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KWADUKUZA MUNICIPALITY

Vuthela
ILEMBE LED PROGRAMME

ZUTARI
IMPACT. ENGINEERED.

STATUS QUO REPORT – MANDENI LOCAL MUNICIPALITY (MLM)

Project Title: Development of Non-Revenue Electricity Management Strategies and Programmes for KwaDukuza & Mandeni Municipalities

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Contents

ACRONYMS AND ABBREVIATIONS ----------4

1 EXECUTIVE OVERVIEW ----------6

2 REQUIRED DELIVERABLES ----------7

3 STAKEHOLDER WORKSHOP----------8

4 DETAILED SITUATIONAL ASSESSMENTS ----------9

4.1 Existing Infrastructure Assessment 9

4.1.1 *Overview* *9*

4.1.2 *Detailed Deliverable Breakdown* *9*

4.1.3 *Situational Analysis Findings* *12*

4.1.3.1 Key Network Installations----------12

4.1.3.2 General Infrastructure Assessment ----------15

4.1.3.3 General Assessment of Metering & Meter Reading for bulk purchases ----------20

4.1.3.4 General Assessment of Metering & Meter Reading for Large Power Users (LPU)----------25

4.1.3.5 Roles & Responsibilities ----------26

4.1.3.6 Bylaws, Policies, Tarif Setting, Asset Management Planning, and Budgets for Maintenance---30

4.2 Technical Losses....35

4.2.1 *Overview* *35*

4.2.2 *Detailed Deliverable Breakdown* *35*

4.2.3 *Situational Analysis Findings* *36*

4.2.3.1 Technical Losses Analysis----------36

4.2.3.2 Reasons for Technical Losses----------36

4.2.3.3 Technical Losses Interventions----------37

4.3 Non-Technical Losses 38

4.3.1 *Overview* *38*

4.3.2 *Detailed Deliverable Breakdown* *39*

4.3.3 *Situational Analysis Findings* *42*

4.3.3.1 Assess completeness & adequacy of metering of electricity - various categories of users------42

4.3.3.2 Assess adequacy, efficiency of institutional arrangements for meter installations & readings 42

4.3.3.3 Assess adequacy, effectiveness & efficiency of financial systems----------43

4.3.3.4 Assess integrity, completeness & accuracy of energy customer data base ----------44

4.3.3.5 Review report on Customer Relations Management System and / or Information Systems ---44

4.3.3.6 Assess billing & revenue collection re electrical services provision----------45

4.3.3.7 Investigate necessity of tariff study and review----------45

4.3.3.8 Review completed Indigent register study ----------46

4.3.3.9 Review of Debt management ----------47

4.4 Community / End-user Awareness Communication & Campaigns....49

4.4.1 *Overview* *49*

4.4.2 *Detail Deliverable Breakdown* *49*

4.4.3 *Situational Analysis Findings* *50*

5 STATUS QUO REPORT SUMMARY & CONCLUSION---------- 51

5.1 Situational Analysis....51

5.1.1 *Key Network Installations* *51*

5.1.2 *General Infrastructure Assessment* *51*

5.1.3 *General Assessment of Metering & Meter Reading for bulk purchases* *52*

5.1.4 *General Assessment of Metering & Meter Reading for Large Power Users (LPU)* *52*

5.1.5 *Roles & Responsibilities* *52*

5.1.6 *Policies, Tarif Setting, Asset Management Planning, and Budgets for Maintenance* *52*

5.1.7 *Technical Management Information Systems* *53*

5.2 Technical Losses 54
5.3 Non-Technical Losses 54
5.3.1 *Assess completeness & adequacy of metering of electricity - various categories of users* *54*
5.3.2 *Assess adequacy, efficiency of institutional arrangements for meter installations & readings* *54*
5.3.3 *Assess adequacy, effectiveness & efficiency of financial systems* *54*
5.3.4 *Assess integrity, completeness & accuracy of energy customer data base* *55*
5.3.5 *Review report on Customer Relations Management System and / or Information Systems* *55*
5.3.6 *Assess billing & revenue collection re electrical services provision* *55*
5.3.7 *Investigate necessity of tariff study and review* *55*
5.3.8 *Review completed Indigent register study* *55*
5.3.9 *Review of Debt management* *56*
5.4 Community / End-user Awareness Communication & Campaigns 56
ANNEXURE 1 ---------- 57
ANNEXURE 2 ---------- 64
ANNEXURE 3 ---------- 65

Acronyms and Abbreviations

ABBREVIATION	DESCRIPTION
AMIS	Asset Management Information System
AMR	Automatic Meter Reading
CRM	Customer Relationship Management
CT	Current Transformer
DBSA	Development Bank of Southern Africa
DMRE	Department of Minerals & Energy
EMP	Electricity Master Plan
FY	Financial Year
FAR	Fixed Asset Register
FBE	Free Basic Electricity
GIS	Geographic Information System
GPS	Global Positioning System
HEU	High End User
HUC	High Use Customers
HV	High Voltage
ICT	Information and Communication Technology
IDM	iLembe District Municipality
IDP	Integrated Development Plan
IT	Information Technology
kVA	Kilo Volt-Ampere
kWh	kilowatt-hour
LPU	Large Power User
LV	Low Voltage
MMS	Meter Management System
MLM	Mandeni Local Municipality
MIS	Management Information System
mSCOA	Municipal Standard Chart of Accounts
MTSF	Medium Term Strategic Framework
MV	Medium Voltage
MW	Mega Watts
NT	National Treasury
NTL	Non-Technical Losses
NRE	Non-revenue electricity
NRS	National Regulatory Services

PCU	Vuthela Programme Coordinating Unit
PFM	Public Finance Management
POD	Point of Delivery
POS	Point of Supply
PSP	Professional Service Provider
RMSP	Remote Meter Service Provider
SCADA	Supervisory Control and Data Acquisition
SDF	Spatial Development Framework
SLD	Single Line Diagram
SPU	Small Power User
STS	Standard Transfer Specification
TAR	Technical Asset Register
TID	Token Identifier
TL	Technical Losses
ToR	Terms of Reference
TOU	Time of Use
VT	Voltage Transformer
WBG	World Bank Group

1 EXECUTIVE OVERVIEW

This report is the second phase of the Vuthela iLembe LED Programme's Development of Non-Revenue Electricity Management Strategies and Programmes for the KwaDukuza and Mandeni Local Municipalities.
The deliverable requires two Status Quo reports to be provided, one each for KwaDukuza and Mandeni Local Municipalities.

This Status Quo report is for the Mandeni Local Municipality (MLM).

The report describes the various structures, systems and data-related activities and identifies possible gaps where energy losses / revenue losses may occur. This report focuses on the analysis of the current situation and reporting on the status quo thereof. Recommendations and suggestions for initiatives and intervention to address these losses will form part of phase 3.

The report is structured as follows:

- High-end Summary of required deliverables
- Report on Stakeholder Workshop session
- Detailed assessment of each deliverable and identification of gaps.

2 REQUIRED DELIVERABLES

Phase two involves the study, review, and assessment (Situational Assessment) of a host of aspects, covering the full spectrum of energy sourcing, distribution, revenue collection and debt management.

The various aspects can be summarized in below table as a high-end summary. Each aspect contains several sub-aspects that will be highlighted in the detailed Sections.

Table 1:High end summary of deliverables

1	Existing Infrastructure assessment
2	Technical Losses
3	Non-Technical Losses
4	Community / End-user awareness & campaigns

The situational analysis will comprise of:

- Assessment of documents / reports / data etc. The various detailed sections will highlight the applicable information that was assessed.
- A Stakeholder workshop with the relevant stakeholders of the KwaDukuza Local Municipality.

3 STAKEHOLDER WORKSHOP

In order to determine the Status Quo of MLM, a workshop was held on the 24th of February 2022 with relevant stakeholders from both the municipality and Vuthela.

The purpose of the workshop was to determine which information Zutari had already acquired and what information would be required from the relevant stakeholders to attain a thorough understanding of the situational analysis of the municipality.

The following list of stakeholders attended the workshop:

Table 2: Stakeholder List

Full Name	Organisation	Department	E-mail
Martin Piper	Zutari	Electrical	Martin.Piper@zutari.com
Senzo Makhoba	MLM	Finance	Senzo.makhoba@mandeni.gov.za
Munya Mutyora	Vuthela	Infrastructure	munyam@vuthelaled.co.za
Selby Msweli	MLM	Electrical	selbym@mandeni.gov.za
Zama Soji	Vuthela	Infrastructure	Szamas@vuthelaled.co.za

The aspects covered and workshopped were placed into four deliverable categories as per the ToR. These deliverables were given as follows:

- Existing Infrastructure Assessments
- Technical Losses
- Non-Technical Losses
- Community Awareness and Behaviours

Zutari summarized the purpose of the workshop, key outcomes and deliverables with the relevant stakeholders as follows:

- To acquire an accurate understanding of the systems in place there is the requirement to gather as much information from all the relevant departments as possible, bearing in mind the more data forthcoming, the more accurate the outcomes will be.

- Numerous aspects, ranging from the status of the existing electrical infrastructure and its performance to the public participation and current awareness campaigns on the go, installed metering and meter reading, effectiveness of financial systems, customer databases, tariffs etc were requested.

These items were expanded on in greater detail and summarised in the tables throughout this document with the relevant department sources categorised for easy identification and allocation. The reference material received at the time of the workshops was also identified.

4 DETAILED SITUATIONAL ASSESSMENTS

This section highlights in more detail the 4 deliverables as highlighted in the high-end Deliverables Requirement Summary in section 3.

It highlights the sub-aspects in detail, the documents / reports / data applicable to the assessment of the deliverable (reference information), and the gaps (if any) identified.

4.1 Existing Infrastructure Assessment

4.1.1 Overview

The TOR for this section read as follows:

"The consultant will be required, amongst other activities, to obtain all relevant information, as-built drawings, asset details, etc. of the electricity infrastructure network and associated facilities and carry out necessary consultation to:

I. Confirm and validate the existence of key network installations.

II. Obtain a general assessment of the entire electricity infrastructure network in the Municipalities through a desktop study to establish the composition, age, quality, general condition, and network modelling thereof using available information or, in the absence of such available information, conducting the assessments. The municipalities' electricity masterplans, GIS Databases, fixed asset registers, asset management plans and any other relevant documentation should be consulted for this purpose,

III. Obtain a general assessment of the status, frequency, and adequacy of metering and meter readings for bulk purchases and high usage consumers in the municipal area.

IV. Identify and assess the existing roles and responsibilities and the effectiveness thereof, regarding the provision of electricity services in the municipality including associated responsibilities such as meter readings, revenue collection, operations and maintenance of electricity services infrastructure, etc.

V. Assess the adequacy and currency of the by-laws, policies, tariff setting, asset management planning, and budgeting for operations and maintenance by the municipality in relation to the sustenance of electricity services provision and its associated infrastructure.

VI. A Scoping study for an Asset Management Information System, and a functional design and specification for the SCADA System & Control Room were completed under the inception phase of the Vuthela Programme. The PSP is to familiarise themselves with these studies and use those for reporting on the current technical management information systems in place in the municipality to manage, operate and maintain the electrical service network."

4.1.2 Detailed Deliverable Breakdown

The table below provides a detailed breakdown of the 6 aspects assessed as per the ToR and the Reference information used in the assessments.

Aspect III was sub-divided into a) Bulk purchases and b) High usage customers. Aspect IV was also sub-divided into a) Asset Management Information System and b) SCADA system and control room.

Codes have been assigned to indicate whether Reference Information is according to the ToR (**T**), Additional Information received (**A**) or Zutari requested (**Z**).

The source field indicates from which department the information was sourced and the received column indicates whether the information was received or not.

Certain Reference Information documents are applicable to more than one of the assessment aspects.

Table 3: Breakdown of Deliverables as per TOR

Main Deliverable	Number	Assessment Item	Reference Material	Source
1. Existing Infrastructure Assessment	**1.1**	Confirm & validate key network installations	Previous Assessment reports & initiatives to reduce losses (T)	Any
			Electricity Master Plans (T)	Energy
			As built drawings (T)	Energy
			Fixed asset register (T)	Energy
			Asset Management plan(s) (T)	Any
			MLM draft IDP (T)	Any
			Loading data (Z)	Energy
			Maintenance & failure percentage per feeder. (Z)	Energy
			Feeder metering data per load point (Z)	Energy
			Existing Network model (Z)	Energy
	1.2	Desktop Study entire electricity network to determine: - Composition - Age - Quality - Network modelling	Previous Assessment reports & initiatives to reduce losses (T)	Any
			Electricity Master Plans (T)	Energy
			As built drawings (T)	Energy
			Fixed asset register (T)	Energy
			Asset Management plan(s) (T)	Energy
			MLM draft IDP (T)	Any
			MLM NERSA D forms (A)	Energy
			Existing network model (Z)	Energy
			Supply areas (Z)	Energy
			Outage statistics (Z)	Energy
	1.3A	Undertake general assessment of Metering & Meter Reading for bulk purchases	ESKOM account & billing data (Z)	Energy
			Detailed POD information (metering diagrams, CT /VT data etc) (Z)	Energy
			POD sub-metering? (Z)	Energy
	1.3B	Undertake general assessment of Metering & Meter Reading for high use customers	High end user list (Z)	Any
			AMR PSP? (Z)	Energy
			AMR data (Z)	Any
			AMR fault list (Z)	Energy
	1.4	Assess existing roles & responsibilities & effectiveness of: - Provision of electrical services in general - Meter readings - Revenue collections	Department organograms? (Z)	Any
			Vacancies? (Z)	Any
			Meter reading outsourced / internal? (Z)	Finance
			Credit control outsourced / internal? (Z)	Finance

		- Operations & maintenance of electricity services in general	Ops & maintenance team composition (Z)	Energy
	1.5	Assess adequacy & currency of: - By-laws - Policies - Tariff setting - Asset Management planning - Budget for maintenance & planning	Electricity by-laws (Z)	Energy
			Policies (SSEG / Disconnection & Rev Protection policy) (Z)	Energy
			Tariff setting policy (Z)	Any
			Revenue Management policy (Z)	Any
			Asset Management policy (Z)	Any
			Asset Management plan & 3 - 5 year rolling maintenance plan (Z)	Any
			Ops & Maintenance budgets (T)	Any
	1.6A	Assess Study for Asset Management Information System	Any assessment studies?	Any
			applicable procedures (Z)	Any
			AM system information (Z)	Any
	1.6B	Assess Functional Design & Specification for SCADA System & Control room	Vuthela functional design & specification for SCADA system & Control room (T)	Vuthela
			Network operational diagrams (Z)	Energy
			Validation & process for managing normal open points (Z)	Energy

4.1.3 Situational Analysis Findings

This section outlines Zutari' s detailed Status Quo Assessments findings.

4.1.3.1 Key Network Installations

Reference information received in this regard, consist of:

- Electricity Master Plans
- Network Drawings
- IDP 2021/22

The Mandeni Municipality has two licensed electricity distributors, namely Eskom and Mandeni. Mandeni has no generation capacity and buys their electricity from Eskom and resells to customers within their licensed area which is the range of 1000 customers. The majority of the municipality is supplied by Eskom as per Figure 1 which indicates the extent of the municipal supply area in comparison to the municipal boundary.

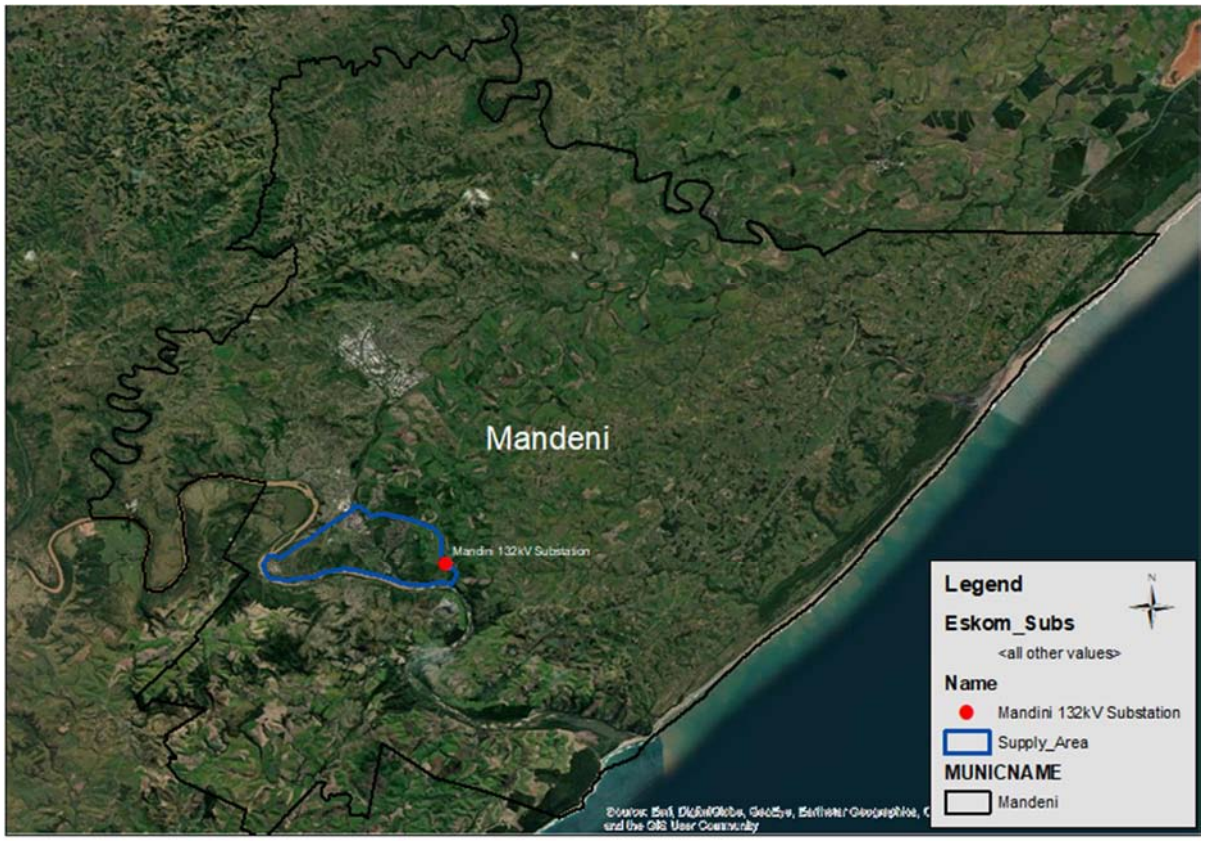


Figure 1: ***Supply Boundaries & Eskom substations***

4.1.3.1.1 Bulk Supply System

The electrical network hierachy for MLM is shown in Figure 2 overleaf. The bulk supply at the highest level is Mandini 132kV / 88 /11 kV Main Transmission Substation. There is one independent 11kV supply from the Eskom Mandeni substation via an 11kV overhead line. The Point of Supply is a combination of a MV feeder in the Eskom Yard and a pole mounted Auto-recloser located outside the

substation. The MLM network is arranged in a ring feed arrangement and the Town is reticulated at both 11kV and 6.6kV.

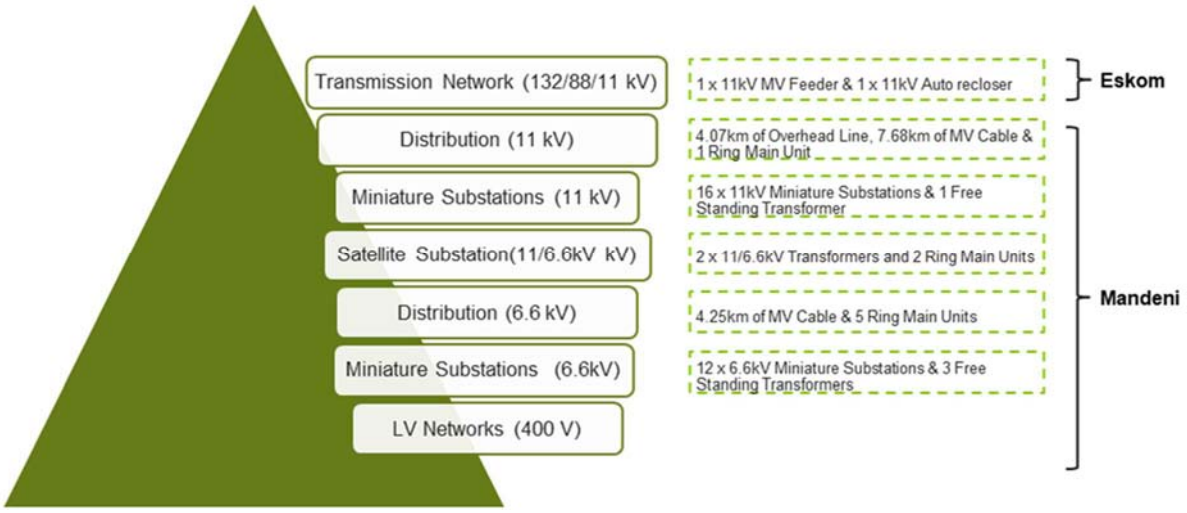


Figure 2: ***Network Hierarchy***

MLM takes bulk supply at 11kV from the Mandeni substation from a single dedicated MV feeder. As the town gets supply via a single overhead line, there is no firm capacity on the bulk supply of electricity. Table 4 below provides a summary of supply at the Mandeni intake point. It must be noted that the Eskom supply substation also supplies Eskom customers and is not dedicated to Mandeni supply area.

Table 4: ***Bulk supply from Eskom Mandeni***

Eskom Point of Supply	Supply Voltage	Substation Firm Capacity	Notified Maximum Demand
Mandeni	11kV	10MVA	3.5MVA

In addition to the above MLM have an independent bulk supply customer Umgeni Water. The supply to Umgeni Water is derived from Eskom Sappi substation. Eskom have provided 1 x 132/33kV 40MVA dedicated transformer and 2 x 33kV feeder bays at Eskom substation. It must be noted that Eskom also supply the Sappi Paper Mill from this substation from two independent 132/33kV 40MVA transformers. MLM have 2 x 33kV feeders from the Eskom Sappi substation to Umgeni Water substation (Mathew substation). The supply to Umgeni water is bulk at 33kV via 2 x 33kV cable feeders aproximatley 4km long. Figure 3 overleaf is a representation of the interconnection from Eskom Sappi substation to Mathew substation.

Figure 3: ***Supply from Eskom substation to Mathew substation***

Table 5 below provides a summary of supply at the Eskom Sappi intake point.

Table 5: ***Bulk supply from Eskom Sappi***

Eskom Point of Supply	Supply Voltage	Substation Firm Capacity	Notified Maximum Demand
Sappi	33kV	40MVA	10MVA

4.1.3.1.2 11kV & 6.6 kV System

MLM have a single 11kV overhead line from the Eskom supply point to their internal 11kV network. The 11kV overhead line supplies the 11kV network which is configured as a ring supplying miniature substations and transformers. The miniature subststaions and transformers then supply reticulation zones to LV customers.

The 6.6kV network is derived from the 11kV supply at two satellite substations. The voltage is stepped down from 11kV to 6.6kV at two points on the 11kV network. Part of the 6.6kV network is ringed for increased reliability and other parts of the network are radial. The 6.6kV feeders supply miniature substations and transformers which in turn supply reticulation zones to LV customers.

MLM do not have any major Distribution substations or switch stations. There are only two outdoor satellite substations that are made up of floor standing transformers and ring main units. Both these satellite substations have 1 x 1.25MVA 11/6.6kV transformers, therefore no firm capacity.

The 11kV network is constructed with a mix of overhead line, strung with Oak, Mink and Fox (on wood pole structures) and underground cable (70mm^2 Copper PILC). There is approximately 4km of overhead line and 7.7km of underground cable.

The 6.6kV network is constructed with underground cable (70mm^2 Copper PILC). There is approximately 4km of overhead line and 7.7km of underground cable. Figure 4 below is a graphical

representation illustrating the extent of the 11kV and 6.6kV networks and connection to Eskom infrastructure.

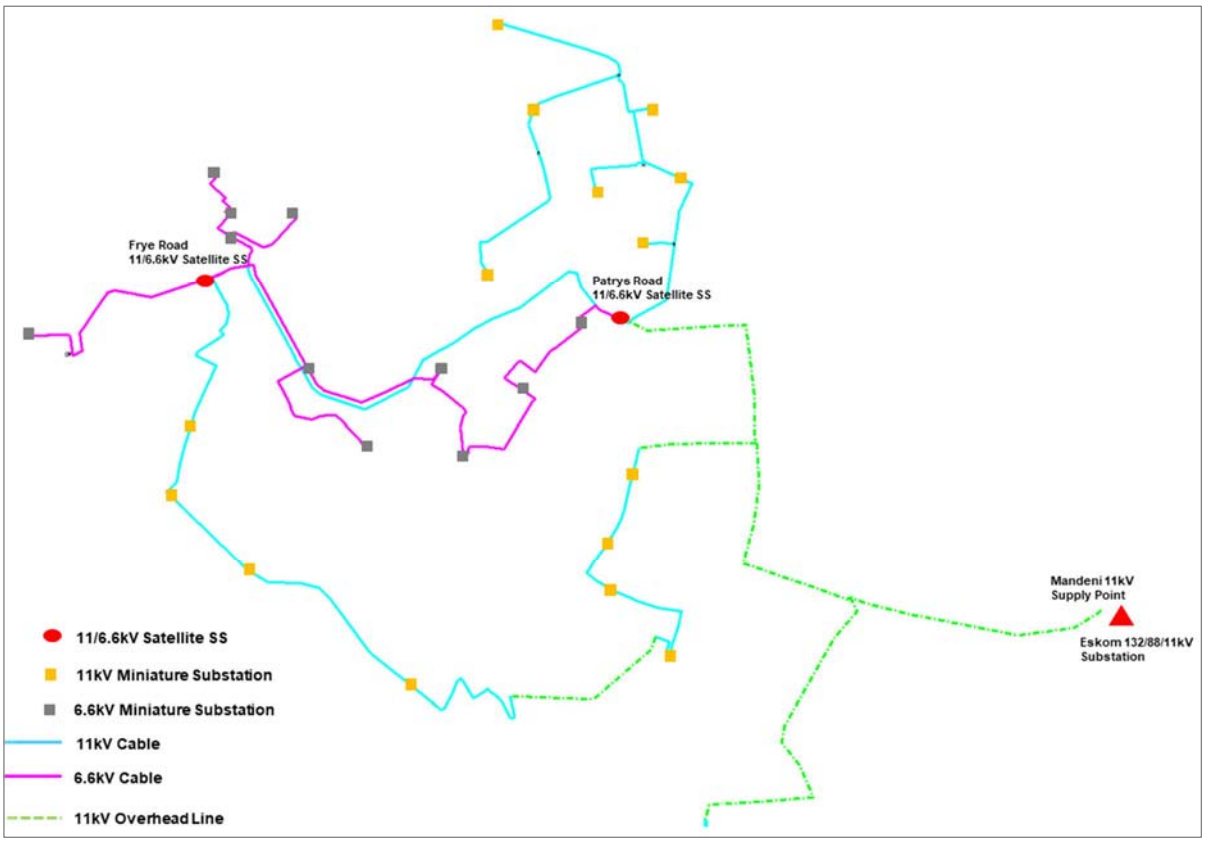


Figure 4: ***Spatial Representation of the 11/6.6kV networks***

The extent of 11/6.6kV distribution devices on the MLM network are highlighted below,

- 1250kVA transformers with a total of 2.
- Ring Main Units with a total of 2.

The extent of 11kV distribution devices on the MLM network are highlighted below,

- 315kVA miniature substations with a total of 16
- Ring main units with a total of 1.
- 200kVA free standing transformer with a total of 1.

The extent of 6.6kV distribution devices on the MLM network are highlighted below,

- 100kVA, 200kVA, 300kVA, 315kVA miniature substations with a total of 12.
- Ring main units with a total of 5.
- 150kVA, 500kVA free standing transformer with a total of 2.

4.1.3.2 General Infrastructure Assessment

Reference information received in this regard, consist of:

- Electricity Master Plan

- Replacement of 6.6kV network Mandeni Report

It must be noted that no additional information was available such as asset registers with condition-based data. Based on the AMP developed in 2019, it was noted that the asset register was considered not sufficiently reliable with no asset health information.

It can be noted that the MLM Distribution networks have been in service for many years and much of the network is aged. Much of the electricity network within MLM's supply area was designed or strengthened in the early 1980's with an expected life of 25 years. Such networks may begin to exhibit degradation in reliability, performance, and functional inadequacy.

4.1.3.2.1 11kV & 6.6 kV Substations

A condition assessment was done during the 2019 Master Plan based on visual inspection. Infrastructure constraints were identified as the bulk of the electricity network was developed many years ago and has since deteriorated or become obsolete through time, technological changes and/or expected useful life. Some of the issues identified include,

- Blown up miniature substations
- Miniature substation transformers bypassed
- Bypassed Magnafix units due to failure
- Lack of labelling
- General damage such as holes in miniature substations enclosures, oil leaks, vegetation etc.

The transformers and miniature substations assessed as part of the 2019 EMP has been categorised with ratings as tabled below.

Table 6: ***Condition Ratings***

Rating	Condition	Description
5	Excellent	No visible defects, new or near new condition, may still be under warranty if applicable
4	Good	Minor deterioration, equipment may be slightly outdated but still meets needs of facility with minimal routine maintenance
3	Adequate	Repairs are needed; some deterioration exists, and maintenance needs are considerable. However, equipment meets needs and is still within its useful life
2	Marginal	Equipment has exceeded useful life; defects are critical and/or widespread; no longer meets needs or current standards and requires partial replacement at a minimum
1	Poor	Equipment is well past its useful life and has critical defects affecting function and ability to meet standards. Issues are beyond repair and warrant detailed review

With respect to the 11kV miniature substations the following can be noted,

- Three are categorised as poor and indicates a need for replacement.
- Twelve are categorised as adequate with routine maintenance and labelling requirements.
- One is categorised as good which is midlife and the latest miniature substation to be added to the network.

With respect to the 11/6.6kV satellite substations and 6.6kV miniature substations the following can be noted,

- The 11/6.6kV satellite substations are categorised as good as they have been refurbished.
- All of the 6.6kV miniature substations are categorised as marginal indicating equipment has reached useful life with defects affecting functionality.

From the analysis, it can be noted that substantial portions of the Mandeni electrical network are approaching or have exceeded useful life specifically the 6.6kV network. There is a general need for routine maintenance and a requirement to replace the 6.6kV equipment with 11kV equipment which is considered a more appropriate system voltage level.

