RUSTENBURG LOCAL MUNICIPALITY

ELECTRICAL ENGINEERING CONTRIBUTIONS POLICY

2019

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RUSTENBURG LOCAL MUNICIPALITY

ELECTRICAL ENGINEERING CONTRIBUTIONS POLICY

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1. INTRODUCTION

1.1 The case for Engineering Contributions

The expansion through of development of a Municipality's area of jurisdiction results in an increasing number of applications for new connections, subdivision of land, application for rezoning and increased services requirements of existing customers.

Granting the rights to proceed with such developments causes a heavy burden on existing municipal service infrastructure and necessitates upgrading and/or extension of the infrastructure at enormous cost, if not immediately, then at a later stage.

It is accepted to be fair and equitable, that a developer who establishes new properties or applies for the subdivision of land, or for particular departures in utilization rights, should be obliged to make a financial contribution (henceforth referred to as an engineering contribution) for the upgrading and/or extension of existing or future engineering infrastructure.

Engineering Contributions (or sometimes referred to as Bulk Supply Contributions) deal with the recovery of capital for electrical infrastructure development to service these developments and future customers in a sustainable way.

The key to the successful implementation of this policy lies in the establishment of the optimum differentiation where developers must contribute capital for electricity infrastructure that will be recovered from property sale prices.

It is also important to ensure that double recovery of capital does not take place through ensuring that the consumption tariffs only deal with servicing the cost of capital portion of loan accounts where loans were used to facilitate capital expansion, and that the Engineering Contributions are utilized towards the capital requirements for network expansion (i.e. the capital portion of loan accounts).

1.2 Some key considerations

Existing customers and rate payers should only subsidise via the capital component in their electricity consumption tariffs for infrastructure spare capacity to ensure an acceptable level and quality of service and attract new developments.

It is extremely important to clearly define the level of services provided as this will lead to disagreements when developers or customers (at a later stage) have to pay additional engineering contributions when the service required is more than what was originally provided.

Pro-rata recovery of engineering contributions will make provision to upgrade and extend existing services to cater for the new developments but will not address the backlog problems created as a result of no or under-recovery in the past.

When developed land is sold without recovering the full extent of engineering contributions, either the Municipality or the new owner will have to pay the cost for servicing the property.

1.3 Aim of Policy

The aim of this document therefore is to establish a uniform approach to establish in which cases and to what extent engineering contributions will be levied by the municipality.

This policy recommends a methodology and application guidelines that are fair, reasonably easy to understand and practical and further determines the detail cost of the electricity engineering contributions.

2. DEFINITIONS

The following meanings apply in this policy document, unless indicated otherwise by the context:

2.1 GENERAL

a) *applicant* - customer and developer have the same meaning

b) *town* - city and municipality have the same meaning

c) *infrastructure* - with regard to municipal services – all external bulk services, link services as well as internal services and networks;

d) *services* and infrastructure have the same meaning

e) *municipality* – Rustenburg Local Municipality

f) *residential unit* - has the same as the meaning attached to it in the Provincial Regulations promulgated

2.2 CAPACITY

a) *Network Capacity* is the maximum technical limit of load that can be delivered by a particular network before equipment life would be abnormally reduced.

b) *Standard Network Capacity* is the maximum capacity that would economically be allowed on a particular network before system reinforcement is required.

c) *Utilised Capacity* is the maximum capacity used by the customer at the specific location of the customer. This would normally refer to the registered half hourly integrated kVA.

d) *Additional Capacity* refers to the additional amount of service required by increasing the notified maximum demand (NMD).

e) *Spare Network Capacity* is the difference between the network capacity and the diversified sum of the connected NMD.

f) *Authorised Capacity* refers to the demand calculated by applying the after diversity maximum demand (ADMD) at a point in the network that has been provided and paid for by the development. This will be the ADMD according to the zoning but could be higher as per contractual agreement.

g) *Zone Capacity* refer to the capacity associated with a development based on the type of development in the area and the average coverage (floor area ratio = FAR).

