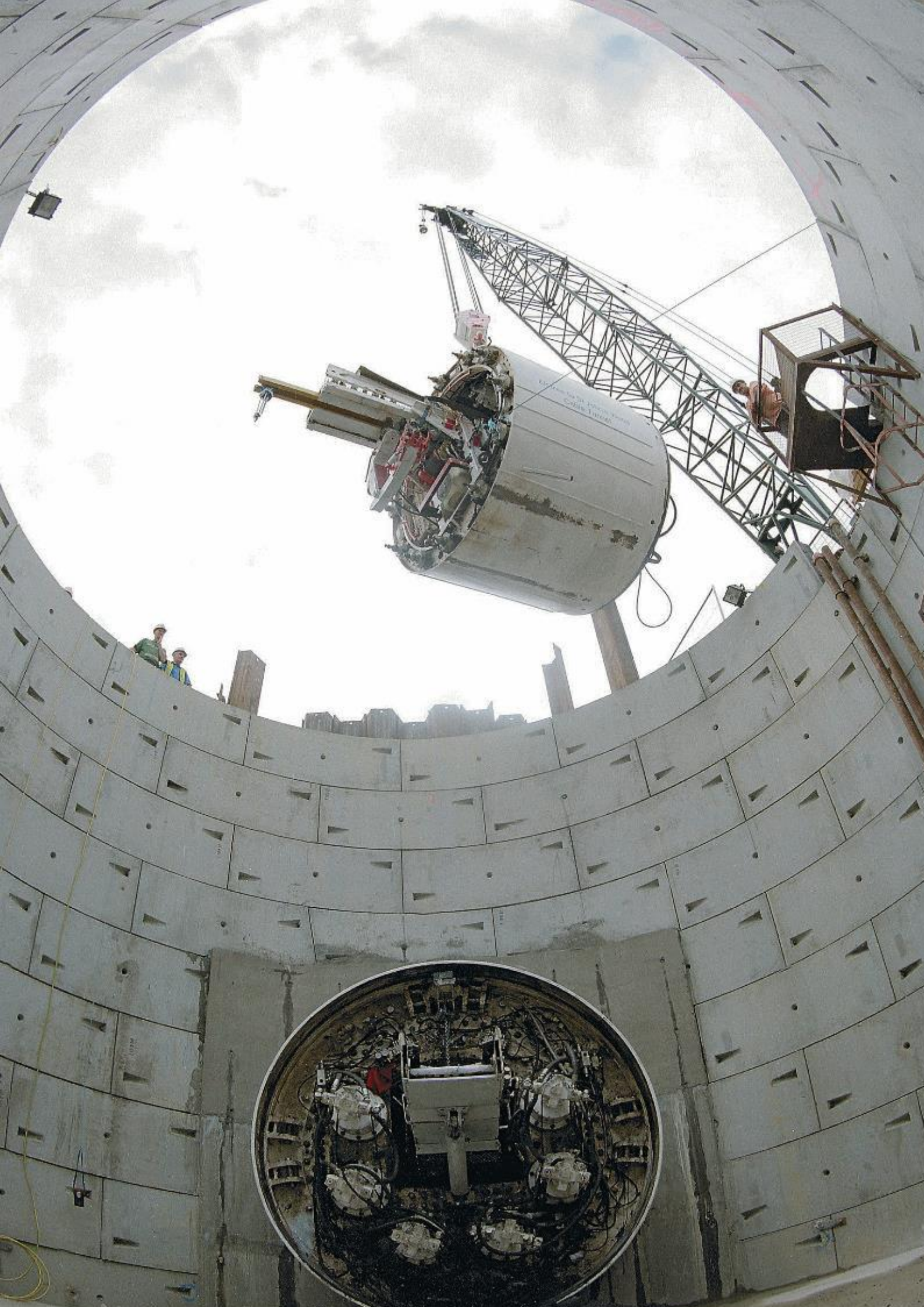
All fees are subject to the addition of VAT.

