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# Electrical Service Connection Policy

**CENTLEC (SOC) LTD**

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<b>1.</b>	<b>Table of Contents .....</b>	<b>2.</b>
	<b>DEFINITIONS.....</b>	<b>6</b>
<b>3.</b>	<b>GENERAL GUIDELINES FOR CONNECTIONS NOT EXCEEDING 500 kVA.....</b>	<b>8</b>
<b>4.</b>	<b>DOMESTIC CONNECTIONS – URBAN AREAS .....</b>	<b>24</b>
4.1.	NEW SINGLE PHASE DOMESTIC CONNECTIONS.....	24
4.2.	TYPES OF NEW SINGLE PHASE DOMESTIC CONNECTION.....	25
4.2.1.	SINGLE PHASE PRE-PAYMENT METER - URBAN .....	25
4.2.2.	SINGLE PHASE MULTI TARIFF METER - URBAN.....	25
4.2.3.	DUET WITH MORE THAN ONE DWELLING - URBAN .....	26
4.2.4.	SINGLE RESIDENTIAL SITES WITH MORE THAN ONE DWELLING OR WITH BACK ROOMS - URBAN.....	27
4.3.	SUBDIVISION OF ERVEN BY PRIVATE DEVELOPERS - URBAN .....	28
4.4.	RELOCATING SINGLE PHASE METERS - URBAN .....	29
4.5.	SINGLE PHASE CONVERSIONS: DOMESTIC URBAN.....	30
4.6.	TYPES OF THREE PHASE DOMESTIC CONNECTIONS – URBAN .....	32
4.6.1.	NEW THREE PHASE DOMESTIC WITH MULTI TARIFF METER .....	32
4.6.2.	THREE PHASE PRE-PAID METER- URBAN.....	33
4.6.3.	THREE PHASE CONNECTIONS TO DUET HOUSING - URBAN .....	33
4.6.4.	SUBDIVISION OF STANDS BY PRIVATE DEVELOPERS – URBAN.....	35
4.6.5.	ENLARGING OF THREE PHASE CONNECTION - URBAN.....	35
4.6.6.	RELOCATING THREE PHASE METER: MOVE TO BOUNDARY - URBAN.....	35
4.7.	THREE PHASE CONVERSIONS .....	36
4.7.1.	CONVERT THREE PHASE ROTARY DISK METER TO PRE-PAYMENT METER - URBAN.....	36
4.7.2.	CONVERT THREE PHASE ROTARY DISK METER TO SINGLE PHASE MULTI TARIFF/TIME OF USE (TOU) METER .....	37

<b>5.</b>	<b>DOMESTIC CONNECTIONS: PERI-URBAN AREAS.....</b>	<b>38</b>
5.1.	NEW DOMESTIC SINGLE PHASE CONNECTION - PERI-URBAN .....	38
5.1.1.	SINGLE PHASE ROTARY DISK METER .....	38
5.1.2.	SINGLE PHASE PRE-PAYMENT METER.....	38
5.2.	PROVISION FROM A LOW VOLTAGE OVERHEAD LINE – PERI URBAN .....	39
5.3.	PLOT WITH MORE THAN ONE DWELLING – PERI URBAN.....	39
5.4.	SINGLE PHASE CONVERSIONS: DOMESTIC - PERI-URBAN .....	41
5.4.1.	CONVERT SINGLE PHASE ROTARY DISK METER TO PRE-PAYMENT METER 41	
5.4.2.	CONVERT SINGLE PHASE ROTARY DISK METER TO THREE PHASE MULTI TARIFF TIME OF USE (TOU) METER .....	41
5.4.3.	TYPES OF THREE PHASE CONNECTIONS: PERI-URBAN AREA.....	41
5.4.4.	NEW THREE PHASE DOMESTIC CONNECTION - PERI-URBAN .....	41
5.4.5.	THREE PHASE MULTI TARIFF/TIME OF USE (TOU) METER – PERI-URBAN ..	42
5.4.6.	THREE PHASE PREPAYMENT METER – PERI-URBAN .....	42
5.5.	THREE PHASE CONVERSIONS: DOMESTIC- PERI-URBAN .....	42
<b>6.</b>	<b>HIGH DENSITY HOUSING DEVELOPMENT.....</b>	<b>44</b>
6.1.	SUPPLYING TOWN HOUSES: URBAN .....	44
6.2.	INFORMAL HOUSING DEVELOPMENTS ON SINGLE RESIDENTIAL SITES ....	46
6.3.	FORMAL MUNICIPAL HOUSING: SUPPLY POINTS FOR MUNICIPAL OWNED HIGH DENSITY HOUSING UNITS/FLATS: URBAN.....	48
6.4.	SUPPLYING TOWN HOUSES: PERI-URBAN.....	48
<b>7.</b>	<b>SMALL DEMAND CONNECTIONS .....</b>	<b>50</b>
<b>8.</b>	<b>BULK SUPPLY CONNECTIONS .....</b>	<b>52</b>
8.1.	BULK SUPPLY:- URBAN.....	52
8.2.	UPGRADING OF THE NETWORK FOR GREATER SUPPLY CAPACITY .....	52
8.3.	BULK SUPPLY - PERI-URBAN .....	53
<b>9.</b>	<b>REDUCING OF CONNECTION SIZE.....</b>	<b>54</b>

<b>10.</b>	<b>TEMPORARY CONNECTION.....</b>	<b>55</b>
10.1.	TEMPORARY BUILDERS CONNECTION.....	55
10.2.	TEMPORARY CONNECTION FOR A SOCIAL EVENT .....	55
<b>11.</b>	<b>REMOVING SERVICE CONDUCTORS .....</b>	<b>56</b>
<b>12.</b>	<b>POWER FACTOR CORRECTION .....</b>	<b>56</b>
<b>13.</b>	<b>REFUNDING CONNECTION FEES .....</b>	<b>56</b>
<b>14.</b>	<b>ALLOCATING PADLOCKS AND ISSUING OF KEYS .....</b>	<b>57</b>
14.1.	LOW SAFETY AREAS.....	57
14.2.	MEDIUM SAFETY AREAS .....	57
14.3.	HIGH SAFETY AREAS .....	57
<b>15.</b>	<b>SMALL SCALE EMBEDDED GENERATION (SSEG) .....</b>	<b>57</b>

## 1. DEFINITIONS

All definition's as set out in the Electrical Installation Regulations of the Occupational Health and Safety Act (Act 85 of 1993), as amended, also applies to this policy. For the purpose of this policy, the most general definitions of the OHS Act as well as other relevant definitions are stated below.

**“approved inspection authority for electrical installations”**

means a person or body approved by the chief inspector in terms of regulation 5 to carry out inspections, tests and investigations on electrical installations.

**“electrical certificate of compliance”**

means a certificate, with a unique number obtainable from the chief inspector, in the form of annexure 4 (*not included in this document*) and issued by a registered person in respect of an electrical installation or part of any electrical installation or a certificate of compliance issued under the Electrical Installation Regulations, 1992.

**“consumer tariff”**

means the approved listed tariffs authorised by the City Council, applicable to the consumption of electricity and chargeable to customers as specified in the license issued by the NER in terms of the Electricity Act 1987.

**“electrical contractor”**

means a person who undertakes to perform electrical installation work on the behalf of any other person, but excludes an employee of such first-mentioned person.

**“electrical installation”**

means any machinery, in or on any premises, used for the transmission of electricity from the point of control to a point of consumption anywhere on the premises, including any article forming part of such an installation irrespective of whether or not it is part of the electrical circuit, but excluding -

- a) any machinery of the supplier related to the supply of electricity on the premises;
- b) any machinery which transmits electrical energy in telecommunication, television or radio circuits;
- c) an electrical installation on a vehicle, vessel, train or aircraft.

**“electrical tester for single phase”**

means a person who has been registered as an electrical tester for a single phase in terms of regulation 13 and who has been approved

by the chief inspector for the verification and certification of the construction, testing and inspection of electrical installations supplied with a single phase electrical supply, excluding specialized electrical installations.

