ScottishPower
EnergyNetworks

METHODOLOGY STATEMENT DETAILING THE BASIS OF SP DISTRIBUTION'S USE OF SYSTEM CHARGES

APPLICABLE FROM 1 APRIL 2007

THIS STATEMENT IS SUBJECT TO THE APPROVAL OF THE GAS AND ELECTRICITY MARKETS AUTHORITY

METHODOLOGY STATEMENT DETAILING THE BASIS OF SP DISTRIBUTION'S USE OF SYSTEM CHARGES

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1 INTRODUCTION

This statement describes the Use of System Charging Methodology under which authorised users will be charged for use of SP Distribution's electricity distribution system.

Words and expressions used in this statement have (unless specifically defined herein) the definitions given to them in the Electricity Act 1989 ('the Act') or SP Distribution's Distribution Licence ('the Licence') and shall be construed accordingly.

This statement has been approved by the Gas and Electricity Markets Authority (the Authority). A fee of £10 (excluding VAT) will be payable for each copy of this statement which is provided in accordance with a request. The most recent version can also be obtained from the library section of the ScottishPower website at www.ScottishPower.com.

1.1 ScottishPower Companies

ScottishPower's Infrastructure Division includes the UK wires businesses, which comprises three asset owning companies and an asset management company. This structure was introduced in October 2001 to comply with the Utilities Act 2000.

The companies within the Infrastructure Division are:

SP Transmission Ltd which owns the transmission network in south and central Scotland (132 kV and above), and the Scottish land-based part of the interconnector linking Scotland and Northern Ireland;

SP Distribution Ltd, which owns the distribution network (from 33 kV downwards) in south and central Scotland;

SP Manweb plc, whose distribution system is located in Merseyside, Cheshire and North Wales; and

SP Power Systems Ltd which manages and maintains the networks on behalf of the three asset owners.

The three asset owning companies, which hold the transmission and distribution licenses, fall within the responsibility of SP Transmission & Distribution, a business unit within the ScottishPower Infrastructure division.

1.2 Licence Obligations

SP Distribution is obliged, under Licence Condition 4, of its electricity distribution licence, to prepare a statement (the Methodology Statement) approved by the Authority setting out the methodology upon which charges will be made for the provision of Use of System. We are also obliged to review our charging methodology annually to ensure it continues to achieve the 'relevant objectives' and, where necessary make such modifications to the charging methodology that better achieve these. The 'relevant objectives' are:

(a) that compliance with the use of system charging methodology facilitates the discharge by the licensee of the obligations imposed on it under the Act and by this licence;

(b) that compliance with the use of system charging methodology facilitates competition in the generation and supply of electricity, and does not restrict, distort, or prevent competition in the transmission or distribution of electricity;

(c) that compliance with the use of system charging methodology results in charges which reflect, as far as is reasonably practicable (taking account of implementation costs), the costs incurred by the licensee in its distribution business; and

(d) that, so far as is consistent with sub-paragraphs (a), (b) and (c), the use of system charging methodology, as far as is reasonably practicable, properly takes account of developments in the licensee's distribution business.

1.3 Price Control

SP Distribution is a licensed distribution business regulated by the Authority. The regulation is applied via the Distribution Licence and the price control mechanism. The price control period is 5 years and Ofgem prescribe the amount of revenue that SP Distribution is allowed to recover from its customer base annually and over the price control period. Use of System charges may vary year on year as SP Distribution sets its use of system charges to recover its allowed revenue.

1.4 Use of System

SP Distribution will levy use of system charges for utilisation of its network for the supply of electricity to end users and/or the transportation of electricity across its network from entry points. SP Distribution's Use of System tariffs are published in our Licence Condition 4A Use of System Charging Statement ('Charging Statement').

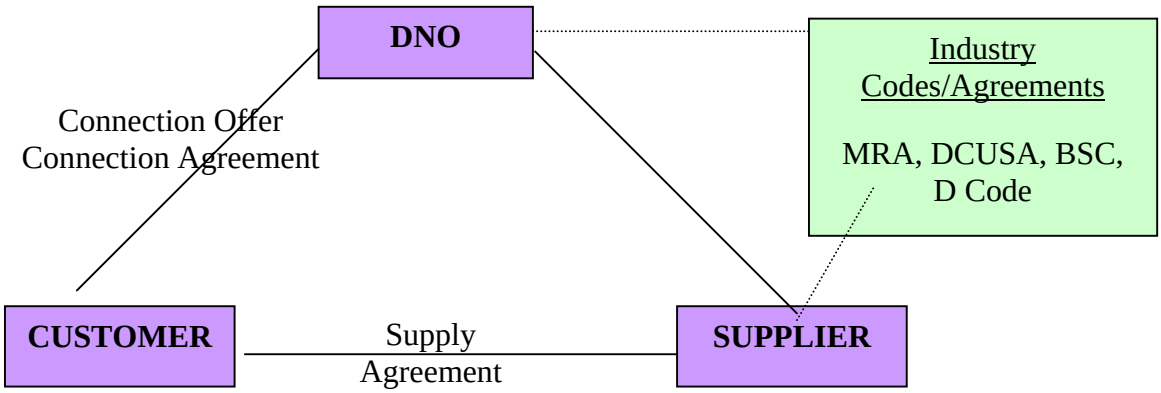
1.5 Connection and Use of System Boundary

SP Distribution splits the recovery of costs into charges for connection to the distribution network and charges for use of the network. The boundary point on the network for demarcation of these charges is identified using common rules for both demand and generation customers. This statement details the charging methodology that is applied for the calculation of use of system charges. The Charging Statement details the use of system charges that are applied, whilst the Licence Condition 4B Statement ('Connections Statement') details the connection charging methodology that is used for the calculation of connection charges. The latter statement also contains indicative charges and examples to aid understanding of connection charges. These statements can be obtained from our web-site, www.ScottishPower.com, and they are also available on request at a cost of £10 by following up the contact details on page 5.