2.3 ENGINEERING CONTRIBUTION

a) *Engineering contribution* is the engineering service costs incurred through a once-off capital expenditure on plant, equipment and other productive resources to increase network capacity. This is the pro-rata cost to be paid by a developer to connect a new development or to provide for additional requirement for services. This cost is based on the nett present replacement value of the network being or to be shared by more than one customer. (also called: Engineering Charges, Developer Contributions, Bulk Contributions.)

b) *Capital allowance* is the contribution to network engineering service costs that are contained in the consumption tariffs - i.e. average engineering service costs recovered over time through the tariffs.

c) *Connection fees* are the up-front payment payable by the customer towards the cost of a standard new connection.

d) *Network charges* are part of the consumption tariffs that are unbundled to reflect the costs associated with networks and are usually based on the required capacity of the supply.

2.4 COSTS

a) *Network upstream costs* refer to costs that will be incurred closer to the source of electricity supply from the actual point where supply is / will be required.

b) *Cost sharing* refers to cases where costs are pooled and shared between the developers utilizing the network.

c) *Replacement value* refers to the value of installing and commissioning new equipment or networks to the required standard and in the year in which contribution calculations are done.

2.5 DEVELOPMENT

a) *Developers* are the entities who undertake the required activities of developing a particular area and this could also include the township establishment, Special / Written / Temporary Consent, Change of land use, Rezoning or Subdivision of land. This includes private persons or government at any level.

b) *Developments* are activities where the requirement or utilization of engineering services is changed and can include only one or various facets of the area.

c) *External services* refer to the networks that fall outside of the boundaries of a particular development but are required to service a particular development.

d) *Internal services* are networks that fall within the boundaries of the development and are specifically required to provide the required capacity to each stand in the development. It excludes service connections.

e) *Leapfrog Developments* are developments that are remote from the existing or available networks of the utility and beyond any short-term expansions of the services. No development inside a development objective area can be regarded as a leapfrog development.

f) *Subdivisions* refer to situations where a particular piece of land is subdivided, thus requiring one or more additional utility service connection/s to be made to the development. These are considered a development like any others in terms of determining engineering services contributions.

2.6 ELECTRICITY USAGE

a) *Diversity* refers to the ratio of the sum of the non-simultaneous maximum demands of various points of supply divided by the simultaneous maximum demand in time at a common point in the network. The closer to the source of supply the higher the diversity will be. (also referred to as After Diversity Maximum Demand (ADMD))

b) *Registered Maximum Demand* is the highest averaged demand, during any integrating period within a designated billing period (usually one month).

c) *Notified Maximum Demand* (NMD) is the contracted maximum demand notified in writing by the customer and accepted by the utility to supply.

d) *After Diversity Maximum Demand* (ADMD) is the maximum demand for a homogenous load class (i.e. a similar group of consumers) divided by the number of consumers in the group (kVA / residential unit). ADMD can also be determined by using the maximum demand divided by the total floor area (kVA/m^2). In some cases, property area is used.

2.7 NETWORKS

a) *Distribution Networks* refer to the service network of the utility. This includes all assets required to transfer the service from the in-feed point to the distributor and include service connections.

b) HV (high voltage) networks are the lines, cable, switches, protection and associated equipment at voltages from 44kV to 132kV.

c) *HV to MV transformation networks* refers to transformation networks between Distribution and Reticulation voltages which includes all substation equipment.

d) *MV (medium voltage) networks* are the lines, cables, switches, protection and all other associated equipment at voltages from 1 000V to 33kV.

e) *MV to LV transformation networks* are the transformation equipment between Reticulation and LV voltages which includes all substation equipment.

f) *LV (low voltage) networks* are the lines, cables, switches, protection and all other associated equipment at voltages below 1 000V.

g) *Metering* includes all equipment associated to measure and calculate the quantities of services used including: VT's and CT's, meters, modems, metering kiosks, seals, tamper protection, internal wiring, etc.

h) *Network strengthening / upgrading / augmentation* is the engineering service expenditure required to increase the capacity of the network to be able to meet increased demand or capacity required on the network.

i) *Network refurbishment* refers to major engineering service expenditure required to existing network equipment after the end of its technical life necessary to extend the life of the asset to an age similar to when it is new. It excludes costs to increase the capacity of the network.

j) *Point of supply (POS)* is a physical point on the network, where service is supplied to a customer or where the customer's installation connects to the utility network.

k) *Point if delivery (POD)* is the grouping of one or more POS at the same substation, for one customer, at the same voltage and same tariff.

l) *Rural network* are all networks not considered under the term urban.

m) *Urban networks* - supply to an applicant or customer that will be considered to be urban when:

1) It is a proclaimed township or within a proclaimed township as determined by the Council,
2) The number of connections within a 1km radius of the particular point of supply exceeds 314. **NOTE:** All connections within the particular development will qualify.
3) The number of current and newly applied connections per kilometre of MV line exceeds 44 and / or there are at least 40 connections in one development.

