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Department : Economic Development, Tourism and Environmental Affairs
PROVINCE OF KWAZULU-NATAL

ILEMBE DISTRICT MUNICIPALITY
ILEMBE UMASIPALA WESIFUNDA

KWADUKUZA
MUNICIPALITY

MANDENI MUNICIPALITY

Vuthela
ILEMBE LED PROGRAMME

ZUTARI
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STATUS QUO REPORT – KWADUKUZA LOCAL MUNICIPALITY (KDM)

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

Contract No.: VILP/I/033

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Contents

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
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
KDM	KwaDukuza Local Municipality
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
PILC	Paper insulated lead covered
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 KwaDukuza Local Municipality (KDM).

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 the KDM municipality, a workshop was held on the 17th February 2022 with the 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
Umeshan Pillay	Zutari	Electrical	Umeshan.Pillay@zutari.com
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Zafika Ngubane	KDM	IDP & Public Participation	ZafikaN@kwadukuza.gov.za
Sibusiso Jali	KDM	Electrical	SibusisoJ@kwadukuza.gov.za
Duma Mhaule	KDM	Electrical	DumaM@kwadukuza.gov.za
Krishen Kemi	KDM	Finance	Krishenk@kwadukuza.gov.za
Shamir Rajcoomar	KDM	Finance	Shamirr@kwadukuza.gov.za
Thandiwe Gumede	KDM	Finance	Thandiweg@kwadukuza.gov.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:

- In order 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 2.

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.

Where information was requested but not received, it is assumed that the information was not available.

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

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

Number	Assessment Item	Reference Material	Source
1.1	Confirm & validate key network installations	Electricity Master Plans **(T)**	Energy
		As built drawings **(T)**	Energy
		Fixed asset register **(T)**	Energy
		Asset Management plan(s) **(T)**	Any
		KDM IDP **(T)**	Any
		KDM Energy losses & action plan report **(A)**	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
		Previous Assessment reports & initiatives to reduce losses **(T)**	Any
1.2	Desktop Study entire electricity network to determine: - Composition - Age - Quality - Network modelling	Electricity Master Plans **(T)**	Energy
		As built drawings **(T)**	Energy
		Fixed asset register **(T)**	Energy
		Asset Management plan(s) **(T)**	Energy
		KDM IDP **(T)**	Any
		KDM Energy losses & action plan report **(A)**	Any
		KDM NERSA D forms **(A)**	Energy
		KDM distribution losses report 2018-2019 **(A)**	Energy
		KDM Energy Revenue Enhancement programme 09-2020 **(A)**	Energy
		KDM Energy Losses report 2020 **(A)**	Energy
		Existing network model **(Z)**	Energy
		Supply areas **(Z)**	Energy

		Outage statistics **(Z)**	Energy
		ESKOM account & billing data **(Z)**	Energy
1.3.A	Undertake general assessment of Metering & Meter Reading for bulk purchases	Detailed POD information (metering diagrams, CT /VT data etc) **(Z)**	Energy
		POD sub-metering? **(Z)**	Energy
		High end user list **(Z)**	Any
1.3.B	Undertake general assessment of Metering & Meter Reading for high use customers	AMR PSP? **(Z)**	Energy
		AMR data **(Z)**	Any
		AMR fault list (Z)	Energy
		Department organograms? (Z)	Any
1.4	Assess existing roles & responsibilities & effectiveness of: - Provision of electrical services in general - Meter readings - Revenue collections - Operations & maintenance of electricity services in general	Vacancies? **(Z)**	Any
		Meter reading outsourced / internal? **(Z)**	Finance
		Credit control outsourced / internal? **(Z)**	Finance
		Ops & maintenance team composition **(Z)**	Energy
		Electricity by-laws **(Z)**	Energy
1.5	Assess adequacy & currency of: - By-laws - Policies - Tariff setting - Asset Management planning - Budget for maintenance & planning	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
		Vuthela scoping study for AM Information System **(T)**	Vuthela
1.6.A	Assess Scoping Study for Asset Management Information System	Applicable procedures **(Z)**	Any
		AM system information **(Z)**	Any
		Vuthela functional design & specification for SCADA system & Control room **(T)**	Vuthela
1.6.B	Assess Functional Design & Specification for SCADA System & Control room	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, consists of:

- Electricity Master Plans
- Network Drawings
- GIS data for electrical infrastructure
- IDP 2021/22

The KwaDukuza Municipality has two licensed electricity distributors, namely Eskom and KwaDukuza. KwaDukuza has no generation capacity and buys its electricity from Eskom and resells it to customers within their licensed area. Most of the municipality is supplied by KwaDukuza as per Figure 1 below. Whereas ESKOM supplies electricity directly to Wards 1, part of ward 2, part of ward 3, part of ward 21, ward 25, and part of 27 with the rest of the Wards supplied by the Municipality.

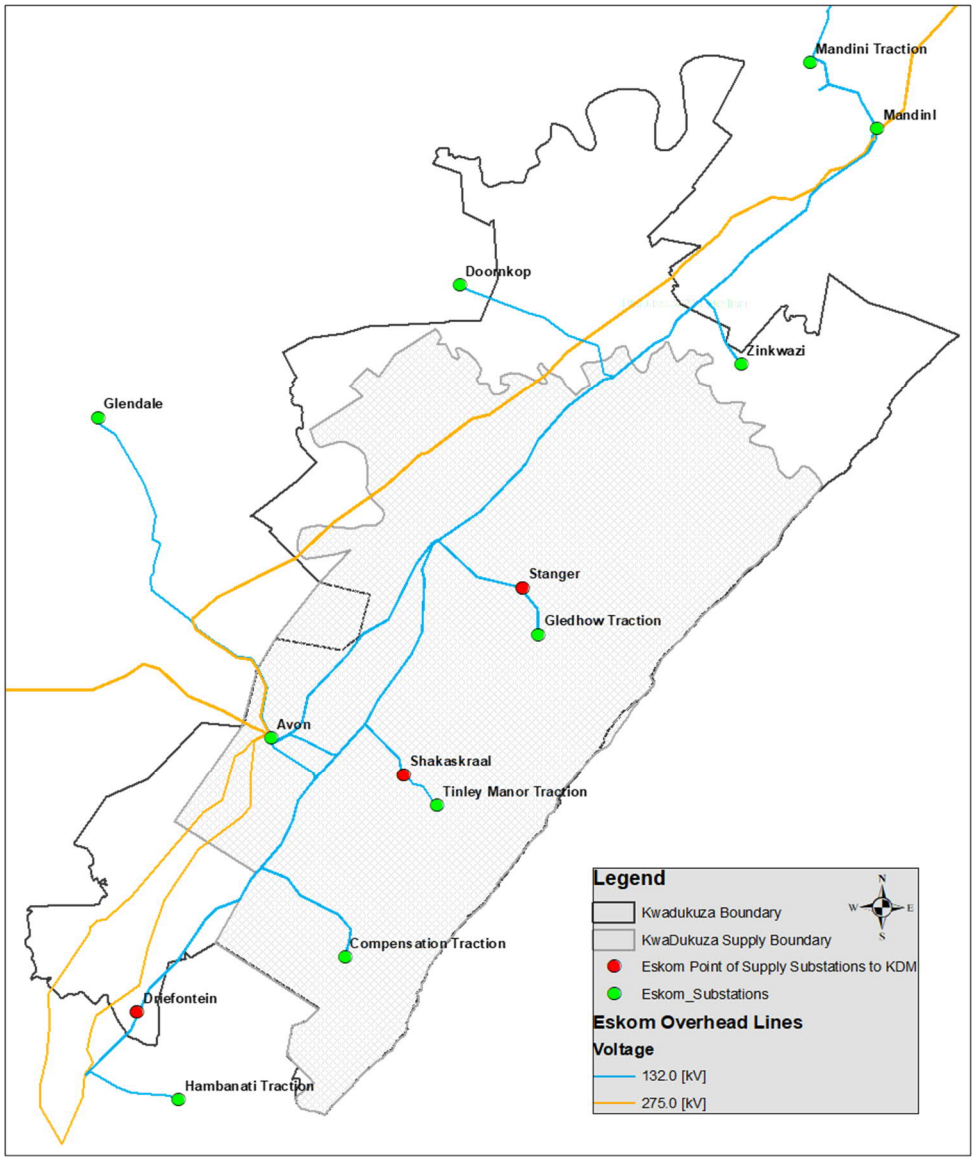


Figure 1: Eskom Bulk Infrastructure & Point of Supplies

4.1.3.1.1 Bulk Supply System

The electrical network hierarchy for Kwadukuza is shown in Figure 2 below. The bulk supply at the highest level is Eskom Avon 275kV / 132kV Main Transmission Substation. There are two circuits north to Stanger (Avon – Stanger lines 1 and 2) and two circuits south to Driefontein (Avon Driefontein lines 1 and 2) that form part of the Transmission network supplying Eskom substations. In turn, these Eskom substations supply Kwadukuza 33kV intake substations or switching stations.

Kwadukuza 33kV Distribution substations then supply 11kV switching stations, miniature substations, and ground and pole mount transformers through 11kV network feeders. The 11kV switching substations in turn supply additional miniature substations and transformers as well as large power users in some instances at 11kV. The miniature substations and transformers then supply reticulation zones to LV customers.

