

## POLICY ON ELECTRICITY METERING FOR RESIDENTIAL AND SMALL BUSINESS CUSTOMERS IN THE EMM

Item A-F (32-2016) CM 28/04/2016	REVIEWD INTEGRATED DEVELOPMENT PLAN (IDP) AND MEDIUM TERM REVENUE AND EXPENDITURE FRAME WORK (MTREF): 2016/2017 TO 2018/2019
-------------------------------------	--

### Resolved:

5. That to guide the implementation of the municipality's annual budget, the Council of the EMM **APPROVES** the policies as set out in the following Annexures of this document:

- Annexure D1** Medium-term Budget Policy Statement (reviewed)
- Annexure D2** Pricing Policy Statement (reviewed)
- Annexure D3** Property Rates Policy (remains unchanged)
- Annexure D4** Provision of Free Basic Electricity Policy (remains unchanged)
- Annexure D5** Waste Management Services Tariff Policy (reviewed)
- Annexure D6** Consumer Deposit Policy (reviewed)
- Annexure D7** Indigent Policy (remains unchanged)
- Annexure D8** Credit Control & Debt Collection Policy (reviewed)
- Annexure D9** Provision for Doubtful Debtors and Debtors Write Off (reviewed)
- Annexure D10** Budget Implementation and Monitoring Policy (remains unchanged)
- Annexure D11** Municipal Entity Financial Support Policy (reviewed)
- Annexure D12** Accounting Policy (reviewed)
- Annexure D13** Funding and Reserve Policy (remains unchanged)
- Annexure D14** Borrowing Policy (remains unchanged)
- Annexure D15** Cash Management Policy (remains unchanged)
- Annexure D16** Policy on electricity metering for residential and small business customers in the EMM (reviewed)
- Annexure D17** Policy for the Vending of Pre-paid Electricity (reviewed)
- Annexure D18** Policy for Correction of Meter Reading and Billing Data (remains unchanged)
- Annexure D19** Electricity Tariff policy (reviewed)
- Annexure D20** Virement Policy (remains unchanged)
- Annexure D21** Consumer Agreement Policy (reviewed)
- Annexure D22** Renewable Energy Revenue Loss Mitigation Policy (new)

# CONTENTS

<b>1. BACKGROUND.....</b>	<b>2</b>
<b>2. DEFINITIONS .....</b>	<b>3</b>
<b>3. ADVANCED METERING INFRASTRUCTURE (AMI) – NRS 049 (FUTURE “SMART METERING”)</b> .....	<b>4</b>
<b>4. PROTECTION OF METERING AND CONSEQUENCE MANAGEMENT.....</b>	<b>4</b>
<b>5. METERING IN EXISTING AREAS.....</b>	<b>6</b>
5.1 CATEGORY A: ESTABLISHED AREAS (OR NODES) WITH PAYMENT LEVELS EXCEEDING 90%.....	7
5.2 CATEGORY B: ESTABLISHED AREAS (OR NODES) WITH PAYMENT LEVELS LOWER THAN 90%.....	8
5.3 CATEGORY C: EXISTING INDIVIDUALLY METERED FLATS, HOSTELS AND TOWNHOUSES .....	10
5.4 CATEGORY D: EKURHULENI OWNED PROPERTY RENTED TO OWN STAFF.....	12
5.5 CATEGORY E: MANUALLY READ EXISTING BULK METERED CONNECTIONS (DEMAND METERS).....	14
<b>6. METERING IN NEW RESIDENTIAL AND SMALL BUSINESS AREAS.....</b>	<b>15</b>
6.1 CATEGORY F: NEW RESIDENTIAL AND BUSINESS AREAS (OR NODES) – LOWER END-USERS .....	15
6.2 CATEGORY G: NEW RESIDENTIAL AND SMALL BUSINESS AREAS (OR NODES) – MEDIUM TO HIGHER END-USERS .....	16
6.3 CATEGORY H: NEW BULK RESIDENTIAL COMPLEXES AND BUSINESSES (AMR DEMAND METERS).....	17
<b>7. CREDIT CONTROL MEASURES .....</b>	<b>18</b>
<b>8. DEVIATIONS FROM THE POLICY.....</b>	<b>19</b>
<b>9. STAKEHOLDER ENGAGEMENT.....</b>	<b>19</b>

# ELECTRICITY METERING FOR RESIDENTIAL AND SMALL BUSINESS CUSTOMERS POLICY

## 1. BACKGROUND

The Ekurhuleni Metropolitan Municipality, since 2003, created a practical residential metering policy covering all aspects related to the future planning, design and installation of residential and business metering systems. The term “systems” encompasses all forms of residential and business metering, whether it is a Ferraris-type credit meter, a prepayment meter, a high tech remote meter as found in Tembisa, AMR Demand meter or a future smart meter.

The document has the following section headings:

- ▶ Definitions;
- ▶ Smart metering (future);
- ▶ Protection of metering;
- ▶ Metering in existing areas;
- ▶ Metering in new areas;
- ▶ Credit control measures; and
- ▶ Stakeholder engagement.

The strategy is designed to manage current use of existing metering processes and equipment as far as is practically possible and to improve the security of metering cost effectively.