**“installation electrician”**

means a person who has been registered as an installation electrician in terms of regulation 13 and who has been approved by the chief inspector for the verification and certification of the construction, testing and inspection of any electrical installation, excluding specialized electrical installations.

**“point of control”**

means the point at which the electrical installation on or in any premises can be switched off by a user or lessor from the electricity supplied from the point of supply, or the point at which part of the installation on the premises can be switched off where different users occupy different parts of such premises.

**“point of supply”**

means the point at which electricity is supplied to any premises by a supplier.

**“electricity services costs”**

means the list of costs for the supply of respective electricity services, annually approved by means of a City Council resolution.

**“supply terminals”**

in relation to machinery installed as a complete unit, means the terminals or connection clamps on such machinery where the external conductors supplying the machinery of electricity are terminated or connected.

**“valid certificate of compliance”**

means an electrical certificate of compliance which has been issued in accordance with these regulations and has been correctly completed in its entirety by a registered person.

## **2. GENERAL GUIDELINES FOR CONNECTIONS NOT EXCEEDING 500 kVA**

The general guidelines which are important when implementing the connection policy are as follows:

- 3.1. Application for an electricity service connection must be done in writing, either by means of an official letter or by completing an official application form, which is obtainable from the Customer Care offices at the Power Station building in Fort street;
- 3.2. The client must confirm the demand of the development via a consulting engineer or an electrical contractor, depending on the size of the development. The application will not be considered if the size of the connection is not mentioned or, for bigger developments (load requirement of more than 100kVA), no proof of load calculations are provided with the application.
- 3.3. No consideration shall be given to any application if it is not received in writing from the legal owner or his appointed representative with a letter of appointment by the owner;
- 3.4. The service costs must be paid in advance, accompanied by a valid quotation provided by the Planning Division of CENTLEC;
- 3.5. The electrical supply to new connections shall only be switched on after the client has reached a supply agreement, excluding prepaid metering, with the CENTLEC Finance Directorate, and the client or his/her electrical contractor produces the required Certificate of Compliance, in terms of the Occupational Health and Safety Act (Act 85 of 1993);
- 3.6. With the exception of prepaid connections, the client must pay, at the CENTLEC Finance Directorate, a customer deposit in advance, and in the case of bulk connections, the client must make satisfactory alternative arrangements for a bank guarantee, with the CENTLEC Finance Directorate.
- 3.7. Wherever possible, a substation must be an integral part of a building's design, and should not be located in the basement of buildings. For aesthetic reasons, placing substations, miniature substations and meter boxes next to buildings, or next to each other, must be avoided if at all possible;
- 3.8. CENTLEC reserves the right to place the point of supply in such a way, to ensure optimal utilisation of the existing network;
- 3.9. An estimated amount shall be payable for any service which cannot be accommodated within the standard electricity services costs;
- 3.10. Only one point of supply shall be provided per erf, including consolidated and notarial connected erven, except for peri-urban areas where technical limitations limit the length of low voltage cables. In these cases where the houses are in the region of 300 meters apart, or as otherwise approved by the Engineer, a second point of supply will be allowed;
- 3.11. An application for the supply of electricity service/s to a subdivision must be accompanied with proof of the approval of the subdivision;



- 3.12. An electricity service supplying one stand may not pass over another stand, unless a servitude or right of way has been registered for this purpose or if the electricity service cable is overhead;
- 3.13. If any changes to a building, electrical installation or supply cabling causes CENTLEC's equipment or supply cabling to be moved or changed, whilst the energy meter is still mounted inside the building or outside against the wall, it is required that the energy meter be moved to the street front erf boundary and that changeover costs be payable by the applicant;
- 3.14. If any changes to a building or electrical installation with more than one meter causes CENTLEC to change the connection size or metering equipment, then all the meters shall be converted to pre-payment metering as far as possible.
- 3.15. Peri-urban areas refer to all smallholdings, plots and farms in the electricity distribution area of CENTLEC. Technically it refers to areas where electricity is supplied via transformers from overhead 11kV networks, with the point of supply on the site boundary.
- 3.16. Electricity services, irrespective of being formal or informal housing, will not be supplied to erven for which town planning and development has not yet been completed;
- 3.17. The minimum size of the customer's connection cable, overhead or underground, between the point of supply and the point of control shall be 10mm<sup>2</sup> Copper;
- 3.18. Refer to Annexure A for all relevant standard drawings.

### 3. DOMESTIC CONNECTIONS – URBAN AREAS

#### 4.1. NEW SINGLE PHASE DOMESTIC CONNECTIONS

It is the responsibility of CENTLEC to provide an infrastructure according to design norms from where a point of supply can be provided for every stand in residential areas;

For **all** developed stands available for residential purposes, it is policy to at least provide electricity supply mains in the street adjacent to these stands for **normal** domestic electricity consumption. Normal domestic electricity consumption implies 60 amperes, single phase supply, at the “point of control”. The point of supply shall be provided in a distribution box/meter box on the erf boundary and CENTLEC’s responsibility, in respect to equipment and cabling, will **only** be up to the point of supply. The safety of all equipment and underground or overhead cabling from the point of supply will be the explicit responsibility of the customer.

Where meters are installed in dwellings, alongside the customers distribution board/Ready Board, or on an outside wall of the building this will be regarded to be the “point of supply”. In both instances, CENTLEC will be responsible for the safety of the equipment and underground or overhead cabling up to the “point of supply”, whilst the customer will be responsible for the electrical installation behind the “point of supply”. CENTLEC will only be responsible for the meter inside the dwelling.

Pre-payment meters are currently installed in meters boxes/pole mounted meter boxes on the erf boundary. Only the key-pad (control panel) of the pre-payment meters will be installed inside dwellings. The customer will be responsible for the safety of the equipment and underground or overhead cabling after the “point of supply”, whilst CENTLEC will only be responsible for the key-pad inside the dwelling. The owner/lessor/user shall be held liable for negligent damage of CENTLEC’s equipment.

Load control equipment (ripple control relay) for controlling geysers in dwellings, shall be installed when a domestic connection is made. The customer’s underground connection cable have to make provision for this circuitry. Centlec reserves the right to have a geyser controller installed inside or next to the consumer (point of control) distribution box where overhead connections are done.

The customer now has the choice to manage his/her own electricity account via the installation of a multi tariff meter or pre-payment meter. The multi tariff meter makes use of the different tariffs available in certain time period in 24 hours thus giving total control to the customer. The pre-payment meter has a single tariff with no accounts or service levy. Although the pre-payment meter gives one no control on the energy costs it has the advantage that you can buy tokens as your budget allows.

## **4.2. TYPES OF NEW SINGLE PHASE DOMESTIC CONNECTION**

### **4.2.1. SINGLE PHASE PRE-PAYMENT METER - URBAN**

**Refer to standard drawing No: TS - 5 - 35**

A single phase pre-payment connection is supplied according to the customer's need. The connection capacity is limited to a maximum of 60 amperes. The normal single phase domestic connection is controlled by an 80 ampere circuit breaker at the point of supply and a 60 ampere circuit breaker at the point of control. A three-pole circuit breaker is used to isolate the live, neutral and geyser supply (only in areas where the load control signal is available). The pre-payment meter trips electronically if the load exceeds 60 amperes.

The pre-payment meter will be installed in the meter box/pole mounted meter box on the erf boundary. CENTLEC will install the key-pad of the meter inside the dwelling at the position preferred by the owner.

#### **Customer connection cable**

For a domestic consumer, the recommended consumer cable size to be connected onto the network is 10mm<sup>2</sup> armoured copper cable. The consumer's cable will be supplied with a separate earth wire of at least 6 mm<sup>2</sup> cross section if one of the cable cores is not utilised as an earth wire. The connection cable is the consumer's responsibility and the above mentioned is only a recommendation.

