



STATEMENT OF CONNECTION CHARGING POLICY FOR SUPPLY SYSTEM CONNECTIONS

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STATEMENT OF CONNECTION CHARGING POLICY FOR SUPPLY SYSTEM CONNECTIONS

1. INTRODUCTION

This statement is produced by Guernsey Electricity Limited (“GEL”) in its role as Supply Network Licensee in accordance with the Decision (document OUR 08/02) issued during January 2008 to GEL by the Office of Utility Regulation (“OUR”).

This statement allows existing and new network users to understand the basis upon which charges for the connection of new load, additional load and embedded generation to the supply network are made. These charges provide GEL with a revenue to recover the costs, covering such matters as the planning, design, construction and commissioning of new cables and plant and the recovery of previous network capital investment.

The determination of connection charges is a cost apportionment exercise, in that increasing the proportion of revenue collected via tariff charges would lead to a corresponding reduction in connection charges and vice versa. Typically, GEL charges new users a fee for the connection of new and additional load, which covers localised reinforcement of supply (low voltage) and conveyance (high voltage) networks but major network developments on the supply and conveyance network are generally funded by tariff charges.

This statement is concerned only with connections to the supply system, that is, the electricity distribution network operating nominally at 400 volts and 230 volts. Users and potential users who wish to understand the extent and nature of the supply and conveyance networks are recommended to visit the GEL website (www.electricity.gg).

Any users and potential users requiring advice on the matters set out in this statement are recommended to contact the Senior Distribution Planning Engineer, on 01481 200700, e-mail admin@electricity.gg.

2. OBJECTIVES OF THE CHARGING SYSTEM

The objective of the charging system for connection to the network is to recover the efficient planning, design, construction and commissioning costs of that network from users in a fair, non-discriminatory and transparent manner.

Connection charges are expected to recover the capital costs of establishing a new user’s connectivity, whilst tariff charges should recover operating and maintenance costs and any capital costs of network construction which are considered as providing benefits (and hence attributable) to all users.

3. CONNECTION CHARGES

3.1 OPTIONS & ISSUES

In assessing whether to make connection charges for new users at all, and if so, how to calculate them, network operators are faced with a range of options, these options are set out in Table 1 below. In examining these options, network operators must consider how to balance the interests of the potential new user and any existing users.

It should be noted that as connection charges depend on the physical assets to be deployed, the cost of any new connection must be related to:

- I. the distance between that new connection and the existing network assets;
- II. the capacity of new connection required; and
- III. the existing local configuration of network assets.

Table 1 – Connection Charging Options

Options	Discussion
1. No Charge	<p>If no connection charge is made then the network operator will recover all these capital costs in tariff charges paid by all users. GEL considers this to be inappropriate as existing users could meet significant costs caused by new users from which the existing users would derive no benefit.</p> <p>GEL considers it appropriate to make a charge to new users for system connection which therefore excludes this option</p>
2. Shallow Reinforcement <i>Charge for the costs of reinforcement only of the local network in the area of the new usage (typically the low voltage and minor secondary high voltage network within a high voltage sector).</i>	<p>Historically GEL has levied “shallow” connection charges for new customers whose incremental impact relative to the capacity of the adjacent low voltage or secondary high voltage network is minimal. “Shallow” charging is advantageous in that the new user can readily identify the connection assets and hence there is transparency as to the value being provided to the new user. Furthermore GEL can readily identify and cost the relevant assets without incurring any significant administrative overhead. This methodology provides market signals to potential users as to the economic effect of the new use of the network.</p> <p>GEL considers shallow charging is most appropriate for small new users where the new user’s load (referred to by GEL as the “after diversity maximum demand” or ADMD) as assessed by GEL, has minimal impact on the adjacent network.</p> <p>There are, however, a limited number of potential new users whose size or location is relatively large or distant compared to the existing network sector. In such cases extensive works will be required to the network, not just in the geographic area of the new user but possibly on the wider network. If only “shallow” charging is applied in such instances then existing users would have to meet the costs of such extensive works, through higher tariff charges, with large users subsidised by existing users, which is inequitable. GEL proposes an alternative method to address these types of users, which is addressed in option 4.</p>