In all cases, reasonable efforts will be made to restore metering integrity through the use of:

- ▶ by-laws, supported by special operations in the application of these;
- ▶ meter audits, guided by non-purchasing patterns or suspect consumption profiles (regular meter audits are essential in order to maintain the integrity of the installed meter base), and
- ▶ the application of reinstatement fees, as contained in the schedule of tariffs.

Further (possibly anticipated) violation of metering equipment must lead to placing the split metering element of a prepayment meter inside a medium or heavily constructed meter box/structure on the sidewalk (or pole top) and to include remote tamper monitoring devices.

All new reticulation must be designed:

- ▶ using strengthened meter boxes with no visible hinges or locking arrangements on the outside. These meter boxes are to be secured by methods other than the usual lock and key arrangement (possibly using electronic remote devices, or mechanical locking devices).

- ▶ to cater for split prepayment metering that utilises pilot wire (communication wire) to connect to the customer interface unit (CIU) of the meter.

Only one connection will be permitted to a stand, unless otherwise authorized by the Head of Department: Energy, for individually motivated cases.

All meters must be sealed, using numbered and colour coded seals as per standard specifications and Council’s Meter Seal Policy. This will allow authorised personnel to establish at a glance whether the meter’s integrity has been breached.

## 2. DEFINITIONS

**kWh – Kilowatt-hour**                      1 kWh = 1 Unit of Electricity consumed

**AMR**    Automated Meter Reading (metering method which is mainly associated with Demand meters and requires a modem to upload the metering data automatically to a central database for billing purposes)

**EWASA**    e-Waste Association of South Africa

**“Lower end user”**                      : The typical monthly consumption value is, on average, less than 450kWh.

**“Medium end user”**                      : The typical monthly consumption value is, on average, less than 1 000kWh.

**“Higher end user”**                      : The typical monthly consumption value is, on average, more than 1 000kWh.

<b>“Lightly constructed strengthened meter box”</b>	: Electrical kiosk, constructed from a suitable material that will be able to withstand attempted break-ins, with hidden hinges and opening mechanisms, also adapted for pole top use.
<b>“Medium constructed strengthened meter box”</b>	: Electrical kiosk, constructed from a suitable material that will be able to withstand relatively serious attempted break-in’s, with hidden hinges and opening mechanisms, also adapted for pole top use.
<b>“Heavily constructed protective structure”</b>	: Heavy steel and/or concrete structure serving as an electrical kiosk.

The above table excludes all use of unprotected padlocks in future developments. All new designs are to cater for better protected meter boxes and this will only be possible by using more advanced opening mechanisms.

### 3. ADVANCED METERING INFRASTRUCTURE (AMI) – NRS 049 (FUTURE “SMART METERING”)

Once certain technical obstacles related to smart metering have been cleared, the supply chain management process will be followed to appoint a service provider(s), as well as to establish required infrastructure such as a control centre and other resources.

It is expected that the introduction of smart metering, when mainly targeted at the credit metering segment, will resolve various problems related to inaccessible meters, errors due to manual meter reading, creation of an accurate energy balance, meter interference, and so forth.

It is envisaged that the primary application of AMI systems is for metering installations using direct-connected meters. The relevant part of NRS 049 is applicable to residential and commercial customers. The application of AMI systems is in response to the need for demand-side management measures, which will mitigate the effects of a shortage of electricity generation capacity at a national level that might occur from time to time.

The AMI system incorporates an AMI master station, from where the configuration and functionality of the system are controlled. The communication network, the AMI meters, a load switch (disconnect/reconnect/load limiting), the appliance (load) control devices (activated through the meter), a customer interface unit and optional interfaces to communicate with a mobile customer interface and to retrieve water consumption data. The communication media between the AMI master station and the meter are not specified. The choice of communication media will be dependent on a number of factors. The communication media may also be changed during the life of the AMI system.

This is intended to evolve towards the inclusion of an industry-agreed set of open communication standards based on international standards, for communication between the AMI master station and meters and concentrators.

### 4. PROTECTION OF METERING AND CONSEQUENCE MANAGEMENT

Three types of protective device are to be utilized, ranging from being relatively inexpensive at the one end of the scale too expensive at the other end of the scale. The lightly constructed meter box will only be suitable for relatively unproblematic areas and will require an immediate response if used in a more problematic area, when tampering occurs. As part of the future management of meter boxes, there may also be costs related to the installation and maintenance of communication devices with these meter boxes.

The following three principles regarding protection of metering should be adhered to:

**Protection** – Stronger electrical meter boxes should be used to allow protection of the network and metering. Three types of meter boxes should be enough to cover a spectrum from possible mild interference to full scale, uncontrollable interference with the electrical network. Metering will, therefore, have to be centralized in meter boxes on sidewalks, or in pole top meter boxes.

**Detection** – Interference with electrical distribution structures may take place even though the structures are reinforced and will need to be detected electronically with a monitoring system.

**Reaction** – Reliable reaction to monitoring devices received is essential. A firm approach is essential and consideration should be given to regular patrols in the specific areas where structures are installed.