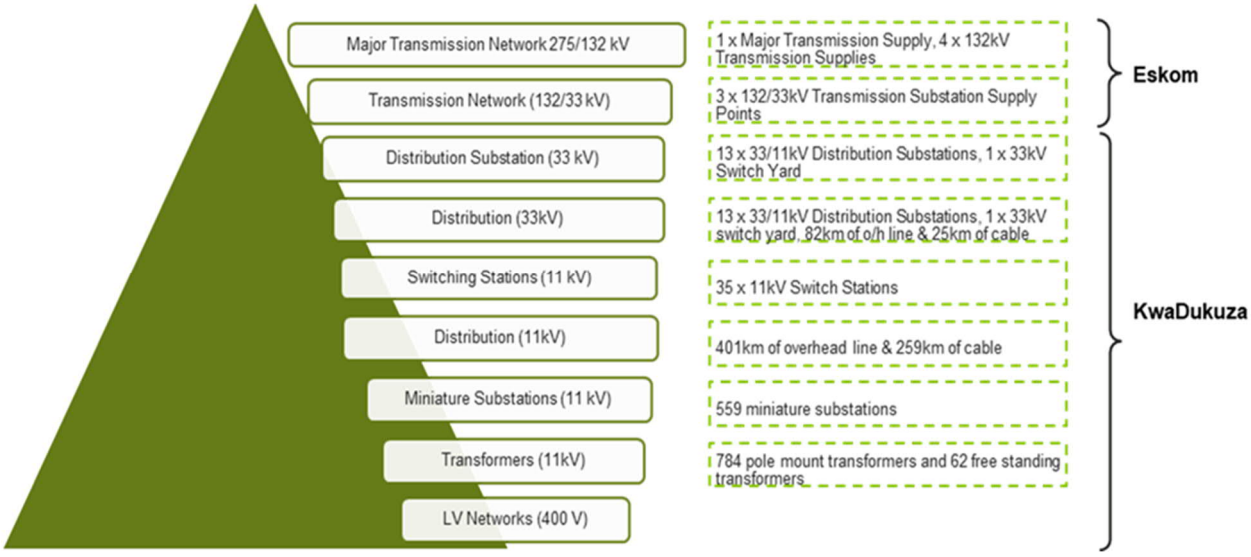


Figure 2: Network Hierarchy

KwaDukuza takes bulk supply from Eskom at three points of supply which are summarised in Table 4 below along with the contracted notified maximum demand at each point. The Avon Stanger lines supply Eskom Stanger and Shakaskraal substations and the Avon Driefontein lines supply Eskom Driefontein substation.

Table 4: Bulk supply from Eskom at three points to KwaDukuza

Eskom Point of Supply	Supply Voltage	Substation Firm Capacity	Notified Maximum Demand
Stanger	33kV	80MVA	75MVA
Shakaskraal	33kV	40MVA	47MVA
Driefontein	33kV	40MVA	30MVA

4.1.3.1.2 33kV System

The bulk supply from Eskom is received and distributed at 33kV by the municipal network and is then transformed to 11kV at 13 distribution substations as outlined in Table 5 below. In addition to this, there is one standalone 33kV Switchyard in the Northern region. The municipality is organisationally

divided into two areas, namely the Northern region, and Southern region. The Northern region is supplied from Stanger substation and the Southern region is supplied from Shakaskraal and Driefontein substations.

Table 5: 33kV Substations

Substation	Region	Transformer	Install Capacity (MVA)	Firm Capacity (MVA)
Ballito	South	3 x 33/11kV, 10MVA	30	20
Business Park	South	4 x 33/11kV, 10MVA	40	30
Chakasrock	South	2 x 33/11kV, 10MVA	20	10
Gledhow	North	1 x 33/11kV, 5MVA	5	0
Glenhills	North	2 x 33/11kV, 10MVA	20	10
Groutville P1	North	2 x 33/11kV, 10MVA	20	10
Imbonini	South	2 x 33/11kV, 10MVA	20	10
Industrial	North	3 x 33/11kV, 10MVA	30	20
Lavoipierre	North	3 x 33/11kV, 10MVA	30	20
Sappi	North	3 x 33/11kV, 15MVA	45	30
Shakaskraal	South	3 x 33/11kV, 10MVA	30	20
Sheffield	South	2 x 33/11kV, 10MVA	20	10
Zimbali	South	3 x 33/11kV, 10MVA	30	20
Stanger POS	North	None	N/A	N/A

The 33kV network is constructed with a mix of overhead lines, strung with either Oak or Poplar conductor (on wood pole or concrete pole structures) or underground cable (XLPE & Aluminium, between 95mm^2 and 300mm^2).

From the Geospatial network information on the 33kV network, there is approximately 82 km of overhead line (route length) and 25 km of cable (cables that are laid double are calculated as total length i.e., 5km of 2x95mm^2 route length is calculated as 10km of cable). Figure 3 below is a graphical representation illustrating the extent of the 33kV networks and connection to Eskom infrastructure.

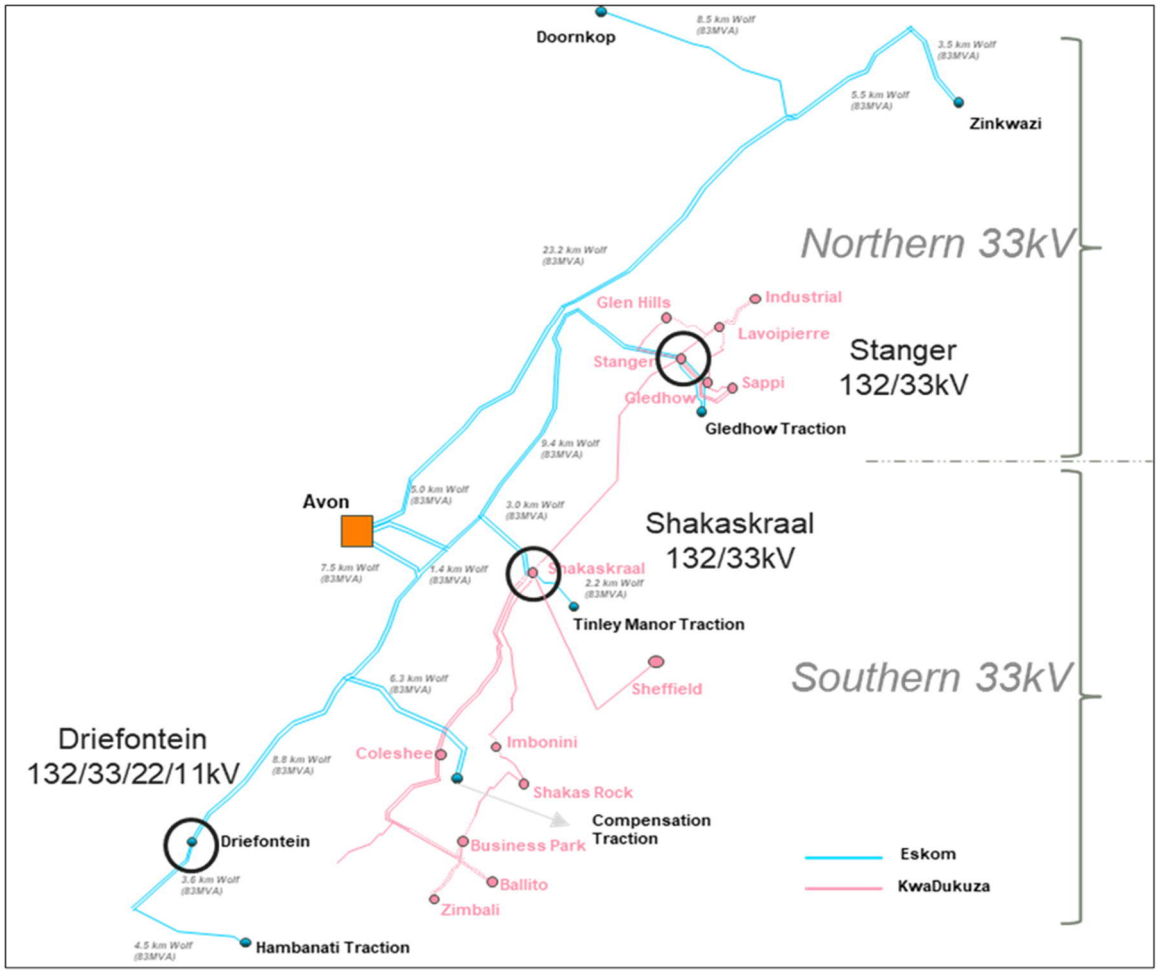


Figure 3: Eskom Bulk infrastructure & KDM 33kV Distribution Infrastructure

The extent of the 33kV feeders is noted below,

Table 6: 33 kV feeders North and South

33kV Feeders South	33kV Feeders South	33kV Feeders North
1. 33kV Driefontein 1	16. 33kV Imbonini 1 Shakasrock	1. 33kV Stanger 1 Lavoipierre
2. 33kV Driefontein 2	17. 33kV Sheffield 1 Mount Richmore (Future)	2. 33kV Stanger 2 Lavoipierre
3. 33kV Shakaskraal 1 Imbonini	18. 33kV Sheffield 2 Mount Richmore (Future)	3. 33kV Stanger 3 SAPPI
4. 33kV Shakaskraal 2 Sheffield	19. 33kV Dukuza 1 Shakaskraal (Future)	4. 33kV Stanger 4 SAPPI
5. 33kV Shakaskraal 3 Sheffield	20. 33kV Dukuza 2 Shakaskaal (Future)	5. 33kV Stanger 5 Gledhow
6. 33kV Shakaskraal 4 Interconnector	21. 33kV Dukuza 3 Ballito (Future)	6. 33kV Stanger 6 Glenhills
7. 33kV Shakaskraal 5 Interconnector	22. 33kV Dukuza 4 Zimbali (Future)	7. 33kV Stanger 7 Priority 1
8. 33kV Shakaskraal 6 Ballito	23. 33kV Dukuza 5 Spare (Future)	8. 33kV Stanger 8 Blythedale
9. 33kV Shakaskraal 7 Zimbali	24. 33kV Dukuza 6 Spare (Future)	9. 33kV Lavoipierre 1 Gledhow
10. 33kV Shakaskraal 8 Gizenga		10. 33kV Lavoipierre 2 Industrial

11. 33kV Shakaskraal 9 Palm Lakes (11kV Operated)		11. 33kV Glehills 1 Industrial
12. 33kV Shakaskraal 10 Palm Lakes (11kV Operated)		12. 33kV SAPPI 1 Gledhow
13. 33kV Zimbali 1 Business Park		13. 33kV Priority 1 Gizenga
14. 33kV Business Park 1 Ballito		14. 33kV Industrial 1 Blythedale (Future)
15. 33kV Business Park 2 Shakasrock		15. 33kV Industrial 2 Blythedale (Future)

4.1.3.1.3 11kV System

The 11kV network is constructed with a mix of overhead lines, strung predominantly with Pine conductor as well as Oak on wood pole structures, and underground cable, PEX, Aluminium and PILC, between 25mm2 and 150mm2. From the Geospatial network information on the 11kV network, there are approximately 401 km of overhead line and 259 km of cable. Figure 4 provides a geographic representation of the extent of the 11kV system in KwaDukuza.