4.1.3.2.2 Single Line Diagram & GIS Data

There are currently no single line diagrams (SLD) available for MLM. The network has been drafted as a spatial representation of the 11kV and 6.6kV networks within a GIS platform. Considering that this network is relatively small with a limited number of assets, constructing these drawings as a single line representation is considered a relatively simple task, however the required drafting tool such as CAD may not be available to the utility. An SLD will enable easy visualisation of power flow in a network, interconnectivity, visualisation of switching devices, network switching arrangements, equipment key ratings etc. and it is recommended that this be developed.

The MLM electrical network is shown overleaf on Figure 5 and includes the following,

- 11/0.4kV and 6.6/0.4kV Miniature substations and transformers
- 11/6.6kV Outdoor Transformers
- 11kV Overhead Lines and Poles
- 11kV and 6.6kV MV Cables
- 11kV and 6.6kV MV Ring Main Units

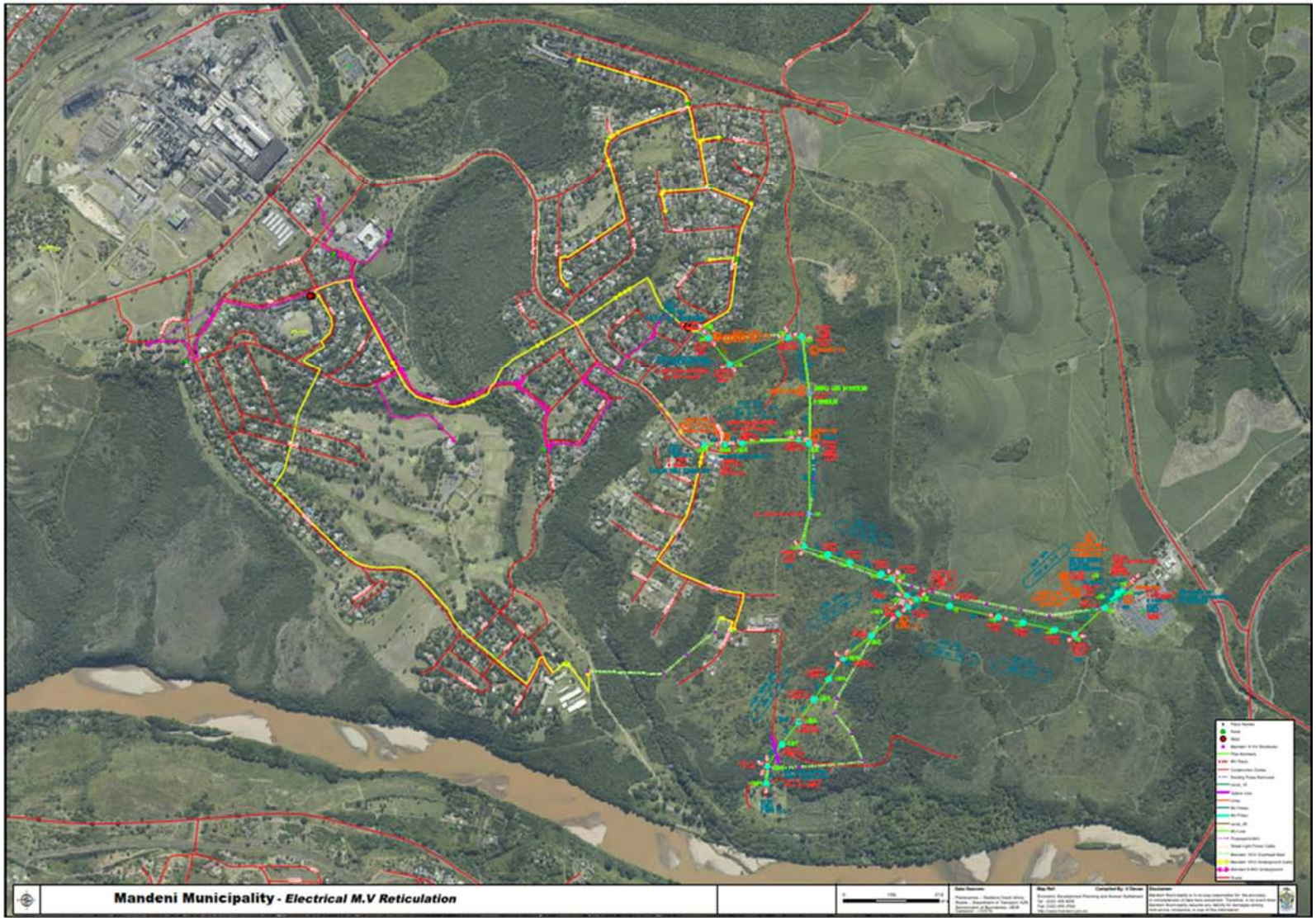


Figure 5: ***Extent of electrical infrastructure within the GIS data base***

4.1.3.2.3 Network Loading & Modelling

Figure 6 below is an indication of the loading identified during the 2019 master plan revision for the period 2016-2017 and Figure 7 is an indication of the most recent loading in 2022. The supply has a notified maximum demand of 3.5MVA and currently peaks at around 2.5MVA consistently. Based on historic and current loading it can be noted that there has been limited growth within the supply area. Electricity consumption in the town of Mandeni is stable with a buffer of around 1MVA for future growth.

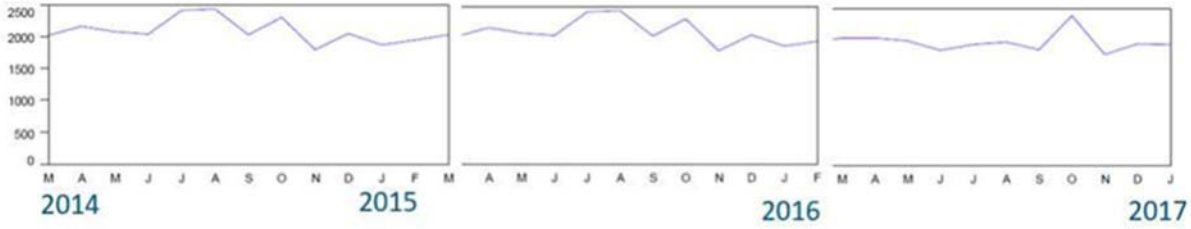


Figure 6: ***Mandeni Electrical Loading 2014-2017***

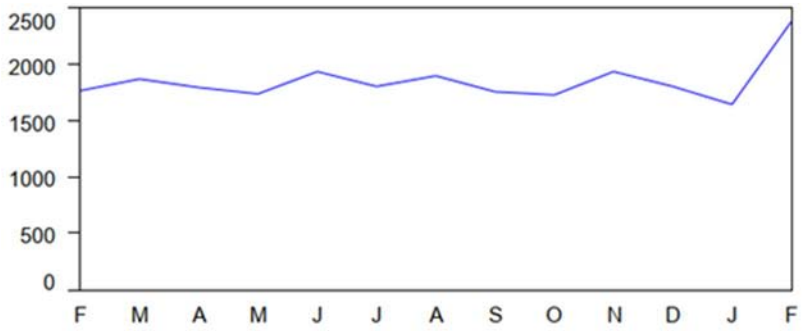


Figure 7: ***Mandeni Electrical Loading 2022***

A network model was compiled as part of the 2019 Master Plan revision. The model is a reduced version of the actual network and does not include reticulation transformers but rather lumped loads representing each transformer load. For the purpose of a planning study, this can be considered acceptable.

The load flow analysis concluded that the 11 kV and 6.6 kV networks are sufficient in terms of current capacity in the contingency state. The additional impedance of the 11/6.6kV transformers results in voltage regulation of the 6.6 kV network that is exceeding SANS 507 norms. The 6.6kV network has been earmarked for replacement as part of the EMP study and this upgrade will remove the voltage regulation issue identified.

With respect to the bulk supply customer Umgeni Water, no analysis was considered for this supply however the current infrastructure is considered adequate for the current notified maximum demand of 10MVA. The demand at Umgeni Water for February 2022 is shown in shown on Figure 8 overleaf and is around 2.7MVA. This can however fluctuate to higher demands with this being a high lift pumpstation.

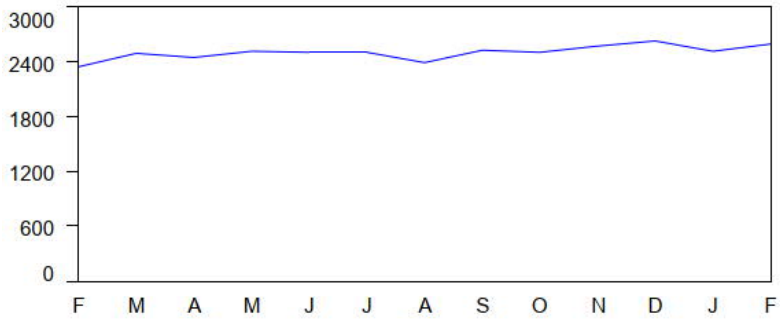


Figure 8: ***Umgeni Electrical Loading 2022***

4.1.3.3 General Assessment of Metering & Meter Reading for bulk purchases

ESKOM

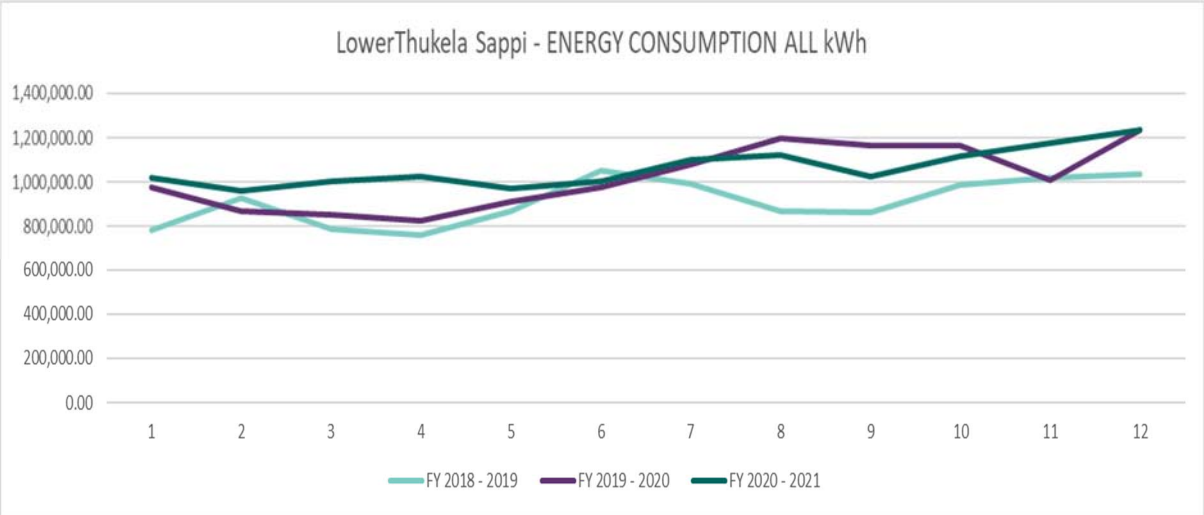
Reference information received in this regard consisted of the ESKOM invoicing for the periods July 2018 to June 2019, July 2019 to June 2020, and July 2020 to June 2021. The documents are in PDF format and consist of an invoice per intake point per month as well as a consolidated invoice per month.

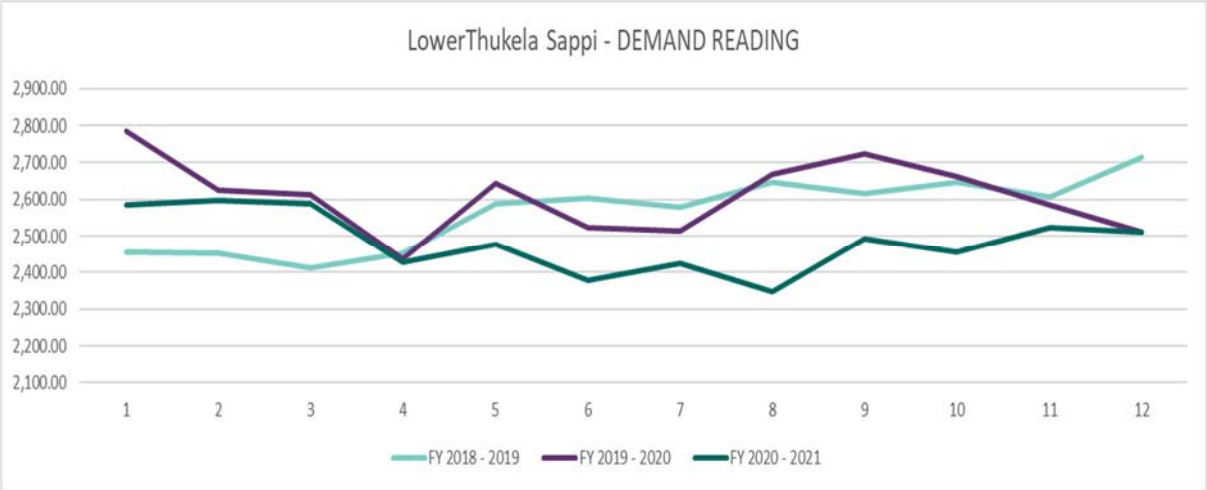
The invoice data has been consolidated by Zutari into an annual overview per intake point as well as a combined annual overview. Please refer to Annexure 1 for the detailed overview of the annual data per intake point for the last 3 financial years.

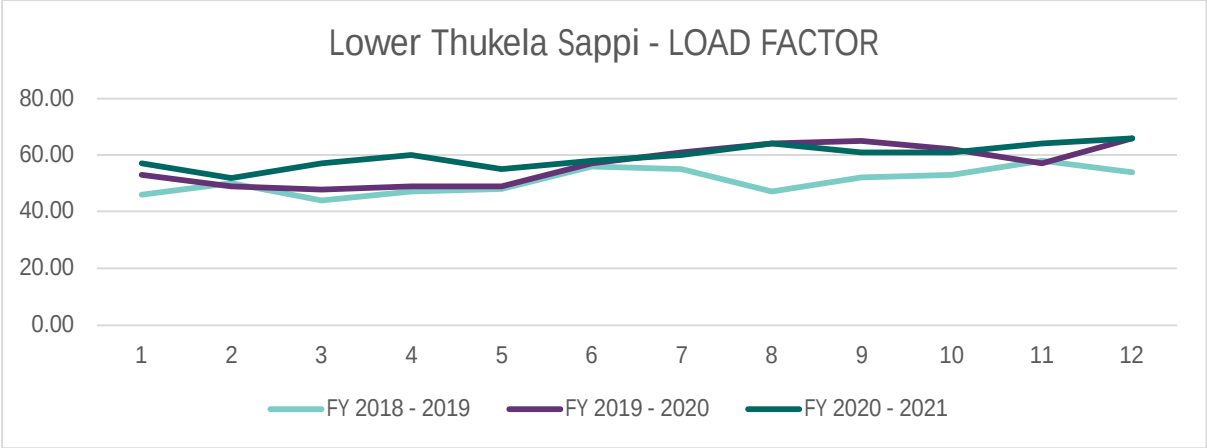
LOWER THUKELA SAPPI

The graphs below provide an overview of the Lower Thukela Sappi intake point for the three financial years with respect to:

- Energy consumption per month per financial year.
- Demand reading per month per financial year.
- Load factor per month per financial year.



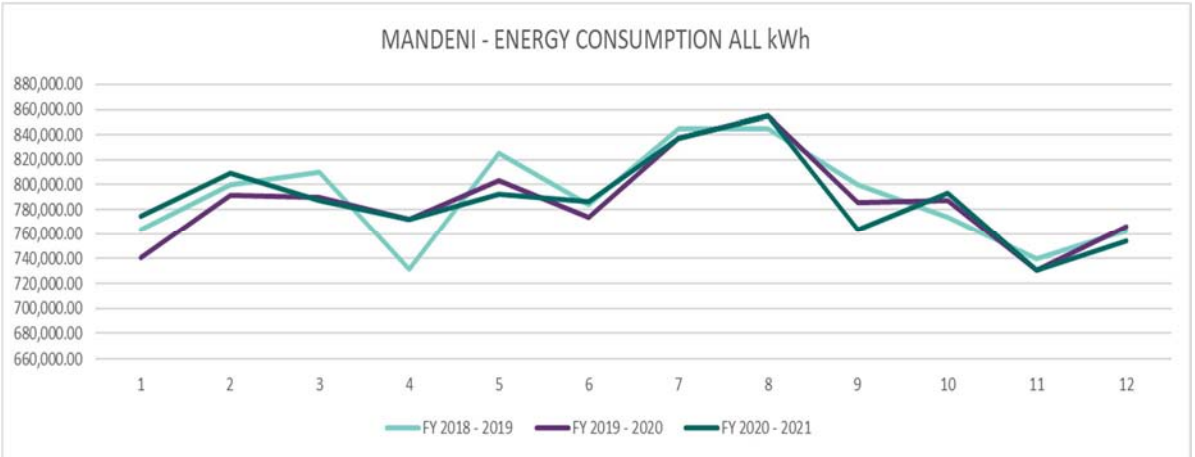


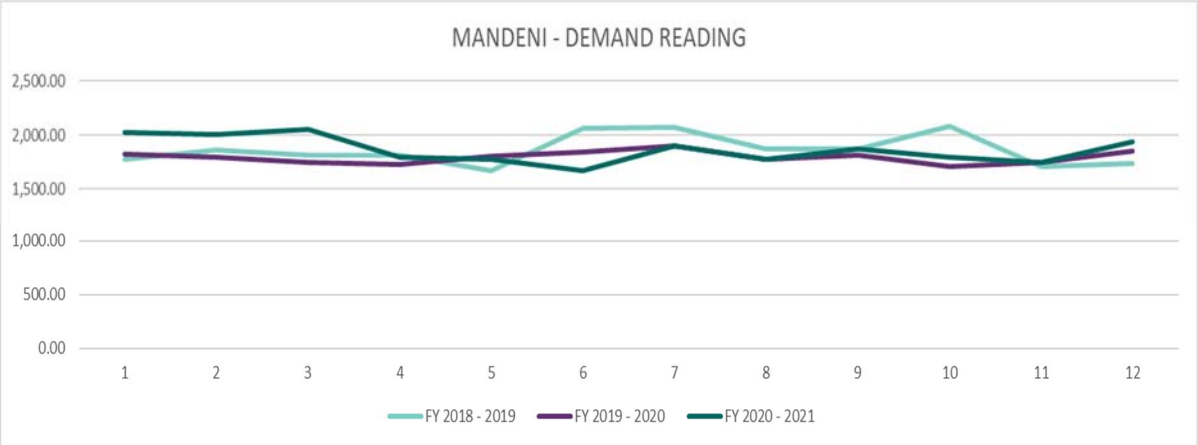


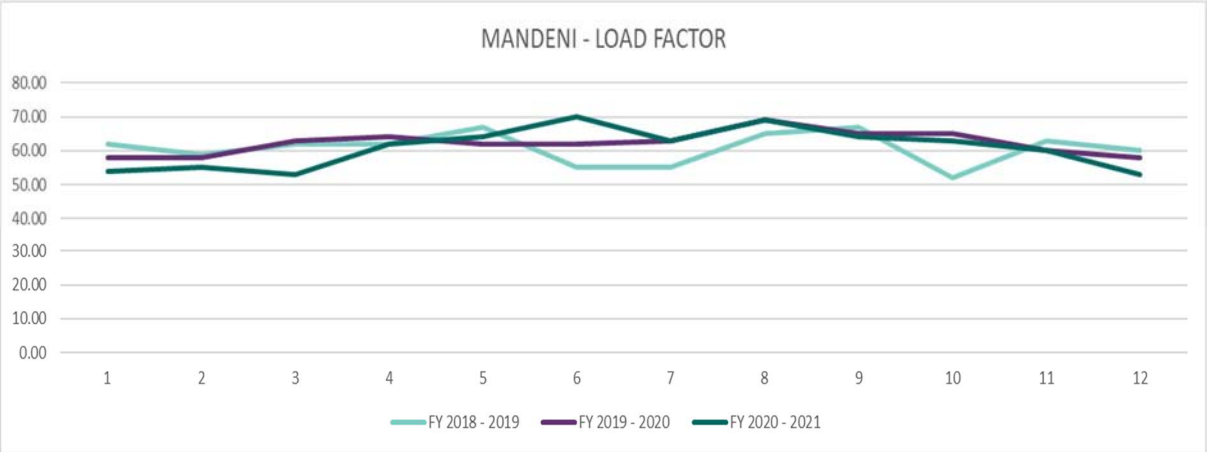
MANDENI POS

The graphs below provide an overview of the Mandeni intake point for the three financial years with respect to:

- Energy consumption per month per financial year.
- Demand reading per month per financial year.
- Load factor per month per financial year.







Observations:

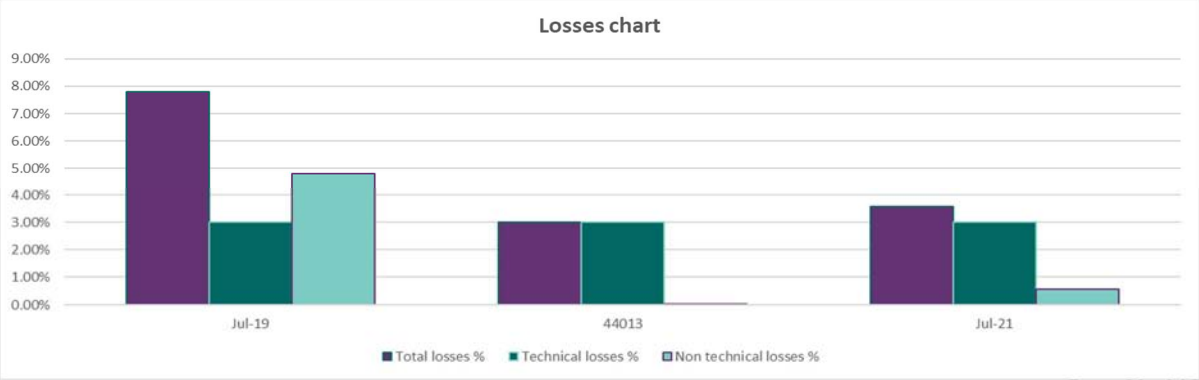
- Unlike KDM with a single Eskom account and three premise IDs for their three intake points, MLM have separate account numbers for the two intake points. This can be attributed to premise ID 6274494579 being a dedicated supply point for Umgeni water as the only consumer and was established via a three-way SLA agreement around 2015.
- No MLM check meters exist and reliance is placed completely on the accuracy of Eskom measuring equipment.
- Umgeni water as a single customer has more than double the energy consumption of the whole of the rest of MLM.
- Mandeni intake point has a monthly Network Demand Charge / kVA as well as an Energy Demand Charge / kVA. This is because of the municipality being on the Eskom tariff called Nightsave Urban kVa Interval. It results in MLM paying more per GWh than the metros of the country.

MLM		
Concept	Tot al Jul-18 to Jun-19	
GWh	9.53	
R	9,914,294.65	
R/GWh	1,040,172	
USD/GWh	69,345	
R/USD		
FY2018/19 D-form	R/GWh	USD/GWh
BCM	909,364	60,624
CoCT	873,246	58,216
Ekur	814,410	54,294
Ethe	805,735	53,716
CoJ	958,833	63,922
Mang	910,858	60,724
NMB	891,441	59,429
CoT	824,946	54,996
Total 8 Metros	862,269	57,485
MLM Jul-18 to Jun 19	1,040,172	69,345
MLM/ 8 Metros	1.21	1.21

NERSA D FORMS

D Forms were received for the financial years ending July 2019, July 2020, and July 2021. Below table and graph provide a summary of the information. Being a small municipality, technical losses were considered to be at 3%.

NERSA D FORMS SUMMARY	FINANCIAL YEAR ENDING					
	Jul-19		Jul-20		Jul-21	
Energy Purchased in kWh	20,441,858		21,548,189		22,211,843	
Energy Sold in kWh	Units	% of Energy bought	Units	% of Energy bought	Units	% of Energy bought
Free basic electricity	0	0.00%	0	0.00%	0	0.00%
Domestic (prepaid)	3,637,913	17.80%	4,053,916	18.81%	4,609,747	20.75%
Domestic (conventional)	4,123,980	20.17%	4,563,258	21.18%	1,466,398	6.60%
Commercial (conventional)		0.00%		0.00%	2,354,670	10.60%
Commercial (prepaid)	0	0.00%	0	0.00%	0	0.00%
Street lighting	131,040	0.64%	193,551	0.90%	150,000	0.68%
Other sales	10,952,766	53.58%	12,088,896	56.10%	12,836,809	57.79%
Total Sales	18,845,699	92.19%	20,899,621	96.99%	21,417,624	96.42%
Total losses in kWh	1,596,159		648,568		794,219	
Total losses %	7.81%		3.01%		3.58%	
Technical losses %	3.00%		3.00%		3.00%	
Non technical losses %	4.81%		0.01%		0.58%	

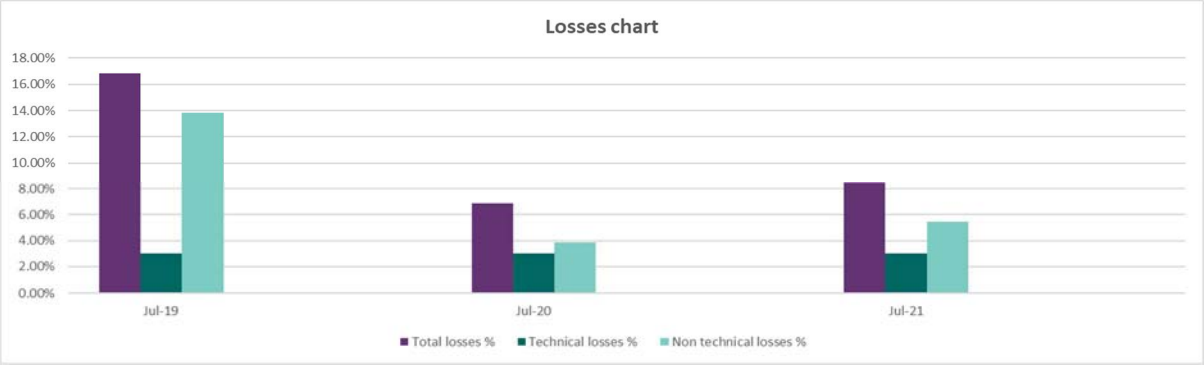


As it was established that Umgeni water's consumption is more than double that of the rest of Mandini, an analysis was also done by excluding Umgeni water, by assuming zero losses for Umgeni water as it is basically a stand-alone feed. The table and graph below indicate the effect thereof.

NERSA D FORMS SUMMARY	FINANCIAL YEAR ENDING		
	Jul-19	Jul-20	Jul-21
Energy Purchased in kWh (excl Umgeni water)	9,489,092	9,459,293	9,375,034

Energy Sold in kWh	Units	% of Energy bought	Units	% of Energy bought	Units	% of Energy bought
Free basic electricity	0	0.00%	0	0.00%	0	0.00%
Domestic (prepaid)	3,637,913	17.80%	4,053,916	18.81%	4,609,747	20.75%
Domestic (conventional)	4,123,980	20.17%	4,563,258	21.18%	1,466,398	6.60%
Commercial (conventional)		0.00%		0.00%	2,354,670	10.60%
Commercial (prepaid)	0	0.00%	0	0.00%	0	0.00%
Street lighting	131,040	0.64%	193,551	0.90%	150,000	0.68%
Total Sales	7,892,933	38.61%	8,810,725	40.89%	8,580,815	38.63%

Total losses in kWh	1,596,159	648,568	794,219
Total losses %	16.82%	6.86%	8.47%
Technical losses %	3.00%	3.00%	3.00%
Non technical losses %	13.82%	3.86%	5.47%



A further analysis was also done by taking the number of consumers per category and determining and average consumption per consumer per category. Below table illustrates this analysis.

Energy Sold in kWh	Units	Number of customers	Units per customer	Units	Number of customers	Units per customer	Units	Number of customers	Units per customer
Free basic electricity	0	0	0.00	0	0	0.00	0	0	0.00
Domestic (prepaid)	3,637,913	662	5,495.34	4,053,916	681	5,952.89	4,609,747	739	6,237.82
Domestic (conventional)	4,123,980	315	13,092.00	4,563,258	299	15,261.73	1,466,398	163	8,996.31
Commercial (conventional)	0	50	0.00	0	50	0.00	2,354,670	49	48,054.49
Commercial (prepaid)	0		0.00	0	0	0.00	0		0.00
Street lighting	131,040	1	131,040.00	193,551	1	193,551.00	150,000	1	150,000.00
Other sales	10,952,766	1	10,952,766.00	12,088,896	1	12,088,896.00	12,836,809	1	12,836,809.00
Total Sales	18,845,699	1,029	18,314.58	20,899,621	1,032	20,251.57	21,417,624	953	22,473.90

Observations:

- Generally total losses are well within the NERSA benchmark of 11%, except for FY2019 sitting at 16.82% if Umgeni water is discounted.
- Although a significant decrease from 2019 to 2021, an increase is noted in 2021. This is not yet alarming though, but recommendation is that it be monitored annually.
- It was noted that for 2019 and 2020, 50 commercial customers were indicated, however no units sold. This may be an indication of the D forms not being completed correctly.

- It also noted that conventional domestic customers are decreasing year on year, while prepaid domestic increases year on year. This can be expected as it is generally accepted that faulty conventional domestic meters will be replaced with prepaid meters. It is however noted that especially for FY 2021 the decrease in domestic conventional customers is disproportionate to the increase in prepaid domestic customers. This may well indicate data inaccuracies. From 2020 to 2021, MLM's customer base decreased by 79 or 7.66% of the 2020 customer count.
- When looking at the income statement on the D Form it can be noted that the expenses have increased from R23 mil in 2019 to R37 mil in 2020 to R47 mil in 2021. The 2019 expenses did not include any costs attributed to FBE or other expenses such as subsistence, travelling, uniforms etc. The increase seen from 2020 to 2021 can be attributed to costs under fuel and oil at R3.3 mil and prepaid electricity vendors at R4.7 mil which does seem to be excessively high.

Conclusion:

Based on D Forms data, we conclude that losses within MLM are not of grave concern, however some administrative issues need to be resolved to ensure quality of data and optimal revenue collection.