1.6 The Contractual Framework

Users entitled to use SP Distribution's electricity distribution system are those who are authorised by Licence or by exemption under the Act to supply, distribute or generate electricity. In order to protect all Users of the system, SP Distribution will require evidence of authorisation before agreeing terms for use of the system. NOTE: In the rest of this commentary, requirements applying to authorised Users or Authorised Electricity Operators should be taken to mean Licensed Suppliers, Licensed Embedded Electricity Distributors or Licensed Generators.

High Level Contractual Framework



Users seeking to use the system will be required, prior to using the system, to enter into an agreement with SP Distribution setting out the obligations of both parties. The party seeking use of the system will be required to:

- pay all charges due in respect of use of the system as described in this statement and the accompanying schedules;
- be a party (where the person is a Licensed Supplier) to the Master Registration Agreement (MRA) for the provision of metering point administration services within SP Distribution/SP Manweb's authorised area;
- enter into the National Grid Company's (NGC) Connection and Use of System Code and any necessary Bilateral Agreement, governing connections to and use of NGC's transmission system, unless SP Distribution is informed by NGC that this is not required in any particular case;
- be a party to the Balancing and Settlements Code; and
- comply with the provisions of the Distribution Code (copies can be downloaded at www.dcode.org.uk).

If the applicant and SP Distribution fail to agree contractual terms, or any variation of contractual terms proposed by SP Distribution, either party may request settlement by the Office of Gas and Electricity Markets (OFGEM).

While the terms and conditions in the agreements will be consistent with those in this statement, the agreement will take precedence. Where a User, having entered an agreement for use of SP Distribution's electricity distribution system, ceases for whatever reason to be a User with respect to that use of the system, then the entitlement to use of the system will cease forthwith, but the User will continue to be liable under the agreement unless and until the agreement is terminated. In order to avoid any liability in this regard, a User wishing to terminate his agreement or wishing to notify a change should give SP Distribution no less than 28 days' notice. SP Distribution will normally respond within 28 days of a notification of change.

Terms and conditions for connection of premises or other electrical systems to SP Distribution's electricity distribution system are contained in the Connections Statement, which is available from SP Distribution on request. Persons seeking use of the system with respect to a new supply, must apply for connection in accordance with the terms and conditions described in that statement.

Where a person requires a connection to SP Distribution's electricity distribution system pursuant to Section 16 of the Electricity Act (as amended), the provisions of this statement are without prejudice to the provisions of sections 16 to 22 of the Electricity Act (as amended) (those sections which deal with the rights, powers and duties of SP Distribution, as an electricity distributor), in respect of the distribution of electricity to owners or occupiers of premises.

1.7 Contact Information

This statement has been prepared in accordance with SP Distribution's Licence Condition 4. If you have any questions about the contents of this statement please contact us at the address shown below. Also given below are contact details for the Office of Gas and Electricity Gas Markets should prospective users wish to enquire separately on matters relating to this statement.

For enquiries about this statement, please contact in the first instance: -

Commercial Section
SP PowerSystems
New Alderston House
Dove Wynd
Strathclyde Business Park
Bellshill
ML4 3FF

Email: commercial@sppowersystems.com

Tel. No. 01698 413512
Fax No. 01698 413053

Persons seeking further information on any aspect of this document may also contact:

OFGEM
9 Millbank
London
SW1P 3GE

Tel: 0207 9017000
www.ofgem.gov.uk

2 PRINCIPLES

The following paragraphs relate to the transport of electricity on SP Distribution's system by Users of the system.

1. Where electricity is transported over electric lines or electrical plant comprising a part of SP Distribution's system, a charge for use of the system will be levied on the user. The relevant use of system charges are described in our Charging Statement and are payable by reference to the characteristics of the supply, in accordance with the categories of supply described in the Schedule. Where the Use of System Agreement is combined with a Connection Agreement and the site is registered in the CVA registration system, other parties may be responsible for Use of System charges, by agreement between the parties. The charges for each category of supply depend upon the criteria that determine eligibility for that category, including the voltage of connection to the system, the characteristics of the load, and installation of the appropriate use of system metering.

2. The charges for use of the system reflect:

   - the costs of providing, operating and maintaining the distribution system to the standards prescribed by the Act, other than those costs which are recovered through the charges paid to SP Distribution in respect of connection to the system, and

   - the costs to SP Distribution of providing certain services and performing functions for Users, on terms which SP Distribution is under a duty to offer under its Electricity Distribution Licence, in order to support the operations of a fully competitive supply market in its authorised area. These services include; Metering Point Administration Services; Energisation and De-energisation and Re-energisation services; and Radio Teleswitch Services. SP Distribution is either wholly or partly remunerated through use of system charges or through transaction charges for these services. The cost for provision of these services is detailed in our Charging Statement.

   All charges for use of the system include a reasonable return on the relevant assets, and the revenues arising from the charges are subject to regulation in accordance with the terms of the Licence.