2.8 REFUNDS AND SURPLUS CHARGES

a) *Refund* of engineering contributions refer to amounts repaid to developers where they have previously paid full incremental cost for engineering service contributions which are later utilised by other customers.

b) *Surplus capacity* provided due to technical standards that may be shared in the near future will not be allocated as a contribution cost to the developer. The cost of surplus capacity provided due to technical requirements that will unlikely be shared in future (for example, the provision of a 20 MVA transformer to meet a 15 MVA load requirement), will not be pro-rated.

c) Assets that are later shared will result in a refund/reduction to the initial contributor only based on capacity. Adequate records must be kept by the Municipality.

2.9 SUPPLIES

a) *Firm supply* refers to a design standard that will ensure single contingency in security of supply. (Referred to N-1)

b) *Premium supplies* refer to supplies that have features that exceed the standard set for the particular utility on a specific network.

c) *Dedicated supply* refers to a network or a portion of network that is considered dedicated according to the best judgement at the time to the supply of a specific consumer and it is unlikely that it will be shared by another supply within a reasonable foreseeable period of 5 years.

d) *Engineering contribution subsidies* refer to situations where the required engineering services contribution, is funded by another party other than the one to whom it is due.

3. ABBREVIATIONS

The following abbreviations are used in this document:

AMD	Authorized maximum demand for a particular development.
ADMD	After diversity maximum demand
FAR	Floor area ratio
HV	High voltage
kV	Kilo-volt
kVA	Kilo-volt ampere
kWh	Kilowatt hour
LV	Low voltage
MV	Medium voltage
NRS 069	National Rationalized User Specification: Code of practice for the recovery of capital costs for distribution network assets
NMD	Notified maximum demand
NERSA	National Energy Regulator of SA
NPRV	Nett present replacement value
VAT	Value added tax

4. LEGISLATION

4.1.1 Constitution

In terms of section 151(3) of the Constitution of the Republic of South Africa, 1996, municipalities have the right to govern, on its own initiative, the local government affairs of its community, subject to national and provincial legislation, as provided for in the Constitution.

In terms of section 156(1)(a) of the Constitution of the Republic of South Africa, 1996, municipalities have the right to administer certain local government matters listed in Part B of Schedule 4 of the Constitution. Among these is “electricity and gas reticulation”.

The Constitution further makes provision for three categories of municipalities. The distinction between these categories is important in that it creates the basis for differentiated powers and functions between category B and C municipalities and for the possibility that this division of powers and functions may differ. In other words, the respective allocation of powers and functions does not have to be the same in all situations where category B and C municipalities

interact and may take into account the particular patterns of capacity / revenue and other local circumstances. The aim of this flexibility is to ensure that municipal services are provided in an equitable and sustainable manner, in terms of section 155(4).

4.1.2 **Municipal Structures Act**

The above-mentioned right to provide services is further provided for by the Local Government: Municipal Structures Act 117 of 1998, section 85(1) for the MEC to adjust the division of functions and powers between a district and a local municipality as set out in section 84(1), which refers to the distribution of electricity.

Section 74(1) of the Municipal Systems Act 32 of 2000 further provides that a municipal council must adopt and implement a tariff policy on the levying of fees for municipal services provided. Section 74(2)(b) specifically requires that the policy reflects the amount users pay for services should generally be in proportion to their use of that service.

4.1.3 **Electricity Regulation Act**

The municipality's distribution right is subject to and regulated in terms of Section 7(1) of the Electricity Regulation Act 4 of 2006 provides that: "*No person may, without a license issued by the Regulator in accordance with this Act-*

> *(a) operate any generation, transmission or distribution facility;*
> *(b) import or export any electricity; or*
> *(c) be involved in trading.*"

4.1.4 **Town Planning Ordinance**

The provisions of the Town Planning Ordinance are tabled below for the sake of completeness and historic importance.

In terms of section 48(1)(a) of the Town Planning and Township Ordinance 15 of 1986, contributions in respect of engineering services may (at the discretion of the local authority) be payable where an approved amendment scheme came into operation.