4.1.3.4 General Assessment of Metering & Meter Reading for Large Power Users (LPU)

As far as can be determined, the only LPU in MLM is Umgeni water as highlighted above.

MLM invoices to Umgeni Water as received, reflects that MLM only charges a 10% markup fee to Umgeni water based on Eskom billing to MLM. Below illustration is an extract from the February 2022 invoice to Umgeni water. The highlighted section clearly indicates the 10% markup fee.

Date	Service rendered/goods supplied	Unit of Mearsurement		Tariff	Amount
2022-01-14 to 2022-02-13	TOTAL CHARGES BILLING FOR THE PERIOD				
	Administration Charge	31.00	days	R 125.02	R 3,875.62
	TX Network Capacity Charge	10000.00	kVa	R 11.24	R 112,400.00
	Network Capacity Charge	10000.00	kVa	R 22.26	R 222,600.00
	Network Demand Charge	2594.40	kVa	R 42.21	R 109,509.62
	Ancillary Service Charge	1645791.00	kWh	R 0.0055	R 9,051.85
	Low Season Standard Energy Charge	587695.00	kWh	R 0.9756	R 573,355.24
	Low Season Peak Energy Charge	238521.00	kWh	R 1.4176	R 338,127.37
	Low Season Off Peak Energy Charge	819574.00	kWh	R 0.6188	R 507,152.39
	Electrification and Rural Subsidy	1645791.00	kWh	R 0.11	R 177,745.43
	Service Charge	8597.85	Fixed	R 1.00	R 8,597.85
	Handling fee	2062415.38	%	R 0.10	R 206,241.54
	Grand total				**R 2,268,656.91**
	Vat @ 15%				**R 340,298.54**
	Amount Due				**R 2,608,955.45**

Observations

- Sole reliance is placed on accuracy of Eskom metering to bill Umgeni water. This may not be such an issue with only one LPU customer but could become one when more LPU customers are added to the grid.
- MLM is may well be setting a precedent in this regard as other potential LPU customers may well demand the same kind of agreement.
- A proper tariff structure in line with a proper tariff policy may well suit MLM better in this regard.

4.1.3.5 Roles & Responsibilities

4.1.3.5.1 Electricity Department

The organogram represented in Figure 9 overleaf illustrates the organogram of the Technical Services & Infrastructure Development Department.

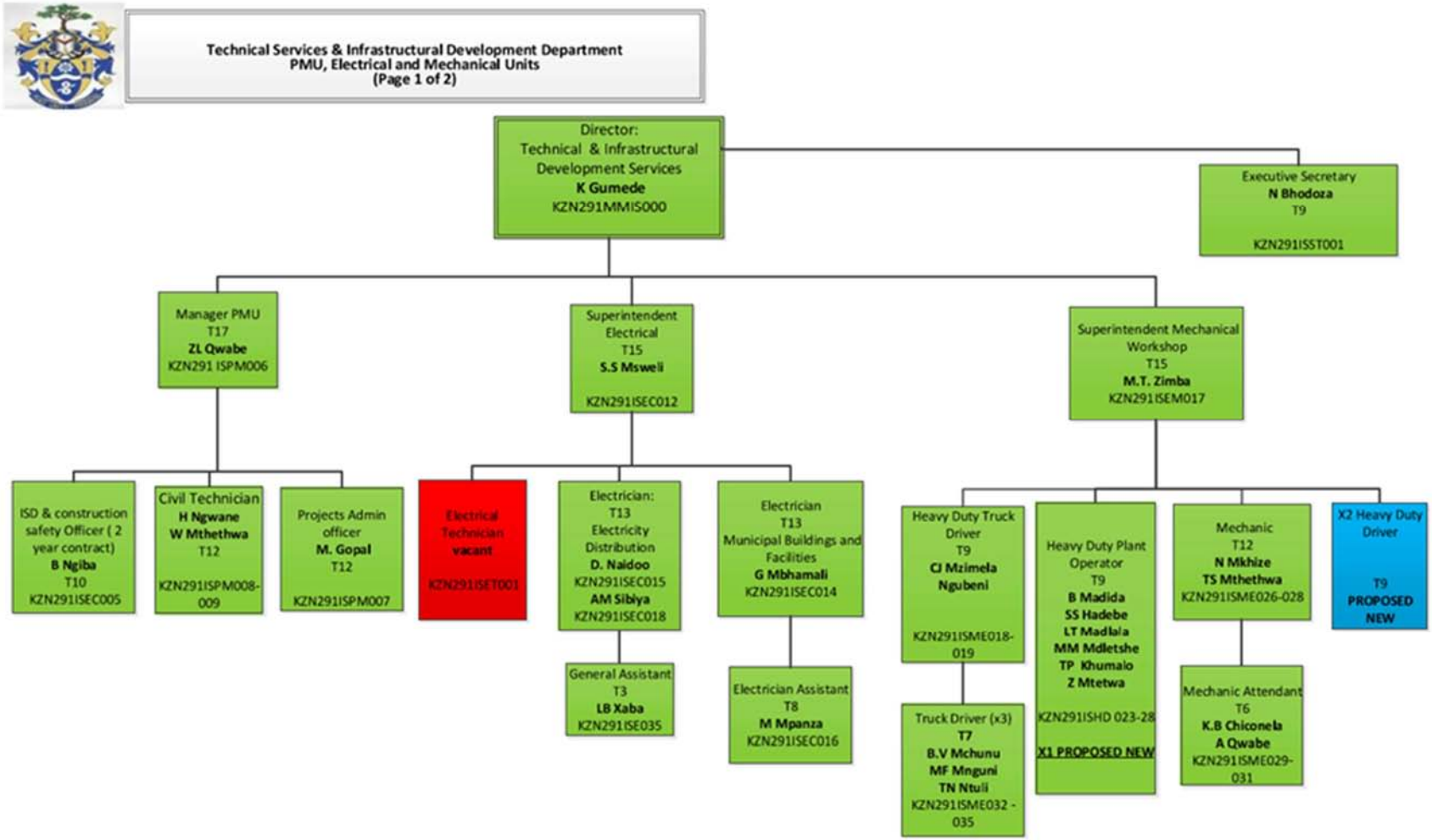


Figure 9: ***Technical Services & Infrastructure Development Organogram***

Observations:

- The electricity department is a sub-department of the Technical Services & Infrastructure Development Department.
- The whole department is headed by Mr K Gumede, with Mr Selby Msweli heading up the electrical department.
- The electrical department shows one electrical technician vacancy at this stage and a proposed heavy-duty driver.
- It is not clear from the organogram whether the positions within the electrical department are sufficient to handle the workload. It is however normal practice for artisans to assist each other during significant incidents as well as share standby duties.
- The Mandeni AMP 2019 does however note that there are currently management positions currently not filled with a need for a competent person type 1(c) and 1(d) to be appointed as per the General Machine Regulations 2(1) responsible person.
- The Mandeni EMP has identified a need for an updated structure within the electrical department which expands on the current structure to introduce 3 streams, Municipal Buildings, Reticulation System and Street Lighting. The proposed organogram can be seen in the Figure 10. and indicates a need for additional artisans specifically for streetlights repairs and maintenance which is being done in-house by the municipality through agreements with Eskom in order to expedite response to streetlights that are not working.

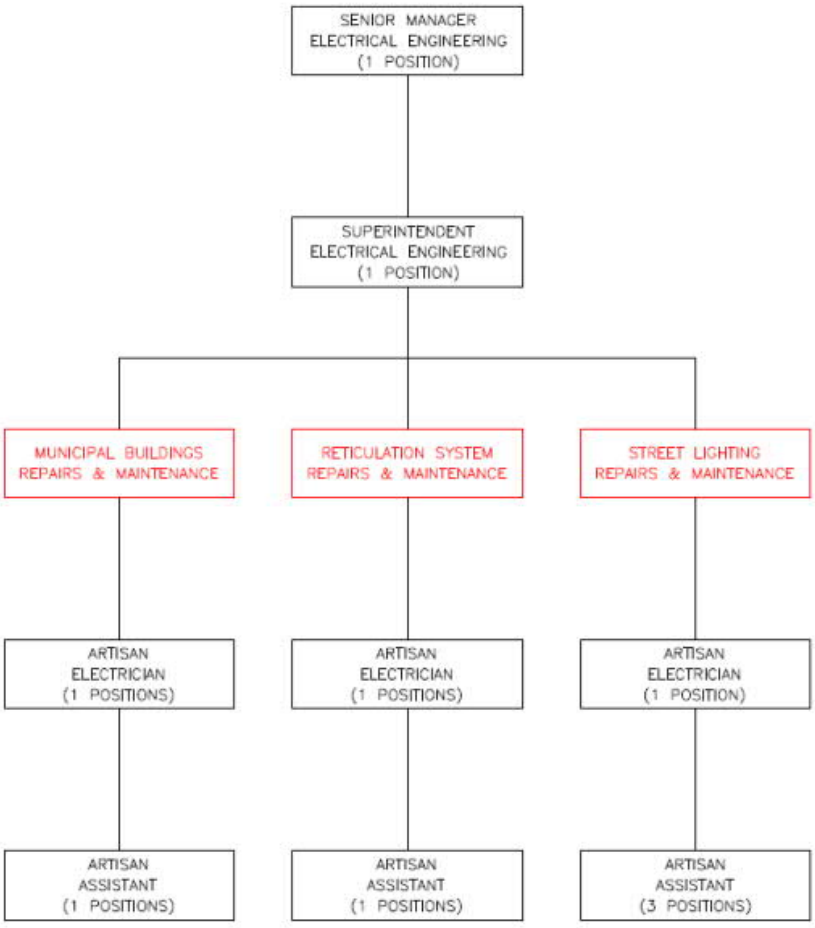


Figure 10: ***Recommended organogram of the electrical department***

4.1.3.5.2 Finance Department

The diagram below illustrates the organogram of the Budget & Treasury Office Department.

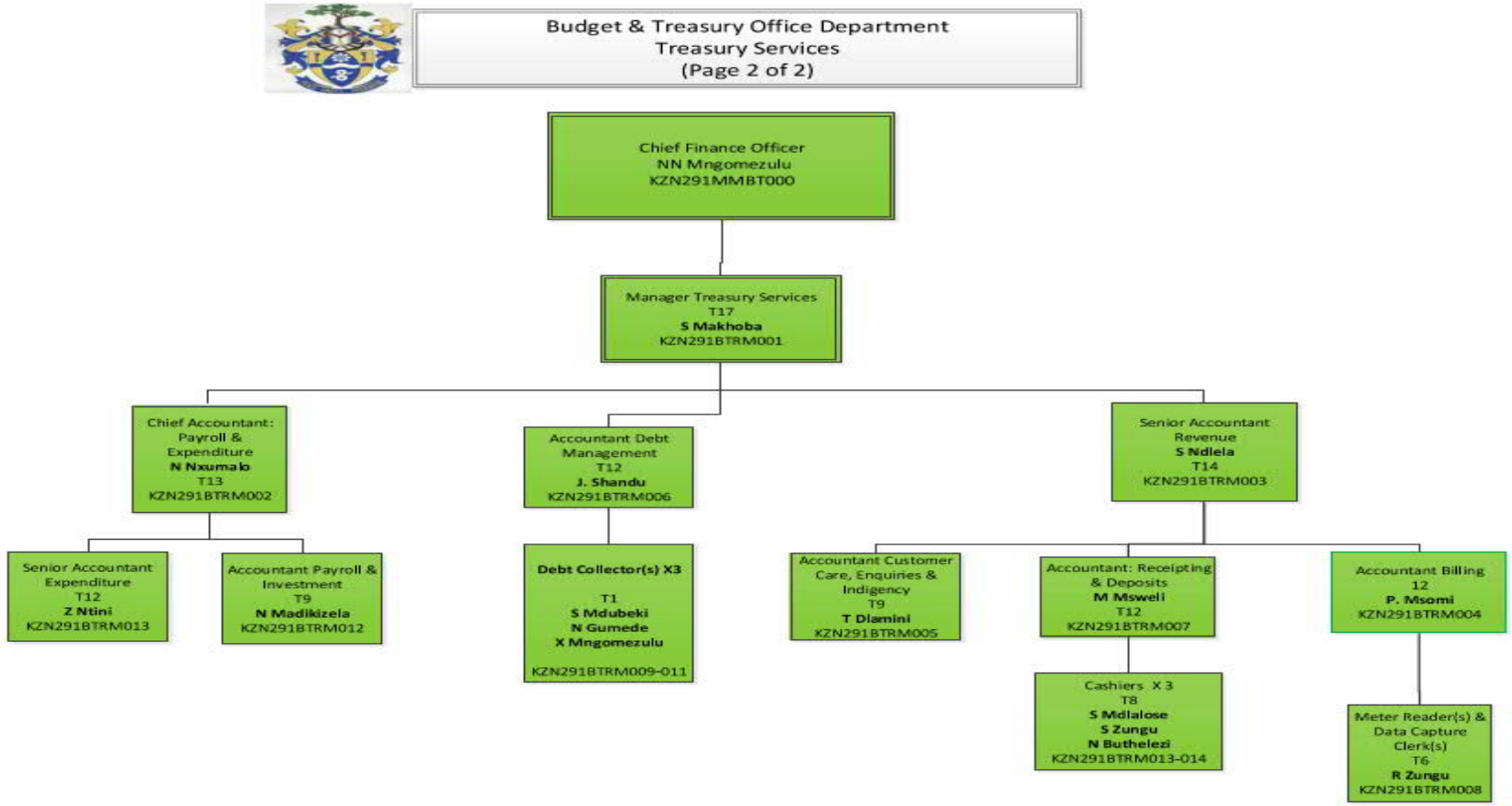


Figure 11: Organogram of the finance department

The organogram indicates a total complement for the Revenue department (including meter reading) of 8 people and for credit control (debt management) a total of four. No vacancies exist. It is not clear though whether the staff complement is sufficient to manage the workload.

4.1.3.6 Bylaws, Policies, Tarif Setting, Asset Management Planning, and Budgets for Maintenance

4.1.3.6.1 Bylaws

MLM has a set of electricity supply bylaws prescribed for electrical supply within their licensed area. This bylaw has a comprehensive breakdown of the key aspects required for the provision of electricity services and conditions of supply. The revision date of the bylaws is not indicated, and it is possible that the bylaws are not up to date in all instances.

4.1.3.6.2 Policies

MLM has a range of policies in place that focus on specific goals and objectives, the extent of the available policies relevant to this exercise has been highlighted below.

Asset Management Policy: MLM currently have a draft Asset Management Policy 2022/2023 in place that is considered comprehensive and covers key aspects required for asset management. The objective this policy is consistent application of asset management principles, implementation of accrual accounting and complies with the MFMA, Treasury Regulations and other related legislation.

Tariff Policy: MLM currently have a Tariff Policy 2021/2022 and a draft Tariff Policy 2022/2023 in place. The objective of the policy is to ensure tariffs comply with legislation, Municipal services are financially sustainable, affordable and equitable with consistency in how the tariffs is applied across the municipality and aligned to the principles outlined in the Municipal Systems Act. The tariffs for economic services are fixed in such a way that full cost of providing the service is recovered without incurring a surplus or deficit. Subsidised tariffs are fixed in such a way that at least a portion of the cost providing the service can be recovered.

Indigent Support Policy: the policy is in place to provide procedures and guidelines for the subsidisation of basic services to its indigent households using the Councils budgetary provisions received from Central Government. This policy provides the relevant criteria for qualification for indigent support and control measures for the distribution of indigent support. In addition to this an independent report was compiled on the alignment of indigent policies across municipalities in the iLembe district. This report provides recommendations to improve the indigent registration systems. Some of the recommendations include stipulating the extent of kWh of free electricity that will be provided monthly, clearly define the period for being a valid indigent customer, prepare standard operating procedure to assist official etc.

Credit Control & Debt Collection Policy: this policy provides credit and debt collection procedures and mechanisms to ensure that all consumers pay for the services that are supplied by the municipality. In addition, it is aimed at identifying defaulters and ensure that their failure to meet their financial obligations towards the Council are treated in a consistent, fair and effective manner.

4.1.3.6.3 Tariff Setting

MLM has a draft tariff policy 2022/2023. The principles of this policy indicates that tariffs must be set at a level to facilitate financial sustainability. Electricity falls under the trading service category and Council's pricing strategy for this service is to recover the full cost of rendering the service to the

community. The policy acknowledges that a minimum amount of basic services such as electricity must be free for poor households and tariffs kept at affordable levels.

The tariff structure of MLM makes provision for different categories of customer such as,

- Domestic
- Commercial
- Large Customers
- Bulk Supply

Tariffs are reviewed during the preparation of the annual budget in accordance with the Tariff Policy and the tariff determination process is conducted in line with the MSA,

- Levy and recover fees, charges or tariffs in respect of any function or service of the municipality,
- That such fees and charges levied are passed by the municipal Council with a supporting vote of its majority members.
- The proposed tariffs will be presented to the community during Council's consultations process about the budget.

MLM currently has a final tariff of charges for the year 2021/2022 and can be found under Annexure 2. The tariffs indicated overs the 2 past two financial years indicate a general increase across energy tariff and service charges. The current methodology for tariff increases is expected to align to the current policy and principles however the methodology for the current Tariff setting is not documented. Considering that the utility has not conducted a detailed tariff study in recent years may indicate that the current tariffs may not be completely cost reflective with a need for a study in the near future.

4.1.3.6.4 Asset Management Planning

As part of the Vuthela LED project, IMQS established a high-level Asset Management Plan (AMP). This AMP is a high-level initial document to start steering the municipality towards implementing quality asset management planning. MLM currently does not formally implement a lot of asset management systems and have a relatively low asset management practice maturity, especially in the field of physical asset management within the utility. These poor asset management practices are related to skill challenges and constrained budgets. The current practise was assessed to be predominantly "aware" of good practices and the municipality aims to move towards a level of competence.

This AMP compiled highlights key focus areas such as, current level of service, life cycle plan, financial plan, asset management practices, risk management plan and a performance plan. The AMP is expected to enable the development of a strategy to support the optimal, functional management of existing assets whilst considering the financial and technical decision-making aspects for future service requirements. In terms of priority improvements, the proposed improvement plan prioritises an improvement of the maintenance management process followed by an enhancement of the asset register and finally improving the management processes associated with projects.

The fixed asset register for electrical assets compiled/updated in 2019 was provided. The register provides a fair representation of assets installed with accounting-based data. The detail is however limited in terms of condition, age of asset, extent of cables/lines (length) and therefore has a need for enhancement.

4.1.3.6.5 Budget for Operations & maintenance

MLM have identified electrical infrastructure repairs and maintenance budgets for financial years 2022/2023 and 2023/24 and are indicated below.

Table 7: Planned Repair and Maintenance Budgets

REPAIR AND MAINTENANCE	2022/23	2023/24
Power Plants	R 156 000,00	R 163 000,00
HV Transmission Conductors	R 625 000,00	R 653 000,00
MV Substations	R 156 000,00	R 163 000,00
MV Networks	R 208 000,00	R 218 000,00
LV Networks	R 1 103 000,00	R 1 244 000,00
Capital Spares	R 918 000,00	R 929 000,00
Grand Total	**R 3 367 000,00**	**R 3 370 000,00**

Considering that there is a need for additional maintenance on existing failing infrastructure, the current budgets need to be reassessed to meet the current network needs.

There are currently no major projects that have been budgeted for with current budgets directed to operational and maintenance activities. There is however a need to replace the existing 6.6kV networks which forms part of the EMP recommendations.

The MLM D forms were assessed over the past 3 financial years and the following expenses under the income statement were identified in Table 8 below. The detailed breakdown of revenue, expenses, electricity purchases and sales etc. for 2019, 2020 and 2021 can be found under Annexure 3 Distribution Forms.

Table 8: ***MLM Expenses over three financial years***

Description	Expenses 2019	Expenses 2020	Expenses 2021
Electricity Purchase Eskom	R 20 441 858.22	R 26 354 808.00	R 28 817 906.00
Repairs, Maintenance & Salaries	R 2 686 452.00	R 2 362 818.00	R 2 774 546.00
Financial Costs (Interest)	R 8 879.89	R 441.49	R 243.01
Notified Maximum Demand Costs	R 0	R 0	R 0
Other Expenses (Bad debts, FBE to Eskom)	N/A	R 2 091 134.00	R 4 946 875.00
General Expenses (Depreciation, Collection Costs, audit fees etc.)	N/A	R 6 768 058.00	R 10 535.451
Total	**R 23 139 190.00**	**R 37 577 260.00**	**R 47 075 217.00**

It can be noted that when comparing the repairs and maintenance spend to revenue over sales of electricity, the repairs and maintenance spend falls within the 6% range of electricity sales for 2020 and 2021. The other expenses such as Free Basic Electricity (FBE) has increased from around R1.37 mil to R1.58 mil from 2019 to 2020. For the financial year 2019 no general expenses or other expenses were populated within the D Form.

4.1.3.6.6 Technical Management Information system

The extent of information systems within the utility is documented at a high level within the Information Systems Assessment and Improvement Plan compiled for Mandeni in 2019. It can be noted that there is a general lack of information systems to support electricity service delivery, maintenance, and asset management.

To enable the effective implementation of Master Plans, Maintenance Plans and projects leading to asset creation, the assets need to be properly managed and monitored. Various information systems needs exist to support the utility, however very little is currently implemented. The current systems are largely manual and paper-based processes with a need for automated processes.

The information systems that have been identified are discussed below,

Geographical Information System (GIS): GIS is a system used to display equipment, infrastructure, etc. at the correct geographical location relative to each other. The Mandeni MV electrical infrastructure has been captured within the ESRI GIS platform and is considered accurate and up to date. This software package has a standalone license for the ArcGIS Desktop Basic version 10.6 with a one-year maintenance package that is currently being renewed. The ArcGIS software currently does not have interface with any other systems.

Financial Management: MLM utilise Sage Evolution version 10.1.3.005 which is an integrated financial management and internal control system which is mSCOA compliant. This is the main accounting system used for budgeting, supply chain management, billing, revenue, reporting etc. The service provider for Sage is CGC Systems which is a service provider for mSCOA implementation and support in South Africa and MLM have a 5-year service level agreement for maintenance and support. With respect to payroll, MLM utilise a software called PayDay for payroll which has an interface to Sage Evolution. In addition to this software a standalone system called Caseware AFS is utilised for the preparation of annual financial statements with no interface to other systems.

Asset Register: MLM utilise the AMS360 asset management software which is a Web-based solution and is mSCOA compliant. This is an independent tool utilised to capture new assets, host existing assets and to verify assets. The information captured within this tool is transferred to Sage and hosted within this platform, there is no direct interface.

Maintenance Management System (MMS): Maintenance management systems are used to manage maintenance of electrical network infrastructure. There are currently no systems in place for the electrical department. MLM have standard operating procedures in place (SOP) and a programme is done manually each month for preventative maintenance. The equipment guidelines are utilised to determine the maintenance needs in terms of extent and frequency.

SCADA: System that monitors the infrastructure in real time for switching operations, outages, load conditions etc. As part of the Vuthela LED programme, a functional specification for the establishment of a SCADA system for monitoring the main Intake point auto-recloser. The SCADA system will allow for remote monitoring of the main intake point and provide statistical metering information in real time. This installation has not been completed to date.

The Asset Management Information Systems (AMIS): the study conducted provides an assessment of the current utility processes and gap analyses thereof. The output of this analysis identified opportunities that are exposed by the challenges experienced. Some of these opportunities are highlighted below,

- Develop a standard asset definition and structure
- Development of a technical asset register

- Centralise asset master data for both financial (FAR) and engineering (TAR) needs
- The use of an electronic maintenance scheduling system
- Implementation of a computerised Job carding system etc.

The proposed solution to address the challenges is addressed through an integrated asset life-cycle system. To achieve this all systems and subsystems used in the utility need to be fully integrated and supported by relevant business processes and controls. The general requirements for the AMIS and associated components have been unpacked as part of the AMIS study, with a solution roadmap on the proposed way forward. The solution is phased over a 3-year period with the key components highlighted below,

Year 1: Implementation and configuration of a maintenance management system

Year 2: Review of the asset register, implementation of the asset register system, integration with the finance and GIS systems

Year 3: Implementation of the specialist systems

4.2 Technical Losses

4.2.1 Overview

The ToR for this section read as follows:

“A study was carried out by the World Bank Group to roughly estimate the technical energy losses of the urban 33kV&11kV network of KwaDukuza Municipality (hereinafter identified as KDM), by running power flows on a “virtual distribution system / network” which represents the situation in the field. The PSP is expected to familiarise themselves with this report and refer to it where necessary.

From the report, the service provider to deduce the Electricity Balance of the Municipality in terms of:

- The quantum of electricity loss

- The key elements in the grid where the electricity losses are occurring, and

- The reasons/cause of the loss

The consultant is expected to liaise with municipalities and the relevant stakeholders’ municipalities in line with the energy losses study for the purpose of advising strategic and pragmatic steps to intervention of NRE.”

4.2.2 Detailed Deliverable Breakdown

The table below provides a detailed breakdown of the 2 aspects assessed as per the ToR and the Reference information used in the assessments.

Table 9: Technical Loss Deliverable Breakdown

Main Deliverable	Number	Assessment Item	Reference Material	Source
2. Technical Losses	2.1	Determine energy balance ito: - Quantum of electricity loss - Key elements in grid where losses are occurring - Reasons / causes of losses	Any studies?	Energy
			MLM D Forms	Energy
			Any MLM distribution losses report?	Energy

4.2.3 Situational Analysis Findings

4.2.3.1 Technical Losses Analysis

Reference information received in this regard, consists of:

- MLM EMP
- Replacement of the 6.6kV network Report

The extent of technical losses studies compiled for the MLM electrical networks are limited to one independent assessment conducted as part of the 2019 EMP. No additional information is currently available for technical loss estimation by the utility.

As part of the 2019 Master Plan Revision, technical losses for the MLM electrical network were estimated using the following approach,

- LV Copper losses were obtained directly from the Reticmaster simulation package designed to NRS 034
- MV Copper losses were obtained by the DiGSILENT PowerFactory software package based on the networks produced for this study.
- The magnetizing losses of the transformers were based on database no-load losses of similar transformers.

The estimate of the MV losses were in the 2% range and 6% on the LV networks which is considered relatively high for LV networks in Mandeni supply area. Considering the extent of networks, demand of the current system and comparison to the total losses of 8.47% in 2021 highlighted in the previous section, a benchmark of 3-4% would be considered more likely for technical losses. The losses on the MV network can be mostly attributed to the aged 6.6kV network.

4.2.3.2 Reasons for Technical Losses

Energy losses are defined as the difference between energy received by the utility, and the actual energy billed to end customers and is given by the sum of technical and non-technical losses.

Technical losses are those losses experienced in an electrical system that is due to the loading and electrical characteristic of the electrical network (for instance the network and transformer impedance and no-load losses of transformers)

The technical losses can be classified into two categories,

Fixed Losses: These losses remain constant despite the amount of power flowing in the system. This can typically only be reduced by replacing older assets with higher efficiency.

Variable Losses: These losses change based on power flow in the network, a highly loaded network will result in losses much higher than fixed losses.

The main reasons for technical losses are typically related to the following factors,

- Long Distribution lines
- Overloading of Distribution lines
- Inadequate size of Distribution conductors
- Distribution transformers located far from load centres
- Poor power factor on the network

- Poor network optimisation
- Imbalance on 3 phase feeders etc.

Accurate technical loss estimation can only be determined through network analysis of a complete network model. To date this has been considered not practical as the extent of information required was not available. The study conducted is a pragmatic approach utilising a combination of network modelling and typical equipment losses to estimate both the MV and LV network technical losses. The preferred would be a comprehensive network model that would provide a higher level of accuracy with typical sample network studies of the LV network. This method would however require statistical metering data across the network which is unfortunately not available for the MLM electrical network.

Assessment of the current network and network studies indicates that 6.6kV infrastructure is currently contributing to the technical losses as well reducing network reliability due to the age and poor condition of equipment.

4.2.3.3 Technical Losses Interventions

To date MLM have not identified any specific activities that will reduce technical losses. They have however identified a need to replace the aged 6.6kV electrical infrastructure with new 11kV infrastructure. This is primarily due to the condition of the 6.6kV network, this upgrade will however assist in the reduction of technical losses.

4.3 Non-Technical Losses

4.3.1 Overview

This section is the largest section of the project and is also expected to be the area where the biggest part of losses can be ascribed to.

The ToR for this section read as follows:

"In line with the non-technical losses, the consultant will be required to execute the following tasks to investigate the possible areas of revenue loss, inter alia:

I. Assess the completeness and adequacy of metering of electricity use in each Municipality vis-à-vis the various categories of users,

II. Assess the adequacy, effectiveness, and efficiency of the institutional arrangements regarding meter installations and meter readings for bulk and reticulation supplies. Review of the Standard Operating Procedures and providing recommendations/comments for improvement.

III. Assess the adequacy, effectiveness, and efficiency of the financial management systems of the municipalities with regard to metering and billing (prepaid and conventional meters), historical payment levels, collections, cost recovery, implementation of credit control policies, ring-fencing of electricity accounts, free basic electricity, credit control and debtor management, revenue enhancement, customer account management, etc.

IV. Assess the integrity, completeness, and accuracy of each municipality's electricity customer database in the municipal financial system vis-à-vis its existing spatial development, actual number of end users, etc. Information from the Data Cleansing Project carried out under the Vuthela Programme's Public Finance Management Component (PFM) will be made available to the PSP as the bulk of the work was already completed. This must include:

- A reconciliation of households (customers) in the valuation roll to the Deeds Office and Surveyor General's listing.

- Assessment of the completeness of the customer information on the Municipality's billing system.

V. A report on the current customer/consumer relations management and/or information systems in place to log or record customer queries, track the resolution of the query, report on customer queries was produced under the PFM Component and the PSP is expected to familiarise themselves with this report on the incorporation of customer service into performance management of officials and the Electrical Department.

VI. Assessment of Billing and Revenue Collection in respect of electricity services provision: This must include an assessment of:

- Accuracy of billing

- Billed revenue versus collected revenue.

- Returned mailed billings.

- Return to Drawer Cheque Register

- Unallocated receipts

- Clearing of suspense accounts.

- Updating of debtor's ledgers

VII. The consultant will also be required to investigate the necessity for a tariff study and review to ensure that the tariff accurately reflect the costs of providing the electricity services in KDM.