Options	Discussion
<p>3. Deep Reinforcement</p> <p><i>Charge for all the local reinforcements, for all other network reinforcements and for capacity in principal network assets</i></p>	<p>Historically, deep charging has not been employed by GEL.</p> <p>Deep charging recovers the full costs of all system changes from any new system user irrespective of the user's intended location and size of connection. Whilst there is an economic rationale for deep charging - based on a complete allocation of all additional costs - the estimation of deep charges would require GEL to carry out sophisticated mathematical analysis of its network, a task which GEL considers inappropriate to undertake on a routine basis and which attracts significant cost. Deep charging would necessitate full network analysis even for developments of very moderate size, which is disproportionate. Furthermore, GEL believes that such deep connection charges would be a significant barrier to new developments on Guernsey, which is inconsistent with the States' policy to facilitate the establishment of appropriate new enterprises.</p> <p>GEL considers deep charging is inappropriate for Guernsey and excludes this option.</p>
<p>4. Semi-deep Reinforcement</p> <p><i>Charge for local reinforcement costs and also the cost of reinforcing principal network assets further back in the network</i></p>	<p>In recent years there have been a small number of developments where the size of the new load relative to the network capacity available has been sufficiently large that a semi-deep charging regime was adopted.</p> <p>For such large new users, GEL advocates the use of a "semi-deep" charging methodology as the appropriate trade-off between the extremes of shallow and deep charging. Given that the actual costs of a new connection are driven by the power demand, the distance from the existing network and the existing local configuration, it would appear appropriate to use these factors as the basis for deciding whether any potential user should be charged "shallow" or "semi-deep" costs. A new user located at a significant distance from the existing network will attract a larger connection charge irrespective of whether the shallow or semi-deep methodology is used. The critical factor, therefore, in choosing the appropriate methodology is the power demand, and its relationship to the capacity of the existing network.</p> <p>The assessment that a potential new user is large enough to warrant "semi-deep" charging is set out as follows:</p> <p>Any user requiring a connection utilising more than the existing local secondary high voltage network can provide and which will require supply network and conveyance network reinforcement.</p> <p>GEL considers semi-deep charging is most appropriate for connections to the supply network which require conveyance network reinforcement.</p>

3.2 CONNECTION CHARGES METHODOLOGY

3.2.1 Additional Load <50kW ADMD Requiring No Network Development

Where no network development is undertaken to service an existing customer requiring additional load less than 50kW ADMD as assessed by GEL, no charge will be made for this additional requirement.

3.2.2 Additional Load >50kW ADMD Requiring No Network Development

Where no network development is undertaken to service a user requiring additional load in excess of 50kW ADMD, as assessed by GEL, the user will be charged a transformer charge as a proportion of their new load against the full load capacity of

the nearest distribution transformer. GEL only charges for the proportion of a transformer required by a customer unless that transformer is for their exclusive use.

3.2.3 New Users

Where a service installation or network development is undertaken to service a new user and no benefit is derived by other users, the calculation of connection charges is relatively straightforward. GEL will meet the limited cost of the first 20 metres of a simple network extension in the public road or the cost of a service joint and 2 metres of service cable whichever is the greater. The limited contribution from GEL recognises that all island premises require a supply of electricity but significantly limits the costs to existing users. The new user will be asked to meet all other shallow or semi-deep connection costs as appropriate, these charges normally being significantly greater than any GEL contribution.

The calculation becomes more complex, however, when it is apparent that existing or future users will derive benefit from the new installation. Given that the vast majority of the supply and conveyance networks are comprised of underground cabling and ground-mounted plant, if costly and disruptive road works are to be avoided, it is appropriate for the network operator to use the opportunities provided by new user connections to enhance the network as may be prudent.

From the 1st January 2002, the Public Thoroughfares Committee's Code of Practice on excavations in the highway has provided for a three-year period after resurfacing where only emergency works will be permitted. Such restrictions make it even more important that available opportunities to reinforce the network are used where appropriate.