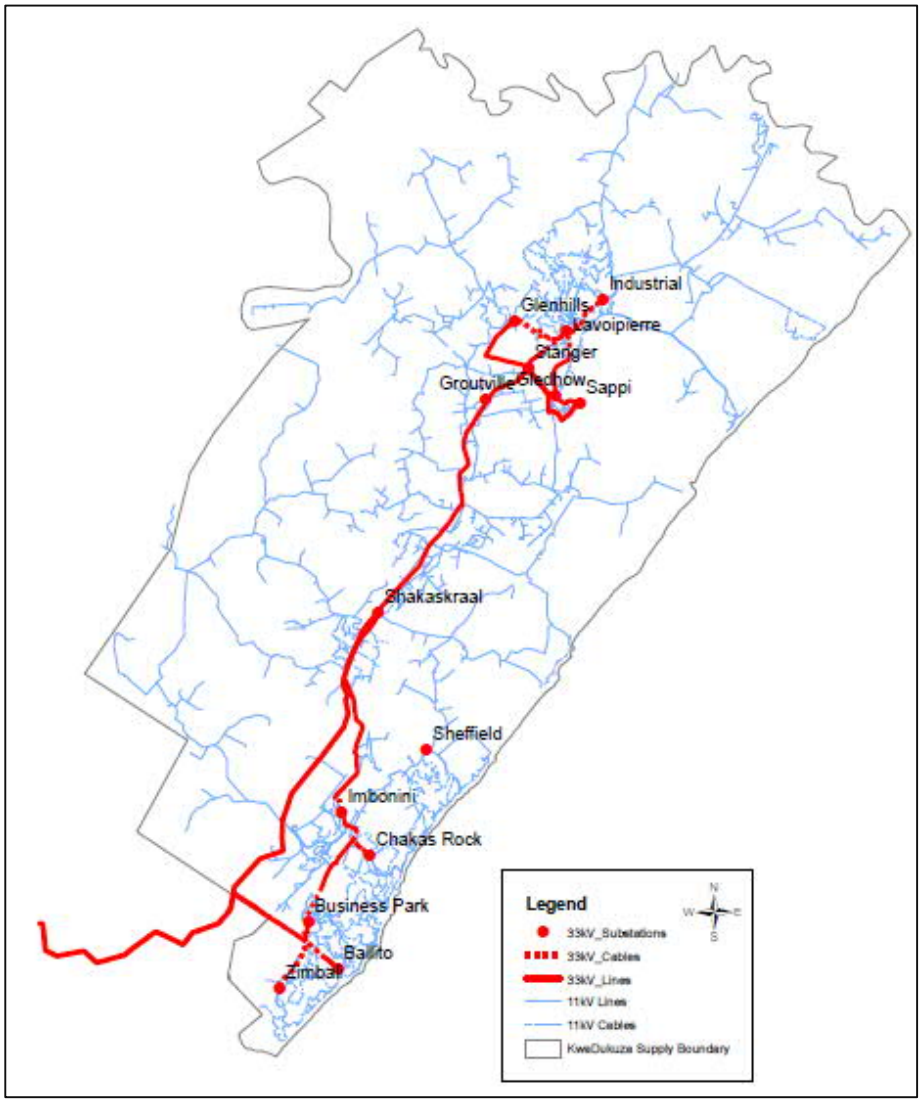


Figure 4: Spatial representation of the extent of the 11kV system in KwaDukuza

The 11kV network includes a range of key switching stations across the Northern and Southern regions of KwaDukuza and is tabled below. These switching stations are supplied from the 33/11kV substations and in most instances interconnected to increase network reliability.

Table 7: 11kV Switching Substations

11kV Switch Stations North	11kV Switch Stations South	11kV Switch Stations South
1. Bilkus Street	13. Ashley Road	25. Marion Road
2. BW Charles	14. Ballito Bay Mall	26. Nkobongo
3. CBD	15. Ballito Junction	27. Peter Hulett
4. Flamboyant Drive	16. Ballito Lifestyle Centre	28. Promenade
5. Hesto	17. Ballito Manor Estate	29. Seaward Estate Gate House
6. Hydrangea Road	18. Ballito Hills	30. Thompsons Bay
7. I D C	19. Bogmore Park	31. Tiffany's shopping centre
8. Magic Tissue	20. Etete West	32. V. M. H.
9. Melville	21. Extention 5	33. Village
10. Saunders Street	22. Fire Station	34. Woodmead
11. Townview	23. Hampshire Hotel	35. Zimbali 1
12. KwaDukuza Mall	24. Hewitt Road	36. Zimbali 2

The reticulation transformers across the network as of 2019 are categorised as,

1. 315kVA, 500kVA mini substations with a total of 559.
2. 16kVA, 50kVA, 100kVA, 200kVA pole-mounted transformers with a total of 784.
3. 200kVA, 500kVA, 800kVA, 1MVA ground mount transformers with a total of 62.

4.1.3.2 General Infrastructure Assessment

Reference information received in this regard, consists of:

- Electricity Master Plans
- Asset Register and Asset Verification Data

It can be noted that the KwaDukuza Distribution networks have been in service for many years and much of the network is aged. Such networks may begin to exhibit degradation in reliability, performance, and functional inadequacy.

The infrastructure assessment is based on available information from previous Master planning and Asset Verification projects conducted between the period of 2016 – 2019. The recent Master Plans include field inspections across the 33/11kV Distribution substations. Asset inspections conducted in 2016 as part of the Asset Verification Project include high-level condition equipment ratings for downstream infrastructure such as switch rooms and distribution devices. The current asset register does not have a consistent naming convention to identify electrical assets with limited condition ratings across equipment. Conditional assessments of the 33kV and 11kV lines and cables have not been included as no previous assessments provide detail around these assets. The KDM 11kV overhead networks are typically replaced or refurbished as part of their MV Upgrade projects on a yearly basis.

4.1.3.2.1 33kV Substations

A condition assessment was done during the 2019 Master Plan based on visual inspection and the substation equipment has been categorised with an assessment rating as tabled below.

Table 8:Condition Ratings

Rating	Condition	Description
5	Excellent	No visible defects; new or near new condition; may still be under warranty if applicable
4	Good	Good condition, but no longer new; may have some slightly defective or deteriorated component(s), but is overall functional
3	Adequate	Moderately deteriorated or defective components, but has not exceeded useful life
2	Marginal	Defective or deteriorated component(s) in need of replacement; exceeded useful life
1	Poor	Critically damaged component(s) or in need of immediate repair; well past useful life

Table 9 overleaf provides a general assessment of the equipment and condition at each of the 33kV distribution substations. The ratings provided are based on the 2019 Master Plan assessment. KwaDukuza Distribution networks have been in service for many years and much of the network is approaching its design life. Such networks may begin to exhibit degradation in reliability, performance, reduced safety margins, functional inadequacy, or general deterioration.

Table 9: Substation General assessment

Substation Name	Estimated Age	Transformer Average Rating	33kV Breaker Average Rating	11kV Breaker Average Rating	Condition Comments
Ballito	35	4	3	3	• This substation falls within the adequate to good range illustrating overall functionality with some deteriorated equipment. • Transformer 1 is 35 years old and transformer 3 is 23 years old however still in fair condition based on inspection rating. • Outdoor CTs are aged 35 years old.
Business Park	16	3	4	4	• This substation falls within the adequate to good range which is expected based on the age. • A transformer rating of 3 illustrates a need for maintenance as it is still approaching midlife. • Transformer Bay 4 is relatively new under 5 years triggered by developments in the area.
Chakasrock	35	3	3	3	• This substation falls within the adequate range which is in line with the age. It is functional however deteriorated and in need of refurbishment and replacement of equipment such as relays. • The transformer rating is expected based on age. The 2019 master plan indicates that these transformers were refurbished in recent years.
Gledhow	35	2	2	3	• This substation falls within the adequate range and has equipment that is both defective and in need of replacement. • The 11kV switchgear is aged and of the Oil type which is a safety hazard and should be replaced. • The transformer is in poor condition and in need of refurbishment or replacement.
Glenhills	30	4	3	3	• This substation falls within the adequate to good range illustrating overall functionality with some deteriorated equipment which is expected for the age. • Transformer 2 is 30 years old but in fair condition based on the inspection rating.
Groutville P1	5	5	5	5	• This substation falls within the excellent range which is expected to be a relatively new substation.
Imbonini	13	3	4	4	• This substation falls within the adequate to good range illustrating overall functionality with minor defects that can be addressed through maintenance.