Load control equipment (ripple control relay) is installed at all domestic underground cable connections for controlling the dwelling's geyser. The consumer's connection cable must make provision for this circuitry. The recommended cable size is 6mm<sup>2</sup> x 2 core armoured copper cable. Centlec reserves the right to have a geyser controller installed inside or next to the consumer (point of control) distribution box where overhead connections are done.

The owner is responsible for the installation of an additional 1.5mm<sup>2</sup> x 2core (Twin & Earth or Surfex) cable between the supply point and the dwelling for the connection of the key-pad inside the dwelling.

#### **Service cost**

The cost for new domestic connections is set out in the annual standard service cost.

### **4.2.2. SINGLE PHASE MULTI TARIFF METER - URBAN**

**Refer to standard drawing No: TS – 5 - 26**

Single phase connections with a multi tariff meter (Time of Use Meter - TOU) are provided on receipt of a special request with a valid motivation as to why a prepaid meter would not be suitable. The capacity of connections is limited at 60 amperes. The normal single phase domestic connection is controlled by an 80 ampere circuit breaker at the point of supply and a 60 ampere two pole circuit breaker at the point of control. A two-pole circuit breaker is used to

isolate the live and neutral supply.

#### **Customer connection cable**

The owner/customer will provide a customer connection cable from the dwelling, up to the single point of supply at the erf boundary.

For a domestic consumer, the recommended consumer cable size to be connected onto the network is 10mm<sup>2</sup> armoured copper cable. The consumer's cable will be supplied with a separate earth wire of at least 6 mm<sup>2</sup> cross section if one of the cable cores is not utilised as an earth wire. The connection cable is the consumer's responsibility and the above mentioned is only a recommendation.

Load control equipment (ripple control relay) is installed at all domestic underground cable connections for controlling the dwelling's geyser. The consumer's connection cable must make provision for this circuitry. The recommended cable size is 6mm<sup>2</sup> x 2 core armoured copper cable. Centlec reserves the right to have a geyser controller installed inside or next to the consumer distribution box (point of control) where overhead connections have been used.

#### **Service cost**

The cost for the above-mentioned connection is set out in the standard electricity service costs.

### **4.2.3. DUET WITH MORE THAN ONE DWELLING - URBAN**

Separate metering is allowed for more than one dwelling on the same single residential erf, if it has been zoned as a duet and a sectional title register exist. The electrical supply to the dwellings will be taken from only one point of supply, located on the erf boundary. When a request is received for electrical connections, and it is required that all permissible dwellings on the site must be metered separately, the applicant can choose from two possibilities:

**A.** Firstly, the total capacity of the connection is limited by means of an 80 ampere single phase main circuit breaker(point of supply), and the supply to each dwelling is also each limited with a 60 ampere sub-circuit breaker and meter for each permissible dwelling in a meter box on the street boundary. The advantage here is, the initial capital cost is relatively low. The disadvantage is that the total connection capacity at the point of supply is limited to 80 ampere single phase maximum.

The owner, with the assistance of his electrical consultant must calculate the estimated load to establish if the mentioned connection 80A will be sufficient to supply the combined loading of all permissible dwellings on the site. The maximum size meter box permitted on the street boundary is an 8-way box that could house up to 12 single phase meters.

#### **Service cost**

The cost for the connection will consist of the standard service costs for the first two dwellings. Estimated costs shall be charged for all the additional

metering equipment needed, plus a contribution towards the backbone upgrading costs for the total additional load imposed on the distribution network, to accommodate all the additional permissible dwellings on the site. This would be calculated from 1.5kVA for each additional meter for the additional permissible dwelling, up to the maximum of 13.48kVA (18.48kVA-5kVA).

**B.** Secondly, the connection consists of a triple pole circuit breaker switch(point of supply) and an 80 ampere circuit breaker and meter for each permissible dwelling in a meter box on the street boundary. The initial capital cost is relatively high but the advantage is that each dwelling is serviced with a separate 80 ampere at the point of supply. The maximum size meter box permitted on the street boundary is an 8-way box that could house up to 12 single phase meters.

#### **Service cost**

The cost for the connection will consist of the standard service costs for the first two dwellings. Estimated costs shall be charged for all the additional metering equipment needed, plus a contribution towards the backbone upgrading costs for the total additional load imposed on the distribution network to accommodate all the additional permissible dwellings on the site. This would be calculated from the required 5kVA for each additional meter of the additional permissible dwellings.

#### **Customer connection cable**

The owner/customer will provide separate customer connection cables from each dwelling, up to the single point of supply at the erf boundary.

See paragraphs 4.2.1

#### **4.2.4. SINGLE RESIDENTIAL SITES WITH MORE THAN ONE DWELLING OR WITH BACK ROOMS - URBAN**

Separate metering is allowed for more than one dwelling on the same single residential erf, if it has been permitted by the zoning of the site. The electrical supply to the dwellings will be taken from only one point of supply, located on the erf boundary. When a request is received for electrical connections, and it is required that all permissible dwellings on the erf must be metered separately, the applicant can choose from two possibilities:

**A.** Firstly, the total capacity of the connection is limited by means of an 80 ampere main circuit breaker(point of supply), and the supply to each dwelling is also each limited with a 60 ampere sub-circuit breaker and meter for each permissible dwelling in a meter box on the street boundary. The maximum size meter box permitted on the street boundary is an 8-way box that could house up to 12 single phase meters. The advantage here is, the initial capital cost is relatively low. The disadvantage is that the total connection capacity at the point of supply is limited to 60 ampere maximum.

The owner, with the assistance of his electrical consultant must calculate the estimated load to establish if the mentioned connection (13.8kW/60A single phase) will be sufficient to supply the combined loading of all permissible

dwellings on the site.

#### **Service cost**

The cost for the connection will consist of the standard service costs for the first dwelling. An estimated costs shall be charged for all the additional metering equipment needed, plus a contribution towards the backbone upgrading costs for the total additional load imposed on the distribution network to accommodate all the additional permissible dwellings on the site. This would be calculated from 2.5kVA for each meter for the additional permissible dwelling.

**B.** Secondly, the connection consists of a triple pole circuit breaker switch(point of supply) and an 80 ampere circuit breaker and meter for each permissible dwelling in a meter box on the street boundary. The maximum size meter box permitted on the street boundary is an 8-way box that could house up to 12 single phase meters. The initial capital cost is relatively high but the advantage is that each dwelling is serviced with a separate 80 ampere at the point of supply.

#### **Service cost**

The cost for the connection will consist of the standard service costs for the first dwelling. An estimated costs shall be charged for all the additional metering equipment needed, plus a contribution towards the backbone upgrading costs for the total additional load imposed on the distribution network to accommodate all the additional permissible dwellings on the site. This would be calculated from 5kVA for each meter for the additional permissible dwelling.

#### **Customer connection cable**

The owner/customer will provide separate customer connection cables from each dwelling, up to the single point of supply at the erf boundary.

See paragraphs 4.2.1

### **4.3. SUBDIVISION OF ERVEN BY PRIVATE DEVELOPERS - URBAN**

In the case of subdividing erven, the developer shall be responsible for all the alterations needed to relocate the existing and, or to create additional supply points for the newly created erven.

#### **Service cost**

The estimated distribution network development cost for the relocation and or creation of additional connections for the new sites, as well as the back bone cost at the ruling R/kVA tariff shall be paid by the developer. The tariff consists out of a contribution towards the primary, secondary and low voltage infrastructure. The developer pays the full estimated amount. This amount will exclude the service covered by the standard Service cost, which is payable by the owner after purchasing the new erf (subdivision).

**4.4. RELOCATING SINGLE PHASE METERS - URBAN**  
(Move meter to the boundary)

The relocation of meters takes place when the customer applies for such service or when tampering with the metering equipment has occurred.

**Service cost**

Although it is CENTLEC's policy for the supply points of domestic connections to be located on the erf boundary, the real cost for shifting the meters is to be recovered from the customer.