3. Charges to Users for the use of the system are evaluated as if from SP Distribution’s Grid Supply Points. These charges reflect real electrical flows on the system and the need to provide adequate capacity at all voltage levels to protect the security of the system. Charges are applied to the electricity as measured at the exit or entry points, as indicated in paragraph 6 below.

4. The Users via its meter operator must ensure that the data provided by the metering meets SP Distribution’s requirements for use of system billing purposes. In addition, SP Distribution reserves the right to install metering equipment for monitoring purposes; if SP Distribution exercises this right, no charge will be made for this equipment.

Charges exclude the costs of meter provision and operation. Details of metering charges are covered in a separate document, 'Statement of Basis of Charges for Use of SP Distribution's Metering Services', which is available upon request at a cost of £10.

5. Charges for use of system will normally be payable on demand, in accordance with the billing period and payment terms agreed with the party using the system. SP Distribution reserves the right to require appropriate security in respect of the charges estimated to arise, depending on the circumstances of the supply and on the basis of the agreed payment terms. Interest payment may be applied to late payments. Invoices for residential and [most/some] business supplies will generally be calculated according to the Supercustomer Methodology for Use of System Billing, a description of which is given in our Charging Statement.

6. Where a supply is to be provided wholly or partly over SP Distribution's electricity distribution system to an exit point from that system, the Users must demonstrate that at all times that the quantity of electricity entering the system for the purpose of providing that supply equals the metered quantity delivered from the system to that exit point plus the amount of electrical losses appropriate to the voltage at which the supply is delivered and to the source of the supply, as shown in the Schedule of Loss Adjustment Factors (Schedule 5) of our Charging Statement. However, the settlements process uses additional adjustments to calculate supplier liability for purchases. Relevant metering information or membership of the Balancing and Settlement Code will be considered to meet the criteria for demonstrating that the supplier has provided adequate energy to the system.

7. Where a supply is to be provided over SP Distribution's electricity distribution system on either an intermittent or continuing basis to any premises with own generation, charges for use of the system will be levied with respect to the system capacity provided to meet the maximum power required as requested by the party seeking use of the system. Other charging components may also be applicable depending on the voltage of connection, the use of reactive power and the capacity required.

8. Where SP Distribution, after evaluation of the characteristics of the requested use of the system, accepts that none of the categories of charges in the schedules of our Charging Statement is appropriate, SP Distribution will offer special arrangements, such charges will be calculated according to the same principles as the other use of system charges. SP Distribution will normally make its offer of terms within 28 days of receiving the application, following receipt of the full and final information necessary for the preparation of the terms.

9. Where use of the system is sought at a standard of security different from that referred to in the Distribution Code, SP Distribution may consider special arrangements with respect to that supply. Where the power factor of the supply is less that 0.95, it will normally be possible for SP Distribution to offer use of system, subject to appropriate charges (see our Charging Statement). In such

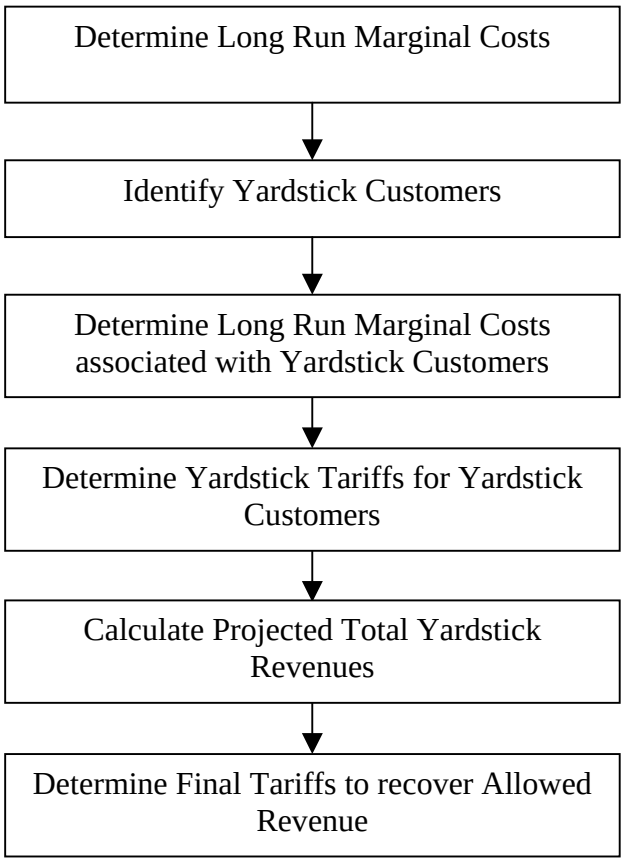
cases, specially assessed loss adjustment factors may apply at SP Distribution discretion.

10. In all cases the charges for use of the system include a contribution to recovery of NGC's transmission charges. These amounts are calculated to be appropriate to each class of customers. This is on the basis that the total contribution to NGC's transmission charges paid by any class of customers is in proportion to the use of that class of customer.

11. Charges to generators for use of SP Distribution's system will be made for use of the system in respect of electricity that the generator imports from and exports to the system. The generator will be charged for use of system in respect of such imports or exports in accordance with paragraphs 1 to 10 above.

3 USE OF SYSTEM METHODOLOGY – REGULATED DEMAND TARIFFS

Regulated demand tariffs are set using the following methodology.