A balance is sought between the above three principles in order to create a cost effective solution in protecting the Ekurhuleni Metropolitan Municipality's electricity assets.

#### CONSEQUENCE MANAGEMENT FOLLOWING METERING THAT WAS INTERFERED WITH

The following factors will lead to meter reinstatement fees being issued:

- Meter found bypassed (as a result of customer initiated interference)
- Meter found tampered in any other way, leading to under-registration of consumption
- Meter found bypassed (as a result of EMM own staff correcting a no power situation at some point in history)

A meter reinstatement fee may be waived:

- In the case of individual connections, where a reinstatement fee was levied, motivation may be made in writing by the responsible official, for the reinstatement fee to be reversed based on specific, mitigating factual information. Such reversal shall be approved in writing by the Head of Department: Energy or his delegate.
- The fact that the meter may have been bypassed by EMM own staff will not necessarily result in the reinstatement fee being reversed, the customer involved needs proof of this event, or proof that the meter was reported as faulty, especially in the case of prepayment meters that are obviously issuing free units (i.e. bypassed)
- The provisions of the by-laws in relation to back billing remain in place.

## 5. METERING IN EXISTING AREAS

Existing electricity customers can be categorized as follows:

Category A	Established areas with payment levels exceeding 90%
Category B	Established areas with payment levels lower than 90%
Category C	Individually metered flats, hostels and townhouses
Category D	Ekurhuleni owned property rented to own staff
Category E	Manually read existing bulk metered connections (demand meters)

The above categories of customer will now be discussed in some detail, taking into account practical aspects and cost limitations.

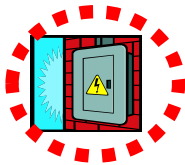
### Legend



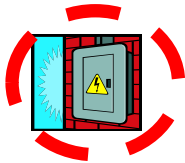
Residence/building



Option acceptable



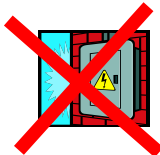
Meter box with light protection



Meter box with medium protection



Meter box with heavy protection



Option unacceptable

## 5.1 CATEGORY A: ESTABLISHED AREAS (OR NODES) WITH PAYMENT LEVELS EXCEEDING 90%

- ▶ These are more established residential and business nodes ranging from medium- to higher end-user areas. Typically, these areas are fully electrified with underground and/or overhead networks, and credit metering and prepayment meters have been successfully used for many years, and
- ▶ Credit meters in these areas are manually read by appointed contractors.

### 5.1.1 MAIN PROBLEMS:

- (a) Inaccessibility of meters due to old reticulation methods (i.e. the meter is situated inside the property or inside the home), and
- (b) manual meter readings have inherent quality problems and are very labour intensive.

### 5.1.2 METERING STRATEGY

- (a) The credit metering system currently in use is now becoming outdated and must be replaced with a prepayment meter, or a smart meter (when available);
- (b) Accessibility problems will be addressed as follows:
  - (i) installation of a prepayment meter, at the cost of Ekurhuleni (and subject to available funding);
  - (ii) as part of larger projects, at the discretion of the Head of Department: Energy, at the cost of Ekurhuleni (and subject to available funding).
- (c) in the pre smart metering phase, resources should be spent on routine inspections, recovery of lost income, legal action and the replacement of credit meters with prepayment meters.

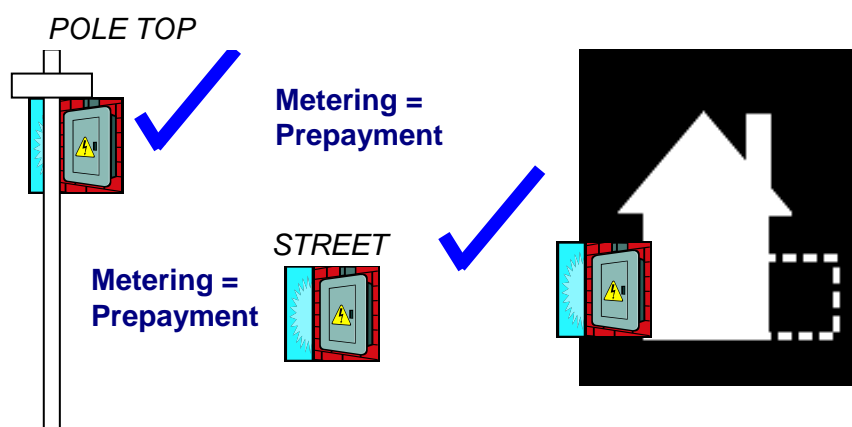


Figure 1: Category A: Established Areas with Payment Levels Exceeding 90%

- (d) Disposal of dilapidated, faulty or damaged replaced meters – All meters that are replaced, shall be evaluated against the Expected Useful Life encapsulated in the Council's Accounting Policy for



Assets. Should the replaced meter prove to be beyond the Expected Useful Life or the meter is damaged to such an extent that it is unserviceable it shall be regarded as scrap equipment. The scrap equipment shall be disposed of in terms of Supply Chain Management Policy and Council's approval to the HOD: Energy to dispose of the scrap equipment on an as and when required basis subject to an EWASA registered recycler being appointed by Council.