If a meter has to move to another position, other than the boundary, the full estimated cost is payable. In case of moving the connection from an informal dwelling to a permanent/brick house, the standard relocation cost is payable.

#### **4.5. SINGLE PHASE CONVERSIONS: DOMESTIC URBAN**

##### **4.5.4. CONVERT SINGLE PHASE ROTARY DISK METER TO A PRE-PAYMENT METER**

###### **a) Connection with meter mounted inside the dwelling or in a meter box externally mounted against external wall**

The existing single phase rotary disk meter shall be replaced with a split pre-payment meter. The owner shall be required to supply and install a 1.5mm<sup>2</sup> copper twin and earth or Surfex cable for the key-pad that will be installed inside the dwelling. The owner must decide on the preferred position of the key-pad inside the dwelling.

###### **b) Cable connection with meter box located on the erf boundary**

All prescriptions in paragraph 4.3.1 will apply.

###### **c) Cable connection where the meter is mounted inside a meter box not situated at the applicable erf.**

The meter will be converted to a split pre-payment meter. If the connection cable is running on the street front then a meter box will be installed on the erf boundary. The key-pad of the meter will be installed inside the dwelling where the owner prefers. The owner shall be required to supply and install a 1.5mm<sup>2</sup> x 2core Twin & Earth or Surfex cable from point of supply to the key-pad position inside the dwelling. If the connection cable is running through other erven to the meter box then the owner must install a 1.5mm<sup>2</sup> x 2core cable from that meter box through the other erven to the key-pad position inside the dwelling.

###### **d) Connection with meters mounted inside a meter room or in a meter box. (Townhouses/Flats)**

The existing single phase rotary disk meter would be replaced with a split pre-payment meter. The owner shall be required to supply and install a 1.5mm<sup>2</sup> copper twin and earth or Surfex cable for the key-pad that will be installed inside the dwelling. The owner must decide on the preferred position of the key-pad inside the dwelling.

###### **Service cost for option (a), (b) and (c)**

The standard conversion to prepaid tariff is payable.

##### **4.5.5. CONVERT SINGLE PHASE METER TO THREE PHASE MULTI TARIFF / TIME OF USE (TOU) METER - URBAN**

Three phase domestic connections are provided according to the customer's need. The point of supply shall be in the meter box on the erf boundary. The connection is limited to a maximum of 150 amperes per phase. If the requirement is more than 150 amperes, such a connection is considered as a bulk domestic connection. The current carrying capacity of the circuit breakers to be installed at the point of supply and the point of control, will be determined according to the current requirement of the connection.



### **Customer connection cable**

The recommended minimum size cable allowed to be connected to CENTLEC network for a domestic customer is a 10mm<sup>2</sup> x 4core armoured copper cable. Additional to this, a separate earth conductor of at least 6mm<sup>2</sup>, and a 6mm<sup>2</sup> x 2 core Cu/PVC cable for controlling the geyser, should be provided. The connection cabling is the customer's responsibility.

### **Service cost**

The applicant will be liable to pay the standard tariff if a standard domestic connection is required. If the connection size required is more than the standard then the full estimated amount necessary to strengthen the infrastructure, as well as for the metering equipment, is payable.

### **Phase balancing**

The consumer is to ensure that the loading of the installation is balanced across all three phases, so that the difference between phases is no more than 30% at any given time.

#### **4.6. TYPES OF THREE PHASE DOMESTIC CONNECTIONS – URBAN**

##### **4.6.1. NEW THREE PHASE DOMESTIC WITH MULTI TARIFF METER**

(Three phase time of use (TOU) connections)

Three phase domestic connections are provided according to the customer's need. The connection is limited to a maximum of 150 amperes per phase. If the requirement is more than 150 amperes per phase, then such a connection is considered a bulk domestic connection. The current carrying capacity of the circuit breakers to be installed at the point of supply, and the point of control, will be determined according to the current requirement of the connection.

Load control equipment (ripple relay) is installed at domestic connections for the control of the geysers in dwellings. The customer's connection cabling must make provision for this function.

##### **Customer connection cable**

The recommended minimum size cable allowed to be connected to CENTLEC network for a domestic customer is a 10mm<sup>2</sup> x 4 core armoured copper cable. Additional to this, a separate earth conductor of at least 6mm<sup>2</sup>, and a 6mm<sup>2</sup> x 2 core Cu/PVC cable for controlling the geyser, should be provided. The connection cabling is the customer's responsibility.

Load control equipment (ripple control relay) for controlling geysers in dwellings, shall be installed when a domestic connection is made. The customer's underground connection cable have to make provision for this circuitry. Centlec reserves the right to have a geyser controller installed inside or next to the consumer (point of control) distribution box where overhead connections are done.

##### **Service cost**

The applicant will be liable to pay the standard tariff if a standard domestic connection is required. If the connection size required is more than the standard then the full estimated amount necessary to strengthen the infrastructure, as well as for the metering equipment, is payable.

##### **Phase balancing**

The consumer is to ensure that the loading of the installation is balanced across all three phases, so that the difference between any two phases is no more than 30% at any given time.

#### **4.6.2. THREE PHASE PRE-PAID METER- URBAN**

Three phase domestic connections with a split pre-payment meter are supplied to all new standard three phase domestic clients with a load requirement less than 60A per phase. The normal three phase domestic connection is controlled by three 80 ampere circuit breakers at the point of supply and a 60 ampere three pole circuit breaker at the point of control. A split pre-payment meter will be installed inside a meter box on the erf boundary. The key-pad of the meter will be installed inside the dwelling where the owner prefers.

##### **Customer connection cable**

For a domestic customer, the recommended minimum size cable allowed to be connected to the distribution network is a 10mm<sup>2</sup> x 4core armoured copper cable. Additional to this, a separate earth conductor of at least 6 mm<sup>2</sup> must be provided.

The customer is also responsible for installing 2 x 6mm<sup>2</sup> CU/PVC conductors for controlling the geyser, as well as a 1.5mm<sup>2</sup> copper twin and earth or Surfex cable from the meter box to the position where the key-pad will be installed. The connection cabling is the customer's responsibility.

Load control equipment (ripple control relay) for controlling geysers in dwellings, shall be installed when a domestic connection is made. The customer's underground connection cable have to make provision for this circuitry. Centlec reserves the right to have a geyser controller installed inside or next to the consumer (point of control) distribution box where overhead connections are done.

##### **Service cost**

The cost as set out in the standard Service costs is payable.

##### **Phase balancing**

The consumer is to ensure that the load is balanced across all three phases, so that the difference is no more than 30% at any given time.

#### **4.6.3. THREE PHASE CONNECTIONS TO DUET HOUSING - URBAN**

Three phase connections, with prepaid meters may be installed for larger dwellings on a duet site or plot. A prepaid meter shall be installed for each permissible dwelling and it is limited to 60A per phase. The point of supply main circuit breaker size is limited at 150 ampere maximum, with 3 x 80A circuit breakers for each meter, and a 60A three pole circuit breaker at each point of control. The rating size of the main circuit breaker shall be determined according to the total load demand. The maximum size meter box permitted on the street boundary is an 8-way box that could house up to 6 three phase meters.

##### **Customer connection cable**

Refer to paragraph 4.6.1 for cable size.

**Service cost**

The service cost will be estimated, and the full estimated cost is payable.

#### **4.6.4. SUBDIVISION OF STANDS BY PRIVATE DEVELOPERS – URBAN**

Refer to and apply paragraph 4.3

#### **4.6.5. ENLARGING OF THREE PHASE CONNECTION - URBAN**

A standard three phase connection (3x60A at point of control) may be increased up to 150A per phase, and a multi tariff (TOU) meter shall be installed. If the requirement is more than 150 amperes, such a connection is considered a bulk domestic connection. The current carrying capacity of the circuit breakers to be installed at the point of supply and the point of control, will be determined according to the current requirement of the connection.