VIII. The PSP is also expected to familiarise themselves with the Completed PFM Indigent Register Study to gain insight into the Indigent Management on the provision of electricity services, with respect to:

- Community awareness (or lack thereof)

- Formal indigent applications and verifications thereof

- Assessment of completeness (up-to-date status) of the municipalities' indigent register.

IX. Debt Management:

- Monthly review of debtors age analysis

- Percentage of debt outstanding for more than 90 days.

- Review of credit control measures.

- Follow-up of existing payment arrangements in place.

- Councillor involvement in Debt Management"

4.3.2 Detailed Deliverable Breakdown

The table below provides a detailed breakdown of the 8 aspects assessed as per the ToR and the Reference information consider as useful for the assessments.

Aspect VII was sub-divided into a) Tariff study necessity review and b) Indigent customers.

Table 10: Non-Technical Losses Deliverable Breakdown

Main Deliverable	Number	Assessment Item	Reference Material	Source
3. Non-technical Losses	**3.1**	Assess completeness & adequacy of metering of electricity - various categories of users	Customer data base from financial system (Z)	Finance
			Including billing data base and metering data base (Z)	Finance
			Spatial component (Z)	Finance
			Rezoning approvals over past 5 years (Z)	Finance
	3.2	Assess adequacy, efficiency of institutional arrangements for meter installations & readings (SOP)	SOP for Meter Movement (Z)	Finance
			SOP for Meter Reading (Z)	Finance
			SOP for Prepaid (Z)	Finance
			SOP for new connections (Z)	Finance
			SOP for connection upgrade (Z)	Finance
			SOP for connection removal (Z)	Finance
			Applicable policies (Z)	Finance
	3.3	Assess adequacy, effectiveness of financial systems wrt: - Metering & billing (PP &	Customer Data base from financial system (Z)	Finance
			Any data cleansing project s / report (Z)	Vuthela

		Conv) - Historical payment levels - Collections - Cost recovery - Implementation of credit control policies - Ring-fencing of electricity accounts - Free basic electricity - Credit control & debtor management - Revenue enhancement - Customer account management	12 m Meter reading history (Z)	Finance
			12 m Billing data (Z)	Finance
			12 m PP purchase history (Z)	Finance
			PP Vending locations and transactions per location (Z)	Finance
			SOP Prepaid metering (A)	Finance
			SOP PP vending system (A)	Finance
			Meter reading error report (Z)	Finance
			Interim billing report (12 m data) (Z)	Finance
			Unmetered Municipal owned sites & methodology for estimation (Z)	Finance
			Payment levels history (Z)	Finance
			Revenue vs collections data (Z)	Finance
			Credit control policy & Procedure (Z)	Finance
			Arrears arrangements procedure (Z)	Finance
			SOP - Disconnection non-payment (Z)	Finance
			SSEG Data (locations / meter installations / tariffs applied / sizing / impact on energy balance (Z)	Any
	3.4	Assess integrity, completeness & accuracy of energy customer data base wrt: - Existing spatial development - Actual number of end users - Reconcile customers in valuation roll to Deeds office & SG listing - Assess completeness of info on billing system	Customer data base from fin system (Z)	Finance
			Customer Data Management report	Vuthela
			Valuation roll (T)	Finance
			Cadastral data (T)	Finance
	3.5	Review report on Customer Relations Management System and / or Information Systems	Any reports / studies on CRM / IS for query logging (Z)	Vuthela
			Customer Care Centre Strategic Plan report (A)	Vuthela
			Current process / system for query logging (Z)	Any
			Any SLA between Energy & Finance for meter maintenance. (Z)	Any
			Dispute resolution process? (Z)	Any
	3.6	Assess billing & revenue collection re electrical services provision: - Accuracy of billing - Billed revenue vs collected revenue - Returned mail billings - Rd cheque register - Unallocated receipts - Clearing of suspense accounts - Updating debtor's ledgers	Customer data base with reading and billing history (Z	Finance
			Billed revenue vs collected revenue report (T)	Finance
			Returned mail billings? (T)	Finance
			RD cheque register (T)	Finance
			Unallocated receipts report (T)	Finance
			Unallocated receipts procedure (Z)	Finance
			SOP's related to revenue management / protection (Z)	Finance

	3.7.A	Investigate necessity of tariff study & review	Tariff policy (inc bulk contribution charges) (Z) Any	
	3.7.B	Review completed Indigent register study wrt: - Community awareness - Formal indigent applications & verification thereof - Assessment of completeness (up-to-date) status of indigent register - Billing of indigents - Restriction of services to Indigents - Accuracy of offsetting of indigents against equitable share	Any Indigent register study (Z)	Vuthela
			Customer data base (indigents status) / Indigent register (Z)	Finance
			Indigent policy (Z)	Finance
	3.8	Debt management: - Monthly review of debtor's age analysis - Percentage debt outstanding > 90 days - Review credit control measures - Follow up of existing payment arrangements in place - Councillor involvement in debtor management	Debtor age analysis report (T	Finance
			Credit control policy & procedures (Z)	Finance
			Payment arrangements process (Z)	Finance
			Communication & stakeholder engagement policy (Z)	Any
			Debt management policy (incl incentives to settle quicker) (Z)	Finance
			Debt payment data base (if separate from bill payment data) (Z)	Finance
			Debt write off policy (A)	Finance

4.3.3 Situational Analysis Findings

4.3.3.1 Assess completeness & adequacy of metering of electricity - various categories of users

To make a proper assessment of this aspect, a full data set of the customer data base was requested that should as a minimum cover the following aspects:

- Account number
- 21 Digit SG land parcel code
- Address
- Meter number
- Meter type (Conventional / Prepaid etc)
- Tariff code
- Zone code
- Land use code
- Date of meter installation.
- Debtor information
- Meter status (Active / inactive)
- Stand status (active / inactive)
- Connection Size (Circuit breaker size)
- Feed phase (single / 3 phase)
- Reading information x 12 months (this may well be contained in a separate report.)

The above list is by no means complete but is considered the minimum critical information needed to make this assessment. Tariff code for instance need to be cross referenced to Zone Code / Land use Code.

The following reference information as received:

- Excel file “Mandeni Meter Readings v1”. This file contains record of 162 electricity meters with what seems to be an accumulative meter reading for each.
- Excel file “bca2a38339dc45aa91b0b9cbdb0e71b7”. This file contains a record of 300 prepaid electricity meters and their purchasing history for February 2022.

A comparison of the information received against the valuation roll have revealed the following:

- According to the valuation roll, 7614 unique stand numbers exist in MLM. This implies at least 7614 potential electricity customers. Information received, suggests 162 conventional customers and 300 prepaid customers. Add to that Umgeni water as the only LPU customers, then there is a large gap between potential customers and actual customers (assuming that information received is accurate). This information is inconsistent with what is reported in NERSA D-forms (214 conventional customers and 739 prepaid customers.
- Confirmation was also received that from a recent audit, meters were found in the field that are not in the financial system. It is not clear what the scale was of this audit and what was done with audit information.

4.3.3.2 Assess adequacy, efficiency of institutional arrangements for meter installations & readings

No SOP’s were received at time of this report. Confirmation was also received that no SOP’s exist and that MLM have a challenge in this regard.

Observations:

- SOPs in form of swim lane workflow processes to be considered as part of the improvement strategy.

4.3.3.3 Assess adequacy, effectiveness & efficiency of financial systems

Adequacy, efficiency & effectiveness had to be assessed wrt:

- Metering & billing
- Historical payment levels
- Collections
- Cost Recovery
- Implementation of credit control policies
- Ring-fencing of electricity accounts
- Free basic electricity
- Credit control & debtor management
- Revenue enhancement
- Customer account management

Reference information received in this regard consist of:

- IMQS INFRASTRUCTURE ASSET MANAGEMENT report dated April 2019
- Vuthela PFM data cleansing project report (RUMAS Development and Implementation of Data Management Systems for KwaDukuza, Mandeni and iLembe Municipalities dated 26 June 2021)
- Sage mSCOA brochure.

From the reports it was determined that:

Financial Management System

The IMQS report reflects that MLM makes us of Sage Pastel Accounting as their financial management system. This was confirmed in an e-mail query sent to MLM official.

As indicated in the KDM status quo report, municipal finance management and control system need to be mSCOA compliant.

Online research has revealed that Sage Pastel does indeed provide mSCOA compliant software.

Supplementary Systems:

Prepaid Electricity

The service provider for MLM in this regard is Conlog, a well-known provider of prepaid and smart metering services.

Prepaid vending systems need to be STS compliant. STS stands for Standard Transfer Specification and is the global standard for the transferring of electricity and other utility prepayment tokens to ensure inter-operability between system components of different manufacturers. The STS association website confirms Conlog (Pty) Ltd as an STS member, implying that their system is STS compliant.

Observations

- We can confirm that MLM indeed make use of compliant systems
- It does not seem as if there are integration of systems though. Prepaid meter information seems to only reside in the Prepaid system and not in the financial system. This means that the main system does not contain full details of customers with prepaid meters. We are of the view that all meter information management should start within the main system to eradicate reliance on third party / supplementary systems.

4.3.3.4 Assess integrity, completeness & accuracy of energy customer data base

Integrity, completeness & accuracy had to be assessed wrt:

- Existing spatial development
- Actual number of end users
- Reconciling of customers in valuation roll to deeds office and / or SG listing.
- Completeness of info on billing system.

Information deemed critical for assessment consist of:

- MLM valuation roll
- Customer data base
- Cadastral data

A fairly comprehensive valuation roll was received as well as the following excel files:

The following reference information was received:

- Excel file “April Electricity Consumption”
- Excel file “Customer list from financial system”
- Excel file “09e7d42fac3a4570bd6d9602688493b0” understood to be an extract from the Conlog prepaid vending system for April 2022.

The information received was insufficient to make a proper assessment of the completeness and accuracy of metering of electricity customers.

An analysis of the valuation roll reveals the following:

- General stand analysis
  - 7614 unique stand IDs within the valuation roll.
  - 7520 has the correct SG code of 21 digits.
  - 94 does not and indicates a data clean up exercise.
- Rate category vs Use category analysis
  - 564 stands do not have a rate category or use category

Count of SG NUMBER	RATE CATEGORY	
USE CAT	(blank)	Grand Total
(blank)	564	564
Grand Total	564	564

  - 467 stands are classified as vacant stands.
  - Assessment of this aspect can therefore not be made at this stage.

4.3.3.5 Review report on Customer Relations Management System and / or Information Systems

Reference information received in this regard consist of:

- Vuthela CRM technical feasibility report by ZTE Consulting dated 30 June 2020.

- Strategic plan for the iLembe Regional Customer Care centre by ZTE Consulting dated 19 June 2020

Observations / Commentary

- The feasibility study is a supporting document to the strategic plan in terms of implementing the Customer Care Centre with supporting CRM system.
- A regional Customer Care Centre with a supporting CRM system will go a long way in improved service delivery to the residents of iLembe and its member municipalities. It will also provide a uniform process through which customers can log queries / complaints. The same system can even be used for customers to send in readings of their meters in order to improve on percentage readings onto bill. In this regard also refer our comments regarding the SOP for meter reading.
- A system where escalation levels exist for the resolution of queries to hold officials accountable is supported. This can be linked to a customer service delivery charter with specified timeframes to resolve certain queries.
- Our experience in this regard, having been involved with a leading metro supports that such a system can provide benefits. As the feasibility report indicates, the success of such a process and system is dependent on officials taking ownership and responsibility. We have experienced officials taking responsibility and trying their level best to provide service, and we have seen officials manipulating the system. It implies consequence management needs to be taken seriously as well.
- It does not seem as if centre and system went live by the intended time.

4.3.3.6 Assess billing & revenue collection re electrical services provision

Aspects to assess included:

- Accuracy of billing
- Billed vs collected revenue
- Returned mail billings
- RD cheque register
- Unallocated receipts
- Clearing of suspense accounts
- Updating of debtors' ledgers.

The only information received at time of report in this regard are:

- Excel file "Mandeni Meter Readings v1". This file contains record of 162 electricity meters with what seems to be an accumulative meter reading for each.
- Excel file "bca2a38339dc45aa91b0b9cbdb0e71b7". This file contains a record of 300 prepaid electricity meters and their purchasing history for February 2022.

Refer section 4.3.3.1 re gaps in information of meters vs actual registered stands and potential electricity customers. Billing has been identified as a problem, and as a result, collection will be too on customers that are supposed to receive a bill but are not.

4.3.3.7 Investigate necessity of tariff study and review

Reference information received in this regard consist of:

- Schedule of tariffs for 2021-2022
- Draft 2022-23 tariff policy as obtained from the MLM website.

Observations:

- The policy is drawn up in accordance with the principles of the Municipal Systems Act (MSA)
- The section about "The customer must pay principle" suggests that not all customers are metered and that plans are being developed to address this. It is not clear from the document whether this relates to electricity, water, or both.
- The mentioned tariff schedule is on the MLM website as we believe it should be so that consumers can be informed. It is however a .pdf version of the Excel document mentioned above and only contain the various charges. No descriptions to explain what the various tariffs are for. We believe it important that where there are different categories of charges, explanations be given for those. The below extract from the schedule for instance is not clear on which of the three tariffs listed is for domestic consumers, which is for churches and which for old age homes.

- The document also lists all tariffs in one document. We believe a better practice is to have a separate document for each type of service. That way consumers can access the tariff documents that are applicable to them.
- Although this project is about non-revenue electricity, the absence of charges for water consumption was noted.
- A comparison of tariffs with one of the metros in the country shows that MLM charges considerably for instance per kWh for business customers (R2,08 compared to R2,68, but significantly more for monthly fixed charges (R 444.54 for single phase compared to R 200).

Conclusion:

- As with our recommendation for KDM, it is recommended that a tariff study and review be considered for iLembe and all its member municipalities for the purpose of arriving at a unified tariff policy and charge's structure.

4.3.3.8 Review completed Indigent register study

The following aspects had to be reviewed based on the completed study:

- Community awareness
- Formal indigent applications and verification thereof
- Assessment of completeness status of indigent register
- Billing of indigents

The reference information in this regard consisted of the close out report titled "Alignment of Indigent policies, Uniform systems and processes for maintaining the indigent register across municipalities" by Bonakude Consulting (Pty) Ltd.

Observations:

- Community awareness

- The report only mentions community awareness once as a strength of the municipality to perform road shows and awareness campaigns to encourage the community to register for indigent status.

- Formal applications and verification thereof
  - The report highlights the following as a weakness:
    - No systems in place to ensure that everyone who qualify as indigent, are indeed registered as such.
    - No systems in place to vet indigent applications, increasing the risk of someone not meeting the criteria being registered as indigent
    - Indigents are not flagged in the system, resulting in indigents being billed as normal debtors.
- Assessment of completeness status of indigent register:
  - The same systems shortcomings as highlighted above, also implies that the indigent register is far from complete / accurate
- Billing of indigents
  - The report highlights that fact that indigents are not flagged in the system and as a result run the risk of being billed as normal debtors. This is highlighted in the report as a weakness and threat.

Conclusion:

The report recommends the establishment of a centralised repository for indigent management, that is web and cloud based, is secure and have audit trail functionality.

4.3.3.9 Review of Debt management

The following aspects had to be assessed in this regard:

- Review of monthly debtor's age analysis
- Percentage of debt outstanding more than 90 days
- Review of credit control measures
- Follow up of existing payment arrangements in place.
- Councillor involvement in debtor management

An Excel file "Debtors Ageing Per Service1- FEBRUARY 2022" was received in this regard. Below Pivot table is an extract from this file.

Serivce	180 Days	150 Days	120 days	90 Days	60 Days	30 Days	Current	Balance
Interest	33,357,090.92	253,363.67	559,281.53	289,875.81	293,709.31	291,354.48	294,085.75	35,338,761.47
Property Rates	68,808,857.16	14,363,124.28	1,103,553.85	1,133,521.49	2,431,278.89	1,491,906.77	2,213,725.10	91,545,967.54
OTHER	1,075,306.40	0.01	-282.20	-1,601.36	-40,869.00	215,514.43	97,331.95	1,345,400.23
Electricity Basic	1,155,584.20	42,192.00	41,930.96	44,372.96	47,686.81	71,459.68	96,295.74	1,499,522.35
Refuse	46,212,305.05	767,631.86	817,794.76	823,855.18	840,903.67	889,413.77	990,349.50	51,342,253.79
Electricity Consumption	1,871,061.61	76,531.90	103,228.42	54,980.52	220,676.01	431,334.67	3,616,372.17	6,374,185.30
Rent	155,651.83	8,382.80	7,552.14	7,552.14	7,552.14	7,552.14	9,182.17	203,425.36
IntElec	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Deposit	-3,546.98	0.00	0.00	0.00	0.00	0.00	0.00	-3,546.98
IntRates	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grand Total	152,632,310.19	15,511,226.52	2,633,059.46	2,352,556.74	3,800,937.83	3,398,535.94	7,317,342.38	187,645,969.06
% of book	81.34%	8.27%	1.40%	1.25%	2.03%	1.81%	3.90%	

The table below indicates the top 25 debtors for the municipality.

Account	Name	Physical1	GroupDescription	0-30	31-60	61-90	91-120	121-150	151-180	181+	Balance
2103333	UMGENI WATER	LOT 3333	Businesses: Municipal Licensed Area	R 2,608,955.45	R -	R -	R -	R -	R -	R -	R 2,608,955.45
9901721	PROVINCIAL GOVERNM OF PROV OF KZN-NAT R S A	22/11 FRYE ROAD	National: Transport	R -	R -	R -	R -	R -	R 636,480.00	R 1,427,422.00	R 2,063,902.00
6600020	UBA CO OP SUGAR MILLING CO. LTD	FARM NEWARK NO 2621	Businesses: Eskom Licensed Area	R 1,628.00	R 1,628.00	R 1,628.00	R 1,628.00	R 1,628.00	R 1,628.00	R 2,025,611.29	R 2,035,379.29
1068200	SUNDUMBILI POLY CLINIC	000682 SUNDUMBILI	Provincial: Health	R 8,293.16	R 8,293.16	R 7,654.35	R 11,838.27	R 15,499.20	R 15,905.97	R 1,641,719.60	R 1,709,203.71
6611201	DEPARTMENT OF EDUCATION KWAZULU-NATAL;			R 48,906.00	R 48,906.00	R 48,906.00	R 48,906.00	R 48,906.00	R 48,906.00	R 1,373,934.33	R 1,667,370.33
ZZZZZ	Direct deposits		Households: Non-indigents - Municpal Licensed Area	R 1,909.59	R 1,906.42	R 1,903.24	R 1,900.08	R 3,790.68	R 2,002.78	R 1,126,950.31	R 1,140,363.10
80021	NATIONAL GVT OF RSA	PORT 12 OF FARM CARLTON NO 6069	Businesses: Eskom Licensed Area	R 30,300.00	R 30,300.00	R 30,300.00	R 30,300.00	R 30,300.00	R 30,300.00	R 887,593.59	R 1,069,393.59
8077777	DEPARTMENT OF PUBLIC WORKS	NATIONAL ROAD CORRIDOR - PSI	National: Public Works	R -	R -	R -	R -	R -	R -	R 1,040,330.74	R 1,040,330.74
1100500	MANDES TRUST-TRUSTEES	001005 SUNDUMBILI	Households: Non-indigents - Eskom Licensed Area	R 26,500.00	R 26,500.00	R 26,500.00	R 26,500.00	R 26,500.00	R 26,500.00	R 743,149.42	R 902,149.42
6600811	REPUBLIC OF SOUTH AFRICA - ZN 06626	LOT 81 TUGELA	National: Public Service and Administration	R -	R -	R -	R -	R -	R 449,280.00	R 403,200.00	R 852,480.00
80373	ISITHEBE INDUSTRIAL SCHOOL	FARM RESERVE NO 21 NO 16882	Provincial: Education	R -	R -	R -	R -	R -	R -	R 816,964.55	R 816,964.55
80372	SUNDUMBILI POLY CLINIC	PORT 1 OF FARM RESERVE NO 21 NO 16882	Provincial: Health	R -	R -	R -	R -	R -	R 370,000.00	R 376,817.31	R 746,817.31
80005	NATIONAL GVT OF THE RSA	FARM ANNEXE RES NO 8 NO 14264	Other: Eskom Licensed Area	R 5,087.50	R 5,087.50	R 5,087.50	R 5,087.50	R 5,087.50	R 5,087.50	R 715,781.62	R 746,306.62
80372	SUNDUMBILI POLY CLINIC	PORT 1 OF FARM RESERVE NO 21 NO 16882	Provincial: Health	R -	R -	R -	R -	R -	R -	R 702,747.43	R 702,747.43
8088888	PUBLIC W/DEPT	PROVINCIAL ROAD CORRIDOR-PSI	National: Public Works	R -	R -	R -	R -	R -	R -	R 667,560.31	R 667,560.31
6600020	UBA CO OP SUGAR MILLING CO. LTD	FARM NEWARK NO 2621	Businesses: Eskom Licensed Area	R 4,292.29	R 4,282.44	R 4,272.61	R 4,262.78	R 8,496.20	R 4,233.46	R 616,810.32	R 646,650.10
80357	THUKELA HIGH SCHOOL- zn 06566	PTN 1 FARM RES NO 21 NO 16882	Provincial: Education	R -	R -	R -	R -	R -	R -	R 630,639.28	R 630,639.28
1133100	SUNDUMBILI POLICE STATION	001331 SUNDUMBILI	National: Police	R 8,922.90	R 8,922.90	R 9,305.10	R 8,922.90	R 8,922.90	R 8,922.90	R 480,985.20	R 534,904.80
1000027	MACAMBINI TRAINING CENTRE		Government	R -	R -	R -	R -	R -	R 273,780.00	R 260,910.00	R 534,690.00
1073800	MATHONSI	000738 SUNDUMBILI	Households: Non-indigents - Eskom Licensed Area	R -	R -	R 282.24	R -	R -	R -	R 523,139.44	R 523,421.68
1000039	BUILD IT	RESERVE NO 21	business	R -	R -	R -	R -	R -	R 157,500.00	R 354,899.41	R 512,399.41
80173	R S A	P/1 FARM LOT H NO 1671	National: Transport	R -	R -	R -	R -	R -	R -	R 424,758.86	R 424,758.86
1057600	IMBEWENHLE LP SCHOOL	000576 SUNDUMBILI	Provincial: Education	R 14,742.00	R 14,742.00	R 14,742.00	R 14,742.00	R 14,742.00	R 14,742.00	R 330,992.45	R 419,444.45
80592	SUNDUMBILI HIGH SCHOOL	PORT 8 OF FARM RESERVE 21 NO 16882	Provincial: Education	R -	R -	R -	R -	R -	R -	R 416,989.95	R 416,989.95
1060800	SUNDUMBILI H P SCHOOL	000608 SUNDUMBILI	Provincial: Education	R -	R -	R -	R -	R -	R 91,260.00	R 321,131.65	R 412,391.65
80124	HURPAUL	PORT 24 FARM LOT 41A NO 2617	Businesses: Eskom Licensed Area	R 31.45	R 31.45	R 31.45	R 31.45	R 31.45	R 31.45	R 409,083.01	R 409,271.71

Observations:

- The total debtor's book is R 187m of which R 152 m, (81%) are 180 days or older. This indicates a real challenge with collection and will negatively affect MLM, not just wrt collecting charges for electricity consumption, but cash collections in general and the resultant impact on cashflow for the entity.
- Although Umgeni water reflects as the biggest debtor, it is also clear that they keep their account up to date.
- The top 25 debtors are almost all government institutions (provincial and national)
- Add to this the concern that many electricity meters may not even be in the system, then it is clear that MLM have a huge challenge in this regard.

4.4 Community / End-user Awareness Communication & Campaigns

4.4.1 Overview

Although this section is contained in the ToR as a sub-section of section 3, we felt it important to separate into a separate section.

The ToR for this section read as follows:

"Assess the adequacy and effectiveness of any existing efforts by the relevant Business units or Departments or Directorates of the municipalities regarding the implementation of effective community and end-user awareness campaigns and initiatives designed to influence and change community behaviour and attitudes towards minimization of non-technical electricity losses, payment for services, appreciation and use of electricity, care of end-user infrastructure and facilities, etc. The consultant is also expected to assess the current measures in place to curb illegal connections and electricity theft in the KDM and MLM. Community awareness initiatives on the dangers and impacts of electricity theft as well as issues around poverty and inequality will need to be taken into consideration. An example is the current KDM Stakeholder engagement programme through the Masakhane Campaign Team to educate the community about the dangers and outcomes of illegal connections."

4.4.2 Detail Deliverable Breakdown

Table 11: End User Awareness Deliverable Breakdown

Main Deliverable	Number	Assessment Item	Reference Material	Source
4. Community / End-user awareness / behaviour change / electricity theft	**4.1**	Include assessment of current measures to curb illegal connections / theft	Communication & stakeholder engagement policy (Z)	Any
	4.2	Take into consideration community awareness re dangers & impact of electricity theft against issues such as poverty & inequality	Any other community awareness initiatives? (Z)	Any

4.4.3 Situational Analysis Findings

Zutari attended a meeting with the MLM Electrical department, through Mr Selby Msweli. The following items were discussed:

- Community awareness of the dangers of electricity theft and illegal connection
- Programmes in place regarding community involvement and awareness
- Initiatives in place to educate the community with regards to electrical issues

There are currently no programmes or initiatives in place within MLM regarding any community awareness of the dangers of electricity theft and illegal connections. The only community awareness programmes in place are where networks are supplied directly by Eskom within the municipality, and therefore do not form part of this study.

In summary, there are no community awareness programs in place at MLM with regards to electricity.

5 STATUS QUO REPORT SUMMARY & CONCLUSION

5.1 Situational Analysis

5.1.1 Key Network Installations

The MLM network data has been derived from previous studies and assessments which include Electricity Master Plans, Asset registers, network drawings and GIS data. The information available illustrates network interconnectivity from Bulk Supply to Distribution level with no information on the LV networks.

The information available specific to key network installations are available in the following formats,

- GIS layers of all the 11kV and 6.6kV infrastructure such as substations, switching substations, cables, overhead lines, mini substations, ring main units and transformers
- GIS Layers of Eskom bulk infrastructure
- Asset Register

The data available is a fair representation of the current 11kV and 6.6kV distribution system, however it must be noted that there are currently no single line drawings of the MLM electrical networks. It would be beneficial to MLM to have these developed. The GIS data currently available seems to be representative of all the current MV electrical assets.

This assessment has identified that there is a need to develop additional data sets such as,

- Spatial layer for LV kiosks
- Spatial layer for electricity meters
- Spatial layer with Customer network link

5.1.2 General Infrastructure Assessment

It can be noted that the MLM Distribution networks have been in service for many years and much of the network is aged however still functional. The infrastructure assessment is based on previous assessments, primarily the Electricity Master Plan.
Infrastructure constraints were identified as the bulk of the electricity network was developed many years ago and has since deteriorated or become obsolete through time, technological changes and/or expected useful life
The following can be noted,

- The 11/6.6kV satellite switching substations are categorised as good as they have been refurbished.
- With respect to 11kV minisub stations around 80% are considered to be in adequate condition with 20% falling in the poor category.
- All of the 6.6kV miniature substations are categorised as marginal indicating equipment has reached useful life with defects affecting functionality.

There is a general need for routine maintenance and a requirement to replace the 6.6kV equipment with 11kV equipment which is considered a more appropriate system voltage level.

5.1.3 General Assessment of Metering & Meter Reading for bulk purchases

- No MLM check meters exist and reliance is placed completely on the accuracy of Eskom measuring equipment.
- Umgeni water as a single customer has more than double the energy consumption of the whole of the rest of MLM. See comparative table below.
- Mandeni intake point has a monthly Network Demand Charge / kVA as well as an Energy Demand Charge / kVA. Refer section 4.1.3.3 in this regard.
- Mandeni Rural POS supplies the rest of MLM, excluding customers supplied directly by Eskom.

5.1.4 General Assessment of Metering & Meter Reading for Large Power Users (LPU)

Only one LPU customer exists for MLM in the form of Umgeni water. The Umgeni Water intake point only supplies Umgeni Water as a consumer currently. A Three-party agreement exist between Eskom, MLM and Umgeni water in this regard.

- Sole reliance is placed on ESKOM for accuracy of readings to Umgeni water.
- MLM only charges a 10% management fee on top of the Eskom invoice to Umgeni water.
- This three-party agreement may lead to confusion as to who are customers of whom and who supplies whom. Strictly one could argue that Eskom supplies Umgeni water, but then Eskom invoices MLM, and Umgeni water gets invoiced by MLM as its customer.

5.1.5 Roles & Responsibilities

Electricity Provision
The provision of electrical services has been assessed using the current organogram and the electricity department is a sub-department of the Technical Services & Infrastructure Development Department. There are currently vacancies available for artisans and the MLM AMP 2019 has identified a need for a General Machine Regulations 2(1) responsible person. The EMP 2019 identified a need for an updated structure within the electrical department which expands on the current structure to introduce 3 streams, Municipal Buildings, Reticulation System and Street Lighting

Finance Department
The organogram indicates a total complement for the Revenue department (including meter reading) of 8 people and for credit control (debt management) a total of four. No vacancies exist. It is not clear though whether the staff complement is sufficient to manage the workload.

5.1.6 Policies, Tarif Setting, Asset Management Planning, and Budgets for Maintenance

Bylaws and Policies
MLM currently have the greater extent of required Bylaws and policies in place to address and guide Asset Management, Indigent requirements, Tariff procedures and principles, credit control and debt collection. There is however a general lack of standard operating procedures.

Tariff Setting

The Tariff setting is aligned to the Tariff Policy, Municipal Systems Act and NERSA Tariff guidelines. Electricity falls under the trading service category and Council's pricing strategy for this service is to recover the full cost of rendering the service to the community. The policy acknowledges that a minimum amount of basic services such as electricity must be free for poor households and tariffs kept at affordable levels. Tariffs are reviewed during the preparation of the annual budget in accordance with the Tariff Policy and the tariff determination process is conducted in line with the MSA. Considering that the utility has not conducted a detailed tariff study in recent years may indicate that the current tariffs may not be completely cost reflective with a need for a study in the near future.

Asset Management & Planning
MLM currently does not formally implement a lot of asset management systems and have a relatively low asset management practice maturity, especially in the field of physical asset management within the utility. These poor asset management practices are related to skill challenges and constrained budgets. The current practise was assessed to be predominantly "aware" of good practices and the municipality aims to move towards a level of competence. As part of the Vuthela LED project, IMQS established a high-level Asset Management Plan (AMP). This AMP is a high-level initial document to start steering the municipality towards implementing quality asset management planning.