Industrial	25	5	4	3	• This substation falls within the good rating illustrating overall functionality. • Transformers 1 & 2 were replaced in 2014 thereby indicated as excellent as it is relatively new • Transformer 3 bay is new and was installed in 2021 • There are however aged 33kV and 11kV switchgear since the establishment of the substation approaching useful life.
Lavoipierre	36	3	4	3	• This substation falls within the adequate rating illustrating that equipment has deteriorated with a need for refurbishment and replacement. • The transformers are 36 years old therefore reaching useful life. • 33kV outdoor breakers have been replaced in the past and are therefore in good condition. • The 11kV switchgear is aged and of the Oil type which is a safety hazard and should be replaced.
Sappi	45	3	3	N/A	• This substation falls within the adequate rating illustrating that equipment has deteriorated with a need for refurbishment or replacement. • The transformers are over 40 years old and reached useful life. • The 33kV outdoor equipment is aged typically over 25 years old and in need of replacement.
Shakaskraal	26	3	5	3	• This substation falls within the adequate to excellent range. This is because this substation was expanded around 2013 and additional 33kV indoor breakers and a transformer were installed. • Two of the existing transformers are 15 years old and the third is around 9 years old. The assessment rating of 3 indicates a need for maintenance and general refurbishment. • The 33kV indoor breakers were part of the expansion and are still in excellent condition. • The 11kV switchgear is around 10 years old and considered to be in fair condition with useful life.
Sheffield	8	3	5	5	• This substation falls within the good to excellent range which is in line with age. • The transformers are 8 years old however fall within the marginal to adequate range which indicates a need for refurbishment.
Zimbali	16	3	3	3	• This substation falls within the adequate rating illustrating that equipment has deteriorated with a need for refurbishment.

Based on the substation ratings illustrated within Table 9 it can be noted that the substations are typically in an Adequate to Good condition based on the assessments conducted within the Master Plan projects. The exception is however Gledhow substation which falls within the Marginal rating.

4.1.3.2.2 11kV Switch Stations

The 11kV switch stations were not assessed in detail during the 2019 master plan and Zutari has therefore utilised data captured in 2016 as part of the Asset Verification Project that was conducted. This assessment provides high-level equipment conditions of these switching stations at the time and a condition rating has been identified using this data and aligned to the rating description provided in Table 8.

Table 10: 11 kV Switching Station General Assessment

11kV Switch Station Name	Estimated Age	Condition	Comments
Bilkis Street	-	Marginal	Several 11kV oil circuit breakers were rated in the replacement category
BW Charles	-	Marginal	Several 11kV oil circuit breakers were rated in the repair/replacement category
CBD	8	Good	Switch station established in 2013
Flamboyant Drive	-	Marginal	Several 11kV oil circuit breakers were rated in the repair/replacement category
Hesto	8	Good	Switch station established in 2013
Hydrangea Road	-	Good	Switch station refurbished in 2013
I D C	-	Marginal	Several 11kV oil circuit breakers were rated in the repair/replacement category
Magic Tissue	-	Marginal	Several 11kV oil circuit breakers were rated in the repair/replacement category
Melville	-	Adequate	Requires refurbishment which was partly done since the Groutville substation project
Saunders Street	8	Good	Switch station established in 2013
Townview	-	Marginal	Several 11kV oil circuit breakers were rated in the repair/replacement category
Ashley Road	-	Marginal	Several 11kV oil circuit breakers were rated in the repair/replacement category
Ballito Junction	-	Adequate	
Ballito Lifestyle	16	Adequate	
Ballito Manor Estate	10	Adequate	
Bogmore Park	14	Adequate	
Etete West	-	Adequate	
Extention 5	-	Adequate	
Fire Station	-	Good	Based on the comment within the 2019 master plan that this switch station has been refurbished.
Hewitt Road	-	Adequate	
Marion Road	-	Marginal	Several 11kV oil circuit breakers were rated in the repair/replacement category
Nkobongo	-	Good	Based on the comment within the 2019 master plan that this switch station has been refurbished.
Peter Hulett	22	Marginal	Several 11kV oil circuit breakers were rated in the repair/replacement category

Promenade	-	Adequate	
Seaward Estate	-	Adequate	
Thompsons Bay	19	Adequate	
Tiffany's centre	10	Good	
V. M. H.	11	Good	
Village	-	Adequate	
Woodmead	11	Good	
Zimbali 1	-	Adequate	
Zimbali 2	-	Adequate	

Based on the condition identified across switching stations it can be noted that many are aged and fall within the marginal to adequate rating, however still functional. These will require refurbishment and replacement of equipment within the medium term. Some switching stations are in good condition and have been refurbished or replaced in recent years.

4.1.3.2.3 11kV Reticulation Transformers

The 11kV reticulation transformers and mini substations were not assessed in detail during the 2019 master plan and Zutari has therefore utilised data captured in 2016 as part of the Asset Verification Project that was conducted. This data provides an indication of the condition per asset and is extensive based on asset numbers and has therefore been represented as percentages within a certain condition category. Figure 5 below illustrates the Northern mini-subs and transformers, and Figure 6 illustrates the Southern mini-subs and transformers.

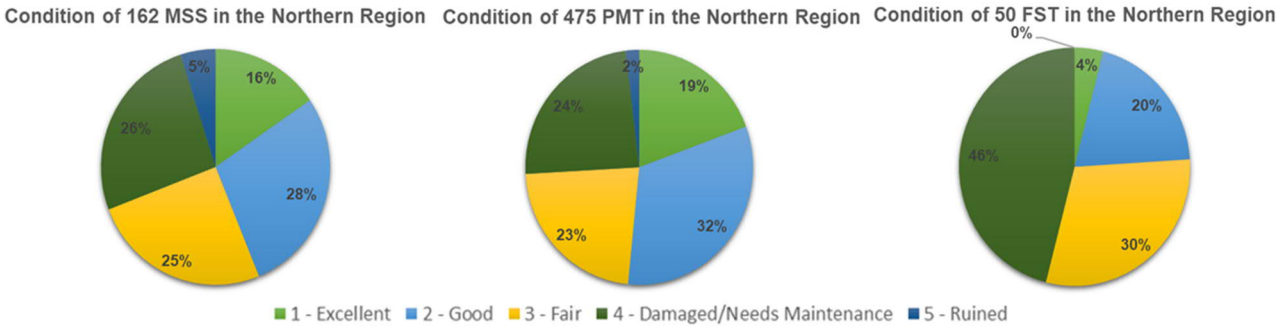


Figure 5: Northern mini-subs and transformers general condition

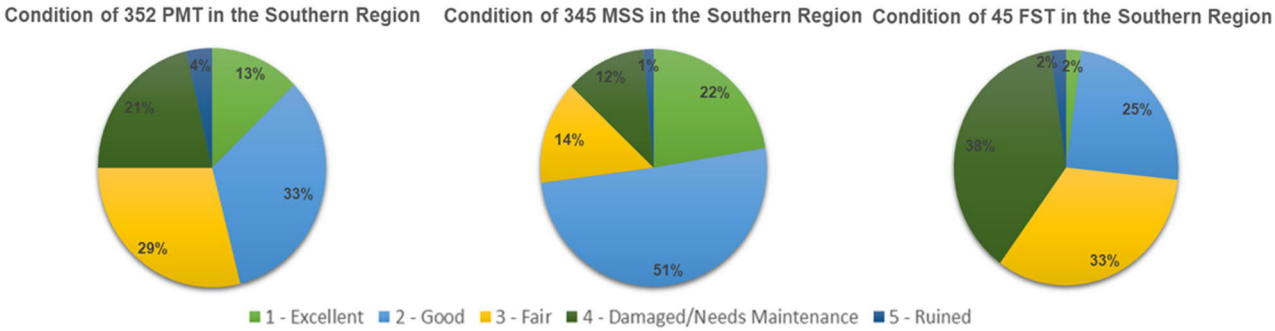


Figure 6: Southern mini-subs and transformers general condition

4.1.3.2.4 Single Line Diagrams & GIS Data

The available single line diagrams (SLD) for the municipal networks are extensive and cover the 33kV interconnection as well as the 11kV. These drawings were compiled initially in 2013 and where necessary some of the drawings have been updated between 2016 and 2018. The 33kV drawings illustrate a true reflection of the current network composition, the 11kV drawings however have not been updated in recent years and the extent of updates required cannot be quantified but is expected to relate to recent upgrade and expansion projects. From the review of the SLD provided the following were identified as updates required,

- Industrial substation third transformer and associated 11kV feeders
- Kwadukuza switching substation
- Groutville substation
- Business Park Transformer 4 and associated 11kV feeders
- Zimbali Transformer 3 and associated 11kV feeders

Figure 7 below is an extract from the Northern SLD. The detailed SLD for the 33kV and 11kV networks can be found under Annexure 1.

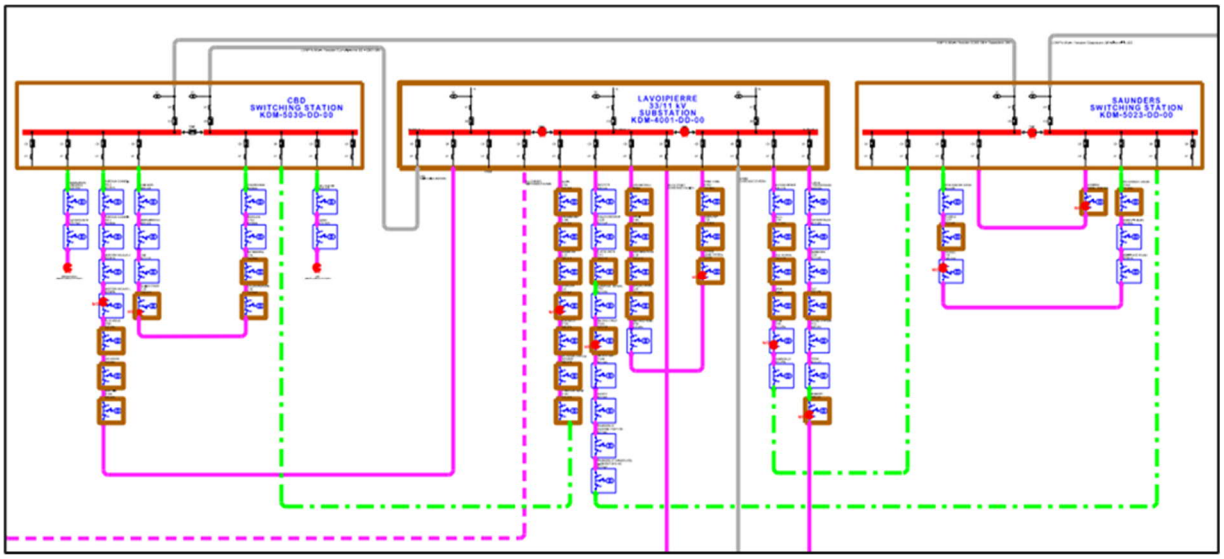


Figure 7: Single Line Diagram Extract

KDM has a GIS function that sits within itsDevelopment and Planning department. The GIS officer is responsible for all GIS related activities and this function is carried out using the ESRI GIS software for mapping and analytics.