##### **Customer connection cable**

With respect to enlarging the three phase connection, the customer's cable to be connected onto Centlec's network must be a 4 core cable, suitable to handle the full load capacity. An additional earth conductor, which shall have a cross section size of half of the cable's neutral conductor, must be provided.

Load control equipment (ripple control relay) is installed at all domestic underground cable connections for controlling the dwelling's geyser. The consumer's connection cable must make provision for this circuitry. The recommended cable size is 6mm<sup>2</sup> x 2 core armoured copper cable. Centlec reserves the right to have a geyser controller installed inside or next to the consumer (point of control) distribution box where overhead connections are done.

##### **Service cost**

For the above mentioned connection, the full estimated amount is payable by the applicant.

#### **4.6.6. RELOCATING THREE PHASE METER: MOVE TO BOUNDARY - URBAN**

The relocation of meters takes place when the customer applies for such service or persistent tampering of metering equipment occurs.

##### **Customer connection cable**

Refer to paragraph 4.6.1 for cable size.

##### **Service cost**

The Service cost payable is the same as for a single phase relocation. (Refer to and apply paragraph 4.4).

#### **4.7. THREE PHASE CONVERSIONS**

##### **4.7.1. CONVERT THREE PHASE ROTARY DISK METER TO PRE-PAYMENT METER - URBAN**

a) **Connection with meter inside the dwelling or in a meter box mounted on external wall**

The existing three phase rotary disk meter will be removed and a new split pre-payment meter installed in a meter box on the erf boundary.

b) **Cable connection with meter box on boundary**

All prescriptions in paragraph 4.6.1 apply.

c) **Connection with meters mounted inside a meter room or in a meter box. (Townhouses/Flats)**

The existing three phase rotary disk meter can be replaced with a pre-payment meter. The meter will be a split pre-payment meter. The owner might be required to supply and install a 1.5mm<sup>2</sup> copper twin and earth cable for the key-pad that will be installed inside the dwelling. The owner must decide on the preferred position of the key-pad inside the dwelling.

#### **Service cost**

The standard Service cost is payable.

**4.7.2. CONVERT THREE PHASE ROTARY DISK METER TO SINGLE PHASE MULTI TARIFF/TIME OF USE (TOU) METER**

Single phase multi tariff meter shall be installed as per the request of the consumer, if the average monthly consumption exceeds 1000 units. The meter point shall be relocated to a meter box on the erf boundary.

**Customer connection cable**

Refer to paragraph 4.6.1 for cable size.

**Service cost**

This kind of request is very seldom received. Seeing that all the required equipment already exists, and only the meters must change over, standard tariff for changing the meter is payable.

#### **4. DOMESTIC CONNECTIONS: PERI-URBAN AREAS**

##### **5.1. NEW DOMESTIC SINGLE PHASE CONNECTION - PERI-URBAN**

This connection will feed from the 11 kV overhead line, to the boundary of the stand/plot, by means of a transformer. This implies that more than one customer is supplied from one transformer, and with any new connection applied for, a partly utilised transformer must be used to full capacity before an additional transformer is installed.

**[All tar road crossings with a connection conductor shall, as far as possible, be installed overhead. All gravel roads will be crossed underground]**

##### **Customer connection cable**

The recommended minimum size cable allowed to be connected to the network for a domestic customer, is a 10 mm<sup>2</sup> x 3 core armoured copper cable or 10 mm<sup>2</sup> x 2 core armoured copper cable plus a separate suitably sized earth conductor.

With respect to geyser control, additional conductors are not necessary here, since a ripple relay signal is not available in peri-urban areas.

The connection cabling is the customer's responsibility.

##### **5.1.1. SINGLE PHASE ROTARY DISK METER**

Single phase domestic connections with rotary disc meters are no longer installed by CENTLEC.

Existing rotary meters are phased out and would soon be replaced by prepayment meters or TOU energy meters in special cases.

##### **5.1.2. SINGLE PHASE PRE-PAYMENT METER**

A split pre-payment meter will be installed to all new connections. Where a dwelling is further than 150 metres from the point of supply, a weather proof box may be installed closer to the erf boundary to accommodate the control unit of the meter. It is the customer's responsibility to install the connection and key pad control cabling from the point of supply up to the point of control. The customer determines the position of the key pad within the dwelling, which is also the position where the communication cable must terminate. CENTLEC will install the pre-payment meter in the meter box which is positioned on the boundary, and the control panel inside the dwelling.

The connection cable is connected through an 80 ampere circuit breaker onto the network. The 80 ampere circuit breaker and meter located in the meter box shall be the point of supply, which is also the point where CENTLEC's responsibility with regard to cabling ends. Beyond this point CENTLEC will only be responsible for the maintenance and repair of the control unit.



### **Customer connection cable**

Refer to paragraph 4.3.1. The minimum size for the communication cable is 1.5mm<sup>2</sup> copper twin and earth cable. Alternatively, an Airdac overhead cable with internal control conductors, can be used.

### **Service cost**

The cost for above mentioned connection is set out in the standard Service costs.

## **5.2. PROVISION FROM A LOW VOLTAGE OVERHEAD LINE – PERI URBAN**

The connection capacity is limited by means of an 80 ampere circuit breaker at the point of supply, and a 60 ampere circuit breaker at the point of control. Low voltage, overhead distribution lines do not get erected anymore, but where low voltage overhead lines still exist, peri-urban connections are still supplied from it where applicable.

### **Service cost**

The Service cost payable is determined annually and is part of the standard electricity tariffs, as in the case of supplying from an 11 kV overhead line. If the customer requests to receive the connection at a position of his/her own choice, such request shall be investigated and considered, but the full estimated amount is to be paid. When connections are taken from existing low voltage overhead lines, the standard cost mentioned, is applicable.

## **5.3. PLOT WITH MORE THAN ONE DWELLING – PERI URBAN**

When a request is received for more than one electrical connection on a small holding or plot, and it is permitted in the zoning of the site to have more than one housing unit, the applicant can choose from the following three possibilities:

- (a) Firstly, the total capacity of the connection is limited by means of a 80 ampere main circuit breaker, and the supply to each dwelling is limited with an 80 ampere sub-circuit breaker. Thus, the plot/stand may have more than one 60 ampere capacity meter points for each permissible dwelling. The advantage here is, the initial capital cost is relatively low. The disadvantage is the total capacity of the connection is limited to 80 ampere maximum. The maximum size meter box permitted on the street boundary is an 8-way box that could house up to 12 single phase meters.

### **Service cost**

The total cost for the connection will consist of the standard Service cost for the first house, and the cost for the additional meter equipment for the additional permissible dwellings, and a pro rata amount which will contribute towards the network with respect to the additional load imposed by the additional permissible housing units (2.5kVA per additional dwelling).

- (b) Secondly, the connection consists of the required size triple pole circuit breaker and an 80 ampere circuit breaker and meter for each dwelling. Thus, the plot/stand may have more than one 60 ampere capacity meter points for each permissible dwelling. The transformer and cable capacity, supplying the meter box, will be selected to comply with the load demand. The maximum size meter box permitted on the street boundary is an 8-way box that could house up to 12 single phase meters.

### **Service cost**

In this case, the applicant shall pay twice the standard Service cost amount required for peri-urban connections, plus a pro rata network contribution cost towards the additional load imposed by the additional permissible housing units. (5kVA)

- (c) Thirdly, two separate supply points for one stand/plot can be awarded in exceptional cases. This will apply where a stand/plot want electricity at each separate dwelling, and the dwellings are situated more than 300 metres away from each other (this also applies to pumps).

The 300 meter distance serves as a guide, and under **no** circumstances may this lead to the mixing of supplies for two separate connections. In other words, when the electricity supply to a dwelling with it's surrounding buildings/pumps/electrical equipment is switched off at the boundary, such building/pumps/electrical equipment may not be supplied from any other supply point.