Budget for Operations & maintenance
MLM have identified electrical infrastructure repairs and maintenance budgets for financial years 2022/2023 and 2023/24 in the order of R3.3 million per financial year. Considering that there is a need for additional maintenance on existing failing infrastructure, the current budgets need to be reassessed to meet the current network needs.
The actual expense for the year is however much greater and shown in section 4.1.3.6.5 within Table 8 of this report. The total expense for the last financial year was R38.4 million with electricity purchase at R31.2 million. It can be noted that when comparing the repairs and maintenance spend to revenue from sales of electricity, the repairs and maintenance spend falls within 6% range for the 2020 and 2021 financial year.

5.1.7 Technical Management Information Systems

There is a general lack of information systems to support electricity service delivery, maintenance and asset management. The current systems still incorporate paper-based processes with a need for automated processes. The following information systems have been identified,

ESRI ArcGIS Software: MLM utilise ArcGIS within their Economic Planning and Development department. The software is a standalone is fully licensed package with maintenance plan. This software package is not linked to any other systems.

Sage Evolution: MDM utilise Sage for financial management and billing as well as host and update their asset register. Sage is a versatile tool that provides the utilities current requirements and is mSCAO compliant. The Sage package has an interface to MLM payroll software.

PayDay: MLM utilise PayDay software for payroll which has an interface to Sage.
Microsoft: Excel, Projects etc. are used on a day-to-day basis, also typically used for asset planning and creation then transferred to Sage.

AMS360: MLM utilise the AMS360 asset management software which is a Web-based solution and is mSCOA compliant. This is an independent tool utilised to capture new assets, host existing assets and to verify assets. The information captured within this tool is transferred to Sage and hosted within this platform, there is no direct interface.

SCADA: SCADA functionality currently does not exist in MLM.

Asset Management Information Systems (AMIS): An AMIS scoping study has been conducted as part of the Vuthela iLembe LED Programme to assess the current utility processes and gap analyses thereof with respect to AMIS. The general requirements for the AMIS and associated components have been unpacked as part of the AMIS study, with a solution roadmap on the proposed way forward. The current understanding is that the recommendations of this study have not yet been implemented.

5.2 Technical Losses

The extent of technical losses studies compiled for the MLM electrical networks are limited to one independent assessment conducted as part of the 2019 EMP.
As part of the 2019 Master Plan Revision, technical losses for the MLM electrical network were estimated using the following approach,

- LV Copper losses were obtained directly from the Reticmaster simulation package designed to NRS 034
- MV Copper losses were obtained by the DiGSILENT PowerFactory software package based on the networks produced for this study.
- The magnetizing losses of the transformers were based on database no-load losses of similar transformers.

The estimate of the MV losses were in the 2% range and 6% on the LV networks which is considered relatively high for LV networks in Mandeni supply area. Considering the extent of networks, demand of the current system and comparison to the total losses of 8.47% in 2021, a benchmark of 3-4% would be considered more likely for technical losses. The losses on the MV network can be mostly attributed to the aged 6.6kV network.

5.3 Non-Technical Losses

5.3.1 Assess completeness & adequacy of metering of electricity - various categories of users

Based on a comparative analysis between the information received on billing and prepaid meters purchasing history vs the valuation roll, a large gap was identified between customers that seem to have actual meters linked to their accounts, and potential electricity customers.

5.3.2 Assess adequacy, efficiency of institutional arrangements for meter installations & readings

It was confirmed by MLM that no SOP's exist and that they are experiencing challenges in this regard. This was further supported regarding information that meters have been found in the field during an audit, but the meters are not in the financial system.

5.3.3 Assess adequacy, effectiveness & efficiency of financial systems

Financial systems in use consist of:

- Main Financial management system
    - Sage Pastel system is in use
    - System is mSCOA compliant

- Supplementary systems
    - Conlog Prepaid vending system
        - System is STS compliant
        - No interface between Sage Pastel and Conlog systems
        - Prepaid meters info only resides in prepaid system

A supplementary supporting data management system to considered to ensure data integrity within main system.

5.3.4 Assess integrity, completeness & accuracy of energy customer data base

As mentioned under 5.3.1, large gaps have been identified between actual customers with meters and potential customers with electricity meters.

5.3.5 Review report on Customer Relations Management System and / or Information Systems

Reports by ZTE Consulting reviewed in this regard:

- Vuthela CRM technical feasibility report dated 30 June 2020.
- Strategic plan for the iLembe Regional Customer Care centre dated 19 June 2020

The above report was part of phase 1 of the establishment of a regional customer care centre and recommend a single platform Customer Care system for whole of iLembe. Our views support this recommendation.

Phase 2 of this project is currently under way, a demo on the system was planned for June 2022. Phase 2 to be implemented on successful completion of Memorandum of Agreements with municipalities.

5.3.6 Assess billing & revenue collection re electrical services provision

Gaps in billing and revenue collection has been identified as a challenge, resulting from indications that not all electricity meters are in the financial system.

5.3.7 Investigate necessity of tariff study and review

A tariff study and review for the whole of iLembe is recommended.

5.3.8 Review completed Indigent register study

A report by Bonakude Consulting (Pty) Ltd titled “Alignment of Indigent policies, Uniform systems and processes for maintaining the indigent register across municipalities” was reviewed for this aspect. This 2020 report forms part of the Vuthela iLembe LED support program.

Existing systems and processes were found to have “gaps”.

The establishment of a centralised repository for indigent management, that is web and cloud based, is secure and have audit trail functionality, was recommended by the report, and supported from our point of view.

Currently draft ToR are being finalised. Project will also only launch post signing of MoA's.

5.3.9 Review of Debt management

A debtor's age report for February 2022 was received.

- This report shows that 81% of the debtor book is 180 days or older.
- Although Umgeni water reflects as the biggest debtor, it is also clear that they keep their account up to date.
- The top 25 debtors are almost all government institutions (provincial and national)
- The fact that there seem to be many electricity meters that are not in the system, further compounds this challenge.

5.4 Community / End-user Awareness Communication & Campaigns

No current campaigns / processes exist to educate community on importance of paying for services and danger of electricity theft.

ANNEXURE 1

Eskom invoicing summary

Mandeni Intake Point Eskom Billing summary (3 years)

Intake Point		Mandeni
Premise ID		6812103328

		Month												Totals / *Averages*
		Jul 18	Aug 18	Sep 18	Oct 18	Nov 18	Dec 18	Jan 19	Feb 19	Mar 19	Apr 19	May 19	Jun 19	
Month Days		31	31	30	31	30	31	31	28	31	30	31	30	
Notified Max Demand		3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	*3,500*
Utilized Capacity		3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	*3,500*
CONSUMPTION DETAILS														
HIGH SEASON ENERGY CONSUMPTION OFF PEAK kWH		0	0.00											0.00
LOW SEASON ENERGY CONSUMPTION OFF PEAK kWH				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
HIGH SEASON ENERGY CONSUMPTION STD kWh		763,523.88	800,094.48	473,711.00									324,069.00	2,361,398.36
LOW SEASON ENERGY CONSUMPTION STD kWh				336,103.00	731,608.00	825,360.00	783,995.20	844,878.60	845,056.00	799,653.44	773,686.12	739,591.88	438,763.00	
HIGH SEASON ENERGY CONSUMPTION PEAK kWh		0.00	0.00											0.00
LOW SEASON ENERGY CONSUMPTION PEAK kWh				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
ENERGY CONSUMPTION ALL kWh		763,523.88	800,094.48	809,814.00	731,608.00	825,360.00	783,995.20	844,878.60	845,056.00	799,653.44	773,686.12	739,591.88	762,832.00	9,480,093.60
DEMAND CONSUMPTION - OFF PEAK		1,550.53	1,641.89	1,640.72	1,858.08	1,592.60	1,746.37	1,877.48	1,812.13	1,641.34	2,021.24	1,589.67	1,781.23	20,753.28
DEMAND CONSUMPTION - STD		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DEMAND CONSUMPTION - PEAK		1,771.61	1,865.12	1,810.92	1,818.26	1,667.53	2,068.09	2,073.20	1,874.93	1,871.37	2,085.84	1,710.67	1,735.23	22,352.77
DEMAND READING - KW/KVA		1,771.61	1,865.12	1,810.92	1,818.26	1,667.53	2,068.09	2,073.20	1,874.93	1,871.37	2,085.84	1,710.67	1,735.23	22,352.77
REACTIVE ENERGY - OFF PEAK		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
REACTIVE ENERGY - STD		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
REACTIVE ENERGY - PEAK		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EXCESS REACTIVE ENERGY		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LOAD FACTOR		62.00	59.00	62.00	62.00	67.00	55.00	55.00	65.00	67.00	52.00	63.00	60.00	*60.75*
CHARGES DETAILS														
Administration Charge per day for monthdays	R 85.8600	R 2,575.80	R 2,661.66	R 2,661.66	R 2,404.08	R 2,747.52	R 2,575.80	R 2,747.52	R 2,661.66	R 2,404.08	R 2,661.66	R 2,575.80	R 2,661.66	R 31,338.90
TX Network Capacity Charge /kVA	R 7.7100	R 25,933.83	R 26,985.00	R 26,985.00	R 26,985.00	R 26,985.00	R 26,985.00	R 26,985.00	R 26,985.00	R 26,985.00	R 26,985.00	R 26,985.00	R 26,985.00	R 322,768.83
Network Capacity Charge /kVA	R 15.2900	R 51,452.33	R 53,515.00	R 53,515.00	R 53,515.00	R 53,515.00	R 53,515.00	R 53,515.00	R 53,515.00	R 53,515.00	R 53,515.00	R 53,515.00	R 53,515.00	R 640,117.33
Network Demand Charge /kVA	R 28.9900	R 49,371.51	R 54,069.83	R 52,498.57	R 52,711.36	R 48,341.69	R 59,953.93	R 60,102.07	R 54,354.22	R 54,251.02	R 60,468.50	R 49,592.32	R 50,304.32	R 646,019.34
Energy Demand Charge / kVA (High season R 216.41, Low Season R 30.22)	R 30.2200	R 368,578.45	R 403,630.62	R 250,506.53	R 54,947.82	R 50,392.76	R 62,497.68	R 62,652.10	R 56,660.38	R 56,552.80	R 63,034.08	R 51,696.45	R 187,925.93	R 1,669,075.61
Ancillary Service Charge /kWh	R 0.0038	R 2,772.69	R 3,040.36	R 3,077.29	R 2,780.11	R 3,136.37	R 2,979.18	R 3,210.54	R 3,211.21	R 3,038.68	R 2,940.01	R 2,810.45	R 2,898.76	R 35,895.65
High Season Off Peak Energy Charge /kWh	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -
Low Season Off Peak Energy Charge /kWh	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -
High Season Peak Energy Charge / kWh	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -
Low Season Peak Energy Charge / kWh	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -
High Season Standard Energy Charge /kWh	R 0.7167	R 526,239.94	R 573,427.37	R 339,508.67	R -	R -	R -	R -	R -	R -	R -	R -	R 232,260.25	R 1,671,436.24
Low Season Standard Energy Charge /kWh	R 0.5590	R -	R -	R 187,881.58	R 408,968.87	R 461,376.24	R 438,253.32	R 472,287.14	R 472,386.30	R 447,006.27	R 432,490.54	R 413,431.86	R 245,268.52	R 3,979,350.64
Electrification and Rural Subsidy /kWh	R 0.0742	R 54,465.62	R 59,366.97	R 60,088.20	R 54,285.31	R 61,241.71	R 58,172.43	R 62,690.02	R 62,703.16	R 59,334.25	R 57,407.50	R 54,877.73	R 56,602.13	R 701,235.04
High Season Reactive energy Charge /kvarh	R 0.1656	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -
Service Charge		R 5,493.27	R 5,904.57	R 5,904.57	R 5,333.16	R 6,095.04	R 5,714.10	R 6,095.04	R 5,904.57	R 5,333.16	R 5,904.57	R 5,714.10	R 5,904.57	R 69,300.72
Rebilled adjustments				R 147,756.36										
Total Charges		R 1,086,883.44	R 1,182,601.38	R 1,130,383.43	R 661,930.71	R 713,831.33	R 710,646.44	R 750,284.43	R 738,381.51	R 708,420.26	R 705,406.87	R 661,198.71	R 864,326.14	R 9,766,538.29
Consumption Charges		R 526,239.94	R 573,427.37	R 527,390.25	R 408,968.87	R 461,376.24	R 438,253.32	R 472,287.14	R 472,386.30	R 447,006.27	R 432,490.54	R 413,431.86	R 477,528.77	R 5,650,786.87
Ancillary Charges		R 560,643.50	R 609,174.01	R 602,993.18	R 252,961.84	R 252,455.09	R 272,393.12	R 277,997.29	R 265,995.20	R 261,413.99	R 272,916.32	R 247,766.85	R 386,797.37	R 4,115,751.42
Consumption Charges as % of Total Charges		48.42%	48.49%	46.66%	61.78%	64.63%	61.67%	62.95%	63.98%	63.10%	61.31%	62.53%	55.25%	58.40%
Ancillary Charges as % of Total Charges		51.58%	51.51%	53.34%	38.22%	35.37%	38.33%	37.05%	36.02%	36.90%	38.69%	37.47%	44.75%	42.14%

Intake Point		Mandeni												
Premise ID		6812103328												
		Month												Totals / *Averages*
		Jul 19	Aug 19	Sep 19	Oct 19	Nov 19	Dec 19	Jan 20	Feb 20	Mar 20	Apr 20	May 20	Jun 20	
Month Days		31	31	30	31	30	31	31	29	31	30	31	30	
Notified Max Demand		3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	*3,500*
Utilized Capacity		3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	*3,500*
CONSUMPTION DETAILS														
HIGH SEASON ENERGY CONSUMPTION OFF PEAK kWH			0.00										0.00	0.00
LOW SEASON ENERGY CONSUMPTION OFF PEAK kWH				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
HIGH SEASON ENERGY CONSUMPTION STD kWh		740,368.68	791,777.00	457,874.00									327,160.00	2,317,179.68
LOW SEASON ENERGY CONSUMPTION STD kWh				332,264.00	771,831.20	803,460.88	773,834.16	837,183.60	854,857.72	785,835.64	787,558.20	730,204.04	438,631.00	
HIGH SEASON ENERGY CONSUMPTION PEAK kWh			0.00										0.00	0.00
LOW SEASON ENERGY CONSUMPTION PEAK kWh				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
ENERGY CONSUMPTION ALL kWh		740,368.68	791,777.00	790,138.00	771,831.20	803,460.88	773,834.16	837,183.60	854,857.72	785,835.64	787,558.20	730,204.04	765,791.00	9,432,840.12
DEMAND CONSUMPTION - OFF PEAK		1,588.84	1,671.81	1,671.81	1,657.31	1,661.41	1,625.80	1,811.58	1,749.01	1,840.97	1,684.45	1,716.01	1,724.38	20,403.38
DEMAND CONSUMPTION - STD		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DEMAND CONSUMPTION - PEAK		1,822.81	1,791.67	1,744.12	1,723.96	1,800.17	1,840.14	1,900.11	1,775.90	1,817.98	1,706.24	1,746.38	1,852.44	21,521.92
DEMAND READING - KW/KVA		1,822.81	1,791.67	1,744.12	1,723.96	1,800.17	1,840.14	1,900.11	1,775.90	1,817.98	1,706.24	1,746.38	1,852.44	21,521.92
REACTIVE ENERGY - OFF PEAK		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
REACTIVE ENERGY - STD		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
REACTIVE ENERGY - PEAK		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EXCESS REACTIVE ENERGY		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LOAD FACTOR		58.00	58.00	63.00	64.00	62.00	62.00	63.00	69.00	65.00	65.00	60.00	58.00	*62.25*
CHARGES DETAILS														
Administration Charge per day for monthdays	R 91.6700	R 2,750.10	R 3,077.68	R 3,077.68	R 2,978.40	R 3,077.68	R 2,978.40	R 2,841.77	R 3,077.68	R 2,879.12	R 3,077.68	R 2,978.40	R 3,077.68	R 35,872.27
TX Network Capacity Charge /kVA	R 8.9200	R 28,820.17	R 31,220.00	R 31,220.00	R 31,220.00	R 31,220.00	R 31,220.00	R 31,220.00	R 31,220.00	R 31,220.00	R 31,220.00	R 31,220.00	R 31,220.00	R 372,240.17
Network Capacity Charge /kVA	R 17.6800	R 30,325.17	R 61,880.00	R 61,880.00	R 61,880.00	R 61,880.00	R 61,880.00	R 61,880.00	R 61,880.00	R 61,880.00	R 61,880.00	R 61,880.00	R 61,880.00	R 711,005.17
Network Demand Charge /kVA	R 33.5200	R 56,691.44	R 60,056.78	R 58,462.90	R 57,787.14	R 60,341.70	R 61,681.49	R 63,691.69	R 59,528.17	R 60,938.69	R 57,193.16	R 58,538.66	R 62,093.79	R 717,005.61
Energy Demand Charge	R 34.9400	R 421,188.20	R 448,329.58	R 278,966.93	R 60,235.16	R 62,897.94	R 64,294.49	R 66,389.84	R 62,049.95	R 63,520.22	R 59,616.03	R 61,018.52	R 231,967.91	R 1,880,474.77
Ancillary Service Charge /kWh	R 0.0044	R 3,012.04	R 3,483.82	R 3,476.61	R 3,396.06	R 3,535.23	R 3,404.87	R 3,683.61	R 3,761.38	R 3,457.68	R 3,465.26	R 3,212.90	R 3,369.48	R 41,258.92
High Season Off Peak Energy Charge /kWh		R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -
Low Season Off Peak Energy Charge /kWh	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -
High Season Peak Energy Charge / kWh	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -
Low Season Peak Energy Charge / kWh	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -
High Season Standard Energy Charge /kWh	R 0.8287	R 567,700.95	R 656,145.60	R 379,440.18	R -	R -	R -	R -	R -	R -	R -	R -	R 271,117.49	R 1,874,404.23
Low Season Standard Energy Charge /kWh	R 0.6464	R -	R -	R 214,775.45	R 498,911.69	R 519,357.11	R 500,206.40	R 541,155.48	R 552,580.03	R 507,964.16	R 509,077.62	R 472,003.89	R 283,531.08	R 4,599,562.91
Electrification and Rural Subsidy /kWh	R 0.0858	R 58,775.66	R 67,934.47	R 67,793.84	R 66,223.10	R 68,936.95	R 66,394.96	R 71,830.39	R 73,346.82	R 67,424.73	R 67,572.48	R 62,651.50	R 65,704.87	R 804,589.76
High Season Reactive energy Charge /kvarh		R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 7,063.20	R -	R 7,063.20
Service charge		R 6,101.11	R 6,827.44	R 6,827.44	R 6,607.20	R 6,827.44	R 6,607.20	R 6,607.20	R 6,827.44	R 6,386.96	R 6,827.44	R 6,607.20	R 6,827.44	R 79,881.51
Billed adjustments			R 26,814.67											R 26,814.67
Total Charges		R 1,175,364.84	R 1,365,770.04	R 1,105,921.03	R 789,238.75	R 818,074.05	R 798,667.81	R 849,299.98	R 854,271.46	R 805,671.56	R 799,929.66	R 767,174.27	R 1,020,789.74	R 11,150,173.17
Consumption Charges		R 567,700.95	R 656,145.60	R 594,215.63	R 498,911.69	R 519,357.11	R 500,206.40	R 541,155.48	R 552,580.03	R 507,964.16	R 509,077.62	R 472,003.89	R 554,648.57	R 6,473,967.13
Ancillary Charges		R 607,663.89	R 709,624.44	R 511,705.40	R 290,327.06	R 298,716.94	R 298,461.41	R 308,144.50	R 301,691.43	R 297,707.40	R 290,852.04	R 295,170.38	R 466,141.17	R 4,676,206.04
Consumption Charges as % of Total Charges		48.30%	48.04%	53.73%	63.21%	63.49%	62.63%	63.72%	64.68%	63.05%	63.64%	61.52%	54.34%	59.20%
Ancillary Charges as % of Total Charges		51.70%	60.37%	43.54%	24.70%	25.41%	25.39%	26.22%	25.67%	25.33%	24.75%	25.11%	39.66%	33.15%

Intake Point		Mandeni												
Premise ID		6812103328												
		Month												Totals / *Averages*
		Jul 20	Aug 20	Sep 20	Oct 20	Nov 20	Dec 20	Jan 21	Feb 21	Mar 21	Apr 21	May 21	Jun 21	
Month Days		31	31	30	31	30	31	31	28	31	30	31	30	
Notified Max Demand		3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	*3,500*
Utilized Capacity		3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	*3,500*
CONSUMPTION DETAILS														
HIGH SEASON ENERGY CONSUMPTION OFF PEAK kWH		0	0.00											0.00
LOW SEASON ENERGY CONSUMPTION OFF PEAK kWH				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
HIGH SEASON ENERGY CONSUMPTION STD kWh		774,319.80	809,399.56	464,082.00									754,188.60	2,801,989.96
LOW SEASON ENERGY CONSUMPTION STD kWh				323,614.00	772,033.72	792,463.72	786,339.48	837,183.60	854,857.72	763,606.24	793,366.08	730,204.04		
HIGH SEASON ENERGY CONSUMPTION PEAK kWh		0.00	0.00											0.00
LOW SEASON ENERGY CONSUMPTION PEAK kWh				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
ENERGY CONSUMPTION ALL kWh		774,319.80	809,399.56	787,696.00	772,033.72	792,463.72	786,339.48	837,183.60	854,857.72	763,606.24	793,366.08	730,204.04	754,188.60	9,455,658.56
DEMAND CONSUMPTION - OFF PEAK		1,618.59	1,733.77	2,022.93	1,724.79	1,662.70	1,564.41	1,811.58	1,749.01	1,745.53	1,796.26	1,716.01	1,892.46	21,038.04
DEMAND CONSUMPTION - STD		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DEMAND CONSUMPTION - PEAK		2,080.17	2,006.99	2,055.62	1,794.72	1,778.18	1,668.75	1,900.11	1,775.90	1,875.78	1,782.40	1,746.38	1,940.59	22,355.59
DEMAND READING - KW/KVA		2,080.17	2,006.99	2,055.62	1,794.72	1,778.18	1,668.75	1,900.11	1,775.90	1,875.78	1,796.26	1,746.38	1,940.59	22,369.45
REACTIVE ENERGY - OFF PEAK		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
REACTIVE ENERGY - STD		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
REACTIVE ENERGY - PEAK		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EXCESS REACTIVE ENERGY		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LOAD FACTOR		54.00	55.00	53.00	62.00	64.00	70.00	63.00	69.00	64.00	63.00	60.00	53.00	*60.83333333*
														3290.03
Administration Charge per day for monthdays	R 106.1300	R 3,067.50	R 3,290.03	R 3,290.03	R 3,183.90	R 3,290.03	R 3,183.90	R 3,290.03	R 3,290.03	R 2,971.64	R 3,290.03	R 3,183.90	R 3,290.03	R 38,621.05
TX Network Capacity Charge /kVA	R 9.5400	R 32,150.33	R 33,390.00	R 33,390.00	R 33,390.00	R 33,390.00	R 33,390.00	R 33,390.00	R 33,390.00	R 33,390.00	R 33,390.00	R 33,390.00	R 33,390.00	R 399,440.33
Network Capacity Charge /kVA	R 18.9000	R 63,730.33	R 66,150.00	R 66,150.00	R 66,150.00	R 66,150.00	R 66,150.00	R 66,150.00	R 66,150.00	R 66,150.00	R 66,150.00	R 66,150.00	R 66,150.00	R 791,380.33
Network Demand Charge /kVA	R 35.8300	R 68,083.50	R 71,910.45	R 73,652.86	R 64,304.82	R 63,712.19	R 59,791.31	R 68,080.94	R 63,630.50	R 67,209.20	R 63,863.39	R 62,572.80	R 69,531.70	R 796,343.66
Energy Demand Charge	R 37.3500	R 523,202.56	R 536,869.83	R 351,461.18	R 67,032.79	R 66,415.02	R 62,327.81	R 70,969.11	R 66,329.87	R 70,060.38	R 66,572.64	R 65,227.29	R 259,777.48	R 2,206,245.97
Ancillary Service Charge /kWh	R 0.0047	R 3,507.62	R 3,804.18	R 3,702.17	R 3,628.56	R 3,724.58	R 3,695.79	R 3,934.76	R 4,017.83	R 3,588.95	R 3,728.82	R 3,431.96	R 3,544.69	R 44,309.92
High Season Off Peak Energy Charge /kWh	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -
Low Season Off Peak Energy Charge /kWh	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -
High Season Peak Energy Charge / kWh	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -
Low Season Peak Energy Charge / kWh	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -
High Season Standard Energy Charge /kWh	R 0.8859	R 660,862.32	R 717,047.46	R 411,130.24	R -	R -	R -	R -	R -	R -	R -	R 282,186.61	R 2,071,226.63	
Low Season Standard Energy Charge /kWh	R 0.6910	R -	R -	R 223,617.27	R 533,475.30	R 547,592.43	R 543,360.58	R 578,493.87	R 590,706.68	R 527,651.91	R 548,215.96	R 504,570.99	R 301,039.68	R 4,898,724.68
Electrification and Rural Subsidy /kWh	R 0.0917	R 68,415.35	R 74,221.98	R 72,231.72	R 70,795.52	R 72,668.95	R 72,107.29	R 76,769.77	R 78,390.48	R 70,022.67	R 72,751.66	R 66,959.71	R 69,159.13	R 864,494.23
High Season Reactive energy Charge /kvarh	R 0.1656	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -
Service Charge		R 6,804.80	R 7,298.64	R 7,298.64	R 7,063.20	R 7,298.64	R 7,063.20	R 7,298.64	R 7,298.84	R 6,592.32	R 7,298.84	R 7,063.20	R 7,298.84	
Total Charges		**R 1,429,824.31**	**R 1,513,982.57**	**R 1,245,924.13**	**R 849,024.09**	**R 864,241.84**	**R 851,069.89**	**R 908,377.13**	**R 913,204.23**	**R 847,637.07**	**R 865,261.35**	**R 812,549.85**	**R 1,095,368.16**	**R 12,110,786.80**
Consumption Charges		R 660,862.32	R 717,047.46	R 634,747.52	R 533,475.30	R 547,592.43	R 543,360.58	R 578,493.87	R 590,706.68	R 527,651.91	R 548,215.96	R 504,570.99	R 583,226.29	R 6,969,951.32
Ancillary Charges		R 768,961.99	R 796,935.11	R 611,176.61	R 315,548.79	R 316,649.41	R 307,709.30	R 329,883.26	R 322,497.54	R 319,985.16	R 317,045.38	R 307,978.85	R 512,141.87	R 7,834,445.54
Consumption Charges as % of Total Charges		46.22%	47.36%	50.95%	62.83%	63.36%	63.84%	63.68%	64.69%	62.25%	63.36%	62.10%	53.24%	**58.66%**
Ancillary Charges as % of Total Charges		53.78%	55.74%	42.74%	22.07%	22.15%	21.52%	23.07%	22.56%	22.38%	22.17%	21.54%	35.82%	**30.46%**

Umgeni Intake Point Eskom Billing summary (3 years)