The GIS data that is currently available was compiled during the previous master planning and Asset Verification projects and is around 5 years old. The data is however comprehensive and is a fair reflection of the greater extent of currently installed equipment and includes the following data,

- 33kV Substations
- 33kV Cables
- 33kV Overhead Lines
- 11kV Switch Stations
- 11kV Overhead lines
- 11kV Cables
- 11kV Distribution Devices that include mini-subs, pole and ground-mounted transformers.
- Registered Cadastral 2021
- Municipal Boundary
- Electrical Supply Boundary

Considering that this data set is now almost 5 years old, an update should be carried out to include key infrastructure recently installed such as substations, switching stations, 11kV feeders etc.

In addition to those highlighted above, there is additional information such as sewer and water which covers primarily bulk supply and is understood to be piece mill and not comprehensive. Additional useful GIS layers such as water pipes, land records, customer network links, routes, electricity meters, meter boxes etc. have not been developed to date.

Figure 8 below is an illustration of the extent of electrical infrastructure within the electrical GIS database.

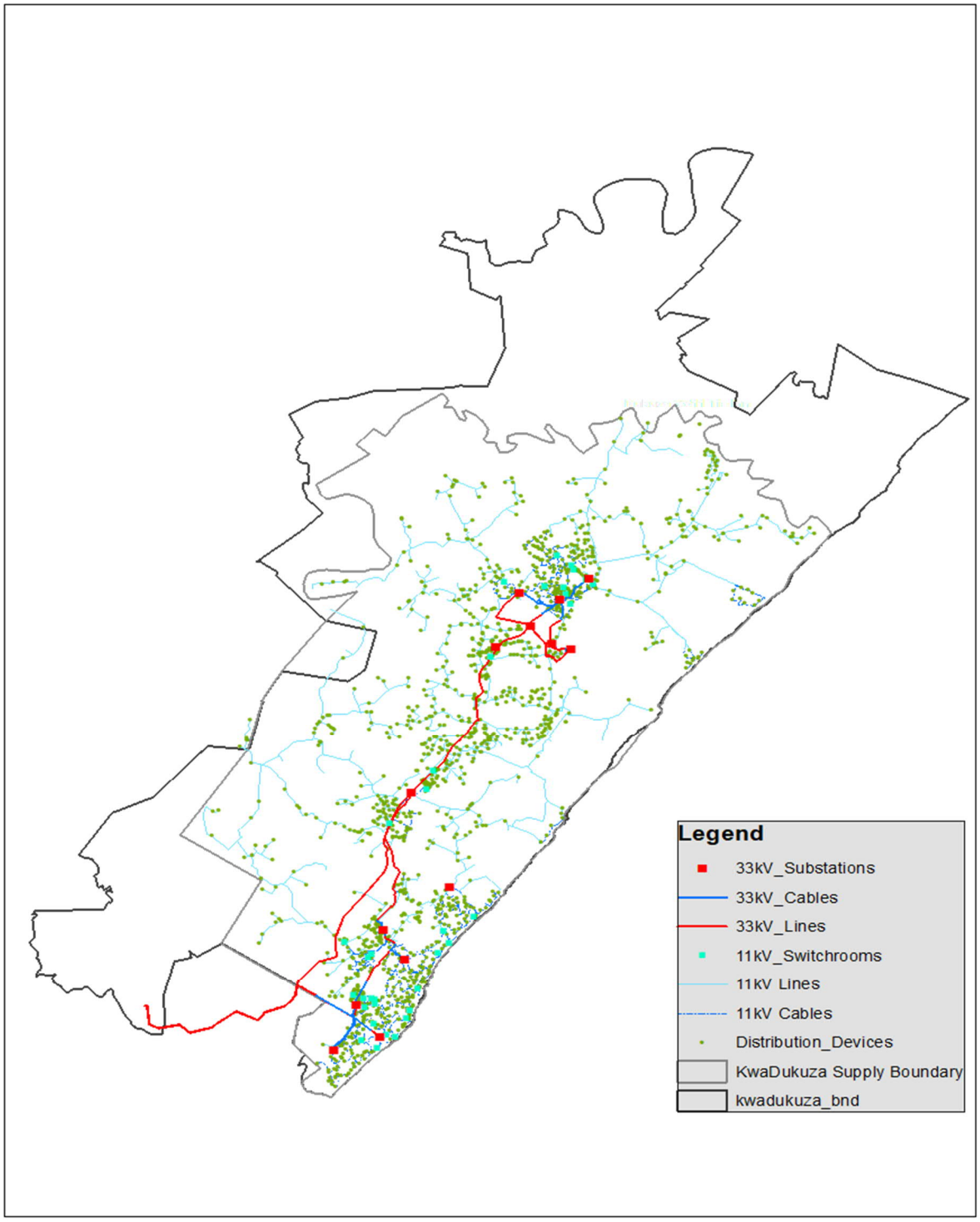


Figure 8: Extent of electrical infrastructure within the GIS database

4.1.3.2.5 Network Loading & Modelling

Table 11 below is an indication of the loading identified during the 2019 master plan revision. It is assumed that these values represent the network under its normal operating conditions.

Table 11: Substation loading identified during the 2019 master plan revision

Substation	Region	Contingency Capacity (n-1)	2019 Loading (MVA)
Ballito	South	20	13
Business Park	South	30	8
Chakasrock	South	10	10.8
Gledhow	North	0 (5MVA installed)	2
Glenhills	North	10	6
Groutville P1	North	10	7
Imbonini	South	10	11
Industrial	North	20	6
Lavoipierre	North	20	24
Sappi	North	30	15
Shakaskraal	South	20	14.5
Sheffield	South	10	6.4
Zimbali	South	10	2
Total			**125.7**

The loading on most substation transformers indicates that these substations are acceptable from a reliability perspective and provide n-1 redundancy capability. There are however some substations that do not have this capability such as Gledhow, Lavopierre, and Shakas Rock. The KwaDukuza network is interconnected allowing for the transfer of load between most substations to a certain extent. The Gledhow substation load can be transferred if required to Groutville substation via Melville switching station. The load at Lavopierre substation was over firm capacity in 2019 as it was supplying loads within the Industrial substation zone. Industrial substation has recently been expanded with an additional transformer thereby increasing capacity, and allowing load transfer from Lavopierre substation to Industrial substation.

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 or loading at each MV reticulation point but rather lumped loading on the MV feeders. For the purpose of a planning study, this can be considered acceptable. Load flow studies were conducted on 11 kV feeders from the main transformation substations to switching stations and no cables except one feeder cable to Bilkus switch room were simulated in excess of 100% under contingency situations as per the 2019 Master Plan report. It can be noted that in terms of technical losses analysis, the model compiled for the EMP planning exercise does not provide the required detail to provide an accurate estimate of technical losses.

A second set of loading data has been provided for the year 2020 by KDM shown overleaf in Table 12 and 13. This loading data was manually captured independently for both the Northern and Southern regions at two different time periods within 2020. It must be noted that the loading provided are snapshots and does not necessarily reflect the substations peak loading. Table 12 and 13 overleaf represents 7 days of substation loading data for the Northern and Southern region respectively, these are extracts of data from the loading provided.

Table 12: KDM Load Readings July 2020 South

Substation	9 July MVA	10 July MVA	13 July MVA	15 July MVA	17 July MVA	21 July MVA	22 July MVA
Ballito	8.92	8.97	9.03	8.63	8.52	8.86	8.80
Business Park	5.37	5.60	5.72	5.49	5.43	5.72	5.66
Chakasrock	7.54	7.72	7.60	7.66	7.66	7.77	7.83
Imbonini	6.69	6.86	6.74	6.69	6.12	6.80	6.86
Shakaskraal	11.83	10.80	12.80	10.46	12.97	12.35	13.37
Sheffield	4.23	4.34	4.29	4.34	4.12	4.52	4.52
Zimbali	2.86	2.86	2.86	2.51	2.63	2.51	2.51
Total	**47.44**	**47.15**	**49.04**	**45.78**	**47.44**	**48.53**	**49.55**

Table 13: KDM Load Readings April/May 2020 North

Substation	21 April MVA	22 April MVA	25 April MVA	28 April MVA	30 April MVA	1 May MVA	2 May MVA
Gledhow	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Glenhills	6.29	5.89	5.54	6.34	6.63	6.34	5.32
Groutville P1	9.55	9.03	8.80	8.63	8.34	8.74	7.94
Industrial	9.49	9.26	8.00	9.03	9.83	9.20	8.29
Lavoipierre	9.55	8.86	9.72	9.89	8.29	7.94	8.86
Sappi	11.55	14.75	11.60	12.80	13.55	13.43	13.32
Total	**48.41**	**49.78**	**45.67**	**48.70**	**48.64**	**47.67**	**45.72**

The loading for the Southern network is lower than that identified during the master planning study. This is due to the period in which the data was captured, the Southern network has their peak in the holiday period December/January and this data was captured in July, therefore lower than the actual yearly peak. The Northern readings are also lower than that used in the master planning study, and this is due to the fact that the Northern regions peak in the winter months of June/July. The yearly maximum demand is typically between 52-68MVA for the Southern region and 58-65MVA for the Northern region based on Eskom billing. Therefore, to get these loads, the actual substation loading would be at least 30% higher than those indicated in Table 12 and Table 13.