Section 121 of the Ordinance further stipulates that: "The applicant shall pay to the local authority concerned as a contribution concerned as a contribution towards the cost incurred by such local authority to install and provide the external engineering services or caused such services to be installed and provided-

> (a) *an amount of money determined by agreement between the applicant and such local authority*".

4.1.5 **Spatial Planning and Land Use Management Act**

Section 49(4) of the Spatial Planning and Land use Management Act (SPLUMA), Act 16 of 2013, that replaced the Development Facilitation Act (Act 67 of 1995), makes provision for

contributions and stipulates that: "*An applicant may, in agreement with the municipality or service provider, install any external engineering service instead of payment of the applicable development charges, and the fair and reasonable cost of such external services may be set off against development charges payable.*"

Section 49(5) further states that, where a developer is installing external engineering services in lieu of contributions payable, *"the provision of the Local government: Municipal Management Finance Management Act, 2003 (Act No. 56 of 2003), pertaining to procurement and the appointment of contractors on behalf of the municipality does not apply"*.

4.1.6 **Distribution Tariff Code**

Distribution Tariff Code - Version 6 - 2014 forms part of the distribution license conditions issued by NERSA [2].

Section 4.2.1(12) states that "*Connection charges will recover that portion of the full cost of dedicated assets and the approved standard scheduled capital contribution to shared upstream assets, not recovered by the tariff. The allocation of costs for connection charges is as per NRS 069*."

Section 11(1) states that the connection charge "… *is payable in addition to the tariff charges and is payable on all dedicated costs plus a fair contribution to capacity on upstream networks".*

Section 11(3) states that *"the methodology used to calculate connection charges must be approved by NERSA, in line with NRS 069"*. Connection Charges in the Distribution Code refers to Engineering Contributions (for shared upstream infrastructure) as well as dedicated costs.

Section 11.1(10)(f) states that *"In addition to dedicated costs the customers shall be allocated a standard R/kVA contribution based on replacement costs, for shared upstream costs, whether new upstream investment is required or not".*

4.1.7 **NRS 069**

NRS 069 [1] defines a methodology to be used when calculating Engineering Contributions. Since NRS 069 is referred to by the Distribution Code, and the Distribution Code forms part of the License conditions Rustenburg Local Municipality must comply with, it becomes not only a guideline any more but an authoritative document.

5. RESPONSIBILITIES OF THE DEVELOPER

The provision of all internal engineering services and infrastructure within the boundary of the development are the responsibility of the developer.

Some exceptions may however occur where the specification of equipment is dictated by the municipality to be higher than that required by the development to cater for future developments or upgrading of existing infrastructure. The developer and the municipality should then enter into a services agreement or the additional requirements are to be funded by the municipality.

6. RESPONSIBILITIES OF THE MUNICIPALITY

In terms of the Distribution Network Code, the Distributor is required to invest by considering best practice technical alternatives and based on a least life-cycle cost approach. Least life cycle cost is the discounted least cost option over the lifetime of the equipment, taking into account the technical alternatives for investment, operating expenses and maintenance. Calculations to justify investment shall assume a typical project life expectancy of 25 years, except where otherwise dictated by plant life or project life expectancy.

The Distribution Tariff Code requires the Distributor to implement a methodology used to calculate connection charges approved by NERSA and being in line with NRS 069. The developer pays for all dedicated equipment and in addition be allocated a standard R/kVA contribution based on replacement costs for shared upstream costs, whether new upstream investment is required or not.

Contributions must be utilized to install the required infrastructure requested for, pay outstanding loans of the electrical service or to be preserved into a dedicated fund that is ring fenced for the specific service.

Adjacent distributors should coordinate and share contributions according to all infrastructure requirements (where applicable).

7. TYPES OF DEVELOPMENTS

Developments can primarily be categorized as follows:

- Township development / Extension of boundaries of townships
- Rezoning / change of land-use right / Special or Temporary Consent approved by the Local Municipality
- Subdivision of a property
- Increased services requirements that exceed the original limits of services designed or currently provided.

Although rural networks are significantly different, the principles and methodology of calculation are similar with the difference that infrastructure for urban areas is more capital intensive with a higher degree of supply reliability.