Intake Point		LOWER THUKELA SAPPI
Premise ID		6274494579

		Month												Totals / *Averages*
		Jul 18	Aug 18	Sep 18	Oct 18	Nov 18	Dec 18	Jan 19	Feb 19	Mar 19	Apr 19	May 19	Jun 19	
Month Days		31	31	30	31	30	31	31	28	31	30	31	30	
Notified Max Demand		10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	*10,000*
Utilized Capacity		10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	*10,000.00*
CONSUMPTION DETAILS														
HIGH SEASON ENERGY CONSUMPTION OFF PEAK kWH		374,666.46	479,158.74	208,166.00									227,525.00	1,289,516.20
LOW SEASON ENERGY CONSUMPTION OFF PEAK kWH				161,195.00	369,447.12	432,905.28	468,685.20	576,118.20	400,956.12	417,310.80	489,294.00	558,943.80	260,541.00	
HIGH SEASON ENERGY CONSUMPTION STD kWh		284,822.22	353,575.32	182,341.00									149,649.00	970,387.54
LOW SEASON ENERGY CONSUMPTION STD kWh				125,425.00	289,907.58	310,372.98	400,063.62	304,039.80	325,121.46	313,780.86	369,497.94	337,381.38	234,471.00	
HIGH SEASON ENERGY CONSUMPTION PEAK kWh		124,028.46	95,879.64	64,758.00									61,074.00	345,740.10
LOW SEASON ENERGY CONSUMPTION PEAK kWh				48,435.00	101,164.14	124,544.04	183,673.62	111,139.32	141,654.12	130,147.86	129,678.90	125,795.22	105,426.00	
ENERGY CONSUMPTION ALL kWh		783,517.14	928,613.70	790,320.00	760,518.84	867,822.30	1,052,422.44	991,297.32	867,731.70	861,239.52	988,470.84	1,022,120.40	1,038,686.00	10,952,760.20
DEMAND CONSUMPTION - OFF PEAK		2,447.18	2,446.09	2,407.31	2,424.11	2,546.85	2,571.31	2,546.31	2,632.66	2,595.71	2,599.95	2,583.26	2,617.85	30,418.59
DEMAND CONSUMPTION - STD		2,455.19	2,452.90	2,411.44	2,453.74	2,589.99	2,605.28	2,571.39	2,570.70	2,614.95	2,647.15	2,600.81	2,695.53	30,669.07
DEMAND CONSUMPTION - PEAK		2,435.26	2,429.33	2,377.77	2,387.20	2,563.88	2,586.84	2,577.97	2,648.84	2,555.56	2,618.87	2,608.13	2,715.80	30,505.45
DEMAND READING - KW/KVA		2,455.19	2,452.90	2,411.44	2,453.74	2,589.99	2,605.28	2,577.97	2,648.84	2,614.95	2,647.15	2,608.13	2,715.80	30,781.38
REACTIVE ENERGY - OFF PEAK		64,951.62	86,028.42	63,473.40	64,077.24	178,947.42	216,141.06	261,614.76	196,033.08	195,426.36	224,869.56	254,804.40	269,445.24	2,075,812.56
REACTIVE ENERGY - STD		49,900.50	65,431.44	54,782.40	51,633.36	127,866.60	181,815.84	138,517.38	158,678.04	148,189.68	169,425.36	149,911.50	211,388.52	1,507,540.62
REACTIVE ENERGY - PEAK		21,902.58	15,045.15	19,174.44	17,051.16	50,310.30	80,452.74	51,055.74	67,610.00	60,720.84	61,287.36	55,861.98	89,432.46	589,904.75
EXCESS REACTIVE ENERGY			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65,364.03	65,364.03
LOAD FACTOR		46.00	50.00	44.00	47.00	48.00	56.00	55.00	47.00	52.00	53.00	58.00	54.00	*50.83*
CHARGES DETAILS														
Administration Charge per day for monthdays	R 82.4300	R 2,390.47	R 2,747.52	R 2,661.66	R 2,404.08	R 2,661.66	R 2,747.52	R 2,555.33	R 2,661.66	R 2,404.08	R 2,661.66	R 2,575.80	R 2,661.66	R 31,133.10
TX Network Capacity Charge /kVA	R 7.7100	R 73,993.11	R 77,100.00	R 77,100.00	R 77,100.00	R 77,100.00	R 77,100.00	R 77,100.00	R 77,100.00	R 77,100.00	R 77,100.00	R 77,100.00	R 77,100.00	R 922,093.11
Network Capacity Charge /kVA	R 15.2900	R 146,803.45	R 152,900.00	R 152,900.00	R 152,900.00	R 152,900.00	R 152,900.00	R 152,900.00	R 152,900.00	R 152,900.00	R 152,900.00	R 152,900.00	R 152,900.00	R 1,828,703.45
Network Demand Charge /kVA	R 28.9900	R 68,326.24	R 71,109.57	R 69,907.65	R 71,133.92	R 75,083.81	R 75,527.07	R 74,735.35	R 76,789.87	R 75,807.40	R 76,740.88	R 75,609.69	R 78,731.04	R 889,502.49
Ancillary Service Charge /kWh	R 0.0038	R 2,841.74	R 3,528.73	R 3,003.22	R 2,889.97	R 3,297.72	R 3,999.20	R 3,766.93	R 3,297.38	R 3,272.71	R 3,756.19	R 3,884.06	R 3,947.01	R 41,484.86
High Season Off Peak Energy Charge /kWh	R 0.4909	R 176,727.56	R 235,219.15	R 102,188.69	R -	R -	R -	R -	R -	R -	R -	R -	R 111,692.02	R 625,827.43
Low Season Off Peak Energy Charge /kWh	R 0.4250	R -	R -	R 68,507.88	R 157,014.98	R 183,984.63	R 199,191.13	R 244,850.15	R 170,406.30	R 177,357.18	R 207,949.95	R 237,551.20	R 110,729.93	R 1,757,543.30
High Season Peak Energy Charge / kWh	R 2.9840	R 354,889.69	R 286,105.92	R 193,237.87	R -	R -	R -	R -	R -	R -	R -	R -	R 182,244.82	R 1,016,478.30
Low Season Peak Energy Charge / kWh	R 0.9735	R -	R -	R 47,151.47	R 98,483.29	R 121,243.62	R 178,806.27	R 108,194.13	R 137,900.29	R 126,698.94	R 126,242.41	R 122,461.65	R 102,632.21	R 1,169,814.28
High Season Standard Energy Charge /kWh	R 0.9040	R 247,451.48	R 319,631.80	R 164,836.26	R -	R -	R -	R -	R -	R -	R -	R -	R 135,282.70	R 867,202.24
Low Season Standard Energy Charge /kWh	R 0.6700	R -	R -	R 84,034.75	R 194,238.08	R 207,949.90	R 268,042.63	R 203,706.67	R 217,831.38	R 210,233.18	R 247,563.62	R 226,045.52	R 157,095.57	R 2,016,741.29
Electrification and Rural Subsidy /kWh	R 0.0742	R 55,831.26	R 68,903.16	R 58,641.74	R 56,430.51	R 64,392.39	R 78,089.71	R 73,554.24	R 64,385.71	R 63,904.01	R 73,344.55	R 75,841.30	R 77,070.50	R 810,389.09
High Season Reactive energy Charge /kvarh	R 0.1340	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 8,758.78	R 8,758.78
Service Charge		R 5,302.80	R 6,095.04	R 5,904.57	R 5,333.16	R 5,904.57	R 6,095.04	R 5,904.57	R 5,904.57	R 5,333.16	R 5,904.57	R 5,714.10	R 590.57	R 63,986.72
Total Charges		R 1,134,557.81	R 1,223,340.90	R 1,030,075.76	R 817,927.99	R 894,518.31	R 1,042,498.55	R 947,267.36	R 909,177.15	R 895,010.65	R 974,163.82	R 979,683.32	R 1,201,436.79	R 11,985,671.70
Consumption Charges		R 779,068.73	R 840,956.87	R 659,956.92	R 449,736.34	R 513,178.14	R 646,040.02	R 556,750.94	R 526,137.96	R 514,289.29	R 581,755.98	R 586,058.37	R 799,677.24	R 7,453,606.83
Ancillary Charges		R 355,489.08	R 382,384.02	R 370,118.84	R 368,191.64	R 381,340.17	R 396,458.53	R 390,516.42	R 383,039.19	R 380,721.36	R 392,407.84	R 393,624.95	R 401,759.55	R 4,532,064.88
Consumption Charges as % of Total Charges		68.67%	68.74%	64.07%	54.98%	57.37%	61.97%	58.77%	57.87%	57.46%	59.72%	59.82%	66.56%	61.33%
Ancillary Charges as % of Total Charges		31.33%	31.26%	35.93%	45.02%	42.63%	38.03%	41.23%	42.13%	42.54%	40.28%	40.18%	33.44%	38.67%

Intake Point		LOWER THUKELA SAPPI
Premise ID		6274494579

		Month												Totals / *Averages*
		Jul 19	Aug 19	Sep 19	Oct 19	Nov 19	Dec 19	Jan 20	Feb 20	Mar 20	Apr 20	May 20	Jun 20	
Month Days		31	31	30	31	30	31	31	29	31	30	31	30	
Notified Max Demand		10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	*10,000*
Utilized Capacity		10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	*10,000.00*
CONSUMPTION DETAILS														
HIGH SEASON ENERGY CONSUMPTION OFF PEAK kWH		471,898.28	453,301.56										616,445.34	1,541,645.18
LOW SEASON ENERGY CONSUMPTION OFF PEAK kWH				400,029.00	401,233.79	429,068.45	462,493.92	630,036.78	543,394.38	572,685.78	643,865.82	487,834.80		
HIGH SEASON ENERGY CONSUMPTION STD kWh		380,044.14	294,863.88										440,149.26	1,115,057.28
LOW SEASON ENERGY CONSUMPTION STD kWh				328,827.84	320,613.53	335,266.49	355,058.94	325,189.38	466,893.24	418,723.50	376,124.40	378,449.28		
HIGH SEASON ENERGY CONSUMPTION PEAK kWh		123,536.46	120,459.78										178,684.62	422,680.86
LOW SEASON ENERGY CONSUMPTION PEAK kWh				125,551.92	101,730.60	147,072.00	158,409.96	123,227.88	189,634.50	171,685.98	144,994.68	145,064.82		
ENERGY CONSUMPTION ALL kWh		975,478.88	868,625.22	854,408.76	823,577.92	911,406.94	975,962.82	1,078,454.04	1,199,922.12	1,163,095.26	1,164,984.90	1,011,348.90	1,235,279.22	12,262,544.98
DEMAND CONSUMPTION - OFF PEAK		2,633.02	2,626.70	2,592.67	2,437.70	2,645.42	2,522.76	2,515.01	2,634.72	2,698.75	2,661.44	2,580.40	2,498.76	31,047.35
DEMAND CONSUMPTION - STD		2,787.35	2,616.27	2,613.30	2,404.28	2,608.60	2,521.17	2,500.07	2,670.09	2,723.81	2,652.81	2,585.24	2,512.56	31,195.55
DEMAND CONSUMPTION - PEAK		2,747.91	2,578.52	2,552.42	2,404.75	2,555.44	2,508.73	2,461.14	2,608.12	2,688.40	2,600.57	2,460.15	2,483.04	30,649.19
DEMAND READING - KW/KVA		2,787.35	2,626.70	2,613.30	2,437.70	2,645.42	2,522.76	2,515.01	2,670.09	2,723.81	2,661.44	2,585.24	2,512.56	31,301.38
REACTIVE ENERGY - OFF PEAK		292,829.40	292,093.02	156,781.56	72,567.89	138,077.63	141,473.82	196,523.76	134,215.02	19,059.74	209,371.20	153,777.54	3,331.26	1,810,101.84
REACTIVE ENERGY - STD		222,554.38	199,878.00	125,494.02	59,221.43	108,044.69	108,791.52	101,353.02	123,280.14	21,960.24	120,914.22	120,704.76	2,102.10	1,314,298.52
REACTIVE ENERGY - PEAK		78,630.42	80,183.04	47,838.95	17,830.49	47,257.31	50,007.48	38,377.20	46,386.44	8,665.50	46,419.30	46,492.62	819.42	508,908.17
EXCESS REACTIVE ENERGY		150,240.60	155,463.94	60,424.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	366,129.43
LOAD FACTOR		53.00	49.00	48.00	49.00	49.00	57.00	61.00	64.00	65.00	62.00	57.00	66.00	*56.67*
CHARGES DETAILS														
Administration Charge per day for monthdays	R 91.6700	R 2,760.10	R 3,077.68	R 3,077.68	R 2,879.12	R 3,176.96	R 2,978.40	R 2,841.77	R 3,077.68	R 2,879.12	R 3,077.68	R 2,978.40	R 3,290.03	R 36,094.62
TX Network Capacity Charge /kVA	R 8.9200	R 82,543.33	R 89,200.00	R 89,200.00	R 89,200.00	R 89,200.00	R 89,200.00	R 89,200.00	R 89,200.00	R 89,200.00	R 89,200.00	R 89,200.00	R 89,200.00	R 1,063,743.33
Network Capacity Charge /kVA	R 17.6800	R 88,643.33	R 176,800.00	R 176,800.00	R 176,800.00	R 176,800.00	R 176,800.00	R 176,800.00	R 176,800.00	R 176,800.00	R 176,800.00	R 176,800.00	R 176,800.00	R 2,033,443.33
Network Demand Charge /kVA	R 33.5200	R 86,276.87	R 87,697.71	R 87,598.15	R 80,607.22	R 87,440.27	R 84,509.62	R 83,802.35	R 89,501.75	R 91,302.11	R 88,922.18	R 86,657.68	R 90,025.02	R 1,044,340.93
Ancillary Service Charge /kWh	R 0.0044	R 3,958.40	R 3,821.95	R 3,759.40	R 3,623.74	R 4,010.19	R 4,294.24	R 4,745.20	R 5,279.66	R 5,117.62	R 5,125.93	R 4,449.94	R 5,435.23	R 53,621.49
High Season Off Peak Energy Charge /kWh	R 0.5676	R 246,031.24	R 257,294.22	R 134,329.35	R -	R -	R -	R -	R -	R -	R -	R -	R 141,675.66	R 779,330.47
Low Season Off Peak Energy Charge /kWh	R 0.4914	R -	R -	R 80,278.54	R 197,166.39	R 210,844.02	R 227,269.55	R 309,600.18	R 267,023.81	R 281,417.90	R 316,395.75	R 239,722.12	R 201,172.04	R 2,330,890.30
High Season Peak Energy Charge / kWh	R 3.4504	R 396,065.07	R 415,635.18	R 228,005.86	R -	R -	R -	R -	R -	R -	R -	R -	R 262,270.79	R 1,301,976.90
Low Season Peak Energy Charge / kWh	R 1.1257	R -	R -	R 66,946.50	R 114,518.14	R 165,558.95	R 178,322.09	R 138,717.62	R 213,471.56	R 193,266.91	R 163,220.51	R 163,299.47	R 129,460.57	R 1,526,782.32
High Season Standard Energy Charge /kWh	R 1.0453	R 367,540.74	R 308,221.34	R 203,102.84	R -	R -	R -	R -	R -	R -	R -	R -	R 196,315.10	R 1,075,180.02
Low Season Standard Energy Charge /kWh	R 0.7747	R -	R -	R 104,217.29	R 248,379.30	R 259,730.95	R 275,064.16	R 251,924.21	R 361,702.19	R 324,385.10	R 291,383.57	R 293,184.66	R 218,559.50	R 2,628,530.93
Electrification and Rural Subsidy /kWh	R 0.0858	R 77,205.78	R 74,528.03	R 73,308.29	R 70,662.99	R 78,198.72	R 83,737.63	R 92,531.35	R 102,953.31	R 99,793.55	R 99,955.71	R 86,773.74	R 105,986.94	R 1,045,636.04
High Season Reactive energy Charge /kvarh	R 0.1549	R 21,644.98	R 24,081.37	R 9,359.83	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 55,086.19
Service Charge	R 206.0955	R 6,101.11	R 6,827.44	R 6,827.44	R 6,388.96	R 7,047.68	R 6,607.20	R 6,827.44	R 6,827.44	R 6,386.96	R 6,827.44	R 6,607.20	R 6,182.86	R 79,459.17
Total Charges		R 1,378,770.96	R 1,447,184.92	R 1,266,811.17	R 990,225.86	R 1,082,007.75	R 1,128,782.88	R 1,156,990.13	R 1,315,837.39	R 1,270,549.26	R 1,240,908.77	R 1,149,673.20	R 1,626,373.74	R 14,974,656.87
Consumption Charges		R 1,009,637.05	R 981,150.74	R 816,880.38	R 560,063.83	R 636,133.92	R 680,655.80	R 700,242.02	R 842,197.56	R 799,069.90	R 770,999.84	R 696,206.24	R 1,149,453.66	R 9,642,690.94
Ancillary Charges		R 369,133.91	R 466,034.18	R 449,930.79	R 430,162.04	R 445,873.83	R 448,127.07	R 456,748.11	R 473,639.82	R 471,479.36	R 469,908.94	R 453,466.96	R 476,920.08	R 5,331,965.93
Consumption Charges as % of Total Charges		73.23%	67.80%	64.48%	56.56%	58.79%	60.30%	60.52%	64.00%	62.89%	62.13%	60.56%	70.68%	63.50%
Ancillary Charges as % of Total Charges		26.77%	32.20%	35.52%	43.44%	41.21%	39.70%	39.48%	36.00%	37.11%	37.87%	39.44%	29.32%	36.50%

Intake Point		LOWER THUKELA SAPPI												
Premise ID		6274494579												
		Month												Totals / *Averages*
		Jul 20	Aug 20	Sep 20	Oct 20	Nov 20	Dec 20	Jan 21	Feb 21	Mar 21	Apr 21	May 21	Jun 21	
Month Days		31	31	30	31	30	31	31	28	31	30	31	30	
Notified Max Demand		10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	*10,000*
Utilized Capacity		10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	*10,000.00*
CONSUMPTION DETAILS														
HIGH SEASON ENERGY CONSUMPTION OFF PEAK kWH		522,162.42	465,453.96	299,256.00									616,445.34	1,903,317.72
LOW SEASON ENERGY CONSUMPTION OFF PEAK kWH				199,264.00	488,967.12	450,462.00	502,710.06	552,061.74	537,221.82	491,511.72	630,669.78	563,089.08		
HIGH SEASON ENERGY CONSUMPTION STD kWh		358,734.06	361,772.16	201,464.00									440,149.26	1,362,119.48
LOW SEASON ENERGY CONSUMPTION STD kWh				162,170.00	376,971.50	378,171.00	367,963.80	383,011.62	406,246.08	382,562.88	342,252.24	442,442.16		
HIGH SEASON ENERGY CONSUMPTION PEAK kWh		136,758.84	135,740.16	80,114.00									178,684.62	531,297.62
LOW SEASON ENERGY CONSUMPTION PEAK kWh				58,943.00	157,374.96	142,129.50	130,767.18	167,731.26	179,716.92	148,848.84	144,908.46	171,279.72		
ENERGY CONSUMPTION ALL kWh		1,017,655.32	962,966.28	1,001,211.00	1,023,313.58	970,762.50	1,001,441.04	1,102,804.62	1,123,184.82	1,022,923.44	1,117,830.48	1,176,810.96	1,235,279.22	12,756,183.26
DEMAND CONSUMPTION - OFF PEAK		2,583.99	2,599.73	2,555.58	2,362.44	2,476.10	2,378.76	2,453.28	2,341.44	2,462.64	2,456.64	2,523.72	2,498.76	29,693.08
DEMAND CONSUMPTION - STD		2,576.71	2,597.36	2,589.34	2,403.63	2,461.33	2,357.88	2,424.24	2,346.96	2,493.96	2,452.68	2,509.80	2,512.56	29,726.45
DEMAND CONSUMPTION - PEAK		2,566.80	2,580.64	2,559.58	2,426.36	2,459.75	2,376.12	2,416.68	2,329.80	2,469.39	2,411.28	2,499.48	2,483.04	29,578.92
DEMAND READING - KW/KVA		2,583.99	2,597.36	2,589.34	2,426.36	2,476.10	2,378.76	2,424.24	2,346.96	2,493.96	2,456.68	2,523.72	2,512.56	29,810.03
REACTIVE ENERGY - OFF PEAK		105,418.74	146,184.60	102,606.62	1,970.34	110,488.04	3,230.28	3,067.14	908.58	1,314.42	2,476.32	2,815.02	3,331.26	483,811.36
REACTIVE ENERGY - STD		60,747.00	116,857.74	70,941.78	4,567.36	92,555.94	2,891.76	1,743.66	908.16	1,481.52	1,711.14	2,627.10	2,102.10	359,135.26
REACTIVE ENERGY - PEAK		23,177.70	43,607.58	27,108.66	1,037.22	34,166.76	1,062.00	486.60	203.64	429.48	790.08	777.78	819.42	133,666.92
EXCESS REACTIVE ENERGY		25,882.30	26,207.51	27,133.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79,222.95
LOAD FACTOR		57.00	52.00	57.00	60.00	55.00	58.00	60.00	64.00	61.00	61.00	64.00	66.00	*59.58*
CHARGES DETAILS														
Administration Charge per day for monthdays	R 106.1300	R 3,067.50	R 3,290.03	R 3,290.03	R 3,183.90	R 3,290.03	R 3,183.90	R 3,290.03	R 3,290.03	R 2,971.64	R 3,290.03	R 3,183.90	R 3,290.03	R 38,621.05
TX Network Capacity Charge /kVA	R 9.5400	R 91,886.67	R 95,400.00	R 95,400.00	R 95,400.00	R 95,400.00	R 95,400.00	R 95,400.00	R 95,400.00	R 95,400.00	R 95,400.00	R 95,400.00	R 95,400.00	R 1,141,286.67
Network Capacity Charge /kVA	R 18.9000	R 182,085.67	R 189,000.00	R 189,000.00	R 189,000.00	R 189,000.00	R 189,000.00	R 189,000.00	R 189,000.00	R 189,000.00	R 189,000.00	R 189,000.00	R 189,000.00	R 2,261,085.67
Network Demand Charge /kVA	R 35.8300	R 88,950.95	R 93,063.41	R 92,776.05	R 86,936.48	R 88,189.81	R 85,230.97	R 86,860.52	R 84,091.58	R 89,358.59	R 87,879.52	R 90,424.89	R 90,025.02	R 1,063,787.79
Ancillary Service Charge /kWh	R 0.0047	R 4,610.76	R 4,525.94	R 4,705.69	R 4,809.58	R 4,562.59	R 4,706.77	R 5,183.18	R 5,278.97	R 4,807.74	R 5,253.80	R 5,531.01	R 5,805.81	R 59,781.84
High Season Off Peak Energy Charge /kWh	R 0.6068	R 304,999.31	R 282,437.49	R 181,588.54	R -	R -	R -	R -	R -	R -	R -	R -	R 141,675.66	R 910,701.00
Low Season Off Peak Energy Charge /kWh	R 0.5253	R -	R -	R 104,673.38	R 256,854.37	R 236,627.69	R 264,073.56	R 289,998.17	R 282,202.72	R 258,191.25	R 331,290.95	R 295,790.65	R 201,172.04	R 2,520,874.78
High Season Peak Energy Charge / kWh	R 3.6885	R 485,662.10	R 500,676.99	R 295,500.49	R -	R -	R -	R -	R -	R -	R -	R -	R 262,270.79	R 1,544,110.37
Low Season Peak Energy Charge / kWh	R 1.2034	R -	R -	R 70,932.01	R 189,385.03	R 171,038.64	R 157,365.22	R 201,847.80	R 216,271.34	R 179,124.69	R 174,382.84	R 206,118.02	R 129,460.57	R 1,695,926.16
High Season Standard Energy Charge /kWh	R 1.1174	R 386,937.82	R 404,244.03	R 225,115.87	R -	R -	R -	R -	R -	R -	R -	R -	R 196,315.10	R 1,212,612.83
Low Season Standard Energy Charge /kWh	R 0.8282	R -	R -	R 134,309.19	R 312,207.80	R 313,201.22	R 304,747.62	R 317,210.22	R 336,453.00	R 316,838.58	R 283,453.31	R 366,430.60	R 218,559.50	R 2,903,411.04
Electrification and Rural Subsidy /kWh	R 0.0917	R 89,932.04	R 88,303.98	R 91,811.05	R 93,837.89	R 89,018.97	R 91,832.14	R 101,127.22	R 102,996.06	R 93,802.04	R 102,505.01	R 107,913.57	R 113,275.08	R 1,166,355.06
High Season Reactive energy Charge /kvarh	R 0.1656	R 4,247.30	R 4,340.04	R 4,493.22	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 13,080.57
Service Charge	R 264.2880	R 6,804.80	R 7,928.64	R 7,928.64	R 7,063.20	R 7,928.64	R 7,063.20	R 7,298.64	R 7,298.64	R 6,592.32	R 7,928.64	R 7,063.20	R 7,928.64	R 88,827.20
Total Charges		R 1,649,184.93	R 1,673,210.56	R 1,501,524.17	R 1,238,678.24	R 1,198,257.59	R 1,202,603.38	R 1,297,215.78	R 1,322,282.33	R 1,236,086.85	R 1,280,384.09	R 1,366,855.83	R 1,654,178.24	R 16,531,634.81
Consumption Charges		R 1,177,599.23	R 1,187,358.51	R 1,012,119.48	R 758,447.19	R 720,867.55	R 726,186.41	R 809,056.19	R 834,927.06	R 754,154.52	R 789,127.10	R 868,339.26	R 1,149,453.66	R 10,787,636.17
Ancillary Charges		R 471,585.70	R 485,852.05	R 489,404.69	R 480,231.05	R 477,390.04	R 476,416.97	R 488,159.59	R 487,355.27	R 481,932.32	R 491,256.99	R 498,516.57	R 504,724.58	R 5,743,998.64
Consumption Charges as % of Total Charges		71.40%	70.96%	67.41%	61.23%	60.16%	60.38%	62.37%	63.14%	61.01%	61.63%	63.53%	69.49%	64.39%
Ancillary Charges as % of Total Charges		28.60%	29.04%	32.59%	38.77%	39.84%	39.62%	37.63%	36.86%	38.99%	38.37%	36.47%	30.51%	35.61%

ANNEXURE 2

Electricity Tariff Book 2021/2022

The Executive committee of the Mandeni Municipality, acting under the authority of section 75 of the Municipal Systems Act (No. 32 of 2000) hereby published the subjoined tariffs of charges as made by the municipality of the said Municipality for 2021/22

Mr S G Khuzwayo
Municipal Manager

MANDENI
MUNICIPALITY

TARIFFS OF CHARGES

All tariffs shown hereunder are net, and any taxes, such as Value Added Tax will be added on.
Unless otherwise indicated, these tariffs shall apply to all areas in Mandeni

		2020/2021	2021/2022
1	**ADVERTISING**	**1.06**	**1.05**
	Licence fees for advertising signs		
(a)	Temporary signs General advertisement of events, meetings		
	(i) 0 - 20 or part thereof per poster ……..……R	**46.59**	**48.92**
	(ii) 30 - 50 or part thereof per poster……...……..R	**23.30**	**24.46**
	(iii) Banners (per banner)……..……...……..R	**355.10**	**372.86**
	(iv) Advertisement Trailer……..……...……..R	**355.10**	**372.86**
	Refundable deposit is 50% of the advertisement fee……..R		
(b)	Signs other than temporary signs:		
	(i) For each sign, or each block of signs Regulation18(6) for 12 months..R	**396.03**	**415.84**
	(ii) For each sign, or each block of signs Regulation 18(6) for 6 months….R	**230.63**	**242.16**
2	**BUILDING PLAN TARIFFS**		
2.1.	Every application for the approval of any building plan shall be accompanied by the following fees:		
	(a) New buildings - first 20 square meters of floor space……..…….R	**442.89**	**465.04**
	Every m^2 thereafter... ……..……..R	**8.19**	**8.60**
	(b) Industrial Buidlings - first 300 square meters of floor space…..…….R	**664.34**	**697.56**
	Every m^2 thereafter……...R	**8.19**	**8.60**
	(c) Minor works in terms of the National Building Regulations Or other work not listed ..……..R	**221.45**	**232.52**
	(d) Alterations and additions, per square meter of additional Floor space…….…….. ……..…….R	**7.75**	**8.14**
	With a minimum fee where there is no increasing floor area…….R	**221.45**	**232.52**
	(e) Amended plans with no increase in floor area……..……...R	**221.45**	**232.52**
	(f) Plans which have lapsed and are resubmitted without alteration	**25% of original fees**	**25% of original fees**
	(g) Swimming pools, (additional to other building fees)……..R	**221.45**	**232.52**
	(h) Boundary walls or retaining walls over one meter high (additional to other building plan fees)……R	**221.45**	**232.52**
	(i) Pre-scrutiny of plans for comment……..R		
	(j) Sidewalk deposit (Verge fees)……..R	**664.34**	**697.56**
2.2.	**TOWNSHIP LAYOUT PLANS**		
2.2.1	**A4**		
	Media - Full Colour		
	Paper	**27.90**	**29.30**
	Film	**34.99**	**36.74**
	Media - Line Map		
	Paper	**11.74**	**12.32**
	Film	**16.39**	**17.21**
2.2.2	**A3**		
	Media - Full Colour		
	Paper	**46.50**	**48.83**
	Film	**58.24**	**61.15**
	Media - Line Map		
	Paper	**23.25**	**24.41**
	Film	**30.34**	**31.86**

2.2.3	**A2**			
	Media - Full Colour			
	Paper		**93.01**	**97.66**
	Film		**104.74**	**109.98**
	Media - Line Map			
	Paper		**58.24**	**61.15**
	Film		**69.76**	**73.24**
2.2.4	**A1**			
	Media - Full Colour			
	Paper		**104.74**	**109.98**
	Film		**139.51**	**146.49**
	Media - Line Map			
	Paper		**93.01**	**97.66**
	Film		**104.74**	**109.98**
2.2.5	**A0**			
	Media - Full Colour			
	Paper		**209.27**	**219.73**
	Film		**232.52**	**244.14**
	Media - Line Map			
	Paper		**116.26**	**122.07**
	Film		**128.00**	**134.40**
3	**ELECTRICITY SUPPLY TARIFFS**		**1.06**	**1.15**
3.1	**Domestic Consumers ,churches and old age homes**		**1.7267**	**1.9786**
			1.7429	**1.9972**
			1.7588	**2.0154**
3.1.1	Consumption charge	**c/Kwh**	**c/Kwh**	
	Inclining Block Tariff in c/kWh			
	0 - 50		**0.9960**	**1.1413**
	51 - 350		**1.3593**	**1.5576**
	351 - 600		**1.4908**	**1.7083**
	> 600		**2.0249**	**2.3203**
3.1.2	Domestic high			
	Monthly service charge(which excludes any kilowatt hour of electricity consumed			
	For a single-phase connection per month		**250.97**	**287.59**
	For a three-phase connection per month		**387.94**	**444.54**
	Indigent user		Nil	**Nil**
3.2.	**Businesses, clubs, boarding houses, hotels, schools and hostels, Government/Provincial**			
3.2.1.	Monthly service charge(which charge excludes any kilowatt hour of electricity consumed			
	For a single-phase connection per month		**387.94**	**444.54**
	For a three-phase connection per month		**1,070.92**	**1,227.16**
3.2.2.	Consumption Charge	**/Kwh**	**/Kwh**	
	Irrespective of kwh used		**1.82**	**2.08**
3.2.3	Commercial Prepaid			
	For single -phase connection per month		**2.32**	**2.66**
3.3.	**Large Consumers**			
3.3.1.	Monthly service charge (which charge excluded any kilowatt hour of electricity consumed)		**1,279.98**	**1,466.73**
3.3.2.	Consumption charge for KVA		**286.19**	**327.95**
3.3.3.	Consumption charges	**/Kwh**	**/Kwh**	
	Irrespective of kwh used		**0.44**	**0.51**
3.4.	**Bulk supply at 11 000 V**			
3.4.1.	Monthly supply at 11 000 V			
	Monthly service charge (which charge excludes any kilowatt)		**1,355.57**	**1,553.35**
	Where 50 KVA or more is installed		**286.02**	**327.76**
3.4.2.	Consumption charge	**/Kwh**	**/Kwh**	
	Irrespective of kwh used		**0.88**	**1.00**
3.5.	**Testing Fee**			
3.5.1	Special fee for testing installation at consumers request, including Compliance tests		**1,575.23**	**1,805.05**
3.5.2	Meter test			
	Single phase conventional meter		**827.00**	**947.66**
	400V Three phase conventional meter		**1,791.83**	**2,053.25**
	11 kv meter		Cost + 10%	Cost + 10%
	Special Provision for Electricity		Cost + 10%	Cost + 10%
3.5.3	Inspection fee: after failure upon first test		**393.80**	**451.25**
3.5.4	Fee for checking meter reading			
	(which fee will be refunded should the reading be found to be incorrect)		**196.89**	**225.62**
3.6	**Disconnection Charge**			
	Final notice of demand			
3.6.1	Properties within the municipal boundaries		**393.80**	**451.25**
3.6.2	Properties outside the municipal boundaries(plus R2.00/km)		**393.80**	**451.25**
3.7	**Reconnection Charge (penalties for services that may be disconnected if not paid on due date)**			
	Properties within municipality			
3.7.1	For non-payment of account		**467.64**	**535.87**
3.7.2	For other reasons, per each occasion		**467.64**	**535.87**
	Properties outside municipal boundary		**0.00**	**0.00**
3.7.3	For non-payment of account		**467.64**	**535.87**
3.7.4	For other reasons, per each occasion (plus R2.00/km)		**467.64**	**535.87**
3.7.5	Connection charge – after office hours		**935.29**	**1,071.75**