4.1.3.3 General Assessment of Metering & Meter Reading for bulk purchases

From a bulk supply perspective, the utility has 3 electricity intake points from Eskom which are being metered by Eskom only. KDM has identified the need for check meters and has subsequently installed the first two check meters at Shakaskraal substation, the first metering data comparison will be done after 01 April 2022. Therefore, validation of ESKOM data at this time is not possible. Sole reliance is placed on the accuracy of what ESKOM provides.

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.

NERSA D forms for the three financial years were also obtained for an assessment of purchased vs sold electricity.

ESKOM INVOICING

The tables below provide a summary of the annual data per intake point per financial year, as well as a combined summary. Please refer to Annexure 2 for the detailed overview.

The tables below provide a summary of the annual data per intake point per financial year, as well as a combined summary. Please refer to Annexure 2 for the detailed overview.

FY 2018-2019

Intake Point	Stanger	Driefontein	Shakaskraal	Combined
Premise ID	5433388634	7032344358	8851805893	
	Annual			
Notified Max Demand	74,167	27,750	46,583	*49,500*
Utilized Capacity	74,166.67	31,650.47	46,583.33	*50,800.16*
CONSUMPTION DETAILS				
HIGH SEASON ENERGY CONSUMPTION OFF PEAK kWH	39,151,963.82	10,991,400.00	18,909,990.41	69,053,354.23
LOW SEASON ENERGY CONSUMPTION OFF PEAK kWH	123,118,552.68	40,211,760.00	58,300,905.82	221,631,218.50
HIGH SEASON ENERGY CONSUMPTION STD kWh	35,171,565.80	11,640,600.00	20,461,435.51	67,273,601.31
LOW SEASON ENERGY CONSUMPTION STD kWh	106,023,399.06	41,508,900.00	57,126,243.73	204,658,542.79
HIGH SEASON ENERGY CONSUMPTION PEAK kWh	15,024,995.46	4,443,840.00	8,767,280.44	28,236,115.90
LOW SEASON ENERGY CONSUMPTION PEAK kWh		16,387,200.00	24,212,308.57	40,599,508.57
ENERGY CONSUMPTION ALL kWh	361,847,279.70	125,183,700.00	187,778,164.48	674,809,144.18
DEMAND CONSUMPTION - OFF PEAK	684,457.91	249,875.21	378,722.68	1,313,055.80
DEMAND CONSUMPTION - STD	691,077.92	297,393.61	393,879.51	1,382,351.04
DEMAND CONSUMPTION - PEAK	727,132.08	286,905.17	416,246.68	1,430,283.93
DEMAND READING - KW/KVA	727,717.47	297,676.01	418,062.99	1,443,456.47
REACTIVE ENERGY - OFF PEAK	63,362,567.52	11,310,180.00	22,937,671.08	97,610,418.60
REACTIVE ENERGY - STD	51,886,151.84	13,419,720.00	24,394,214.16	89,700,086.00
REACTIVE ENERGY - PEAK	20,181,593.08	4,903,060.00	9,444,948.02	34,529,601.10
EXCESS REACTIVE ENERGY	1,867,722.33	0.00	226,267.40	2,093,989.73
LOAD FACTOR	71.33	60.00	62.75	*64.69*
CHARGES DETAILS				
Administration Charge @ R147.34 per day for monthdays	R 43,508.00	R 43,508.00	R 43,508.00	R 130,524.00
TX Network Capacity Charge R9.54/kVA	R 6,861,900.00	R 2,928,301.10	R 4,309,890.00	R 14,100,091.10
Network Capacity Charge R18.90/kVA	R 13,608,100.00	R 5,807,227.47	R 8,547,110.00	R 27,962,437.47
Network Demand Charge R35.83 /kVA	R 21,096,529.46	R -	R -	R 21,096,529.46
Ancillary Service Charge @ R0.0047 /kWh	R 1,375,019.66	R 8,629,627.53	R 12,119,646.08	R 22,124,293.27
High Season Off Peak Energy Charge @ R0.6068 /kWh	R 19,219,699.13	R 475,698.06	R 713,557.02	R 20,408,954.21
Low Season Off Peak Energy Charge @ R0.5253 /kWh	R 52,325,384.60	R 5,395,678.26	R 9,282,914.09	R 67,003,976.95
High Season Peak Energy Charge @ R3.6885 / kWh	R 44,834,585.08	R 17,089,998.00	R 24,777,885.05	R 86,702,468.13
Low Season Peak Energy Charge @ R1.2034 / kWh	R 42,207,846.75	R 10,523,102.40	R 18,497,138.14	R 71,228,087.29
High Season Standard Energy Charge @ R1.1174 /kWh	R 31,795,095.66	R 27,810,963.00	R 38,274,583.48	R 97,880,642.14
Low Season Standard Energy Charge @ R0.8282 /kWh	R 71,035,677.33	R 13,260,418.56	R 26,161,563.52	R 110,457,659.41
Electrification and Rural Subsidy @ R0.0917 /kWh	R 26,849,068.18	R 15,952,939.20	R 23,570,681.84	R 66,372,689.21
High Season Reactive energy Charge @ R0.1656 /kvarh	R 250,274.75	R 9,288,630.54	R 13,933,139.77	R 23,472,045.06
Service Charge	R -	R -	R 30,319.91	R 30,319.91
Total Charges before VAT	R 331,502,688.60	R 117,206,092.12	R 180,261,936.92	R 628,940,397.71

FY 2019-2020

Intake Point	Stanger	Driefontein	Shakaskraal	Combined
Premise ID	5433388634	7032344358	8851805893	
	Annual			
Notified Max Demand	75,000	27,750	47,000	*49,917*
Utilized Capacity	75,000.00	33,738.64	47,000.00	*51,912.88*
CONSUMPTION DETAILS				
HIGH SEASON ENERGY CONSUMPTION OFF PEAK kWH	39,161,752.32	11,848,800.00	16,035,533.46	67,046,085.78
LOW SEASON ENERGY CONSUMPTION OFF PEAK kWH	117,717,356.64	41,655,300.01	53,515,354.84	212,888,011.49
HIGH SEASON ENERGY CONSUMPTION STD kWh	37,296,011.18	13,722,180.00	18,269,839.08	69,288,030.26
LOW SEASON ENERGY CONSUMPTION STD kWh	102,288,187.44	41,643,180.00	51,673,405.12	195,604,772.56
HIGH SEASON ENERGY CONSUMPTION PEAK kWh	15,983,069.98	5,164,140.00	8,076,967.02	29,224,177.00
LOW SEASON ENERGY CONSUMPTION PEAK kWh	41,564,909.57	16,312,860.00	21,720,198.04	79,597,967.61
ENERGY CONSUMPTION ALL kWh	354,011,287.13	130,346,460.01	169,291,297.56	653,649,044.70
DEMAND CONSUMPTION - OFF PEAK	686,016.04	265,420.55	353,909.24	1,305,345.83
DEMAND CONSUMPTION - STD	703,093.31	295,772.97	386,526.22	1,385,392.50
DEMAND CONSUMPTION - PEAK	728,663.99	281,477.43	393,947.76	1,404,089.18
DEMAND READING - KW/KVA	734,931.46	298,024.09	401,510.90	1,434,466.45
REACTIVE ENERGY - OFF PEAK	57,075,294.70	11,396,480.00	22,343,455.80	90,815,230.50
REACTIVE ENERGY - STD	47,540,163.02	12,984,600.00	22,842,481.50	83,367,244.52
REACTIVE ENERGY - PEAK	18,489,346.07	4,684,860.00	8,840,576.33	32,014,782.40
EXCESS REACTIVE ENERGY	1,564,998.89	0.00	433,230.54	1,998,229.43
LOAD FACTOR	68.00	62.50	59.42	*63.31*
CHARGES DETAILS				
Administration Charge @ R147.34 per day for monthdays	R 50,445.78	R 50,445.78	R 50,445.78	R 151,337.34
TX Network Capacity Charge R9.54/kVA	R 8,028,000.00	R 3,611,383.49	R 5,030,880.00	R 16,670,263.49
Network Capacity Charge R18.90/kVA	R 15,912,000.00	R 7,157,988.80	R 9,971,520.00	R 33,041,508.80
Network Demand Charge R35.83 /kVA	R 24,634,902.54	R -	R -	R 24,634,902.54
Ancillary Service Charge @ R0.0047 /kWh	R 1,557,649.66	R 9,989,767.50	R 13,458,645.37	R 25,006,062.53
High Season Off Peak Energy Charge @ R0.6068 /kWh	R 22,228,210.44	R 573,524.42	R 744,881.71	R 23,546,616.57
Low Season Off Peak Energy Charge @ R0.5253 /kWh	R 57,846,308.74	R 6,725,378.88	R 9,101,769.10	R 73,673,456.72
High Season Peak Energy Charge @ R3.6885 / kWh	R 55,147,984.73	R 20,469,414.42	R 26,297,444.96	R 101,914,844.10
Low Season Peak Energy Charge @ R1.2034 / kWh	R 46,789,618.06	R 14,343,794.75	R 19,097,462.71	R 80,230,875.52
High Season Standard Energy Charge @ R1.1174 /kWh	R 38,985,521.34	R 32,260,971.55	R 40,031,387.63	R 111,277,880.52
Low Season Standard Energy Charge @ R0.8282 /kWh	R 79,242,660.02	R 17,818,348.66	R 27,868,766.94	R 124,929,775.61
Electrification and Rural Subsidy @ R0.0917 /kWh	R 30,374,168.42	R 18,363,386.50	R 24,450,428.01	R 73,187,982.94
High Season Reactive energy Charge @ R0.1656 /kvarh	R 242,418.19	R 11,183,726.27	R 14,525,193.37	R 25,951,337.83
Service Charge	R -	R -	R 67,107.48	R 67,107.48
Total Charges before VAT	R 381,039,887.93	R 142,548,131.02	R 190,695,933.06	R 714,216,844.51