8. BASIC PRINCIPLES FOR CALCULATION OF ENGINEERING CONTRIBUTIONS

The following points form the basis of the electricity engineering contribution policy and guidelines:

a) A consistent approach should be applicable throughout the municipal area;
b) The approach should be in harmony with sound practices employed within South Africa and internationally;
c) The approach should be consistent within different utilization and zoning categories;
d) Contributions for each service should be financially ring-fenced;
e) Contributions should be targeted at developers to service properties to the full capacity according to the new zoning;
f) Contributions should be charged to customers when they exceed the designed capacity contributed by the developer or that associated with the zoning;
g) Capital and interest redemption through tariffs should be minimized;
h) Assets financed by engineering contributions remain the property of the distributor;
i) Assets financed by engineering contributions may be used for other customers;
j) The principle of contestability of dedicated networks and funded by customers is supported;
k) Recognition must be given in the longer-term to society benefits from most network extensions because they allow the utility to gradually extend and expand its distribution system to the benefit of all;
l) The standard must be transparent in the way it is set out and applied;
m) The approach should be relatively easy to implement and practical; and
n) The approach should be developed in consultation with representatives from all technical services.
o) Engineering contributions are calculated by the Electrical Engineering Department.

The calculation of engineering contributions must be based on the fundamental principle that customers or subsequent customers should not benefit from a new development at the cost of the developer, or that the developer should not benefit at the cost of customers.

The aim of the policy is to institute a uniform basis for the calculation of engineering contributions in the Municipality's area of jurisdiction as a whole. Calculation of engineering contributions is based on specific applications and guidelines as set out in the documentation for the various services.

The capital component for engineering infrastructure in the consumption tariffs should be limited to spare capacity. It is the municipalities' responsibility to ensure the level of spare capacity is limited as this places risk and an unfair burden onto customers via electricity inflated tariffs.

Developers in the case of Leap-Frog developments, who have funded bulk infrastructure networks in full, should receive a refund of the pro-rata contribution once other developments pay engineering contributions for sharing of that infrastructure. Refunding of contributions should be avoided where possible and be limited to a set a window period of 5 years as proposed by NRS 069.

Where developments are sharing bulk or link infrastructure, it should be done on a pro-rata basis and based on infrastructure cost and capacity.

The present property zoning and FAR or the existing rights, whichever is the greater, will be used as the basis to calculate the level of services to be credited.

9. ASSUMPTIONS

In developing and applying the policy, it is important to understand the situations and circumstances where the policy is intended to be applied. Minor adjustments based on the above principles will have to be made where applicable.

The following was assumed to form a consistent basis for the policy:

a) Consumption tariffs will contain various components which must cover:

   i. Operational and maintenance costs.

   ii. Capital cost of refurbishing networks at some time in the future when networks have reached the end of its technical and economic life. (Applicable to minimum required services).

   iii. Outstanding loans for spare capacity within the electricity infrastructure networks.

b) Contributions will be based on R/kVA for electricity services applicable at the pre-determined point of supply within the network.
c) Contributions are set by the required capacity, which are based on the full rights attainable on the property or notified demand requirements stated by the developer, whichever are the higher.
d) The engineering contributions are to be the same, irrespective of the service provider or customer, provided it is connected to and supplied through the municipal infrastructure networks.
e) Contributions only include municipal owned infrastructure.
f) Contributions are payable only for pro-rata shared infrastructure.

Connection costs are payable for all dedicated equipment. This also includes link or connection services, where applicable.

10. METHODOLOGY AND CALCULATION OF ELECTRICITY ENGINEERING CONTRIBUTION FEES

10.1 General

The methodology to be followed is the most important and critical part of the policy. It describes how contributions are made up and how the calculations should be done in respect of engineering contributions. It also addresses refunding of excess contribution payments where required.

This section also describes how the fees will be established for electricity contributions.

Where a step change in the electricity supply from ESKOM is required due to the additional load imposed by a new development, the developer will be required to fund the full pro-rata increased demand cost as part of the connection costs.