### **Service cost**

In this case, the applicant shall pay twice the standard Service cost amount required for peri-urban connections, plus the estimated cost for the creation of an additional supply point, as well as a pro rata network contribution cost towards the additional load imposed by the additional housing units (5kVA).

#### **5.4. SINGLE PHASE CONVERSIONS: DOMESTIC - PERI-URBAN**

##### **5.4.1. CONVERT SINGLE PHASE ROTARY DISK METER TO PRE-PAYMENT METER**

When converting to a pre-payment meter, the customer is responsible for providing, and installing, a communication cable. All the prescriptions in paragraph 4.2, also applies here.

###### **Customer connection cable**

Refer to paragraph 4.2. The minimum communication cable size is 1.5mm<sup>2</sup> Cu twin and earth cable. Alternatively, an Airdac overhead cable with internal control conductors may be used.

###### **Service cost**

The cost for above mentioned connection is set out in the standard Service costs.

##### **5.4.2. CONVERT SINGLE PHASE ROTARY DISK METER TO THREE PHASE MULTI TARIFF TIME OF USE (TOU) METER**

A three phase domestic connection is provided according to the customer's need. The three phase multi tariff TOU meter will be installed inside a meter box on the erf boundary.

###### **Customer connection cable**

Refer to paragraph 4.6.1.

###### **Service cost**

The calculated cost of the service shall be charged.

##### **5.4.3. TYPES OF THREE PHASE CONNECTIONS: PERI-URBAN AREA**

##### **5.4.4. NEW THREE PHASE DOMESTIC CONNECTION - PERI-URBAN**

The minimum load capacity for three phase connections is 50kVA, and is controlled at the point of supply by 80 ampere circuit breakers, and 60 ampere circuit breakers at the point of control. The 80 ampere circuit breaker function is to decrease the maintenance on peri-urban connections.

###### **Customer connection cable**

Refer to paragraph 4.6.1.

###### **Service cost**

The cost for the above mentioned connection is set out in the standard Service costs, and is only valid where a three phase 11 kV network exists.

If a three phase 11 kV network does not exist, or the customer requires a three phase connection at a different position, than the position indicated by this department, it will be investigated and considered, but the full estimated cost for the extension of the line and or the additional supply transformer must be paid.

A three phase domestic connection greater than 80 ampere per phase, is also available, and the full estimated cost must be paid. The maximum of 200kVA will be applicable on peri-urban networks.

#### **5.4.5. THREE PHASE MULTI TARIFF/TIME OF USE (TOU) METER – PERI-URBAN**

A three phase domestic connection with a three phase multi tariff TOU meter is provided according to the customer's need. The maximum is 150A per phase.

##### **Customer connection cable**

Refer to paragraph 4.6.1

##### **Service cost**

Refer to paragraph 4.6.1

#### **5.4.6. THREE PHASE PREPAYMENT METER – PERI-URBAN**

A three phase pre-payment meter will be installed according to the customer's needs. All the prescriptions of paragraph 4.6.2, also apply here. Maximum of 60A per phase is applicable.

##### **Customer connection cable**

Refer to paragraph 4.6.1. The minimum size for the communication cable is 1.5mm<sup>2</sup> copper twin and earth or Surfex cable.

##### **Service cost**

The cost for above mentioned connection is set out in the standard Service costs.

#### **5.5. THREE PHASE CONVERSIONS: DOMESTIC- PERI-URBAN**

##### **CONVERT THREE PHASE ROTARY DISK METER TO PRE-PAYMENT METER**

When converting to a split pre-payment meter, the customer is responsible to provide and installing a communication cable. All the prescriptions of paragraph 4.6.1, also apply here.

**Customer connection cable**

Refer to paragraph 4.6.1. The minimum size for the communication cable is 1.5mm<sup>2</sup> copper twin and earth cable.

**Service cost**

The cost for above mentioned connection is set out in the standard Service costs.

## **5. HIGH DENSITY HOUSING DEVELOPMENT**

### **6.1. SUPPLYING TOWN HOUSES: URBAN**

For the purpose of supplying electricity to proposed townhouse development, there are three distinguished types of stands on which such development can take place:

- a stand which the Council zoned for town housing, during the planning of residence areas where provision is made for town housing in existing township scheme;
- a stand located in an area, not re-zoned for town housing, but which the Council has earmarked for such development. A prospective developer must still apply for the re-zoning of such stand;
- a townhouse development on a stand, not earmarked or zoned for such development. Provision for a service connection shall only take place after completion of the township establishment of the land, and on receipt of the proof of the registration of the sites and the relevant zoning thereof.

#### **Service cost**

There are no standard service costs applicable to townhouse development. To make provision for an electrical connection to any of the three types of stands mentioned above, the basis for cost estimation for each type, is described below, respectively:

#### **6.1.1. APPLICATION FOR A SUPPLY POINT AT A STAND, WHICH IS ZONED FOR TOWN HOUSING BY THE CITY COUNCIL**

The City Council shall create the 11 kV cable infrastructure in the road reserve, adjacent to stands, which the City Council zoned for town housing or flats. When an application for an electrical connection is received, the applicant will be responsible for paying the full cost of the connection equipment, and the low voltage supply cable further than 120 metres, and a capital contribution towards the estimated capacity of the connection size.

Seeing that stands are identified after thorough deliberation, it almost never occurs that the 11 kV infrastructure is insufficient, and for a supply point to be further away than 120 metres.

#### **Types of connections**

- a. Multiple single phase pre-payment meters shall be installed from a single connection point (point of supply) for townhouses with a total After Diversity Maximum Demand (ADMD) of 500kVA or less;
- b. Bulk domestic connection: When a townhouse complex has a ADMD of more than 500kVA, then a single medium voltage bulk domestic supply connection

is provided, and the developer is responsible for sub-metering.

The main switch inside the meter box or substation located on the erf boundary will be considered the point of supply.

**6.1.2. SUPPLYING ELECTRICITY TO A TOWN HOUSE COMPLEX, SITUATED ON A STAND INTENDED FOR TOWN HOUSING DEVELOPMENT, BUT THE APPLICATION FOR SUCH ZONING STILL HAS TO TAKE PLACE**

The Metro Council and CENTLEC shall burden the cost in creating an 11 kV cable infrastructure in the road reserve, adjacent to stands, which the Metro Council zoned for town housing or flats. A developer who wants to re-zone a stand which is located in an earmarked area, must contribute towards the cost of the 11kV cables if the network is such that it will be necessary to install a substation and 11 kV cabling, so that a supply point for the development can be provided.

The developer is responsible to pay the cost of all the LV cable and meter box material, and one of the two 11 kV cables (up to a maximum of 50 metres) to be installed, to complete the ring feed. Further, as described in the previous item, the developer is responsible for the full cost of the connection, and a pro-rata contribution towards the cost of the upstream distribution networks. (See the CENTLEC connection information sheet attached for more specific detail)

**Types of connections**

Refer to paragraph 6.1.1.

**NOTICE**

If the developer requests that the substation be placed on a specific position on, or inside the stand, then Centlec shall only bare the cost of one of the two 11 kV cables up to a maximum of 15 metre inside the stand. If the cable distance exceeds 15 metres, the developer will then be responsible for the additional cable cost.

### **6.1.3. SUPPLY POINTS FOR TOWNHOUSES: URBAN**

#### **6.1.3.1. SINGLE PHASE PRE-PAYMENT METERS - TOWN HOUSES**

Townhouse, flats and other high density housing units may have unlimited single or three phase direct meters, one for each permissible dwelling with one main point of supply circuit breaker limited to 800A or 500kVA (largest low voltage permissible connection in urban area). But that no limitation to be placed on the quantity of energy meters for permissible individual dwellings. These meters may be housed in either a 8-way meter box or a meter room placed on the site at the street boundary. Also see the requirements related to meter boxes and meter rooms in the By-laws relating to Electricity Supply 2005, chapter 4, Par 38.