## **5.2 CATEGORY B: ESTABLISHED AREAS (OR NODES) WITH PAYMENT LEVELS LOWER THAN 90%**

- ▶ Established residential and business nodes ranging from medium to lower end-user areas. Typically, these areas are fully electrified with underground and/or overhead networks, and combinations of credit and prepayment metering have been used with a limited success rate;
- ▶ interference occurs daily on the electrical network and the resultant vandalized network presents a serious safety hazard; and
- ▶ attempts at normalizing the situation had little or no effect.

### **5.2.1 MAIN PROBLEMS:**

- (a) Inaccessibility of meters due to old reticulation methods (i.e. the meter is situated inside the property or inside the home);
- (b) metering infrastructure is not protected by a robust meter box;
- (c) interference with meters is at an unacceptably high level, and
- (d) manual meter readings have inherent quality problems and are very labour intensive.

### **5.2.2 METERING STRATEGY 1**

- (a) These areas present a serious problem in the Ekurhuleni area since revenue losses are too high to allow a sustainable electricity service;
- (b) credit metering shall not be used in these areas unless not practically/technically possible;
- (c) depending on the scale of interference with the network and metering, the following must be considered:
  - (i) a prepayment metering system, using split type meters - the metering element to be placed on a pole top and protected by a medium strength meter box, with or without a tamper monitoring device;
  - (ii) a prepayment metering system, using split type meters - the metering element to be placed on the sidewalk and protected by a heavily constructed structure, with or without a tamper monitoring device, and
  - (iii) in the case of items (a) and (b), the prepayment meter will need to have mains-borne communication (power line carrier), Radio Frequency communication or similar, to the customer interface, or alternatively a new service cable containing communication wires may need to be installed. A

separate set of pilot wires may also be installed, leaving the current service cable intact.

- (d) further interference must lead to charges according to the provisions made in the Schedule of Tariffs for the Supply of Electricity under “Miscellaneous Charges”;
- (e) the vandalized network needs to be repaired wherever any work is executed;
- (f) regular inspections to be executed on customers appearing on the BP421 deviation report for credit meter in terms of no-access, no-consumption, stuck meters, possible tampered meters; 90 days’ non-purchase and low-purchase exception report for prepayment meter;
- (g) accessibility problems shall be addressed as follows:
  - (i) installation of a prepayment meter, at the cost of Ekurhuleni (and subject to available funding);
  - (ii)
  - (iii) as part of larger projects, at the discretion of the Head of Department: Energy, at the cost of Ekurhuleni (subject to available funding); and
  - (iv) the cost related to a requested change in metering resolving a meter access problem, may be fully funded by EMM, subject to funding being available. If the request, by the customer, for a change in metering does not resolve an access or similar problem, the cost will be for the customer.

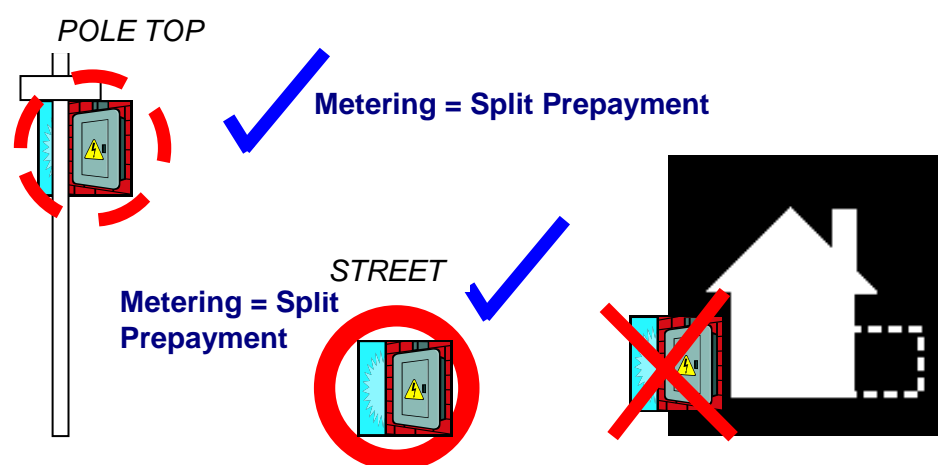


Figure 2: Category B: Established Areas with Payment Levels Lower than 90%

- (h) Disposal of dilapidated, faulty or damaged replaced meters – All meters that are replaced, shall be evaluated against the Expected Useful Life encapsulated in the Council’s Accounting Policy for Assets. Should the replaced meter prove to be beyond the Expected Useful Life or the meter is damaged to such an extent that it is unserviceable it shall be regarded as scrap equipment. The scrap equipment shall be disposed of in terms of Supply Chain Management Policy and Council’s approval to the HOD: Energy to dispose of the scrap equipment on an as and when required basis subject to an EWASA registered recycler being appointed by Council.

## 5.2.2 METERING STRATEGY 2

- (a) When more advanced forms of metering are available, the following alternative may be considered:
  - (i) a smart metering system - the metering element to be placed on the sidewalk or pole top and protected by a medium or heavily constructed structure with a tamper monitoring device.
- (b) a change of the metering system must be for the account of Ekurhuleni;
- (c) further interference must lead to charges according to the provisions made in the Schedule of Tariffs for the Supply of Electricity under “Miscellaneous Charges”; and
- (d) a vandalized network needs to be repaired wherever any work is executed. Further actions should be in line with Council’s Credit Control Policy.