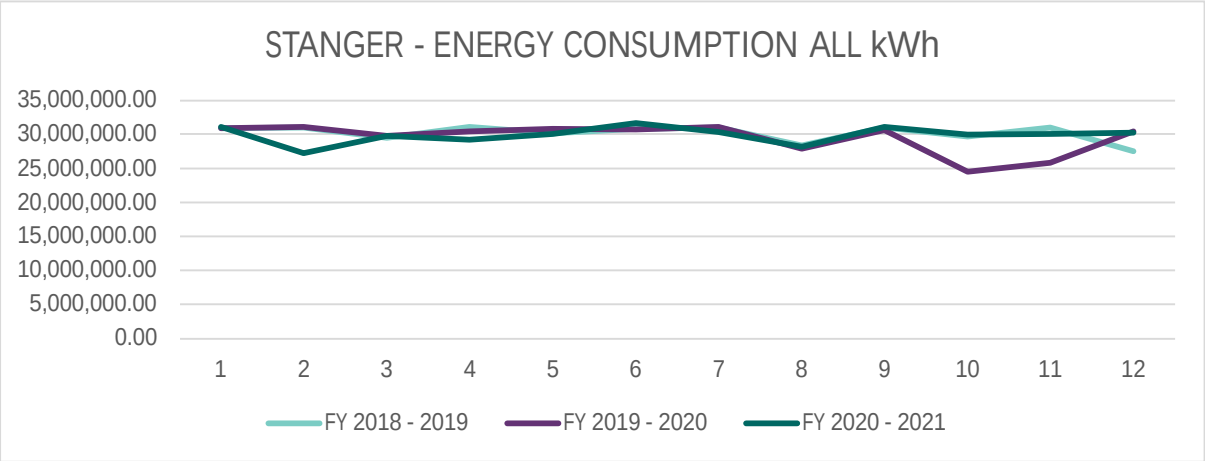
FY 2020-2021

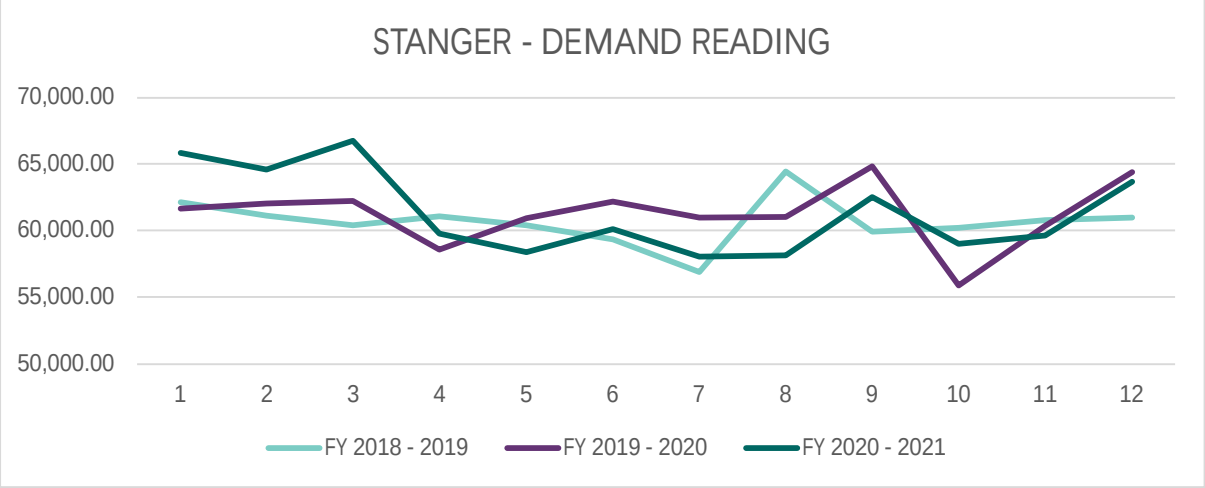
Intake Point	Stanger	Driefontein	Shakaskraal	Combined
Premise ID	5433388634	7032344358	8851805893	
	Annual			
Notified Max Demand	75,000	30,000	47,000	*50,667*
Utilized Capacity	75,000.00	31,828.38	47,000.00	*51,276.13*
CONSUMPTION DETAILS				
ENERGY CONSUMPTION OFF PEAK kWH	37,774,705.92	11,675,520.00	16,797,699.36	66,247,925.28
ENERGY CONSUMPTION STD kWh	35,578,123.92	12,614,400.00	18,331,577.73	66,524,101.65
ENERGY CONSUMPTION PEAK kWh	15,203,837.52	5,000,400.00	8,219,389.32	28,423,626.84
ENERGY CONSUMPTION ALL kWh	358,708,569.60	133,208,160.00	169,259,155.07	661,175,884.67
DEMAND CONSUMPTION - OFF PEAK	682,644.47	262,225.29	375,533.13	1,320,402.89
DEMAND CONSUMPTION - STD	710,187.57	301,553.20	375,412.78	1,387,153.55
DEMAND CONSUMPTION - PEAK	734,816.28	292,252.60	383,488.36	1,410,557.24
DEMAND READING - KW/KVA	736,404.21	303,044.67	389,666.75	1,429,115.63
REACTIVE ENERGY - OFF PEAK	52,435,869.12	16,612,820.00	21,606,606.72	90,655,295.84
REACTIVE ENERGY - STD	105,551,901.12	13,518,300.00	16,707,906.45	135,778,107.57
REACTIVE ENERGY - PEAK	31,399,066.40	4,972,500.00	6,457,832.29	42,829,398.69
EXCESS REACTIVE ENERGY	513,419.46	678.00	222,969.21	737,066.67
LOAD FACTOR	68.75	62.33	59.33	*63.47*
CHARGES DETAILS				
Administration Charge @ R147.34 per day for monthdays	R 53,779.10	R 53,779.10	R 53,779.10	R 161,337.30
TX Network Capacity Charge R9.54/kVA	R 8,586,000.00	R 3,643,712.85	R 5,380,560.00	R 17,610,272.85
Network Capacity Charge R18.90/kVA	R 17,010,000.00	R 7,218,676.40	R 10,659,600.00	R 34,888,276.40
Network Demand Charge R35.83 /kVA	R 26,385,362.84	R 10,858,090.53	R 13,961,759.65	R 51,205,213.02
Ancillary Service Charge @ R0.0047 /kWh	R 1,685,930.29	R 626,078.35	R 795,518.04	R 3,107,526.68
High Season Off Peak Energy Charge @ R0.6068 /kWh	R 22,921,691.60	R 7,084,705.54	R 10,192,844.36	R 40,199,241.50
Low Season Off Peak Energy Charge @ R0.5253 /kWh	R 63,423,286.88	R 22,488,093.00	R 28,759,159.60	R 114,670,539.48
High Season Peak Energy Charge @ R3.6885 / kWh	R 56,079,356.46	R 18,443,975.40	R 30,317,220.02	R 104,840,551.88
Low Season Peak Energy Charge @ R1.2034 / kWh	R 52,489,819.27	R 20,790,347.56	R 24,777,996.16	R 98,058,162.98
High Season Standard Energy Charge @ R1.1174 /kWh	R 39,754,995.76	R 14,095,330.56	R 20,483,704.14	R 74,334,030.46
Low Season Standard Energy Charge @ R0.8282 /kWh	R 87,620,829.06	R 36,301,248.30	R 41,884,087.64	R 165,806,165.00
Electrification and Rural Subsidy @ R0.0917 /kWh	R 32,893,576.05	R 12,215,188.27	R 15,521,064.70	R 60,629,829.02
High Season Reactive energy Charge @ R0.1656 /kvarh	R 85,022.35	R 112.28	R 36,923.67	R 122,058.30
Service Charge	R -	R -	R 1,683,996.85	R 1,683,996.85
Total Charges before VAT	R 408,989,649.68	R 153,819,338.12	R 204,508,213.92	R 765,633,204.86

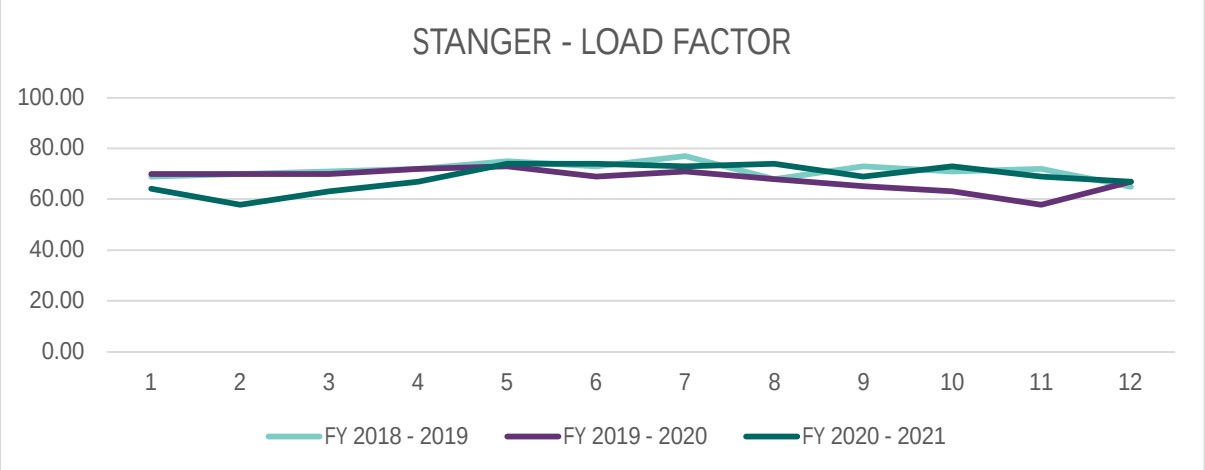
STANGER INTAKE POINT

The graphs below provide an overview of the Stanger 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.