# Glossary

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.
Allowed TO Revenue	as set out in TO's Transmission Licence.
Authority	The Gas and Electricity Markets Authority (GEMA) established under Section 1 of the Utilities Act 2000.
BETTA	British Electricity Trading and Transmission Arrangements.
BETTA Go-Live	Date 1 <sup>st</sup> April 2005
Bilateral Connection Agreement	An agreement between NGESO and the User covering the connection to the TO's transmission system.
CEC	Connection Entry Capacity as defined in the CUSC.
Charging Date	The date upon which the Construction Works are first Commissioned and available for use by the User, as more particularly defined in the CUSC Construction Agreement, irrespective of the User's readiness to use the Construction Works;
Connection Site Specification	As defined in Section D, Part One, sub-paragraph 2.6.1 of the STC.
Consents	In relation to any transmission system and or connection works: - a) all such planning (including Public Inquiry) and other statutory consents; and 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; and c) permission of any kind as shall be necessary for the construction of the works
CUSC	Connection and Use of System Code
Entry Point	A point of connection at which electricity may be exported from a User's installation onto the Transmission System i.e. Generation.
Exit Point	A point of connection at which electricity may flow from the Transmission System to the User's installation, i.e. Demand.
Host TO	The TO which will electrically connect the User to a transmission system which is owned or operated by that TO.
MEA	Modern Equivalent Asset
NGESO	National Grid Electricity System Operator Ltd
NGET	National Grid Electricity Transmission Plc
Pre-BETTA	Before 1 <sup>st</sup> April 2005
Pre-Vesting	Means on or before 31 <sup>st</sup> March 1990
Price Control	As set out in the TO's Licence
Post-Vesting	Means after 31 <sup>st</sup> March 1990
Consumer Price Index (CPIH)	CPIH INDEX 00: ALL ITEMS 2015=100 "L522" published by the Office for National Statistics and as amended monthly.
SO	System Operator. This being NGESO.
STC	The System Operator - Transmission Owner Code.
TO	An onshore or offshore Transmission Owner. This being National Grid Electricity Transmission plc
Transmission Interface Site	the site at which the Transmission Interface Point is located.
Transmission Interface Point	means the electrical point of connection between the Offshore Transmission System and an Onshore Transmission System.
Transmission Licence	Transmission Licence granted or treated as granted under section 6(1)(b) of the Act.
Transmission Voltage	In England and Wales usually voltages above 132kV.
User	A generation or demand customer or Distribution System Operator connected to NGET's transmission system and party to NGESO's bilateral agreement(s).

# Revision history

Issue	Description	Modifications
5.0	01/04/2023 Publication	<ol style="list-style-type: none"> <li>1. Page 12 - Routine update of NGET rate of return</li> <li>2. Page 13 - Routine update of NGET Site Specific Maintenance factor</li> <li>3. Page 21 - Minor clarification to make clear that One-Off charges quoted in NGET's offers are indicative and subject to correction to out-turned values following completion of works.</li> <li>4. Page 21 - Routine update of NGET One-Off Asset maintenance factor</li> <li>5. Page 21 - Minor housekeeping correction to footnote on category 3 inter-trips to make reason for use of such inter-trips clearer in line with Grid Code definition of that type of inter-trip.</li> <li>6. Page 30 - Routine update of illustrative costs of major asset types and illustrative connection charges for 23/24.</li> <li>7. Page 32 - Minor housekeeping - Table heading amended to further clarify table on page 20 is for fixed price applications only, as already stated on page 20.</li> <li>8. Page 33 - Routine update of charge-out rates</li> <li>9. Page 34 and throughout document Correction of CPI and D7BT references to CPIH and L522 respectively. CPIH L522 derived indexation has been used by NGET in line with CPIH use in PCFM indexation.</li> </ol>



**National Grid plc**

National Grid House,  
Warwick Technology Park,  
Gallows Hill, Warwick.  
CV34 6DA United Kingdom  
Registered in England and Wales  
No. 4031152