#### **6.1.3.2. BULK METERING FOR TOWNHOUSES – WITH AN AFTER DIVERSITY MAXIMUM DEMAND OF HIGHER THAT 500kVA.**

When a townhouse complex has an estimated after diversity maximum demand of higher than 500kVA, it shall be supplied by a single medium voltage bulk domestic connection.

Domestic bulk metering is limited by means of a main circuit breaker which determines the connection's capacity. The capital contribution is based on the estimated capacity as applied for by the developer. The connection is supplied from a medium voltage 11KV switch and metering unit inside a substation or kiosk placed within the site, or on an adjacent site, for which the contractor provides one medium voltage cable to be connected onto the network through the necessary metering equipment. The premises are provided with privately sub-metering and no load control equipment is required for this type of connection. CENTLEC's responsibility stop at the bulk meter.

Reselling of electricity is regulated by the requirements in terms of the By-laws relating to Electricity Supply: 2005, chapter 7, Par 57 - Principles for the resale of electricity.

### **6.2. INFORMAL HOUSING DEVELOPMENTS ON SINGLE RESIDENTIAL SITES**

Separate metering is allowed for more than one dwelling on the same single residential erf, if it has been permitted by the zoning of the site. The electrical supply to the dwellings will be taken from only one point of supply, located on the erf boundary. When a request is received for electrical connections, and it is required that all permissible dwellings on the erf must be metered separately, the applicant can choose from two possibilities:

**A.** Firstly, the total capacity of the connection is limited by means of an 80 ampere main circuit breaker(point of supply), and the supply to each dwelling is also each limited with a 60 ampere sub-circuit breaker and meter for each permissible dwelling in a meter box on the street boundary. The advantage here is, the initial capital cost is relatively low. The disadvantage is that the total connection capacity at the point of supply is limited to 60 ampere / single phase maximum.



The owner, with the assistance of his electrical consultant must calculate the estimated load to establish if the mentioned connection (13.8kW/60A single phase) will be sufficient to supply the combined loading of all permissible dwellings on the site. The maximum size meter box permitted on the street boundary is an 8-way box that could house up to 12 single phase meters.

**Service cost**

The cost for the connection will consist of the standard service costs for the first dwelling. An estimated costs shall be charged for all the additional metering equipment needed, plus a contribution towards the backbone upgrading costs for the total additional load imposed on the distribution network to accommodate all the additional permissible dwellings on the site. This would be calculated from 1.5kVA for each additional meter for the additional permissible dwelling, up to the maximum of 8.8kVA (13.8kVA-5kVA).

**B.** Secondly, the connection consists of a triple pole circuit breaker switch(point of supply) and an 80 ampere circuit breaker and meter for each permissible dwelling in a meter box on the street boundary. The maximum size meter box permitted on the street boundary is an 8-way box that could house up to 12 single phase meters. The initial capital cost is relatively high but the advantage is that each dwelling is serviced with a separate 80 ampere at the point of supply.

**Service cost**

The cost for the connection will consist of the standard service costs for the first dwelling. An estimated costs shall be charged for all the additional metering equipment needed, plus a contribution towards the backbone upgrading costs for the total additional load imposed on the distribution network to accommodate all the additional permissible dwellings on the site. This would be calculated from the required 5kVA for each additional meter of the additional permissible dwellings.

**Customer connection cable**

The owner/customer will provide separate customer connection cables from each dwelling, up to the single point of supply at the erf boundary.

See paragraphs 4.2.1

**6.3. FORMAL MUNICIPAL HOUSING: SUPPLY POINTS FOR MUNICIPAL OWNED HIGH DENSITY HOUSING UNITS/FLATS: URBAN**

These high density housing units may be done as per item 6.1 or multiple split prepayment meters shall be installed and managed by CENTLEC.

The developer shall supply and install a metering kiosk or box at each of the housing units or block of flats. Centlec shall supply and install split prepayment meters inside these pre-approved meter enclosure.

**The developer shall be required to supply and install 1.5mm<sup>2</sup> copper twin and earth or Surfex communication cable from the metering unit up to the key-pad that will be installed inside the dwelling.**

**Service cost**

There are no standard Service costs applicable to townhouse and high density flat developments. An estimated actual cost shall be payable, which is normally funded by the Metro.

**6.4. SUPPLYING TOWN HOUSES: PERI-URBAN**

The peri-urban network does not make provision for high density housing. Thus, any application for this type of connection shall thoroughly be investigated (in conjunction with the Planning division) with respect to zoning, available capacity and feasibility. All the conditions for townhouse developments in urban areas, is also applicable here. Refer to item number 4.

Townhouse, flats and other high density housing units may have unlimited single or three phase direct meters with one main point of supply circuit breaker, but the main supply would be limited to 300A or 200kVA (largest pole mounted transformer size on peri-urban distribution networks). No limitation would be placed on the quantity of energy meters for permissible individual dwellings. These meters may be housed in either a 8-way meter box or a meter room placed on the site at the street boundary.

**Service cost**

There are no standard Service costs applicable to townhouse development.

The full estimated amount for the upgrading / creating of network, and all connection equipment, is payable in advance.

## **6. SMALL DEMAND CONNECTIONS**

### **(CONNECTIONS SMALLER THAN 100 kVA)**

#### **SMALL DEMAND SUPPLIES: URBAN / PERI-URBAN AREAS**

##### **Definition**

It is a connection to a customer of which the maximum demand does not exceed 100 kVA. The consumption of the customer is measured by means of a 100/150 ampere kWh multi tariff meter (TOU), and the connection limited at a maximum of 150 ampere, at the supply point.

A low consumption connection can be supplied with single phase and maximum 60 ampere at the point of control. The meter will be installed in a meter box on the erf boundary. If practical the meter box may be installed at a position suitable to the applicant.

In Peri-Urban areas a three phase connection with minimum of 50kVA (60 ampere per phase) is supplied via a pole mounted transformer. The maximum that could be supplied from a pole mounted transformer is 200kVA.

At complexes and businesses (especially in the City centre) the developer shall build a meter box in the outside wall or a meter room accessible from the street side of the building. If changes need to be made to the existing connection and the existing meter box is not accessible or re-usable, then the applicant will have to build a new meter box into the wall as stated above.

**Important**

A difference must be distinguished between a connection smaller than 100 kVA and a meter / supply point with a total capacity greater than 100 kVA, with a number of connections all smaller than 100 kVA.

- (a) Numerous connections exist where the main circuit breaker, with a capacity greater than 150 ampere per phase, limits the total capacity of the connection, but more than one meter measures the consumption. Since 1995-01-01 only one bulk meter were provided if the capacity of the connection exceeds 150 ampere per phase. This has now been adjusted upwards to 500kVA for connections in the urban area (within the urban edge), and 200kVA in the peri-urban areas.
- (b) Where the capacity of an electrical connection does not exceeds 800 ampere per phase, more than one kWh meter is allowed to measure power consumption. Single meters, with maximum capacity of 60 ampere per phase, can be converted to split pre-payment meters. The owner/lessor must supply and install a communication cable.

**Service cost**

The developer is responsible for full estimated Service cost, as well as the capital contribution of the estimated capacity applied for.

## **7. BULK SUPPLY CONNECTIONS**

### **8.1. BULK SUPPLY:- URBAN**

#### **Definition**

It is a connection to a customer of which the maximum demand is greater than 100kVA (150 ampere per phase). The metering shall consist of a combination maximum demand / kWh-unit meter. Time of use registers for each of the time zones shall be applicable for the energy used in the period. The maximum demand is only measured inside peak periods. An excess charge, which is calculated from the highest demand during the last twelve months of consumption is also applicable.

#### **Connection**

A low voltage bulk connection, is limited at a maximum of 500 kVA. The connection is limited by means of a main circuit breaker, and consumption is measured with one bulk meter and accompanying equipment. Connections between 500kVA and 5MVA are considered medium voltage connections. Connections exceeding 5MVA are negotiable (a special arrangement is signed). See electrical connections information sheet for more detail.