3.1 Determine Long Run Marginal Costs

Long Run Marginal Costs are determined for the following cost categories:-

- Transmission Costs
- 33kV Network Costs
- 33kV/ HV Substation Costs
- HV Network Costs
- HV/ LV Substation Costs
- LV Network Costs
- Service/ Connection Asset Costs
- Customer Related and Billing Costs

3.1.1 Transmission Costs

These are determined by the total forecast Transmission Charges levied for demand and divided by the total capacity to produce a £ per kVA cost.

The proportion of transmission capacity provided to meet peak morning, afternoon and night-time demands are also determined based on current usage and forecast projections.

3.1.2 33kV, HV and LV Network Costs

These are determined by establishing the cost per kVA in providing additional network capacity based on current design and network security standards and standard equipment sizes. Capital costs for each voltage level of the system are then calculated using current prices from SP Distribution's estimating package. Typical circuit lengths are derived from analysis of the historic network and the ratio of overhead lines to cable networks, is based on an assessment of current and forecast construction trends rather than the historical mix. The Gross Asset Value is converted to an annuitised yardstick cost using assumed asset lives and the cost of capital.

Operation and maintenance costs including other business costs such as rates are calculated as a percentage of the Gross Asset Value. This percentage is derived using total forecast costs and the modern equivalent value of the existing distribution network.

The proportion of networks provided to meet peak morning, afternoon and night-time demands are also determined based on current usage and forecast projections.

3.1.3 33kV/HV and HV/LV Substation Costs

These are determined by establishing the cost per kVA in providing additional firm transformer capacity based on current design and network security standards and standard equipment sizes. Capital costs for each voltage level of the system are then calculated using current prices from SP Distribution's estimating package. The Gross Asset Value is converted to an annuitised yardstick cost using assumed asset lives and the cost of capital.

Operation and maintenance costs including other business costs such as rates are calculated as a percentage of the Gross Asset Value. This percentage is derived using total forecast costs and the modern equivalent value of the existing distribution network.

The proportion of networks provided to meet peak morning, afternoon and night-time demands are also determined based on current usage and forecast projections.

3.1.4 Service/Connection Asset Costs

These are determined by establishing the cost per customer type in providing the connection to the appropriate network, for example, for domestic customers it would consist of the service cable and cut-out. The customer types are as detailed in 3.2 below. Capital costs are calculated using current prices from SP Distribution's estimating package. The Gross Asset Value is converted to an annuitised yardstick cost using assumed asset lives and the cost of capital.

Operation and maintenance costs including other business costs such as rates are calculated as a percentage of the Gross Asset Value. This percentage is derived using total forecast costs and the modern equivalent value of the existing distribution network.

3.1.5 Customer Related and Billing Costs

These are determined by establishing the cost per customer type in providing customer service and billing. The costs include the annualised costs associated with support IT Systems. The customer types are Super-customer, Half-Hourly and Site-Specific.

3.2 Identify Yardstick Customers

The following Yardstick Customers are used to determine tariffs as these represent the major types of customer.

- Domestic Unrestricted
- Domestic Electrically Heated
- Business Unrestricted
- Business Electrically Heated
- Other Off-Peak Supplies
- Non-Half-Hourly Metered Customers connected to the LV Network
- Half-Hourly Metered Customers connected to the LV Network
- Half-Hourly Metered Customers connected to the HV Network
- Half-Hourly Metered Customers connected to the 33kV (EHV) Network
- Un-metered Street Lighting Supplies
- Un-metered Street 24 hour supplies

Connections to other distribution networks will be treated as Half-Hourly Metered Customers at the appropriate point of connection.

3.3 Determine Long Run Marginal Costs associated with Yardstick Customers

For each yardstick customer type, the average consumption and capacity are determined.

The demand in kVA at the voltage of connection is calculated using electricity load research demand coefficients and an assumed power factor for the type of customer. Demands are calculated for morning, afternoon and night-time peaks. Demands on higher voltage networks are then calculated taking account of network losses and diversity factors.

Long run marginal costs are then calculated using these demand figures and the costs associated with providing capacity at each voltage level calculated previously. The required capacity as opposed to the calculated demand is used at the voltage of connection.

Customer service costs are determined from the type of customer.

Total yardstick costs are then determined by applying the connection/use of system boundary rules. All customer related and operation and maintenance costs are recovered through use of system charges. A proportion of network costs at the voltage of connection, and up to one voltage level above, are recovered through connection charges. This connection/ use of system boundary is applied to identify total yardstick use of system costs for the type of customer.

For all half-hourly metered customers, yardstick incremental costs associated with poor power factor are used to determine a charge where the average power factor in the month drops below 0.95 lagging. These are determined by calculating the costs of providing the necessary additional equipment to bring the power factor to within acceptable limits. These are determined by establishing the cost per kVArh in providing reactive compensation. Capital costs for each voltage level of the system are calculated using current prices from SP Distribution's estimating package. The Gross Asset Value is converted to an annuitised yardstick cost using assumed asset lives and the cost of capital. Operation and maintenance costs including other business costs such as rates are calculated as a percentage of the Gross Asset Value. This percentage is derived using total forecast costs and the modern equivalent of the existing distribution network.

3.4 Determine Yardstick Tariffs for Yardstick Customers

In determining the appropriate tariff elements for each yardstick customer consideration is given to the following factors.

- Type of Metering Installed
- Availability of Data
- Billing System Capabilities

Yardstick Tariffs are produced for each Yardstick Customer and may include the following elements.

- Fixed Charge – this covers all the customer related costs and for customers billed under supercustomer, this will also include asset related costs at the voltage of connection.