The Nett Present Replacement Values (NPRV) of each of the segments of the network is determined as follows:

a) HV network values are based on the actual or network quantities of existing equipment and immediate future expansion to complete the primary networks in terms of the master plan.
b) Calculations for the main substations and downstream networks are based on a generic network model, using the standards adopted by the municipality.
c) The municipal HV & MV supply network is segmented into the various voltage and functional equipment, where the POD's from Eskom is at 88, 33 or 11kV level:

    i. Main 88/33/11kV substation which includes 88kV main busbars, two 88kV bays, bus-section complete with switchgear, two 40MVA 88/33kV transformers and two 20 MVA 88/11kV Transformer, control panels, 33kV and 11kV switchgear;
    ii. 33/11kV substations which includes 33kV and 11kV switchgear, and two 20 MVA transformers;
    iii. Medium voltage 800mm2 Al XLPE 1-core XLPE inter-connection cables operating at 33kV;
    iv. Medium Voltage 300mm² Al 3-core XLPE inter-connection cables operating at 11kV.

d) 11kV Switching substation which includes 11kV switchgear complete with yard stone and fence.
e) Medium Voltage 120mm² Al unarmoured XLPE ring cables operating at 11kV. On average 300m MV cable per minisub is installed;
f) 500kVA miniature substation, complete with plinth, earth mat and MV cable terminations;
g) 100m low voltage 120mm² Al radial cable complete with 9-way distribution kiosks operating at 400V.

The nominal service capacity of each of the segments of the network is determined, based on standard ADMD's and the diversity at each voltage level.

10.2 **ADMD**

The following ADMD's at secondary transformer level will apply:

Table 1: Guideline ADMD values

Description	ADMD
Residential	As per NRS 069 and NRS 034 for the applicable consumption class

Description	ADMD
Hotel, Guest House or equivalent	80 VA/m²
Business, Office or equivalent	80 VA/m²
Light Industrial, Garage or equivalent	40 VA/m²
Educational or equivalent	20 VA/m²
Devotional, agricultural, nursery, scrap yard or equivalent	20 VA/m²

Notes:

a. The m² above refer to the larger of the FAR multiplied with the stand size or the coverage i.r.o. the property zoning.

b. The ADMD values above are at secondary transformation level. Diversity factors are applied in the rate calculation to account for increased diversity between loads at higher transformation and voltage levels.

c. Heavy industry is treated on its application for a connection.

d. The ADMD's are at load class peak, and not at system peak. For mixed-used developments, diversity must be applied between loads by calculating a composite load profile. The demand applicable in mixed-use developments for the purposes of the calculation of engineering contributions is the resulting maximum demand once the composite load profile has been determined (i.e. the expected NMD).

e. The ADMD for residential developments to be used is the capacity obtained after using the a, b and c parameters of the Herman-Beta method through the capacity formula tabled in NRS 034.

f. A developer's consulting engineer may request a higher demand than calculated through ADMD.

g. Where a lower demand is requested than calculated using the ADMD, a servitude of restraint of capacity must be registered over the property.

Gross floor area is used and is determined by multiplying the total stand area with the applicable FAR stipulated in the Town Planning Scheme.

Initial contribution will be based on the highest of the NMD on the application or the capacity as determined using the ADMD for the development or the relevant consumption classes.

The R/kVA engineering contribution fees of each segment are calculated by dividing replacement cost by the system capacity.

In order to apply the correct applicable fee, the point where the development will be connected to the municipal network must be determined to only include upstream shared equipment.

Should the customer require a prime supply, the additional costs to provide this will form part of the connection costs.

For a mixed-use development, the total capacity shall be determined by applying diversity between different load classes.

The formulae for the calculation of maximum demand are as follows:

Table 2: Maximum demand formulae

Category	**Formula**
Residential. This includes Residential 1 and Residential 2 Use Zones as per the RLM Town Planning Scheme.	$$MD = 0.23 \times n \times \frac{c}{a+b}\left[a + 1.28\sqrt{\frac{a \times b}{n(a+b+1)}}\right]$$ (Eq.1) (Capacity formula as per NRS 034) Where: *MD* = Maximum demand in kVA *n* = Number of consumers on heaviest loaded phase (see note in NRS 034) *a, b, c* = Beta probability curve parameters ADMD is given by $$ADMD = c\frac{a}{a+b} \times \frac{230}{1000}$$ (Eq.2) in kVA per residential unit Values for a, b, c for standard ADMD values can be obtained in NRS 034. For any other ADMD value, it must be calculated using the formulae given in NRS 034.