The customer must complete a load estimate and hand it in with the application for the supply of a Bulk connection.

### **8.2. UPGRADING OF THE NETWORK FOR GREATER SUPPLY CAPACITY**

If a miniature substation has to be placed, to enlarge the existing capacity to accommodate the applicant's need, the applicant must then make an area of 6\_meter x 2,5 meter available on the premises where a miniature substation can be placed. This area must be adjacent to the boundary and accessible at all times to ensure that the miniature substation, if underutilised, can be used for future other connections. It is necessary that the developer register a servitude for the miniature substation in favour of CENTLEC.

If the miniature substation is fully utilised, or placed in an inaccessible position for use of further connections, the applicant has to pay the full cost amount for supplying and installation of the miniature substation. The position of the miniature substation must be thoroughly cleared out, taking in consideration the existing 11 kV network, number of substations in the ring circuit, the load, water supply, sewerage connection, future utilisation and aesthetical aspects of the social environment.

### **Service cost**

A bulk connection will be provided if the applicant is prepared to pay the full estimated cost as determined below:

**The Service cost consists of two parts, namely:**

#### **The connection part:**

This estimated amount contains all cost in respect to the applicable meter equipment (labour, material and transport). Similar to the small demand connections.

#### **The capital contribution part:**

The applicant pays a capital contribution, in Rand per kVA, towards the estimated capacity applied for.

The two, abovementioned costs are added together, which constitutes the total calculated Service cost amount.

### **8.3. BULK SUPPLY - PERI-URBAN**

Supply point up to a maximum of 1000kVA

The methods of distribution in peri-urban areas (11 000 volt overhead distribution lines) necessitate another policy with regard to the capacity of supply points, than would be required for urban areas. A low consumption connection can be provided as a single phase connection up to a maximum capacity, the same as for a peri-urban domestic connection (60 ampere at the point of control). The position for the supply point will be determined by CENTLEC.

When a three phase supply is required, the minimum capacity will be 50 kVA, and the Service cost will be estimated. A maximum capacity of 200 kVA can be supplied from a pole mounted transformer. The meter box is placed at a position on the boundary, adjacent to the site.

If an application for a supply point exceeds 200 kVA, the applicant is required to apply for a MV connection point (11kV) and make land available on the plot for an additional transmission pole, a pole mounted metering unit and a stay wire. The minimum size of such a MV connection is 300kVA.

It is required from the applicant to supply and install a transformer or miniature substation on the plot and connect the supply via a suitably sized 11kV cable, terminated to a set of 11kV drop out fuses (consumer point of control), and mounted on the transmission pole, close to the CENTLEC metering unit and point of supply.

#### **Service cost for peri-urban areas**

The Service cost is estimated, and the full amount plus the network contribution portion is payable by the applicant.

**8. REDUCING OF CONNECTION SIZE**

The connection may be reduced on request from the customer.

**Service cost**

The estimated tariff is payable.



## 9. TEMPORARY CONNECTION

### 10.1. TEMPORARY BUILDERS CONNECTION

A builder's connection will only be supplied if the building plans had been approved. The building approval letter must accompany the application.

A three phase prepayment meter, 60A per phase is installed in a Peri-Urban meter box on the erf boundary. The connection is valid for a maximum of three months, unless arranged for a specific period not exceeding eighteen months. The connection shall be removed by CENTLEC if the arranged period has lapsed. If the building is not completed and the final connection not installed, then the applicant will have to re-apply for the connection and the standard tariff would be payable once again.

The small demand business energy tariff is applicable and will only be changed when written proof is provided that all building activities has been completed and that the tariff can be changed to the relevant domestic or commercial tariff.

#### **Service cost**

The standard Service cost is payable for the 60A per phase connection. If such a temporary connection with a larger size required, then the applicant is to pay the actual cost thereof.

### 10.2. TEMPORARY CONNECTION FOR A SOCIAL EVENT

A temporary connection for a social event will only be supplied if the event has been approved by the Mangaung Metro. The approval letter must accompany the application.

A single phase or three phase prepayment meter, 60A per phase is installed in a Peri-Urban meter box on the erf boundary. The connection is valid for a maximum of three months, unless arranged for a specific period not exceeding twelve months. The connection shall be removed by CENTLEC if the arranged period has lapsed.

The small demand domestic energy tariff is applicable.

#### **Service cost**

The standard Service cost is payable for the 60A per phase connection. If such a temporary connection with a larger size required, then the applicant is to pay the actual cost thereof.

## 10. REMOVING SERVICE CONDUCTORS

When a building is to be renovated or demolished, and service conductors need to be removed. The owner must apply for such service at least one month before the site is to be declared safe in terms of the demolishing permit. Where such service conductors were removed, and later need to be reconnected to the renovated, or a new building, it will then be considered a new connection, unless an application to relocate has been received and paid for.

In instances where the power consumption of a premises is metered by one single meter, and the owner applies for removal of such meter, it is considered a removal of the entire connection.

NB. Metering equipment always remains the property of the CENTLEC and is linked to a specific erf, and could not be relocated to another erf by the consumer.

## 11. POWER FACTOR CORRECTION

The Bylaws of electricity dictates that a consumer is to ensure that their equipment is not causing the power factor to go beyond the acceptable levels as specified in Chapter 4- Rights and obligations of the consumer, paragraph 42 of the bylaw. (The power factor of any load shall be maintained within the limits 0,85 lagging and 0,9975 leading).

Customers shall supply and install power factor correction equipment to ensure compliance to this by law, and obtain written permission from CENTLEC before installing such equipment. Such equipment must include sufficient filter circuitry equipment and must comply with the Council's requirements. If such equipment is installed without the permission of CENTLEC, the owner shall be held liable for all correction costs involved.

The service provider may regulate load control by means of a high frequency (425/1050Hz) signal.

## 12. REFUNDING CONNECTION FEES

Standard Service costs are refundable at the request of the applicant if the connection could not be executed for whatever reason. At least 30 days should be allowed for the refunding Service cost. If the standard tariff does not make provision for a particular Service cost, and this cost was estimated, then only a portion of the estimated amount will be refundable. A charge of 26.66 % will be retained to cover administration expenses.



out in the National Rationalised Standards NRS 097-2: Grid interconnection of embedded generation: Part 2 SSEG.

No generation equipment may be connected to the municipal electrical grid without the express consent of the Engineer of the Electricity Services Planning Department of CENTLEC.

The by-law relating to electricity supply, chapter 4, par 31 as was promulgated by Local Government Notice No 110 of 28 October 2005, shall also be applicable to such an installation of a small scale embedded generator (SSEG).

**Reference to the other Policies:**

<b>Number of Electricity Connections per erf</b>	-	<b>Dated: 2005/08/29</b>
<b>Rotation meters: Taking over of meters by Energy Management Companies</b>		<b>Dated: 2005/04/21</b>
<b>Standard Procedures: Shifting of Electricity Services in front of erven</b>		<b>Dated: 2004/07/15</b>
<b>Standard Procedures: Transfer of Electricity Connections from informal dwellings to houses</b>		<b>Dated: 2004/07/15</b>
<b>Low Voltage earthing</b>	-	
<b>Responsibility for Electricity Conductors</b>		<b>Dated: 2005/04/21</b>

**ANNEXURES:**

**A. CONNECTION INFORMATION SHEET 2016/2017**

**B. POLICY AUTHORISATION - CONTROL SHEET**

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**CENTLEC POLICY – AUTHORISATION CONTROL SHEET**

The attached revised Electrical Connection Policy – Revision 28 dated 8 May 2017 has been approved by the CENTLEC Executive Committee for immediate implementation.

**SECTION 11: REVIEW PROCESS**

This policy and underlying strategies will be reviewed at least annually, or as necessary, to ensure its continued application and relevance.