- Capacity Charge – for customers with half-hourly metering (generally with a demand greater than 100kW) this will include asset related costs at the voltage of connection.

  Capacity charges are included to ensure that assets are sized for optimum utilisation on an enduring basis. Capacity charges are levied on an annual basis for the year commencing 1 April. To ensure over-sized assets are not requested by customers there are restrictions on when the requested capacity can be reduced. Where the capacity requested is exceeded then charges will be levied at the increased capacity back to 1 April. Customers who exceed their declared capacity are expected to request an increase in their supply arrangement and pay for any reinforcement necessary in accordance with our connection charge methodology and statement.

No reduction in the requested capacity will normally be permitted for a period of 5 years from the date that the capacity was first made available at the premises. This is to reflect the ongoing operation and maintenance costs of maintaining the assets installed to provide the connection. Further details can be found in the charging statement.

- Unit Charge (either single rate or day/ night) – recovers the shared assets above the voltage of connection, including NGC exit. Dual rate tariffs are available at low voltage. Half-hour hourly tariffs will generally include a dual rate charge where the billing system has the required capability. The applicable number of rates will be detailed in the charging statement.

- Reactive Charge – this is a charge where the average power factor falls below 0.95 lagging. Charges are levied for each kVArh imported in excess of 0.33 of the kWh imported in a month.

3.5 Calculate Projected Total Yardstick Revenues

The total yardstick revenue is calculated based on forecast customer numbers, consumption and other tariff components using the yardstick tariffs for each customer type.

3.6 Determine Final Tariffs to Recover Allowed Revenue

The total revenue that SP Distribution is allowed to charge is determined by its Price Control. In order to determine final prices yardstick tariffs are scaled in proportion to match the allowed revenue.

4 USE OF SYSTEM METHODOLOGY – EXTRA HIGH VOLTAGE DEMAND TARIFFS

An EHV premise is defined as a site connected to the distribution system at a voltage of higher than 22kV or at a substation with a primary voltage of 66kV or above.

With the exception of sole use assets, EHV tariffs are calculated using the Regulated Demand Tariff Model, as per Section 3.

- Fixed Charge – this covers all the customer related costs.

- Capacity Charge – this will include asset related costs at the voltage of connection and the shared assets above the voltage of connection, including NGC exit.

- Reactive Charge – this is a charge where the average power factor falls below 0.95 lagging. The methodology for determining the charges is as set out in paragraph 3.3. Charges are levied for each kVArh imported in excess of 0.33 of the kWh imported in a month.

4.1 Sole Use Assets Charges

The capital cost of any new assets provided for the sole use of the EHV site is recovered from the customer prior to energisation. This will be in the form of an upfront capital contribution in accordance with our connection charge methodology and statement.

The Gross Asset Value of the sole use assets is reviewed annually to take account of inflation and any modifications. An annual contribution towards the costs of on-going Operation and Maintenance is calculated using the Gross Asset Value and the Operation and Maintenance percentage used in the Regulated Demand Tariff Model.

For some existing EHV sites, where the cost was not originally recovered as a capital contribution, a capital charge is also recovered. This comprises of:-

(i) a depreciation charge calculated on a straight-line basis from the Gross Asset Value of the sole use assets, a nominal life of 40 years; and

(ii) a return charge calculated from the depreciated value of the asset and the cost of capital.

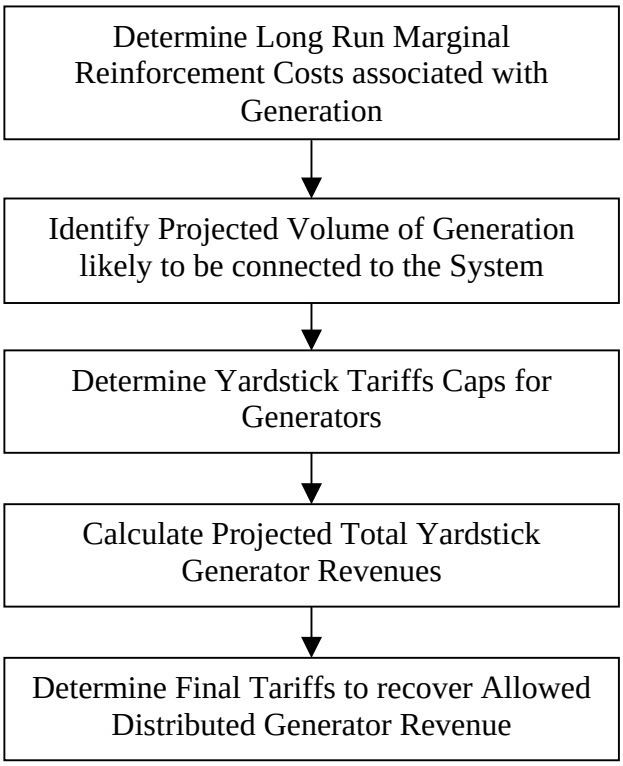
5 USE OF SYSTEM METHODOLOGY – GENERATOR EXPORT TARIFFS

For periods where a Generator is importing real power the appropriate demand tariff will apply. These charges will be levied on the registered supplier.

For periods where a Generator is exporting real power the appropriate generator tariff will apply. These charges will be levied on either the purchaser of the exported energy or the generator.

For EHV connected Generators, sole use asset charges will be calculated using the same methodology as for demand customers but will be recovered through the generator tariff and therefore recovered via the supplier registered for the export.

Generator tariffs are set using the following methodology.