Given that such works are undertaken for the benefit of all users then it is clearly inequitable if only the new user should be required to pay for them. In such circumstances it is inevitable that a judgement must be made as to what proportion of any development should be chargeable to the new user (referred to as customer contribution) and what proportion will be provided by GEL (referred to as technical contribution).

GEL has adopted the following process:

- I. A minimum installation to service the needs of the new user will be designed and costed. The minimum installation will include "semi-deep" network costs when the installation is being costed by this method.
- II. The design is enhanced as necessary to meet the expected needs of other network users in the area. Such enhancements may include the replacements of life-expired plant or cabling.
- III. Additional plant, cabling or ducts may be specified where further new users may be reasonably anticipated.

The charge to the new user initiating the development will be limited to that of the minimum installation.

3.2.4 Obsolete Services

In the case of existing services that are found to be substandard, technically obsolete or shared with another dwelling, when a customer makes an application for additional load, GEL may replace the service at no cost to the customer if the load requested is deemed reasonable for the size of property.

3.2.5 Service Upgrades

In the case of applications for load assessed by GEL as requiring a replacement or upgrading of an existing small service (typically this applies to the replacing of a single-phase 100 amp capacity service with a three-phase 100 amp capacity service), GEL will meet 50% of the costs of work in the public road and the customer will be asked to meet all other costs.

Contributions for service upgrades for loads assessed by GEL to require a service in excess of 100 amps capacity, will be calculated on the same basis as new installations but GEL will only contribute to the service joint. The user will be asked to meet all other shallow or semi-deep connection costs as appropriate.

3.2.6 Off-Peak Usage

Further to the above charging analysis GEL has a responsibility to provide electricity in a cost-effective, efficient and environmentally sound manner. A method used to achieve this is the provision of off-peak tariffs which encourage the use of electricity at times when the plant and network would otherwise be under utilised. To support these tariffs, GEL offers a contribution towards connection charges (referred to as commercial contribution) to users connecting suitable heating load, which recognises the more efficient use of GEL's network and GEL's plant, which results from the connected load. These are all benefits to the supply system component of GEL's business, to which connection is being made.

The commercial contribution is derived using a standard format to ensure all customers are treated fairly. The contribution is dependant on: the type and amount of load; its estimated usage; the marginal production costs; relevant allowable tariffs; and a suitable payback period.

The commercial contribution is deducted from the total contribution required, the resultant amount being the customer contribution. If the commercial contribution is equal to or greater than the total contribution required the customer will not be charged for the installation.

3.3 GENERATION & DEMAND

In the specification of cabling and equipment necessary to make a new connection for either embedded generation or load, the key criterion is the maximum current required by the user. Whether the network is required to absorb or supply the current respectively makes no difference to the size of plant required. So in principle, there should be no difference in the connection charges made in respect of generators or loads.

In accordance with Licence Condition 24 (see document OUR 02/04, which is available from www.regutil.gg), generators capable of exporting more than 500 kilowatts to the network will be subject to central despatch and will require control equipment allowing control and load shedding facilities which increase the cost of connection. Where such equipment is necessary, its costs will be separately detailed and included with the connection charge paid by the generation operator.

Users contemplating the connection of embedded generation to the supply network are advised to make an early enquiry of GEL so that this and other technical issues including possible use of system charges may be discussed.

3.4 SUMMARY OF CONNECTION CHARGES METHODOLOGY

Based on the issues set out above, GEL will adopt the following connection charge methodology as Supply Network Licensee:

- GEL will assess whether or not a charge for additional load or a new connection will be made, any charge will payable in advance to protect existing users against the credit risk of individual new users. Connection charges will be calculated using the shallow or semi-deep principles as discussed in Section 3.1 and described in section 3.2 of this Statement;
- no distinction will be made between the supply network connection costs of generators or loads, save for any differences made necessary by the control requirements of generators; and
- a commercial contribution will be applied when heating load with a suitable off-peak element is installed.