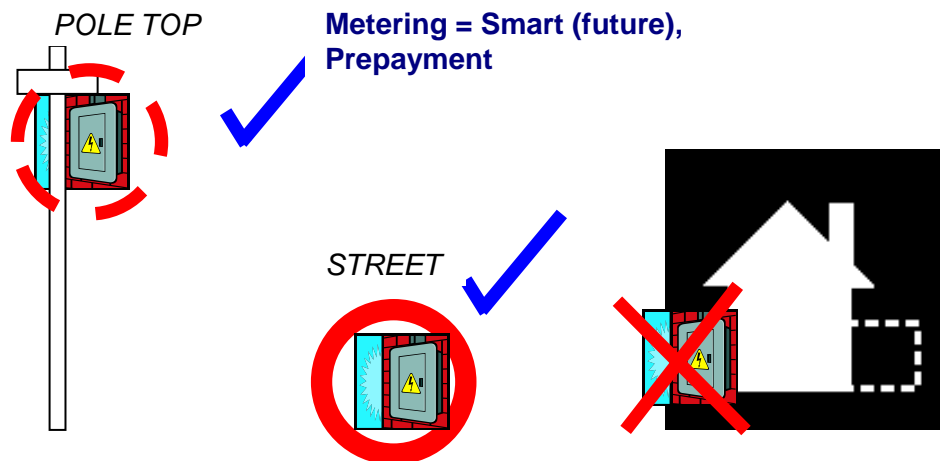


Figure 3: Category B: Established Areas with Payment Levels Lower than 90% - Worst Case Scenario

## 5.3 CATEGORY C: EXISTING INDIVIDUALLY METERED FLATS, HOSTELS AND TOWNHOUSES

These are defined as all the existing high density residential complexes in low, medium and higher end-user areas, which are metered individually. Typically, these complexes are fully electrified with underground and internal networks, and credit and/or prepayment metering have been used with varying degrees of success, for a period.

### 5.3.1 METERING STRATEGY

- (a) The risk associated with each installation to be assessed by the Head of Department: Energy;
- (b) Block of flats –
  - (b) 1. Based on the risk assessment the preferred metering strategy is to convert the individually metered units to one bulk AMR metering installation. Should the Energy

Department be in a position through funding to convert the individually metered units to one bulk AMR metering installation, the Flat or complex owner be afforded the opportunity to purchase from Council the individual meters for sub-metering purposes on a "voetstoots" basis and the owner will indemnify Council from any defects/inaccuracy of the individual meters. The price of the meter shall be determined against the life expectancy and its depreciated value encapsulated in the Accounting Policy for Assets. Should the meter have reached or is beyond the Expected Useful Life period, the meter shall be offered to the complex owner at 20% of a new meter's price. If it is determined that the meter is still within its Expected Useful Life, then for each remaining Expected Useful Life year, 4% to be added to the selling price. The rationale for selling the meter "voetstoots" to the complex owner is to mitigate the additional capital outlay to council to remove all the meters and to reconnect the service connections. Also when Council installs a bulk meter it is creating a new point of control/connection/metering point, thereby removing the individual metering, and changing the electrical installation, which will require a Certificate of Compliance (COC) to be issued by Council adding additional accountability and cost to Council. The Department will ensure that each individual meter is removed from the billing system with the correct closing reading. Where the individual meter has a plate which indicate that it is the property of Council, the Department will oversee that the individual meters are defaced or the nameplate removed.

(b) 2. The second option should it not be technically feasible or funds do not permit to follow point b1 above is for split prepayment meters to be installed with metering elements in a meter room/s or protective structure/s installed at Council's cost and keypads wired to individual flats by a private contractor at the owner's cost. Alternatively, mains-borne communication (power line carrier) or Radio Frequency communication may be used;

NOTE: EMM no longer install (or procure) electromechanically credit meters, as per the contents of this policy. These old meters, in relation to strategy, are therefore worthless to EMM.

- (c) Hostels or similar high risk buildings – split prepayment metering and cut-off elements away from building and placed outside in protective structures/meter boxes. Interface units to be wired to each individual unit, or via mains borne communication or via Radio Frequency communication, and
- (d) Townhouse complexes – Categories A and B apply.