5.1 Determine Long Run Marginal Reinforcement Costs associated with Generation

Long Run Marginal Costs associated with accommodating embedded generation are identified. This will include reinforcement costs that are not recovered from individual connection applications.

Capital costs for each voltage level of the system are then calculated using current prices from SP Distribution's estimating package. The Gross Asset Value is converted to an annuitised yardstick cost using assumed asset lives and the allowed cost of capital.

Operation and maintenance costs including other business costs are calculated as a percentage of the Gross Asset Value using total forecast costs and the modern equivalent value of the existing distribution network. For the avoidance of doubt, the operation and maintenance costs for Generators do not include a contribution to business rates.

The reinforcement costs may be calculated by voltage level, geographic location or a combination of the two. For example, the forecast costs for reinforcing the network for HV connected generation are likely to be based on known trends and hence the charges would not vary by location. For EHV connected generators, forecast reinforcement cost are more likely to be based on specific reinforcement schemes which would result in geographically varying charges.

The reinforcement costs in excess of £200/kW will be recovered as a connection charge.

For illustration purposes only, if the following general reinforcement is estimated to be required assuming 200MW of generation connects to the HV network.

Reinforcement @ 132kV	£5 million
Reinforcement @ 33kV	£2 million
Total Reinforcement due to 11kV Generation	£7 million
Expected Life	15 years
Allowed Cost of Capital	6.6%
Annuitised Annual Cost	£0.75 million
O&M of 132kV Assets @ 2% of GAV	£0.10 million
O&M of 33kV Assets @2.5% of GAV	£0.05 million
Total Annual Costs	£0.90 million

For all half-hourly metered Generators, yardstick incremental costs associated with poor power factor are used to determine a charge where the average power factor in the month drops below 0.95 leading. These are determined by calculating the costs of providing the necessary additional equipment to bring the power factor to within acceptable limits. These are determined by establishing the cost per kVArh in providing reactive compensation. Capital costs for each voltage level of the system are calculated using current prices from SP Distribution's estimating package. The Gross Asset Value is converted to an annuitised yardstick cost using assumed asset lives and the cost of capital. Operation and maintenance costs including other business costs are calculated as a percentage of the Gross Asset Value. This percentage is derived using total forecast costs and the modern equivalent value of the existing distribution network. Charges levied for each net kVArh imported in excess of 0.33 of the kWh exported in a month calculated in the periods that the generator is exporting real power.

5.2 Identify Projected Volume of Generation likely to be connected to the System

For each of the voltage levels and geographic areas identified in the long run marginal cost analysis the expected level of generation to be connected is forecast.

5.3 Determine Reinforcement Yardstick Tariff for Generators

For each of the voltage levels and geographic areas identified, a reinforcement Yardstick Tariff is calculated from the long run marginal cost analysis and the expected level of generation to be connected. A charge per kVA is calculated using a unity power factor.

For illustration purposes only, using the previous example

Yardstick Annual Costs for 11kV connected Generation	£0.90 million
Expected level of 11kV connection generation	200 MW
Yardstick Tariff at unity power factor	£4.50 per kVA

SP Distribution will set Yardstick Tariffs based on projected reinforcement costs associated with connecting a certain level of distribution generation. The Yardstick Tariffs may be set for the whole DNO area, or there may be different tariffs for geographic areas or different connection voltages.

The Yardstick Tariffs are set to ensure that assets are sized for optimum utilisation on an enduring basis. Capacity charges are levied on an annual basis for the year commencing 1 April. To ensure over-sized assets are not requested by generators there are restrictions on when the requested capacity can be reduced. Where the capacity requested is exceeded then charges will be levied at the increased capacity back to 1 April. Generators who exceed their declared capacity are expected to request an increase in their supply arrangement and pay for any reinforcement necessary in accordance with our connection charge methodology and statement.

No reduction in the requested capacity will normally be permitted for a period of 5 years from the date that the capacity was first made available at the premises. This is to reflect the ongoing operation and maintenance costs of maintaining the assets installed to provide the connection. Further details can be found in the charging statement.

SP Distribution may set different Yardstick Tariffs by providing 3 months' notice and publishing the charges in its Charging Statement. These amendments will not affect Generators that are already connected or have accepted a connection offer.

5.4 Determine Final Tariffs to recover Allowed Revenue

Ofgem have proposed a mechanism to incentivise SP Distribution to connect distributed generators to its electrical network. The mechanism allows SP Distribution to recover a percentage of the reinforcement costs associated with connection of generation and a value per kW of generation connected which includes an allowance for operation and maintenance costs. This approach involves the creation of a generation regulatory asset base and the development of a distributed generation (DG) allowed revenue income stream.

The total revenue allowed by SP Distribution is determined by its Distributed Generation Price Control. In order to determine final prices, the Yardstick Tariffs are scaled proportionately to match allowed revenue to produce a Network Charge for each generator.

The Network Charge for generators requiring half-hourly metering will be on a £/kVA basis. For non-half-hourly metered generators the Network Charge will be on a p/kWh basis to allow charging using data provided by the settlement process.

In recognition of the expected greater volatility with generator export tariffs, in the period to 2010, annual price increases will be restricted to the greater of 10% per annum or £1/kVA (0.5p/kWh for non-half-hourly metered generators).

5.5 Network Unavailability Rebates

By prior agreement with Generators connected after 1st April 2005, SP Distribution will rebate generators for network unavailability where a physical break in the distribution system prevents the generator from exporting power.