Category	Formula
Non-domestic and non-industrial loads not catered for elsewhere in this table, including Governmental, Offices, Retail and other Business related loads	MD (in kVA) = ADMD (in kVA/m^2) x FAR x Stand area (in m^2) (Eq.3) ADMD is selected from Table 1. This is applicable to any zoning where an FAR is specified that falls within the Business 1, Business 2, Special, Institutional, Municipal, Government, Transportation, Conservation, Recreational, Institutional and Public Open Space Use Zones as defined in the RLM Town Planning Scheme. Agricultural and High Potential/Unique Agricultural Use Zones with special consent for facilities which falls within any of the abovementioned Use Zones will be treated according to the formula in this category.
Light Industrial	MD (in kVA) = ADMD (in kVA/m^2) x Stand area (in m^2) (Eq.4) This is applicable to Industrial 1 and Industrial 2 uses, but exclude Noxious land use.
Agricultural, Heavy Industry, including Mining and Quarrying	As determined by the developer or the developer's consulting engineer (Professional Engineer). This is usually process dependent and includes Noxious land use.
Special loads	e.g. Storage garages, Cemeteries, Churches etc.: the higher of 13.8 kVA (60 A single phase at 230 V), or the demand calculated by the developer's consulting engineer.
Mixed use	Any combination of the above, with diversity factors applied or composite load curves summated to determine the annual maximum demand of the saturated development (i.e for the full development when all properties have been developed).

11. DETERMINATION OF ELECTRICITY ENGINEERING CONTRIBUTION FEES

This section describes in steps how the Electricity Contribution fees are determined according to the modelled network configuration and adopted standards.

a) The electricity supply networks are modelled to allow for standard equipment types and capacity and separated into logical components.
b) Each component is allocated the minimum of its own capacity / rating or the associated upstream or downstream component's capacity / rating.
c) Each component cost is allocated at the replacement values that include professional fees, installation and commissioning.
d) Provision for a base date and industry related escalation is built into the model.
e) Provision for a pre-determined portion for the respective equipment is subject to rate of exchange.
f) The cost per kVA is calculated taking all the above-mentioned into consideration.
g) Select a typical generic connections type at the applicable voltage levels at a differentiation of the point where the connection will be done.
h) Each generic connection is allocated all the respective components required to make the supply available with a diversity differentiation at all the voltage levels.

12. CALCULATION OF ENGINEERING SERVICES CONTRIBUTIONS

This section describes in steps how the Electricity Contribution fees are determined according to the modelled network configuration and adopted standards.

a) Only shared infrastructure is used to calculate contributions on a pro-rata basis.
b) Establish the point in the network where infrastructure will be shared with other developments.
c) Determine the incremental capacity to be charged for as follows:

    i. The highest of the demand required by a development or the calculated nominal capacity based on the approved zoning.

    ii. Only increased capacity will be applicable for any rezoning and full credit (in kVA) must be given for previous zoning rights.

d) Determine the optimum means to service the development for the medium and long term, taking cognisance to mitigate risk, avoid unutilised capacity and duplication of infrastructure.
e) Multiply the incremental capacity with the relevant engineering service contribution fee to determine the contribution payable.

13. SPECIAL CASES

13.1 **Leapfrog developments:**

Developments located remotely from the promulgated developed area or existing networks are classified as leapfrog developments.

The developer is normally responsible for all costs with regard to the provision or extension of services required by the development, without any contribution from the municipality.

The municipality may decide to specify larger equipment than what is required by the development due to the fault levels or in order to make provision for future developments.

In cases mentioned above, the municipality may only cost for the minimum standard equipment used by the municipality to meet the system and load requirements of the development.

14. REFUNDING OF ENGINEERING CONTRIBUTIONS

This section describes how developers should be refunded where they have funded the full incremental costs for services and sharing takes place at a future date.

a) Only the difference between the engineering contribution payable and the equivalent contribution for the development should be refunded.
b) Refunding should only be applicable for a window period of up to 5 years after the initial connection or as per agreement between the municipality and the developer in the case of a leapfrog type development.
c) Refunding must be based on proportionate capacity sharing of only shared infrastructure.
d) Refunding will be based on replacement values and the approved fees applicable at that time.
e) Refunding will be done on a pro-rata basis being based on the portion of additional service required of the capacity previously financed by private developments.
f) No refunding will be considered for initial overstating of service requirements.