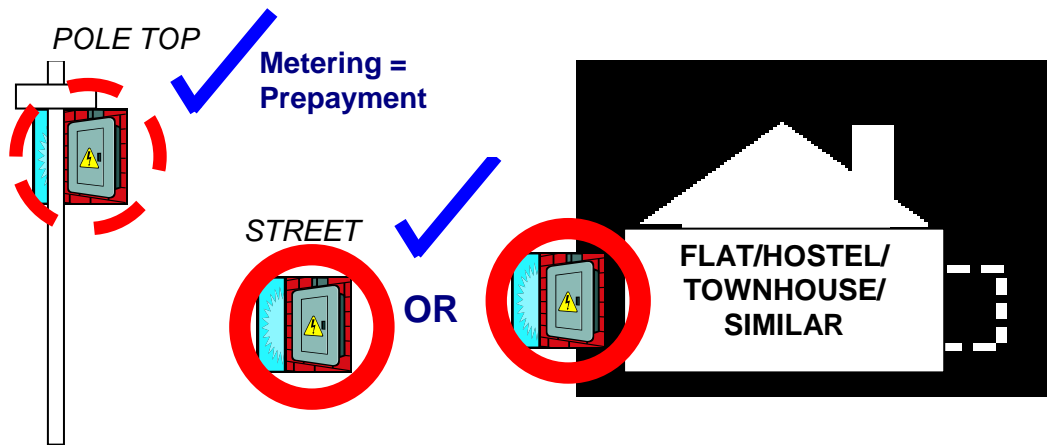


Figure 4: Category C: Individually Metered Flats, Hostels and Townhouses – Low, Medium and Higher End-Users

- (e) Disposal of dilapidated, faulty or damaged replaced meters – All meters that are replaced, shall be evaluated against the Expected Useful Life encapsulated in the Council’s Accounting Policy for Assets. Should the replaced meter prove to be beyond the Expected Useful Life or the meter is damaged to such an extent that it is unserviceable it shall be regarded as scrap equipment. The scrap equipment shall be disposed of in terms of Supply Chain Management Policy and Council’s approval to the HOD: Energy to dispose of the scrap equipment on an as and when required basis subject to an EWASA registered recycler being appointed by Council.

### 5.3.2 MIXED USE RESIDENTIAL AND BUSINESS

Existing stands with mixed residential and business use, will be allowed to receive their electricity supply by means of multiple bulk meters (mostly only 2 meters).

To comply with the Electricity by-laws and for the sake of standardisation, the following [technical requirements shall apply](#):

- One main switch for the property only, isolating the entire property when switched off
- From this main switch, the two (or more) meters may be supplied, one for the business part, and one for the residential part
- [Note: Cost associated with the service connections to the individual metering shall be for the owner’s account](#)
- The meters may be on separate accounts and have separate tariffs
- Credit control will be effected at the main switch only, and not one of the sub-switches.

## 5.4 CATEGORY D: EKURHULENI OWNED PROPERTY RENTED TO OWN STAFF

- ▶ Established Ekurhuleni owned residential properties where credit and prepayment metering have been installed;

- ▶ Typically, properties are occupied by employees of various departments of the Council with similar employment benefits; and
- ▶ The properties may also take the form of communal living arrangements.

#### **5.4.1 MAIN PROBLEMS:**

Due to traditional arrangements, meters are not read or consumption are not charged to the individual employees (or their respective departments) residing in the properties.

#### **5.4.2 METERING STRATEGY**

##### **STRATEGY A**

It is understood that several processes are to be finalized before Strategy B can be implemented. These processes require work to be done via the Local Labour Forum and more.

In the absence of the strategy indicated in B below, the HOD: Energy must install a suitable form of metering (also bulk metering where required) at all Council properties, in order to account for all units used.

Streetlight consumption will continue to be estimated, however, estimations require to be done more accurately, i.e. an audit will be required.

##### **STRATEGY B**

- (a) The informal nature of the traditional arrangement regarding a free electricity service requires formalization;
- (b) any special arrangement with regards to free electricity to certain individuals needs to be quantified and ratified by the appropriate governance structure;
- (c) a special supply group code has been created on the prepayment vending system, which will issue electricity units in accordance to the Council's Schedule of Tariffs;
- (d) a prepayment meter is to be installed at every individual rental property;
- (e) in the case of a communal property, a prepayment meter is to be installed at technical separation points and the combined consumption (and purchasing of units) needs to be managed by any fair method to be employed by the building manager/owner, and
- (f) interference with meters must lead to fees being charged according to the provisions made in the Schedule of Tariffs for the supply of electricity under "Miscellaneous Charges".

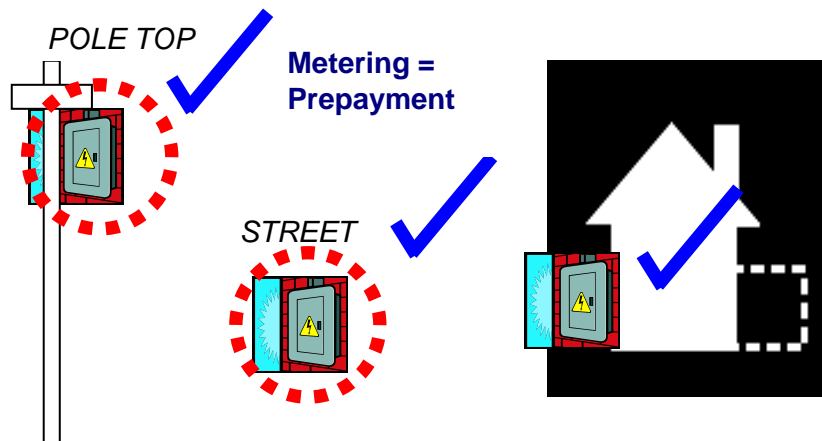


Figure 5: Category D: Ekurhuleni Owned Property Rented to Own Staff

## 5.5 CATEGORY E: MANUALLY READ EXISTING BULK METERED CONNECTIONS (DEMAND METERS)

- ▶ Established residential, mixed residential/business and small business nodes ranging from medium to high end-user areas. Typically, these areas are fully electrified with underground and/or overhead networks, with manual read demand metering with a limited success rate in obtaining monthly readings;