The precise arrangements applying to unavailability rebates will be the subject of bilateral discussion between SP Distribution and the generator and will be included in the generator's connection agreement. A rebate of zero will normally be applicable where the generator has requested an 'unfirm' connection to the distribution system.

The duration of any network interruption will exclude:

- 50 per cent of the duration of interruptions due to pre-arranged outages for which statutory notifications have been issued.
- cases that are exempted events in the quality of service incentive.

The rebates only apply to generators connect at HV and above.

Rebates will be paid annually covering the period 1 April to 31st March. Rebates will not exceed the annual use of system charges for the generator.

A de-minimis level of rebate will also apply.

5.6 Generators connected prior to 1 April 2005

Existing generators have no liability for use of system charges whether they import or export real power and liable for no reactive charges. With effect from 1 April 2005 generators will become liable for use of system charges when they import real power. For periods when generators export real power no charges will be levied until 2010.

6 USE OF SYSTEM CHARGES

6.1 Where our Use of System Charges are published

SP Distribution's Use of System tariffs are published in our Licence Condition 4A Statement. This can be obtained from our web site, www.scottishpower.com, or available on request at a cost of £10 by following up the contact details on page 5.

GLOSSARY

The following definitions are intended to assist the reader's understanding of this document.

"Act"	The Electricity Act 1989 as amended by the Utilities Act 2000.
"Authority"	The Gas and Electricity Markets Authority as established by the Utilities Act.
"BSC"	Balancing and Settlements Code – wholesale electricity trading arrangements introduced in England and Wales 2001 are designed to provide greater competition, while maintaining a secure and reliable electricity system.
"Connection Charging Methodology"	The principles on which and the methods by which, for the purposes of achieving the objectives referred to in paragraph 3 of standard condition 4B (Connection Charging Methodology Statement), connection charges are determined.
"CUSC"	Means the Connection and Use of System Code governing connection to and use of NGC's transmission system.
"CVA"	Central Volume Allocation.
"De-energisation"	Means the movement of any switch, the removal of any fuse, or the taking of any other step to deliberately prevent the flow of electricity from the Distribution System to the connection.
"Distribution Code"	The Distribution Code, the document produced by each Distributor in accordance with Condition 9 of its Licence and approved by Ofgem to define the technical aspects and planning criteria of the working relationship between the Distributor and all those connected to its Distribution System.
"Distribution Licence"	Refers to the Electricity Distribution Licence.
"Distribution System"	The whole of our interconnected distribution equipment, including such items as; cables, overhead lines and substations, which we operate in accordance with our Licence.
"Distributed Generator"	A generator with a direct connection to a Distributors' Distribution System, rather than NGC's transmission system.

"Electricity Distribution Licence"	The Electricity Distribution Licence granted to SP Manweb /SP Distribution pursuant to section 6(1)(c) of the Act.
"Exit Point"	A point of connection at which a supply of electricity may flow between the Distribution System and the Customer's Installation or User's Installation or the Distribution System of another person.
"Export Capacity"	Means the export of a supply of electricity into the Distribution System through the point of connection and is measured in kilo volt-amperes.
"Extra High Voltage (EHV)"	An EHV premise is defined as a site connected to the distribution system at a voltage of higher than 22kV or at a substation with a primary voltage of 66kV or above.
"Grid Supply Points (GSPs)"	The points on our system where supply is taken from from NGC. Usually at a 400/132kV, a 275/132kV or a 400/275/66kV substation.
"High Voltage (HV)"	Means a voltage between 1,000 volts and 22,000 volts. In the case of our Distribution System, this means 6,600 volts or 11,000 volts plus or minus 6% measured between any two phase conductors.
"Licence"	Refers to the Electricity Distribution Licence unless otherwise stated.
"Low Voltage (LV)"	230 volts plus 10% or minus 6% measured between the neutral conductor and any phase conductor, or 400 volts plus 10% or minus 6% measured between any two phase conductors.
"Master Registration Agreement (MRA)"	Means the agreement of that name dated 1 June 1998.
"Metering Point"	The point, determined according to the principles and guidance given at Schedule 9 of the Master Registration Agreement, as which a supply to (export) or from (import) a Distribution System: (a) is or is intended to be measured; or (b) where metering equipment has been removed, was or was intended to be measured; or (c) in the case of an Unmetered Supply under the Unmetered Supplies Procedure, is deemed to be measured, where in each case such measurement is for the purposes of ascertaining the supplier's settlement liabilities under either the Settlement Agreement or the Balancing and Settlement Code.

"NGC"	National Grid Company – own and operate the high voltage electricity transmission network.
"Ofgem"	Ofgem is the Office of 'Gas and Electricity Markets, regulating gas and electricity industries in Great Britain. Ofgem operate under the governance of the Authority, which sets all major decisions and policy priorities.
"Use of System Charges"	Charges made or levied, or to be made or levied, by the licensee for the provision of services as part of the distribution business to any person, as more fully described in standard condition 4 (Use of System Charging Methodology) and 4A (Charges for Use of System), but does not include connection charges.
"Use of System Charging Methodology"	The principles on which and the methods by which, for the purposes of achieving the objectives referred to in paragraph 3 of standard condition 4 (Use of System Charging Methodology), Use of System Charges are determined.
"Users"	Persons entitled to apply for Use of System.

Appendix 1

Statement of Loss Adjustment Factor Methodology for SP Distribution Ltd.'s Electricity Distribution Network

General Information

1.1 This appendix describes the methodologies applied by SP Distribution Ltd in the calculation of its loss adjustment factors[1] for authorised users of its distribution network in 2006/7.