3.8 Disconnection		
Where disconnection is performed by a private contractor at the request of the Chief Financial Officer	**728.84**	**835.17**

3.9	**Connection Charge**		
3.9.1	**60 A single-phase**		
	From the nearest point of supply not exceeding 40 m to the boundary of the property requiring connection	**4,494.49**	**5,150.24**
3.9.2	**60 A Three-phase**		
	From the nearest point of supply not exceeding 40 m to the boundary of the property requiring connection	**16,277.35**	**18,652.22**
3.9.3	In addition to the charges prescribed in sub-paragraphs 1 and 2 hereof, there shall be paid a charge representing the cost of material and labour plus 10% of such cost in respect of the connection from the boundary of the property requiring connection to the meter on the said property and in the event of the distance from the nearest point of supply to such boundary exceeding 40m in respect of such additional distance		
3.9.4	In the above, costs include the cost of the meter equipment and cables and service apparatus, all of which shall remain the property of the Council		
3.9.5	When overhead service connection to any property has to be reconstructed as to comply with the Machinery Occupational Safety Act a fee shall be paid in advance	**364.42**	**417.59**
3.10.	**Connection fees for the supply of Electricity to Building Contractors**		
3.10. 1	**Connections other than 3 phase**		
	Connection fees (including disconnection)	**4,240.09**	**4,858.72**
	Minimum monthly charge	**345.40**	**395.79**
	Plus all kilowatt hours consumed at Maximum period of supply 6 months	**R0.75/ kwh**	**R0.75/ kwh**
3.10. 2	**3 phase connections**		
	Connection fees (including disconnection)	**15,355.99**	**17,596.43**
	Minimum monthly charge	**953.45**	**1,092.55**
	Plus all kilowatt hours consumed at Maximum period of supply 6 months	**R0.75/ kwh**	**R0.75/ kwh**
3.11	**Supply of electricity to Signboards**		
	Irrespective of kwh used per month	**534.48**	**612.46**
3.12	**Availability charge**		
	An availability charge is payable in respect of all properties, which can be yet or not served by the electricity reticulation network	**Nil**	**Nil**
3.13	**Tampering fee**	**4,227.25**	**4,844.01**
3.14	**Special Meter reading (on request)**	**777.43**	**890.85**
3.15	**Certificate of Compliance – revisit fee**	**874.60**	**1,002.21**
3.16	**Inspection of Installation (on request)**	**1,700.62**	**1,948.74**
3.17	**DEPOSITS**		
	Deposits referred to in bylaw 7(1) of the bylaws, are calculated at three times the estimated monthly consumption of electricity, or at the Municipality's discretion, but shall be at least the following:		
	Domestic consumer……R	**5,867.14**	**6,723.15**
	Small Scale consumer ……R	**5,867.14**	**6,723.15**
	Bulk consumer……R	**13,494.66**	**15,463.54**
4	**HIRE OF PLANT AND EQUIPMENT**		
	Digger / loader per hour……R	**505.47**	**530.75**
	Subject to the conditions as laid down by the Council from time to time.		
	All charges are for the period stated or part thereof.		
5	**HIRE OF PUBLIC HALLS**		
	TUGELA,MANQAKAZI,ISITHEBE,MACAMBINI,HLOMENDLINI		
A.	For meetings and other functions where promotion of culture is involved, or other functions approved by the Council:	**1,447.75**	**1,520.13**
	(i) TUGELA,MANQAKAZI,ISITHEBE,MACAMBINI HALL MEETING ROOMS		
	(a) Conducted for personal gain (per session)……..R	**107.16**	**112.52**
	(b) Not conducted for personal gain (per session)……..R	**43.56**	**45.74**
	A session will be: Morning 09h00 - 13h30; Afternoon 14h30 - 18h30; Evening 19h30 - 24h00		
B.	**(i) HIRE OF SUNDUMBILI HALL (INCLUDING KITCHEN)**		
	The hours of use for the above will be 07h00-24h00 (or part thereof) and a session will be three hours or part thereof.		
	Per function:		
		Per Hour	**Per Hour**
	For personal gain.....R	**753.20**	**790.86**
	Wedding Events ……R	**451.92**	**474.51**
	Cultural, Contest, Religious.....R	**301.28**	**316.34**
	Political and public meetings ……R	**301.28**	**316.34**

ANNEXURE 3

NERSA Distribution Forms

National Energy Regulator of South Africa

Electricity Distribution Form
Financial Information
Introduction

Completed form to be returned to NERSA no later than:	**31 Oct 19**
Financial year reporting on:	**Financial year ending 30 June 2019**
Full name of Licensee	**Type here**
Licence number	**Type here**
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulatory Reporting Specialist) dforms@nersa.org.za (012) 401-4600
Completed D-Forms may be returned to one of the following addresses:	Email : dforms@nersa.org.za Post: P O Box 40343, Arcadia, 0007 Fax: (012) 401-4700
D-Forms are available: 1. On the NERSA website: 2. In the following formats	www.nersa.org.za Excel Documents

	Licensee Contact Person					
	Title (Ms/ Mr)	**Initials**	**Last Name**	**Telephone number**	**Fax number**	**Email address**
Example	**Ms**	**L**	**Mkhize**	**0124014710**	**0124014700**	dforms@nersa.org.za
Municipal Manager:	**MR**	**S G**	**KHUZWAYO**	**032456**	**0324562504**	sizwe.khuzwayo@mandeni.gov.za
Chief Financial Officer:	**ms**	**N**	**Mngomezulu**	**0324568224**	**0324562504**	nozipho.mngomezulu@mandeni.gov.za
Contact Person:	**Mr**	**S H**	**MAKHOBA**	**0324568205**	**0324562504**	senzo.makhoba@mandeni.gov.za

	Verification of the entire document and authorization by Senior Management							
	Income Statement		**Expenditure Statement**		**Purchases of Electricity**	**Sales of Electricity**		
	Total Revenue Derived From Electricity Distribution	**Revenue From Sale of Electricity**	**Total Expenditure**	**Energy Purchases**	**Total Energy Purchased**	**Total Energy Sales**	**Total Number of Consumers**	**Please include hand signature and the date below by Senior Management as an authorization that these numbers are correct and can be released to NERSA for processing.**
Municipal Manager:	28,344,584	28,290,355	23,139,190	20,441,858	20,441,858 kWh	18,845,699 kWh	1,028	**Sign here and include the date:**
Chief Financial Officer:	28,344,584	28,290,355	23,139,190	20,441,858	20,441,858 kWh	18,845,699 kWh	1,028	**Sign here and include the date:**

Summary			
Revenue from sale of electricity over total revenue derived from electricity distribution %	Cost of energy purchases over total expenditure %	Energy losses %	Repairs and maintenance over revenue from sales of electricity %
100%	88%	7.81%	10%

Electricity Distribution Form

Financial Information
(D1 Form: Balance Sheet)

Completed form to be returned to NERSA no later than:	**31 Oct 19**
Financial year reporting on:	**Financial year ending 30 June 2019**
Full name of Licensee	**Type here**
Licence number	**Type here**
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulatory Reporting Specialist) dforms@nersa.org.za (012) 401-4600
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D-Forms are available:	
1. On the NERSA website:	www.nersa.org.za
2. In the following formats	Excel Documents

	Licensee Contact Person					
	Title (Ms/ Mr)	**Initials**	**Last Name**	**Telephone number**	**Fax number**	**Email address**
Example	**MS**	**L**	**Mkhize**	**0124014710**	**0124014700**	dforms@nersa.org.za
Contact Person:	**MR**	**S H**	**MAKHOBA**	**0324568205**	**0324562504**	senzo.makhoba@mandeni.gov.za

All information requested relates to a RING-FENCED ELECTRICITY DISTRIBUTION ACTIVITY. RING-FENCED means that separate accounts are kept for the electricity distribution activity. This should ensure that the revenues, costs, assets, liabilities, reserves and provisions are separately identifiable from those of any other business in the books of account of the licensee. The information required is based on the financial accounts for the financial year ending 30 June 2019 and the budget figures for the financial year ending 30 June 2019.

Please note: Balance sheet does not balance

Please Complete the following:

Capital Employed		**Actual 2018/19**
Funds & reserves		**0**
Statutory funds	**Type here**	
Reserves	**Type here**	
(Accumulated deficit) Retained surplus		**Type here**
Trust funds		**Type here**
Long-term liabilities		**Type here**
Consumer deposits		**442,043**
Total		**442,043**

442,043

Employment of Capital - Electricity Distribution Account			**Actual 2018/19**
Fixed assets			**0**
Buildings & other fixed assets		**Type here**	
Electricity distribution network and equipment		**Type here**	
Other (please specify below):			**0**
Type here		**Type here**	
Type here		**Type here**	
Type here		**Type here**	
Investments			**Type here**
Long-term debtors			**Type here**
Deferred charges			**Type here**
Total			**0**

NET CURRENT ASSETS / LIABILITIES	**0**

Current Assets		**Actual 2018/19**
Inventory		**Type here**
Debtors (a) + (b)		**0**
Less than 90 days (a)	**Type here**	
90 days or more (b)	**Type here**	
Cash		**Type here**
Short-term investments		**Type here**
Short-term portion of long-term debtors		**Type here**
Total		**0**

Current Liabilities	**Actual 2018/19**
Provisions	**Type here**
Creditors: Eskom	**Type here**
Creditors: Other	**Type here**
Short-term portion of long-term liabilities	**Type here**
Bank overdraft	**Type here**
Total	**0**

0

Electricity Distribution Form

Financial Information
(D1 Form: Income Statement)

Completed form to be returned to NERSA no later than:	**31 Oct 19**
Financial year reporting on:	**Financial year ending 30 June 2019**
Full name of Licensee	Type here
Licence number	Type here
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulatory Reporting Specialist) dforms@nersa.org.za (012) 401-4600
Completed D-Forms may be returned to one of the following addresses:	Email : **dforms@nersa.org.za** Post: P O Box 40343, Arcadia, 0007 Fax: (012) 401-4700
D-Forms are available: 1. On the NERSA website: 2. In the following formats	www.nersa.org.za Excel Documents

	Licensee Contact Person					
	Title (Ms/ Mr)	Initials	Last Name	Telephone number	Fax number	Email address
Example	Ms	L	Mkhize	0124014710	0124014700	dforms@nersa.org.za
Contact Person:	mr	S H	MAKHOBA	0324568205	0324562504	senzo.makhoba@mandeni.gov.za

All information requested relates to a RING-FENCED ELECTRICITY DISTRIBUTION ACTIVITY. RING-FENCED means that separate accounts are kept for the electricity distribution activity.

Please complete the following:

Your check list	Actual 2018/19	Budget 2019/20
Revenue section	**Completed**	**Not completed**
Expenditure section	**Completed**	**Not completed**

REVENUE:

Revenue from sale of electricity to the following consumers:	Actual 2018/19	Budget 2019/20
Domestic (pre-paid)	5,192,638	Type here
Domestic (conventional)	7,564,980	Type here
Agriculture	Type here	Type here
Mining & quarrying	Type here	Type here
Manufacturing / Industrial	Type here	Type here
Commercial (pre-paid)	Type here	Type here
Commercial (conventional)	Type here	Type here
Transport	Type here	Type here
Redistributors/Resellers	Type here	Type here
Other consumers (please specify below)	15,401,696	0
1. UMGENI WATER	15,401,696	Type here
2.	Type here	Type here
3.	Type here	Type here
4.	Type here	Type here
Total	28,159,315	0

Revenue from street lighting & sold to other municipal departments	Actual 2018/19	Budget 2019/20
Street lighting	131,040	Type here
Sold to other municipal departments	Type here	Type here
Total	131,040	0

Other Income	Actual 2018/19	Budget 2019/20
Reconnection fees	Type here	Type here
New connections	54,229	Type here
Free Basic Electricity(Equitable share)	Type here	Type here
Other revenue (Please specify below)	0	0
1.	Type here	Type here
2.	Type here	Type here
3.	Type here	Type here
4.	Type here	Type here
5.	Type here	Type here
6	Type here	Type here
Other Income	54,229	0

Summary Stats (for office use)	Actual 2018/19	Budget 2019/20
Total Income	28,344,584	-
Surplus	5,205,394	-

EXPENSES:

Electricity Purchases from:	Actual 2018/19	Budget 2019/20
Eskom	20,441,858.22	Type here
Independent Power Producers Conventional	Type here	Type here
Independent Power Producers Renewable Energy	Type here	Type here
Self Generation	Type here	Type here
Other	Type here	Type here
Total	20,441,858.22	0

Repairs, Maintenance and Salaries	Actual 2018/19	Budget 2019/20
Repairs and Maintenance:	2,688,452	0
1. Salaries and allowances	2,606,052	Type here
2. Materials and supplies	82,400	Type here
3. Contracted Services		Type here
Salaries, wages and allowances including payments to consultants		
1. Salaries, wages and allowances (Excl. Repairs and Maintenance)	Type here	Type here
2. Payments to consultants (operational work)	Type here	Type here
Total	2,688,452	0

Financial Costs	Actual 2018/19	Budget 2019/20
Interest	8,879.89	Type here
Total	8,879.89	0

Notified Maximum Demand Costs	Actual 2018/19	Budget 2019/20
NMD Costs	Type here	Type here
Total	0	0

Other Expenses	Actual 2018/19	Budget 2019/20
Bad debts	Type here	Type here
FBE paid to Eskom	Type here	Type here
Charges from other Municipal Departments	Type here	Type here
General Expenses (please specify below) (Group into 6-main categories)	0	0
1.	Type here	Type here
2.	Type here	Type here
3.	Type here	Type here
4.	Type here	Type here
5.	Type here	Type here
6.	Type here	Type here
Total	0	0

	Actual 2018/19	Budget 2019/20
Total Expenditure	23,139,190	-

Electricity Distribution Form

Market Information
(D2 Form: Market)

Completed form to be returned to NERSA no later than:	**31 Oct 19**
Financial year reporting on:	**Financial year ending 30 June 2019**
Full name of Licensee	**Type here**
Licence number	**Type here**
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulatc dforms@nersa.org.za (012) 401-4600
Completed D-Forms may be returned to one of the following addresses:	Email : **dforms@nersa.org.za** Post: P O Box 40343, Arcadia, 0007 Fax: (012) 401-4700
D-Forms are available:	
1. On the NERSA website:	www.nersa.org.za
2. In the following formats	Excel Documents

	Licensee Contact Person					
	Title (Ms/ Mr)	**Initials**	**Last Name**	**Telephone number**	**Fax number**	**Email address**
Example	**Ms**	**L**	**Mkhize**	**0124014710**	**0124014700**	dforms@nersa.org.za
Contact Person:	**MR**	**S H**	**MAKHOBA**	**0324568205**	**0324562504**	**senzo.makhoba@mandeni.gov.za**

All information requested relates to a RING-FENCED ELECTRICITY DISTRIBUTION ACTIVITY. RING-FENCED means that separate accounts are kept for the electricity distribution activity.

The kWh losses are calculated as follows:

$$\frac{kWh\ Purchased\ and\ Generated - kWh\ Sold}{kWh\ Purchased\ and\ Generated} \times 100\%$$

The average system load factor is calculated as follows:

$$\frac{kWh\ Purchased and Generated in the Month}{Monthly Maximum Demand in kWh \times Number of\ hours in the month} \times 100\%$$

The system power factor is calculated as follows:

$$\frac{\text{True Power (P)}}{\text{Apparent Power (S)}}$$

Please complete the following:

	Peak monthly maximum demand		Energy purchased by the licensee		Average Demand Charge		Average Energy Charge	
	Actual 2018/19	**Budget 2019/20**	**Actual 2018/19**	**Budget 2019/20**	**Actual 2018/19**	**Budget 2019/20**	**Actual 2018/19**	**Budget 2019/20**
Eskom	Type here	Type here	20,441,858.22 -	Type here	Type here R/kVA/month	Type here R/kVA/month	100.00 c/kW	c/kWh
Independent Power Producers Conventional	Type here	Type here	Type here	Type here	Type here R/kVA/month	Type here R/kVA/month	c/kW	c/kWh
Independent Power Producers Renewable Energy	Type here	Type here	Type here	Type here	Type here R/kVA/month	Type here R/kVA/month	c/kW	c/kWh
Self Generation	Type here	Type here	Type here	Type here	Type here R/kVA/month	Type here R/kVA/month	c/kW	c/kWh
Other	Type here	Type here	Type here	Type here	Type here R/kVA/month	Type here R/kVA/month	c/kW	c/kWh
Total	-	-	20,441,858 kWh	- kWh	- R/kVA/month	- R/kVA/month	100 c/kW	c/kWh

Electricity sold by the licensee to consumers

	Number of consumers			Sales (kWh)			Average Energy Charge (c/kWh)		Licensee check list	
Consumer classification	**Actual 2018/19**	**Budget 2019/20**	**Estimate 2020/21**	**Actual 2018/19**	**Budget 2019/20**	**Estimate 2020/21**	**Actual 2018/19**	**Budget 2019/20**	**Actual 2018/19**	**Budget 2019/20**
Free Basic Electricity	Type here	Type here	Type here	Type here	Type here	Type here kWh				
Domestic (pre-paid)	662	Type here	Type here	3,637,913.00	Type here	Type here kWh	142.74			
Domestic (conventional)	315	Type here	Type here	4,123,980.00	Type here	Type here kWh	183.44			
Agriculture	Type here	Type here	Type here	Type here	Type here	Type here kWh				
Mining & quarrying	Type here	Type here	Type here	Type here	Type here	Type here kWh				
Manufacturing / Industrial	Type here	Type here	Type here	Type here	Type here	Type here kWh				
Commercial (pre-paid)	Type here	Type here	Type here	Type here	Type here	Type here kWh			Complete Actual Sales kWh	
Commercial (conventional)	50	Type here	Type here	Type here	Type here	Type here kWh			Complete Actual Sales kWh	
Transport	Type here	Type here	Type here	Type here	Type here	Type here kWh				
Other consumers	1	Type here	Type here	10,952,766	Type here	Type here kWh	140.62			
Redistributors/Resellers	Type here	Type here	Type here	Type here	Type here	Type here kWh				
Electricity Department	Type here	Type here	Type here	Type here	Type here	Type here kWh				
Street lighting				131,040	Type here	Type here kWh	100.00			
Sold to other municipal departments	Type here	Type here	Type here	Type here	Type here	Type here kWh				
Total	1,028	-	-	18,845,699 kWh	- kWh	- kWh	150.12			

System factors	**Actual 2018/19**	**Budget 2019/20**
Average system load factor	61	Type here
Average system power factor	Type here	Type here
Energy losses kWh	7.81%	

Electricity Distribution Form

Human Resources Information
(D3 Form: HR)

Completed form to be returned to NERSA no later than:	**31 Oct 19**
Financial year reporting on:	**Financial year ending 30 June 2019**
Full name of Licensee	**Type here**
Licence number	**Type here**
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulatory Reporting Specialist) dforms@nersa.org.za (012) 401-4600
Completed D-Forms may be returned to one of the following addresses:	Email : **dforms@nersa.org.za** Post: P O Box 40343, Arcadia, 0007 Fax: (012) 401-4700
D-Forms are available: 1. On the NERSA website: 2. In the following formats	www.nersa.org.za Excel Documents

	Licensee Contact Person					
	Title (Ms/ Mr)	**Initials**	**Last Name**	**Telephone number**	**Fax number**	**Email address**
Example	**Ms**	**L**	**Mkhize**	**0124014710**	**0124014700**	dforms@nersa.org.za
Contact Person:	**MR**	**S H**	**MAKHOBA**	**0324568205**	**0324562504**	**senzo.makhoba@mandeni.gov.za**

All information requested relates to a RING-FENCED ELECTRICITY DISTRIBUTION ACTIVITY. RING-FENCED means that separate accounts are kept for the electricity distribution activity. **Only include information of personnel who are working in the Electricity Department e.g. (Electricity Technicians)**.

Please complete the following:

	ACTUAL 2018/19	
Level	**Number of Technical Staff**	**Number of Non-Technical Staff**
Management	**1**	**Type here**
Skilled Labour	**2**	**Type here**
Unskilled Labour	**2**	**Type here**
Trainees	**1**	**Type here**
Total staff	6	-
Vacancies	**Type here**	**Type here**

Grand total	**6**

Electricity Distribution Form

Tariff Information
(D6 Form: Tariffs)

Completed form to be returned to NERSA no later than:	**31 Oct 19**
Financial year reporting on:	**Financial year ending 30 June 2019**
Full name of Licensee	**Type here**
Licence number	**Type here**
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulatory Reporting Specialist) dforms@nersa.org.za (012) 401-4600
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D-Forms are available:	
1. On the NERSA website:	www.nersa.org.za
2. In the following formats	Excel Documents

	Licensee Contact Person					
	Title (Ms/ Mr)	Initials	Last Name	Telephone number	Fax number	Email address
Example	**Ms**	**L**	**Mkhize**	**0124014710**	**0124014700**	dforms@nersa.org.za
Contact Person:	**MR**	**S**	**MAKHOBA**	**0324568205**	**0324562504**	**senzo.makhoba@mandeni.gov.za**

All information requested relates to a RING-FENCED ELECTRICITY DISTRIBUTION ACTIVITY. RING-FENCED means that separate accounts are kept for the electricity distribution activity.

Please complete the following:

Click on a cell for code

Tariff Name	Tariff Number	SIC (code)	Load profile (code)	Tariff structure (code)	Number of consumers	Energy Sales	Revenue derived from energy charges	Revenue derived from demand charges	Revenue derived from fixed charge	Revenue	Extra municipal surcharge
residential	771	0	1	5.1	315	4,123,980 kWh	7,564,980	Type here	Type here	7,564,980	Type here %
business	business	6	5	5.1	35	Type here kWh	Type here	Type here	Type here	0	Type here %
business	kva	6	5	5.1	5	Type here kWh	Type here	Type here	Type here	0	Type here %
business	733	6	5	5.1	1	Type here kWh	Type here	Type here	Type here	0	Type here %
business	799	6	5	5.1	1	Type here kWh	Type here	Type here	Type here	0	Type here %
business	778	6	5	5.1	5	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Umgeni	Industrial	10	6	5.1	1	10,952,766 kWh	15,401,696	Type here	Type here	15,401,696	Type here %
Prepaid	771	Type here	Type here	Type here	662	3,637,913 kWh	5,192,638	Type here	Type here	5,192,638	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here		Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Total					**1,025**	**18,714,659** kWh	**28,159,315**	**0**	**0**	**28,159,315**	

National Energy Regulator of South Africa

Electricity Distribution Form
Financial Information
Introduction

Completed form to be returned to NERSA no later than:	**31 October 2020**
Financial year reporting on:	**Financial year ending 30 June 2020**
Full name of Licensee	**Type here**
Licence number	**Type here**
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulatory Reporting Specialist) dforms@nersa.org.za (012) 401-4600
Completed D-Forms may be returned to one of the following addresses:	Email : dforms@nersa.org.za Post: P O Box 40343, Arcadia, 0007 Fax: (012) 401-4700
D-Forms are available: 1. On the NERSA website: 2. In the following formats	www.nersa.org.za Excel Documents

	Licensee Contact Person					
	Title (Ms/ Mr)	**Initials**	**Last Name**	**Telephone number**	**Fax number**	**Email address**
Example	**Ms**	**L**	**Mkhize**	**0124014710**	**0124014700**	dforms@nersa.org.za
Municipal Manager:	**MR**	**S H**	**MAKHOBA**	**0324568205**	**0324562504**	senzo.makhoba@mandeni.gov.za
Chief Financial Officer:	**ms**	**N N**	**MNGOMEZULU**	**0324568204**	**0324562504**	nozipho.mngomezulu@mandeni.gov.za
Contact Person:	**Mr**	**S G**	**Khuzwayo**	**0324568200**	**0324562504**	sizwe.khuzwayo@mandeni.gov.za

	Verification of the entire document and authorization by Senior Management							
	Income Statement		**Expenditure Statement**		**Purchases of Electricity**	**Sales of Electricity**		
	From Electricity Distribution	**Revenue From Sale of Electricity**	**Total Expenditure**	**Energy Purchases**	**Total Energy Purchased**	**Total Energy Sales**	**Total Number of Consumers**	**Please include hand signature and the date below by Senior Management as an authorization that these numbers are correct and can be released to NERSA for processing.**
Municipal Manager:	39,388,057	37,815,168	37,577,260	26,354,808	21,548,189 kWh	20,899,622 kWh	1,031	**Sign here and include the date:**
Chief Financial Officer:	39,388,057	37,815,168	37,577,260	26,354,808	21,548,189 kWh	20,899,622 kWh	1,031	**Sign here and include the date:**

Summary			
Revenue from sale of electricity over total revenue derived from electricity distribution %	Cost of energy purchases over total expenditure %	Energy losses %	Repairs and maintenance over revenue from sales of electricity %
96%	70%	3.01%	6%

Electricity Distribution Form

Financial Information
(D1 Form: Balance Sheet)

Completed form to be returned to NERSA no later than:	**31 October 2020**
Financial year reporting on:	**Financial year ending 30 June 2020**
Full name of Licensee	**Type here**
Licence number	**Type here**
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulatory Reporting Specialist) dforms@nersa.org.za (012) 401-4600
Completed D-Forms may be returned to one of the following addresses:	Email : **dforms@nersa.org.za** Post: P O Box 40343, Arcadia, 0007 Fax: (012) 401-4700
D-Forms are available:	
1. On the NERSA website:	www.nersa.org.za
2. In the following formats	Excel Documents

	Licensee Contact Person					
	Title (Ms/ Mr)	Initials	Last Name	Telephone number	Fax number	Email address
Example	**Ms**	**L**	**Mkhize**	**0124014710**	**0124014700**	dforms@nersa.org.za
Contact Person:	**Mr**	**S H**	**Makhoba**	**0324568205**	**0324562504**	senzo.makhoba@mandeni.gov.za

All information requested relates to a RING-FENCED ELECTRICITY DISTRIBUTION ACTIVITY. RING-FENCED means that separate accounts are kept for the electricity distribution activity. This should ensure that the revenues, costs, assets, liabilities, reserves and provisions are separately identifiable from those of any other business in the books of account of the licensee. The information required is based on the financial accounts for the financial year ending **30 June 2020** and the budget figures for the financial year ending **30 June 2021.**

Please note: Balance sheet does not balance

Please Complete the following:

Capital Employed		Actual 2019/20
Funds & reserves		**0**
Statutory funds	Type here	
Reserves	Type here	
(Accumulated deficit) Retained surplus		Type here
Trust funds		Type here
Long-term liabilities		Type here
Consumer deposits		386,100
Total		**386,100**

Employment of Capital - Electricity Distribution Account			Actual 2019/20
Fixed assets			**88,741,182**
Buildings & other fixed assets		88,741,182	
Electricity distribution network and equipment		Type here	
Other (please specify below):			**0**
Type here		Type here	
Type here		Type here	
Type here		Type here	
Investments			Type here
Long-term debtors			Type here
Deferred charges			Type here
Total			**88,741,182**

NET CURRENT ASSETS / LIABILITIES			213,806,223
Current Assets		Actual 2019/20	
Inventory		979,669	
Debtors (a) + (b)		**233,137,161**	
Less than 90 days (a)	14,706,645		
90 days or more (b)	218,430,516		
Cash		Type here	
Short-term investments		Type here	
Short-term portion of long-term debtors		Type here	
Total		**233,137,161**	

Current Liabilities	Actual 2019/20	
Provisions	Type here	
Creditors: Eskom	Type here	
Creditors: Other	19,330,938	
Short-term portion of long-term liabilities	Type here	
Bank overdraft	Type here	
Total	**19,330,938**	

	386,100	**302,547,404**

Electricity Distribution Form

Financial Information
(D1 Form: Income Statement)

Completed form to be returned to NERSA no later than:	31 October 2020
Financial year reporting on:	Financial year ending 30 June 2020
Full name of Licensee	Type here
Licence number	Type here
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulatory Reporting Specialist) dforms@nersa.org.za (012) 401-4600
Completed D-Forms may be returned to one of the following addresses:	Email : **dforms@nersa.org.za** Post: P O Box 40343, Arcadia, 0007 Fax: (012) 401-4700
D-Forms are available: 1. On the NERSA website: 2. In the following formats	www.nersa.org.za Excel Documents

	Licensee Contact Person					
	Title (Ms/ Mr)	Initials	Last Name	Telephone number	Fax number	Email address
Example	Ms	L	Mkhize	0124014710	0124014700	dforms@nersa.org.za
Contact Person:	Type here	Type here	Type here	Type here	Type here	Type here

All information requested relates to a RING-FENCED ELECTRICITY DISTRIBUTION ACTIVITY. RING-FENCED means that separate accounts are kept for the electricity distribution activity.