### 5.5.1 MAIN PROBLEMS:

- (a) Inaccessibility of meters due to old reticulation methods (i.e. the meter is situated inside the property, in a substation or in a basement of a flat complex);
- (b) interference with meters can be experienced without Council's knowledge;
- (c) manual meter readings have inherent quality problems and are very labour intensive; and
- (d) the manual reading of demand meters is complex and requires a high level of technical expertise to ensure that the meters are read correctly.

### 5.5.2 METERING STRATEGY

- (a) This method of reading demand meters presents a serious problem in the Ekurhuleni area since revenue losses are too high to allow a sustainable electricity service;
- (b) manually read demand meters must be phased out completely and replaced with automated meter reading (AMR) meters;
- (c) regular monitoring of the correctness of the meter readings obtained from the AMR meter installation shall be carried out and corrective action shall be taken where necessary.
- (d) Disposal of dilapidated, faulty or damaged replaced meters – All meters that are replaced, shall be evaluated against the Expected Useful Life encapsulated in the Council's Accounting Policy for Assets. Should the replaced meter prove to be beyond the Expected Useful Life or the meter is damaged to such an extent that it is unserviceable it shall be regarded as scrap equipment.

The scrap equipment shall be disposed of in terms of Supply Chain Management Policy and Council's approval to the HOD: Energy to dispose of the scrap equipment on an as and when required basis subject to an EWASA registered recycler being appointed by Council.

## **6. METERING IN NEW RESIDENTIAL AND SMALL BUSINESS AREAS**

New residential and small business electricity customers can be categorized as follows:

Category F	New areas with expected lower-end use
Category G	New areas with expected medium to higher-end use
Category H	New bulk residential complexes and businesses (AMR demand meters)

### **6.1 CATEGORY F: NEW RESIDENTIAL AND BUSINESS AREAS (OR NODES) – LOWER END-USERS**

- ▶ These are defined as new nodes in lower end-user areas. Typically, these areas are or will be fully electrified with underground or overhead networks, or a combination of the two systems. Metering will be installed as soon as connections are made.

#### **6.1.1 METERING STRATEGY**

- (a) A prepayment metering system, using split type meters - the metering element to be placed in a medium or high strength meter box mounted on the sidewalk or pole top;
- (b) interference with the electricity network must lead to fees being charged according to the provisions made in the Schedule of Tariffs for the Supply of Electricity under "Miscellaneous Charges". Further actions should be in line with Council's Credit Control policy; and
- (c) the service connection cable that will be installed for all new Township development (low cost housing, full title properties (security complexes and non-secured developments)) shall be a new service cable containing communication wires to cater for communication wire type split prepayment meters.



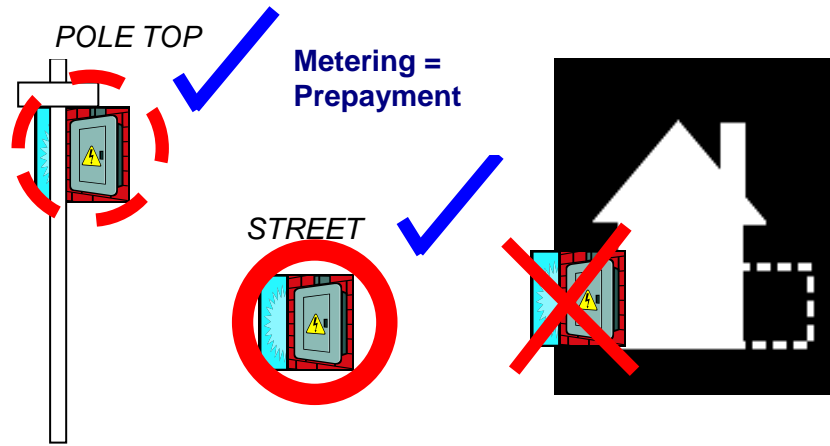


Figure 6: New Residential and Business Areas – Lower End-Users

## 6.2 CATEGORY G: NEW RESIDENTIAL AND SMALL BUSINESS AREAS (OR NODES) – MEDIUM TO HIGHER END-USERS

- ▶ These are defined as new residential nodes in medium to higher end-user areas. Typically, these areas are - or will be - fully electrified with underground and overhead networks. Metering will be installed as soon as connections are made.