15. LONG TERM LOAN AGREEMENTS WITH DEVELOPERS

This section covers the implications of the municipality entering into a loan agreement with a developer for the provision of shared infrastructure and the implications of the MFMA.

a) A debt agreement can be entered into with a developer who provides additional capital expenditure on behalf of the municipality in accordance with section 46(1).
b) The loan or debt agreement must be approved by a Council Resolution and signed by the Mayor in accordance with section 46(2).
c) A long-term debt taken up by a municipality is subject to the specific process stipulated in section 46(3).
d) The long-term debt may not be subject to rate of exchange of the Rand against any foreign currency.
e) The municipality may provide security to such a developer in terms of section 48(1)c.

16. IMPLEMENTATION ISSUES

This section stipulates who should make payments, by what means and when.

a) Engineering contributions due by the developer should be a condition for granting development / subdivision / rezoning approval.
b) Engineering contributions should be calculated and charged as soon as possible in the application process.
c) Payments should in all cases be made as follows:

   i. Township establishment, extension of boundaries of a township & rezoning: Prior to proclamation approval of the town / extension of boundaries / amendment scheme.
   ii. Special Written or Temporary Consent of Council: Within a period of thirty (30) days from date from approval by Council
   iii. Subdivisions: Prior to issuing a certificate confirming that all conditions imposed by council relating to the approval have been complied with.
   iv. Permits: Within a period of thirty (30) days from date of issuing a Permit by the Department of Local Government & Housing.
   v. Any consent given by Council which may require upgrading of the network.

d) The manner in which payments are made for each service must be flexible but should be agreed upon at the time of the signing the Services Agreement, alternatively it should be determined in a resolution of Council or letter of approval issued by Council. Acceptable alternatives are:

   i. The provision of a bank guarantee for the full cost of electrical services and it must make provision for escalation to the planned date of construction.
   ii. Cash payment.
   iii. Phasing of the payment according to pre-determined milestones such as pro-rata contribution per phase, subject to the developer offering an acceptable bank guarantee for the balance of the amount.
   iv. The physical provision of infrastructure to the value of the calculated contribution required for that service, forming part of the Services Agreement.

17. CHANGES TO TOWN PLANNING RIGHTS AND/OR DEMAND

Contributions will be applicable for developments exceeding the original designed capacity for each development as per approved contribution fees.

The zoning can be changed during the planning process, based on new information / requirements.

Where a downgrading of zone takes place after payment of contribution was made, no refund will be made of contributions already paid. The supply requirements may however increase in future up to the original service level, without any further contribution.

Where a developer wishes to reduce the demand in kVA calculated on which contributions will be applied, he should first consider reducing the town planning rights, e.g. reducing the FAR.

Where the developer cannot reduce the town planning rights, and still requires a lower demand value for the purposes of calculating engineering contributions, he can restrict the demand by registering a servitude of constraint in the title deed for the particular property

Where a consumer's notified maximum demand is increased in order to avoid penalties for exceeding the NMD on the monthly consumption charges, engineering contributions will be payable as well.

Where a consumer reduces his notified maximum demand, no refund for previously paid engineering contributions shall be considered.

18. PUBLICATION AND REVISION FREQUENCY OF RATES

The electricity contribution fees should be reviewed and updated annually and published with the annual municipal rates and tariffs.

19. CONTESTABILITY

A developer has the right to contest a quote from the utility and thus use a contractor to install the services to the municipal standards and specifications.

20. EXCLUSIONS AND EXEMPTIONS

Contributions will not be payable under the following circumstances:

a) Where existing municipal services or components thereof are established and are mainly financed from sources other than municipal funds. For instance, allocations and/or subsidies, i.e. INEP, MIG, etc.
b) Where the municipality is not the supply authority that providing electricity services in a specific municipal area.
c) For areas previously supplied by other and the distribution license is transferred, the exemption lapses as soon as the Municipality is established or provides the municipal service.
d) Indigent Customers registered on the municipal indigent database shall be exempted from paying engineering contributions, on condition that the supply remains limited to a maximum of 20A single phase and will be used exclusively for a single connection per erf or designated family living area. Only one such consent will be allowable per Indigent Customer. Should the customer at that address in future apply for the demand increase above 20A, the full payment of contribution for the new NMD will be payable.

ANNEXURES

ANNEXURE A: RATES SCHEDULE

ANNEXURE B: SINGLE LINE DIAGRAM WITH RATES

ANNEXURE A: RATES SCHEDULE

Refer to Annexure A attached as a separate document.

ANNEXURE B: SINGLE LINE DIAGRAM WITH RATES

Refer to Annexure B attached as a separate document