Please complete the following:

Your check list	Actual 2019/20	Budget 2020/21
Revenue section	Completed	Completed
Expenditure section	Completed	Completed

REVENUE:

Revenue from sale of electricity to the following consumers:	Actual 2019/20	Budget 2020/21
Domestic (pre-paid)	6,535,899	Type here
Domestic (conventional)	3,138,153	Type here
Agriculture	Type here	Type here
Mining & quarrying	Type here	Type here
Manufacturing / Industrial	Type here	Type here
Commercial (pre-paid)	Type here	Type here
Commercial (conventional)	9,323,702	Type here
Transport	Type here	Type here
Redistributors/Resellers	Type here	Type here
Other consumers (please specify below)	18,817,413	0
1.	18,817,413	Type here
2.	Type here	Type here
3.	Type here	Type here
4.	Type here	Type here
Total	37,815,168	0

Revenue from street lighting & sold to other municipal departments	Actual 2019/20	Budget 2020/21
Street lighting	Type here	Type here
Sold to other municipal departments	Type here	Type here
Total	0	0

Other Income	Actual 2019/20	Budget 2020/21
Reconnection fees	33,925	Type here
New connections	40,091	Type here
Free Basic Electricity(Equitable share)	1,498,873	1,340,017
Other revenue (Please specify below)	0	0
1.	Type here	Type here
2.	Type here	Type here
3.	Type here	Type here
4.	Type here	Type here
5.	Type here	Type here
6.	Type here	Type here
Other Income	1,572,890	1,340,017

EXPENSES:

Electricity Purchases from:	Actual 2019/20	Budget 2020/21
Eskom	26,354,808	Type here
Independent Power Producers Conventional	Type here	Type here
Independent Power Producers Renewable Energy	Type here	Type here
Self Generation	Type here	Type here
Other	Type here	Type here
Total	26,354,808	0

Repairs, Maintenance and Salaries	Actual 2019/20	Budget 2020/21
Repairs and Maintenance:	2,362,818	520,081
1. Salaries and allowances	1,612,640	Type here
2. Materials and supplies	Type here	Type here
3. Contracted Services	750,178	520,081
Salaries, wages and allowances including payments to consultants		
1. Salaries, wages and allowances (Excl. Repairs and Maintenance)	Type here	Type here
2. Payments to consultants (operational work)	Type here	Type here
Total	2,362,818	520,081

Financial Costs	Actual 2019/20	Budget 2020/21
Interest	441	Type here
Total	441	0

Notified Maximum Demand Costs	Actual 2019/20	Budget 2020/21
NMD Costs	Type here	Type here
Total	0	0

Other Expenses	Actual 2019/20	Budget 2020/21
Bad debts	716,891	1,209,631
FBE paid to Eskom	1,374,243	Type here
Charges from other Municipal Departments	Type here	Type here
General Expenses (please specify below) (Group into 6-main categories)	6,768,058	2,186,308
1.		
2. printing and stationery	1,246,818	1,146,793
3.subsistence and travelling	1,059,197	Type here
4.telepnone and fax	3,288,493	Type here
5.Others	1,173,550	1,039,515
6.	Type here	Type here
Total	8,859,192	3,395,939

Summary Stats (for office use)	Actual 2019/20	Budget 2020/21
Total Income	39,388,057	1,340,017
Surplus	1,810,797	- 2,576,003

	Actual 2019/20	Budget 2020/21
Total Expenditure	37,577,260	3,916,020

Electricity Distribution Form

Market Information
(D2 Form: Market)

Completed form to be returned to NERSA no later than:	31 October 2020
Financial year reporting on:	Financial year ending 30 June 2020
Full name of Licensee	Type here
Licence number	Type here
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulat dforms@nersa.org.za (012) 401-4600
Completed D-Forms may be returned to one of the following addresses:	Email : **dforms@nersa.org.za** Post: P O Box 40343, Arcadia, 0007 Fax: (012) 401-4700
D-Forms are available: 1. On the NERSA website: 2. In the following formats	www.nersa.org.za Excel Documents

	Licensee Contact Person					
	Title (Ms/ Mr)	Initials	Last Name	Telephone number	Fax number	Email address
Example	Ms	L	Mkhize	0124014710	0124014700	dforms@nersa.org.za
Contact Person:	Type here	Type here	Type here	Type here	Type here	Type here

All information requested relates to a RING-FENCED ELECTRICITY DISTRIBUTION ACTIVITY. RING-FENCED means that separate accounts are kept for the electricity distribution activity.

The kWh losses are calculated as follows:

$$\frac{kWh\ Purchased\ and\ Generated - kWh\ Sold}{kWh\ Purchased\ and\ Generated} \times 100\%$$

The average system load factor is calculated as follows:

$$\frac{kWh\ Purchased and Generated in the Month}{Monthly Maximum Demand in kWh \times Number of\ hours in the month} \times 100\%$$

The system power factor is calculated as follows:

$$\frac{\text{True Power (P)}}{\text{Apparent Power (S)}}$$

Please complete the following:

	Peak monthly maximum demand		Energy purchased by the licensee		Average Demand Charge				Average Energy Charge	
	Actual 2019/20	Budget 2020/21	Actual 2019/20	Budget 2020/21	Actual 2019/20		Budget 2020/21		Actual 2019/20	Budget 2020/21
Eskom	Type here	Type here	21,548,189	Type here	Type here	R/kVA/month	Type here	R/kVA/month	122.31 c/kWh	c/kWh
Independent Power Producers Conventional	Type here	Type here	Type here	Type here	Type here	R/kVA/month	Type here	R/kVA/month	c/kWh	c/kWh
Independent Power Producers Renewable Energy	Type here	Type here	Type here	Type here	Type here	R/kVA/month	Type here	R/kVA/month	c/kWh	c/kWh
Self Generation	Type here	Type here	Type here	Type here	Type here	R/kVA/month	Type here	R/kVA/month	c/kWh	c/kWh
Other	Type here	Type here	Type here	Type here	Type here	R/kVA/month	Type here	R/kVA/month	c/kWh	c/kWh
Total	-	-	21,548,189 kWh	- kWh	-	R/kVA/month	-	R/kVA/month	122.306369 c/kWh	c/kWh

Electricity sold by the licensee to consumers

	Number of consumers			Sales (kWh)				Average Energy Charge (c/kWh)		Licensee check list	
Consumer classification	Actual 2019/20	Budget 2020/21	Estimate 2021/22	Actual 2019/20	Budget 2020/21	Estimate 2021/22		Actual 2019/20	Budget 2020/21	Actual 2019/20	Budget 2020/21
Free Basic Electricity	Type here	Type here	Type here	Type here	Type here	Type here	kWh				
Domestic (pre-paid)	681	Type here	Type here	4,053,916	Type here	Type here	kWh	161.22			
Domestic (conventional)	299	Type here	Type here	4,563,258	Type here	Type here	kWh	68.77			
Agriculture	Type here	Type here	Type here	Type here	Type here	Type here	kWh				
Mining & quarrying	Type here	Type here	Type here	Type here	Type here	Type here	kWh				
Manufacturing / Industrial	Type here	Type here	Type here	Type here	Type here	Type here	kWh				
Commercial (pre-paid)	Type here	Type here	Type here	Type here	Type here	Type here	kWh			Complete Actual Sales kWh	
Commercial (conventional)	50	Type here	Type here	Type here	Type here	Type here	kWh			Complete Actual Sales kWh	
Transport	Type here	Type here	Type here	Type here	Type here	Type here	kWh				
Other consumers	1	Type here	Type here	12,088,896	Type here	Type here	kWh	155.66			
Redistributors/Resellers	Type here	Type here	Type here	Type here	Type here	Type here	kWh				
Electricity Department	Type here	Type here	Type here	Type here	Type here	Type here	kWh				
Street lighting				193,551	Type here	Type here	kWh	#VALUE!			
Sold to other municipal departments	Type here	Type here	Type here	Type here	Type here	Type here	kWh				
Total	1,031	-	-	20,899,622 kWh	- kWh	-	kWh	180.94			

System factors	Actual 2019/20	Budget 2020/21
Average system load factor	56	Type here
Average system power factor	Type here	Type here
Energy losses kWh	3.01%	

Electricity Distribution Form

Human Resources Information
(D3 Form: HR)

Completed form to be returned to NERSA no later than:	**31 October 2020**
Financial year reporting on:	**Financial year ending 30 June 2020**
Full name of Licensee	**Type here**
Licence number	**Type here**
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulatory Reporting Specialist) dforms@nersa.org.za (012) 401-4600
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	Licensee Contact Person					
	Title (Ms/ Mr)	**Initials**	**Last Name**	**Telephone number**	**Fax number**	**Email address**
Example	**Ms**	**L**	**Mkhize**	**0124014710**	**0124014700**	dforms@nersa.org.za
Contact Person:	**Mr**	**S H**	**MAKHOBA**	**0324568205**	**0324562504**	**senzo.makhoba@mandeni.gov.za**

All information requested relates to a RING-FENCED ELECTRICITY DISTRIBUTION ACTIVITY. RING-FENCED means that separate accounts are kept for the electricity distribution activity. **Only include information of personnel who are working in the Electricity Department e.g. (Electricity Technicians)**.

Please complete the following:

	ACTUAL 2019/20	
Level	**Number of Technical Staff**	**Number of Non-Technical Staff**
Management	**1**	**Type here**
Skilled Labour	**2**	**Type here**
Unskilled Labour	**2**	**Type here**
Trainees	**2**	**Type here**
Total staff	7	-
Vacancies	**Type here**	**Type here**

Grand total	**7**

Electricity Distribution Form

Tariff Information
(D6 Form: Tariffs)

Completed form to be returned to NERSA no later than:	**31 October 2020**
Financial year reporting on:	**Financial year ending 30 June 2020**
Full name of Licensee	**Type here**
Licence number	**Type here**
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulatory Reporting Specialist) dforms@nersa.org.za (012) 401-4600
Completed D-Forms may be returned to one of the following addresses:	Email : **dforms@nersa.org.za** Post: P O Box 40343, Arcadia, 0007 Fax: (012) 401-4700
D-Forms are available: 1. On the NERSA website: 2. In the following formats	www.nersa.org.za Excel Documents

	Licensee Contact Person					
	Title (Ms/ Mr)	Initials	Last Name	Telephone number	Fax number	Email address
Example	MS	L	Mkhize	0124014710	0124014700	dforms@nersa.org.za
Contact Person:	MR	S H	MAKHOBA	0324568205	0324562504	senzo.makhoba@mandeni.gov.za

All information requested relates to a RING-FENCED ELECTRICITY DISTRIBUTION ACTIVITY. RING-FENCED means that separate accounts are kept for the electricity distribution activity.

Please complete the following:

Click on a cell for code

Tariff Name	Tariff Number	SIC (code)	Load profile (code)	Tariff structure (code)	Number of consumers	Energy Sales	Revenue derived from energy charges	Revenue derived from demand charges	Revenue derived from fixed charge	Revenue	Extra municipal surcharge	
HOUSEHOLD	771	0	1	5.1	299	4,563,258 kWh	9,947,120	Type here	Type here	9,947,120	Type here	%
BUSINESS	BUSINESS	6	5	5.1	36	857,106 kWh	9,947,120	Type here	Type here	9,947,120	Type here	%
BUSINESS	778	6	5	5.1	7	Type here kWh	Type here	Type here	Type here	0	Type here	%
BUSINESS	773	6	5	5.1	1	Type here kWh	Type here	Type here	Type here	0	Type here	%
BUSINESS	KVA	6	5	5.1	5	Type here kWh	Type here	Type here	Type here	0	Type here	%
BUSINESS	779	6	5	5.1	1	Type here kWh	Type here	Type here	Type here	0	Type here	%
prepaid	771	0	1	5.1	681	6,053,916 kWh	6,535,899	Type here	Type here	6,535,899	Type here	%
umgeni water	industrial	5	6	5.1	1	9,425,341 kWh	11,385,029	Type here	Type here	11,385,029	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here	%
Total					**1,031**	**20,899,622** kWh	**37,815,168**	**0**	**0**	**37,815,168**		

National Energy Regulator of South Africa

Electricity Distribution Form
Financial Information
Introduction

Completed form to be returned to NERSA no later than:	**31 October 2021**
Financial year reporting on:	**Financial year ending 30 June 2021**
Full name of Licensee	**Mandeni**
Licence number	**Type here**
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulatory Reporting Specialist) dforms@nersa.org.za (012) 401-4600
Completed D-Forms may be returned to one of the following addresses:	Email : dforms@nersa.org.za
D-Forms are available:	
1. On the NERSA website:	www.nersa.org.za
2. In the following formats	Excel Documents

	Licensee Contact Person					
	Title (Ms/ Mr)	**Initials**	**Last Name**	**Telephone number**	**Fax number**	**Email address**
Example	**Ms**	**L**	**Mkhize**	**0124014710**	**0124014700**	dforms@nersa.org.za
Municipal Manager:	**Mr**	**S G**	**KHUZWAYO**	**0324568255**	**0324562504**	Sizwe.Khuzwayo@mandeni.gov.za
Chief Financial Officer:	**Ms**	**N N**	**MNGOMEZULU**	**0324568204**	**0324562504**	cfo@mandeni.gov.za
Contact Person:	**Mr**	**S H**	**MAKHOBA**	**0324568205**	**0324562504**	senzo.makhoba@mandeni.gov.za

	Verification of the entire document and authorization by Senior Management							
	Income Statement		**Expenditure Statement**		**Purchases of Electricity**	**Sales of Electricity**		
	From Electricity Distribution	**Revenue From Sale of Electricity**	**Total Expenditure**	**Energy Purchases**	**Total Energy Purchased**	**Total Energy Sales**	**Total Number of Consumers**	**Please include hand signature and the date below by Senior Management as an authorization that these numbers are correct and can be released to NERSA for processing.**
Municipal Manager:	48,621,685	46,903,890	47,075,021	28,817,906	22,211,843 kWh	21,417,624 kWh	952	**Sign here and include the date:**
Chief Financial Officer:	48,621,685	46,903,890	47,075,021	28,817,906	22,211,843 kWh	21,417,624 kWh	952	**Sign here and include the date:**

Summary			
Revenue from sale of electricity over total revenue derived from electricity distribution %	Cost of energy purchases over total expenditure %	Energy losses %	Repairs and maintenance over revenue from sales of electricity %
96%	61%	3.58%	6%

Electricity Distribution Form

Financial Information
(D1 Form: Balance Sheet)

Completed form to be returned to NERSA no later than:	**31 October 2021**
Financial year reporting on:	**Financial year ending 30 June 2021**
Full name of Licensee	**Mandeni**
Licence number	**Type here**
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulatory Reporting Specialist) dforms@nersa.org.za (012) 401-4600
Completed D-Forms may be returned to one of the following addresses:	Email : **dforms@nersa.org.za**
D-Forms are available:	
1. On the NERSA website:	www.nersa.org.za
2. In the following formats	Excel Documents

	Licensee Contact Person					
	Title (Ms/ Mr)	Initials	Last Name	Telephone number	Fax number	Email address
Example	**Ms**	**L**	**Mkhize**	**0124014710**	**0124014700**	dforms@nersa.org.za
Contact Person:	**Mr**	**S H**	**Makhoba**	**0324568205**	**0324562504**	senzo.makhoba@mandeni.gov.za

All information requested relates to a RING-FENCED ELECTRICITY DISTRIBUTION ACTIVITY. RING-FENCED means that separate accounts are kept for the electricity distribution activity. This should ensure that the revenues, costs, assets, liabilities, reserves and provisions are separately identifiable from those of any other business in the books of account of the licensee. The information required is based on the financial accounts for the financial year ending **30 June 2021** and the budget figures for the financial year ending **30 June 2022.**

Please note: Balance sheet does not balance

Please Complete the following:

Capital Employed		Actual 2020/21
Funds & reserves		**0**
Statutory funds	**Type here**	
Reserves	**Type here**	
(Accumulated deficit) Retained surplus		**Type here**
Trust funds		**Type here**
Long-term liabilities		**Type here**
Consumer deposits		**290,048**
Total		**290,048**

290,048

Employment of Capital - Electricity Distribution Account		Actual 2020/21
Fixed assets		**16,356,876**
Buildings & other fixed assets	**Type here**	
Electricity distribution network and equipment	**16,356,876**	
Other (please specify below):		**0**
Type here	**Type here**	
Type here	**Type here**	
Type here	**Type here**	
Investments		**Type here**
Long-term debtors		**Type here**
Deferred charges		**Type here**
Total		**16,356,876**

NET CURRENT ASSETS / LIABILITIES		
		164,430,602

Current Assets		Actual 2020/21
Inventory		**Type here**
Debtors (a) + (b)		**164,430,602**
Less than 90 days (a)	**10,057,272**	
90 days or more (b)	**154,373,329**	
Cash		**Type here**
Short-term investments		**Type here**
Short-term portion of long-term debtors		**Type here**
Total		**164,430,602**

Current Liabilities	Actual 2020/21
Provisions	**Type here**
Creditors: Eskom	**Type here**
Creditors: Other	**Type here**
Short-term portion of long-term liabilities	**Type here**
Bank overdraft	**Type here**
Total	**0**

180,787,477

Electricity Distribution Form

Financial Information
(D1 Form: Income Statement)

Completed form to be returned to NERSA no later than:	**31 October 2021**
Financial year reporting on:	**Financial year ending 30 June 2021**
Full name of Licensee	**Mandeni**
Licence number	**Type here**
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulatory Reporting Specialist) dforms@nersa.org.za (012) 401-4600
Completed D-Forms may be returned to one of the following addresses:	Email : **dforms@nersa.org.za**
D-Forms are available:	
1. On the NERSA website:	www.nersa.org.za
2. In the following formats	Excel Documents

	Licensee Contact Person					
	Title (Ms/ Mr)	Initials	Last Name	Telephone number	Fax number	Email address
Example	**Ms**	**L**	**Mkhize**	**0124014710**	**0124014700**	**dforms@nersa.org.za**
Contact Person:	**MR**	**S H**	**Makhoba**	**0324568205**	**0324562504**	**senzo.makhoba@mandeni.gov.za**

All information requested relates to a RING-FENCED ELECTRICITY DISTRIBUTION ACTIVITY. RING-FENCED means that separate accounts are kept for the electricity distribution activity.

Please complete the following:

Your check list	**Actual 2020/21**	**Budget 2021/22**
Revenue section	**Completed**	**Not completed**
Expenditure section	**Completed**	**Completed**

REVENUE:

Revenue from sale of electricity to the following consumers:	**Actual 2020/21**	**Budget 2021/22**
Domestic (pre-paid)	**10,912,002**	**Type here**
Domestic (conventional)	**5,284,898**	**Type here**
Agriculture	**Type here**	**Type here**
Mining & quarrying	**Type here**	**Type here**
Manufacturing / Industrial	**Type here**	**Type here**
Commercial (pre-paid)	**Type here**	**Type here**
Commercial (conventional)	**9,685,950**	**Type here**
Transport	**Type here**	**Type here**
Redistributors/Resellers	**Type here**	**Type here**
Other consumers (please specify below)	**21,021,040**	**0**
1. Umngeni water	**21,021,040**	**Type here**
2.	**Type here**	**Type here**
3.	**Type here**	**Type here**
4.	**Type here**	**Type here**
Total	**46,903,890**	**0**

Revenue from street lighting & sold to other municipal departments	**Actual 2020/21**	**Budget 2021/22**
Street lighting	**Type here**	**Type here**
Sold to other municipal departments	**Type here**	**Type here**
Total	**0**	**0**

Other Income	**Actual 2020/21**	**Budget 2021/22**
Reconnection fees	**Type here**	**Type here**
New connections	**95,126**	**Type here**
Free Basic Electricity(Equitable share)	**1,622,669**	**Type here**
Other revenue (Please specify below)	**0**	**0**
1.	**Type here**	**Type here**
2.	**Type here**	**Type here**
3.	**Type here**	**Type here**
4.	**Type here**	**Type here**
5.	**Type here**	**Type here**
6	**Type here**	**Type here**
Other Income	**1,717,795**	**0**

Summary Stats (for office use)		
Total Income	**Actual 2020/21**	**Budget 2021/22**
	48,621,685	-
Surplus	**1,546,664**	**- 750,178**

EXPENSES:

Electricity Purchases from:	**Actual 2020/21**	**Budget 2021/22**
Eskom	**28,817,906**	**Type here**
Independent Power Producers Conventional	**Type here**	**Type here**
Independent Power Producers Renewable Energy	**Type here**	**Type here**
Self Generation	**Type here**	**Type here**
Other	**Type here**	**Type here**
Total	**28,817,906**	**0**

Repairs, Maintenance and Salaries	**Actual 2020/21**	**Budget 2021/22**
Repairs and Maintenance:	**2,774,546**	**0**
1. Salaries and allowances	**2,025,298**	**Type here**
2. Materials and supplies	**Type here**	**Type here**
3. Contracted Services	**749,248**	**Type here**
Salaries, wages and allowances including payments to consultants		
1. Salaries, wages and allowances (Excl. Repairs and Maintenance)	**Type here**	**Type here**
2. Payments to consultants (operational work)	**Type here**	**Type here**
Total	**2,774,546**	**0**

Financial Costs	**Actual 2020/21**	**Budget 2021/22**
Interest	**243**	**Type here**
Total	**243**	**0**

Notified Maximum Demand Costs	**Actual 2020/21**	**Budget 2021/22**
NMD Costs	**Type here**	**Type here**
Total	**0**	**0**

Other Expenses	**Actual 2020/21**	**Budget 2021/22**
Bad debts	**3,366,199**	**Type here**
FBE paid to Eskom	**1,580,676**	**Type here**
Charges from other Municipal Departments	**Type here**	**Type here**
General Expenses (please specify below) (Group into 6-main categories)	**10,535,451**	**750,178**
1.Prepaid Electricity vendors	**4,757,772**	**750,178**
2. Fuel and oil	**3,299,813**	**Type here**
3.Printing and stationery	**896,292**	**Type here**
4.Substances and travelling	**633,909**	**Type here**
5.Uniforms	**947,665**	**Type here**
6.	**Type here**	**Type here**
Total	**15,482,326**	**750,178**

	Actual 2020/21	**Budget 2021/22**
Total Expenditure	47,075,021	750,178

Electricity Distribution Form

Market Information
(D2 Form: Market)

Completed form to be returned to NERSA no later than:	**31 October 2021**
Financial year reporting on:	**Financial year ending 30 June 2021**
Full name of Licensee	**Mandeni**
Licence number	**Type here**
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulatc dforms@nersa.org.za (012) 401-4600
Completed D-Forms may be returned to one of the following addresses:	Email : **dforms@nersa.org.za**
D-Forms are available:	
1. On the NERSA website:	www.nersa.org.za
2. In the following formats	Excel Documents

	Licensee Contact Person					
	Title (Ms/ Mr)	**Initials**	**Last Name**	**Telephone number**	**Fax number**	**Email address**
Example	**Ms**	**L**	**Mkhize**	**012014710**	**012014700**	dforms@nersa.org.za
Contact Person:	**MR**	**S H**	**MAKHOBA**	**0324568205**	**0324562504**	**senzo.makhoba@mandeni.gov.za**

All information requested relates to a RING-FENCED ELECTRICITY DISTRIBUTION ACTIVITY. RING-FENCED means that separate accounts are kept for the electricity distribution activity.

The kWh losses are calculated as follows:

$$\frac{kWh\ Purchased\ and\ Generated\ -\ kWh\ Sold}{kWh\ Purchased\ and\ Generated} \times 100\%$$

The average system load factor is calculated as follows:

$$\frac{kWh\ Purchased\ and\ Generated\ in\ the\ Month}{Monthly\ Maximum\ Demand\ in\ kWh \times Number\ of\ hours\ in\ the\ month} \times 100\%$$

The system power factor is calculated as follows:

$$\frac{\text{True Power (P)}}{\text{Apparent Power (S)}}$$

Please complete the following:

	Peak monthly maximum demand		Energy purchased by the licensee		Average Demand Charge		Average Energy Charge	
	Actual 2020/21	**Budget 2021/22**	**Actual 2020/21**	**Budget 2021/22**	**Actual 2020/21**	**Budget 2021/22**	**Actual 2020/21**	**Budget 2021/22**
Eskom	**Type here**	**Type here**	**22,211,843**	**Type here**	**Type here** R/kVA/month	**Type here** R/kVA/month	129.74 **c/kW**	**c/kWh**
Independent Power Producers Conventional	**Type here**	**Type here**	**Type here**	**Type here**	**Type here** R/kVA/month	**Type here** R/kVA/month	**c/kW**	**c/kWh**
Independent Power Producers Renewable Energy	**Type here**	**Type here**	**Type here**	**Type here**	**Type here** R/kVA/month	**Type here** R/kVA/month	**c/kW**	**c/kWh**
Self Generation	**Type here**	**Type here**	**Type here**	**Type here**	**Type here** R/kVA/month	**Type here** R/kVA/month	**c/kW**	**c/kWh**
Other	**Type here**	**Type here**	**Type here**	**Type here**	**Type here** R/kVA/month	**Type here** R/kVA/month	**c/kW**	**c/kWh**
Total	-	-	22,211,843 **kWh**	- **kWh**	- R/kVA/month	- R/kVA/month	129.7411778 **c/kW**	**c/kWh**

Electricity sold by the licensee to consumers

	Number of consumers			Sales (kWh)			Average Energy Charge (c/kWh)		Licensee check list	
Consumer classification	**Actual 2020/21**	**Budget 2021/22**	**Estimate 2022/23**	**Actual 2020/21**	**Budget 2021/22**	**Estimate 2022/23**	**Actual 2020/21**	**Budget 2021/22**	**Actual 2020/21**	**Budget 2021/22**
Free Basic Electricity	**Type here**	**Type here**	**Type here**	**Type here**	**Type here**	**Type here** **kWh**				
Domestic (pre-paid)	**739**	**Type here**	**Type here**	**4,609,747**	**Type here**	**Type here** **kWh**	236.72			
Domestic (conventional)	**163**	**Type here**	**Type here**	**1,466,398**	**Type here**	**Type here** **kWh**	360.40			
Agriculture	**Type here**	**Type here**	**Type here**	**Type here**	**Type here**	**Type here** **kWh**				
Mining & quarrying	**Type here**	**Type here**	**Type here**	**Type here**	**Type here**	**Type here** **kWh**				
Manufacturing / Industrial	**Type here**	**Type here**	**Type here**	**Type here**	**Type here**	**Type here** **kWh**				
Commercial (pre-paid)	**Type here**	**Type here**	**Type here**	**Type here**	**Type here**	**Type here** **kWh**				
Commercial (conventional)	**49**	**Type here**	**Type here**	**2,354,670**	**Type here**	**Type here** **kWh**	411.35			
Transport	**Type here**	**Type here**	**Type here**	**Type here**	**Type here**	**Type here** **kWh**				
Other consumers	**1**	**Type here**	**Type here**	**12,836,809**	**Type here**	**Type here** **kWh**	163.76			
Redistributors/Resellers	**Type here**	**Type here**	**Type here**	**Type here**	**Type here**	**Type here** **kWh**				
Electricity Department	**Type here**	**Type here**	**Type here**	**Type here**	**Type here**	**Type here** **kWh**				
Street lighting				**150,000**	**Type here**	**Type here** **kWh**	#VALUE!			
Sold to other municipal departments	**Type here**	**Type here**	**Type here**	**Type here**	**Type here**	**Type here** **kWh**				
Total	**952**	-	-	**21,417,624 kWh**	**- kWh**	**- kWh**	**219.00**			

System factors	**Actual 2020/21**	**Budget 2021/22**
Average system load factor	**Type here**	**Type here**
Average system power factor	**Type here**	**Type here**
Energy losses kWh	3.58%	

Electricity Distribution Form

Human Resources Information
(D3 Form: HR)

Completed form to be returned to NERSA no later than:	**31 October 2021**
Financial year reporting on:	**Financial year ending 30 June 2021**
Full name of Licensee	**Mandeni**
Licence number	**Type here**
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulatory Reporting Specialist) dforms@nersa.org.za (012) 401-4600
Completed D-Forms may be returned to one of the following addresses:	Email : **dforms@nersa.org.za**
D-Forms are available:	
1. On the NERSA website:	www.nersa.org.za
2. In the following formats	Excel Documents

	Licensee Contact Person					
	Title (Ms/ Mr)	**Initials**	**Last Name**	**Telephone number**	**Fax number**	**Email address**
Example	**Ms**	**L**	**Mkhize**	**0124014710**	**0124014700**	dforms@nersa.org.za
Contact Person:	**mr**	**S H**	**MAKHOBA**	**0324568205**	**0324562504**	**senzo.makhoba@mandeni.gov.za**

All information requested relates to a RING-FENCED ELECTRICITY DISTRIBUTION ACTIVITY. RING-FENCED means that separate accounts are kept for the electricity distribution activity. **Only include information of personnel who are working in the Electricity Department e.g. (Electricity Technicians)**.

Please complete the following:

	ACTUAL 2020/21	
Level	**Number of Technical Staff**	**Number of Non-Technical Staff**
Management	**1**	**Type here**
Skilled Labour	**3**	**Type here**
Unskilled Labour	**2**	**Type here**
Trainees	**3**	**Type here**
Total staff	9	-
Vacancies	**Type here**	**Type here**

Grand total	**9**

Electricity Distribution Form

Tariff Information
(D6 Form: Tariffs)

Completed form to be returned to NERSA no later than:	**31 October 2021**
Financial year reporting on:	**Financial year ending 30 June 2021**
Full name of Licensee	**Mandeni**
Licence number	**Type here**
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulatory Reporting Specialist) dforms@nersa.org.za (012) 401-4600
Completed D-Forms may be returned to one of the following addresses:	Email : **dforms@nersa.org.za**
D-Forms are available:	
1. On the NERSA website:	www.nersa.org.za
2. In the following formats	Excel Documents

	Licensee Contact Person					
	Title (Ms/ Mr)	**Initials**	**Last Name**	**Telephone number**	**Fax number**	**Email address**
Example	**MS**	**L**	**Mkhize**	**0124014710**	**0124014700**	dforms@nersa.org.za
Contact Person:	**MR**	**S H**	**Makhoba**	**0324568205**	**0324562504**	**senzo.makhoba@mandeni.gov.za**

All information requested relates to a RING-FENCED ELECTRICITY DISTRIBUTION ACTIVITY. RING-FENCED means that separate accounts are kept for the electricity distribution activity.

Please complete the following:

Click on a cell for code

Tariff Name	Tariff Number	SIC (code)	Load profile (code)	Tariff structure (code)	Number of consumers	Energy Sales	Revenue derived from energy charges	Revenue derived from demand charges	Revenue derived from fixed charge	Revenue	Extra municipal surcharge
Electricity KVA	778	6	6	5.1	7	Type here kWh	8,982,509	Type here	Type here	8,982,509	Type here %
EL IND>11000V	773	6	6	5.1	1	Type here kWh	Type here	Type here	Type here	0	Type here %
EL DOM H CONV	771	0	1	5.1	163	3,971,068 kWh	2,290,728	Type here	Type here	2,290,728	Type here %
EL COM 3PHASE	Business	6	6	5.1	35	Type here kWh	6,691,780	Type here	Type here	6,691,780	Type here %
EL IND>11000V	779	6	6	5.1	1	Type here kWh	Type here	Type here	Type here	0	Type here %
EL IND>11000V	50kva	6	6	5.1	5	Type here kWh	Type here	Type here	Type here	0	Type here %
Umgeni	400kva	10	11	5.6	1	12,836,809 kWh	21,021,040	Type here	Type here	21,021,040	Type here %
Prepaid	771	0	1	5.1	739	4,609,747 kWh	7,917,832	Type here	Type here	7,917,832	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
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Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Type here	Type here	Type here	Type here	Type here	Type here	Type here kWh	Type here	Type here	Type here	0	Type here %
Total					**952**	**21,417,624** kWh	**46,903,890**	**0**	**0**	**46,903,890**	