### 6.2.1 METERING STRATEGY

- (a) Prepayment metering will be the only option to customers, unless, the connection size is bigger than the technical current carrying capacity of a prepayment meter or it is not practically feasible to utilise a prepayment meter in which case an AMR direct drive credit meter shall be installed;
- (b) The metering element is to be placed on the sidewalk or pole top, protected by a *lightly constructed meter box*, with or without a tamper monitoring device;
- (c) Interference with the electricity network must lead to fees being charged according to the provisions made in the Schedule of Tariffs for the SUPPLY OF ELECTRICITY under “Miscellaneous Charges”. Further actions should be in line with Council’s Credit Control and Debt Collection Policy;
- (d) The service connection cable that will be installed for all new Township development (low cost housing, full title properties (security complexes and non-secured developments)) shall be a new service cable containing communication wires to cater for communication wire type split prepayment meters;
- (e) Possible deviation for institutions where prepayment metering may prove impractical may only be obtained from the Head of Department: Energy (e.g. Telkom, Rand Water, Sasol Gas, SAR fuel pipelines, cell phone masts, security boom gates, etc.).

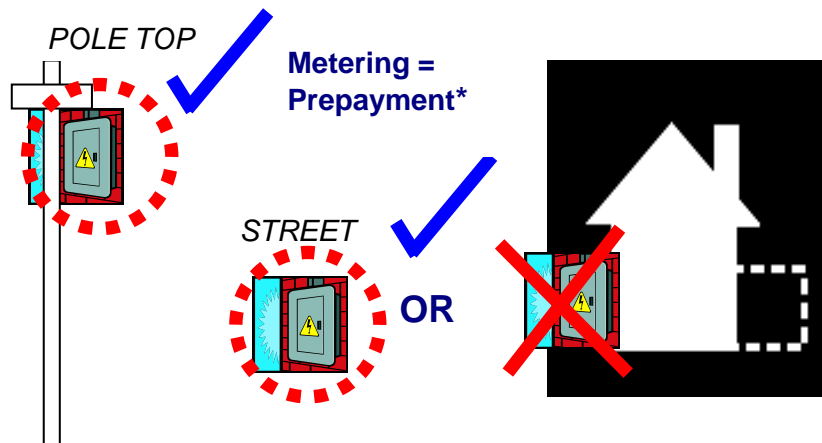


Figure 7: New Residential and Business Areas – Medium- to Higher End-Users

**\* AMR Direct driven credit meters only where technically impossible to install prepayment meters**

### 6.3 CATEGORY H: NEW BULK RESIDENTIAL COMPLEXES AND BUSINESSES (AMR DEMAND METERS)

- ▶ These are defined as new residential complexes and businesses which require a bulk demand meter installation.

#### 6.3.1 METERING STRATEGY

An Automated Meter Reading (AMR) demand meter will be installed at these premises:

- ▶ to eliminate manual reading of meters;
- ▶ ensure accurate and timeous complex data monthly meter readings are obtained remotely; and
- ▶ regular monitoring of the correctness of the meter readings obtained from the AMR meter installation shall be carried out and corrective action shall be taken where necessary.

#### 6.3.2 MIXED USE RESIDENTIAL AND BUSINESS

Existing stands with mixed residential and business use, will be allowed to receive their electricity supply by means of multiple bulk meters (mostly only 2 meters).

To comply with the Electricity by-laws and for the sake of standardisation, the following [technical requirements](#) shall apply:

- One main switch for the property only, isolating the entire property when switched off
- From this main switch, the two (or more) meters may be supplied, one for the business part, and one for the residential part

- Note: Cost associated with the service connections to the individual metering shall be for the owner's account
- The meters may be on separate accounts and have separate tariffs
- Credit control will be effected at the main switch only, and not one of the sub-switches.

## **7. CREDIT CONTROL MEASURES**

The metering and protective devices mentioned above are to be used in conjunction with Council's Credit Control and Debt Collection policy. The intention is to aid credit control by creating an environment that is not conducive to people electing to tamper with the electricity meter installations of Ekurhuleni.

In most of the existing areas, credit control and punitive measures will still be the most cost effective method of dealing with interference, since the capital outlay to protect metering is very high. The current operational costs involved in repairing damage, purchasing locks, disconnecting and reconnecting defaulters must be taken into account when determining a course of action in any area.

## 8. DEVIATIONS FROM THE POLICY

Complex technical and social conditions may require that deviations from the policy be allowed. Examples, listed below (not exhaustively), requires a case-by-case decision by the Head of Department: Energy, based on practical aspects:

- Replacing all credit meters in an area or as part of a project, with prepayment metering (as per this policy). During these special projects, amnesty may be required in terms of levying the reinstatement fee for bypassed meters. Such amnesty shall be approved in writing by the Head of Department: Energy or his delegate and will have specific time duration.
- In the case where a severely mismatched load factor leads to exceptionally high active energy charges to a customer, a retrospective correction in the tariff applied may be recommended to Finance, in writing by the Head of Department: Energy or his delegate.

## 9. STAKEHOLDER ENGAGEMENT

Continuous engagement with stakeholders is required to ensure a sustainable provision of the electricity service.

**NOTE:** The reference to “they” in the above sentences is a reference to the Department concerned and its personnel

**The term “shall” is used throughout this document to indicate those provisions which, are considered to be mandatory.**

**The term “should” is used to indicate those provisions which, although not mandatory, are provided as a recognized means of meeting the requirements.**

**The term “may” is used to indicate something which is permitted.**

**The term “can” is used to indicate a possibility or a capability.**