1.2 SP Distribution Ltd is providing this statement as an appendix to the Use of System Charging Methodology. It details the methodology that is used for the calculation of its published loss adjustment factors and is made available in order to provide clarity and transparency for users of its distribution network. The statement is in addition to the Use of System Charging Methodology statement and is not subject to approval by the Authority.

1.3 SP Distribution Ltd is obliged under Standard Condition 4A of the Distribution Licence to publish a statement of charges for the use of the distribution system that is in a form approved by the Authority. The statement is required to contain "a schedule of adjustment factors to be made for distribution losses" in the company's Condition 4A statement. SP Distribution Ltd loss adjustment factors are made available to Elexon (and therefore all market participants) through the provision of the dataflow, D0265 for SVA loss adjustment factors and an Elexon prescribed data format for CVA loss adjustment factors. Elexon also make both the SVA and CVA loss adjustment factors available on their website.

1.3 Loss adjustment factors are determined through the application of two methodologies. Generic loss adjustment factors are calculated using data obtained from detailed network studies of the distribution system undertaken by external consultants. The site-specific loss adjustment factors are calculated using an electricity industry methodology using the recognised network planning tool. These methodologies are described in detail in sections 2 and 3 below.

[1] Loss Adjustment Factors are sometimes referred to as Line Loss Factors and vice versa.

Generic Loss Adjustment Factors

2.1 Generic loss adjustment factors are calculated for all SVA registered authorised users, and are reviewed annually.

2.2 A detailed study of distribution losses has been undertaken by external consultants on the SP Distribution network. This study produced theoretical calculations of network losses based on network data such as the number and size of transformers, network lengths etc. Actual network loading data, customer numbers and load factor profiles and loss load factor profiles derived from load research and temperature data were used to determine theoretical values. Loss percentages are calculated for each of the three voltage levels 33kV, HV and LV and two transformation levels 33/HV and HV/LV. The study also identified fixed and variable losses.

2.3 This information is used in a losses model which is populated with the metered volumes of energy per annum at the various network voltages, including the energy metered at the connection points with National Grid Electricity Transmission's system and the contribution from distributed generation within SP Distribution Ltd's distribution network.

2.4 The model calculates the energy needed to be passed from the next higher voltage level/ transformation point for users connected at different points on the network using the following empirical equation:

$$E_{in} = E_{out} / (1 - Loss\%)$$

Where E_{in} = Energy from higher voltage level,

E_{out} = Energy at lower voltage level,

Loss% = Derived losses relative to throughput.

This is illustrated by the following example:

Energy required at LV for users	9,800GWh
Losses on LV network	2%
Energy required from HV/ LV transformation	10,000GWh

2.5 This is repeated through the voltage and transformation levels to calculate the theoretical losses, based on the detailed study, at each voltage level and transformation level for customers connected at different points on the network. The total theoretical losses are then compared to the total measured losses and adjusted to match. To calculate the loss adjustment factor for a particular connection point, the losses associated with the connection are divided by the annual consumption.

2.6 The loss adjustment factors for generators connected at different points on the network are determined from the variable losses from the network above the voltage of connection.

Site Specific Loss Adjustment Factors

3.1 Site specific loss adjustment factors are calculated for all CVA registered authorised users and, where requested, EHV SVA registered authorised users. These loss adjustment factors are re-calculated following a material change to network data.

3.2 These loss adjustment factors are determined by the use of a network model on which the general network load and the site load is adjusted to be at its RMS value (over one year). RMS is used, rather than average as losses are proportional to the square of current. The method is to take the square root of the sum of the squares of average demand and the standard deviation of that demand. The kW variable (copper) loss so derived from the network model will be equivalent to that derived by calculating the sum of all the losses (for each half hour) over the same period.

3.3 It is then possible to identify the fixed and variable losses attributable to a particular user by determining the total losses between connection point with National Grid Electricity Transmission's system (F.M.S. Metering) and the point of connection with the Customer by the method of substitution.

Generation Customers

3.4 The treatment of generation sites is in accordance with the principles set out in industry guidance document SSC(OP) 1390 (Revised) - "Guidance note for the calculation of loss factors for embedded generators in settlement".

3.5 The guidance states that the accepted method of calculation should be by use of substitution. Load flow and energy loss calculations are carried out with the generator both connected to and disconnected from the network. The network and generation are set at their RMS values. The loss calculation itself is carried out exactly as for load customers, the difference in total system losses is then allocated to the generator.

3.6 Where more than one site specific generator exists locally on the network then the substitution method is carried out similarly with the generators being connected to the losses model in the order of their date of commissioning. E.g. For a network containing two generators the following calculations are performed:

- Total energy loss calculated with no generation (T)
- Total energy loss calculated with Generator 1 connected (TG1)
- Total energy loss calculated with Generator 2 connected (TG2)

Difference in loss attributable to Generator 1 = T – TG1

Difference in loss attributable to Generator 2 = TG2 – TG1

3.7 Loss adjustment factors for generation whose output causes an overall reduction in system losses will be > 1. Generation whose output causes an overall increase in system losses will have loss adjustment factors of < 1.

3.7 The loss adjustment factor is given by the losses attributable to the generator in each time period averaged over the number of units generated.

Contact Details

4.1 This statement has been prepared to provide clarity and transparency for users of SP Distribution Ltd's distribution network. If you have any questions about the contents of this statement, please contact the relevant person at the address shown below.

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