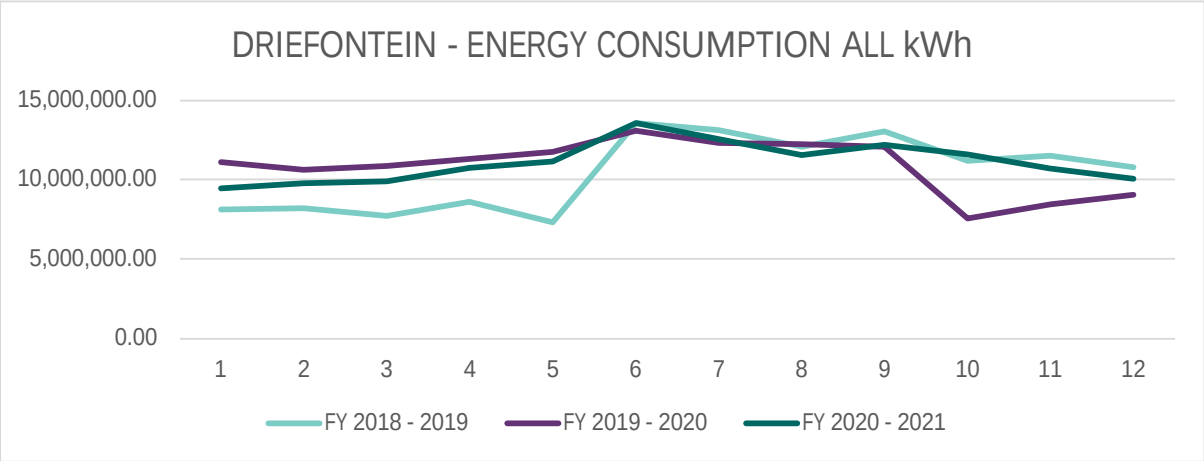


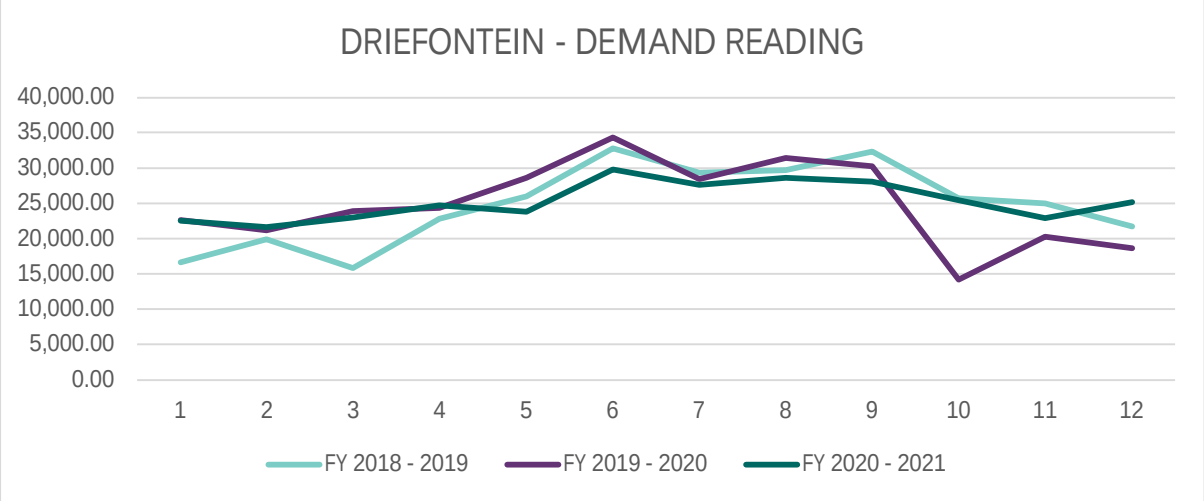


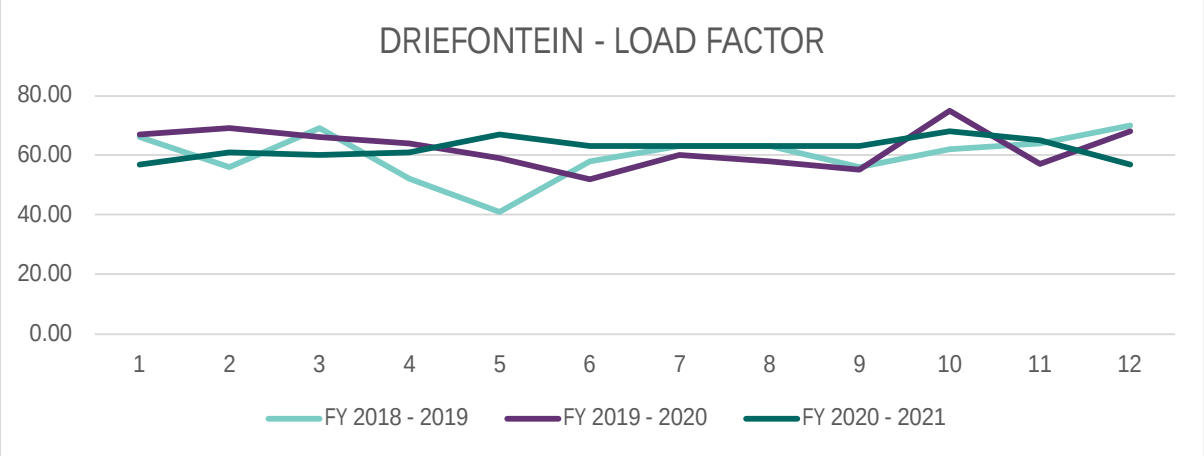
DRIEFONTEIN INTAKE POINT

The graphs below provide an overview of the Driefontein 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.



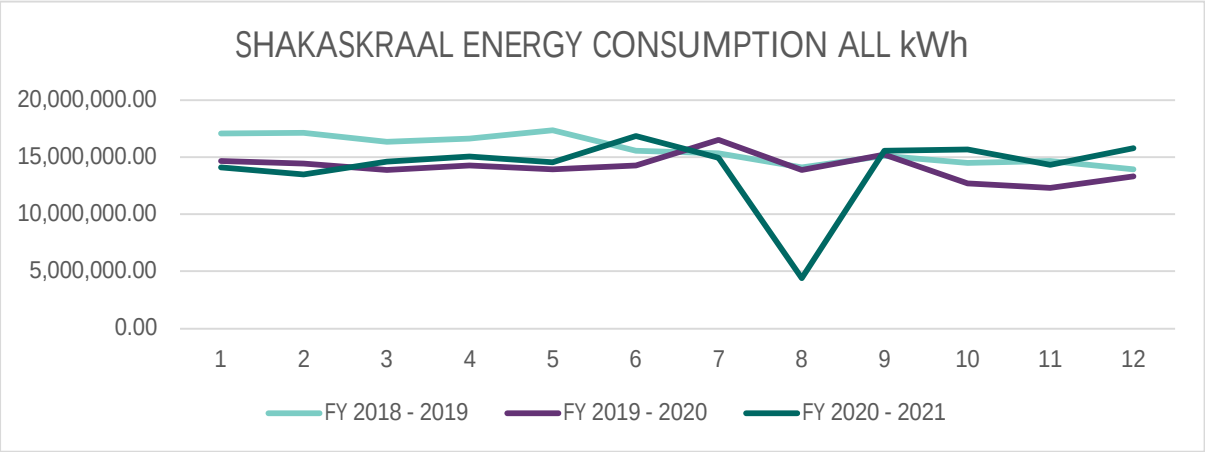


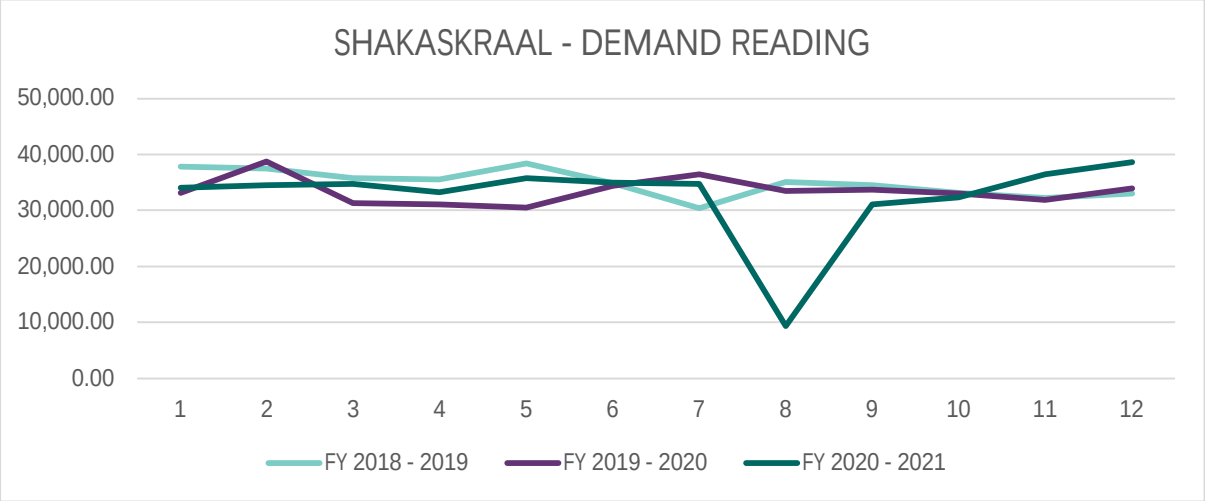


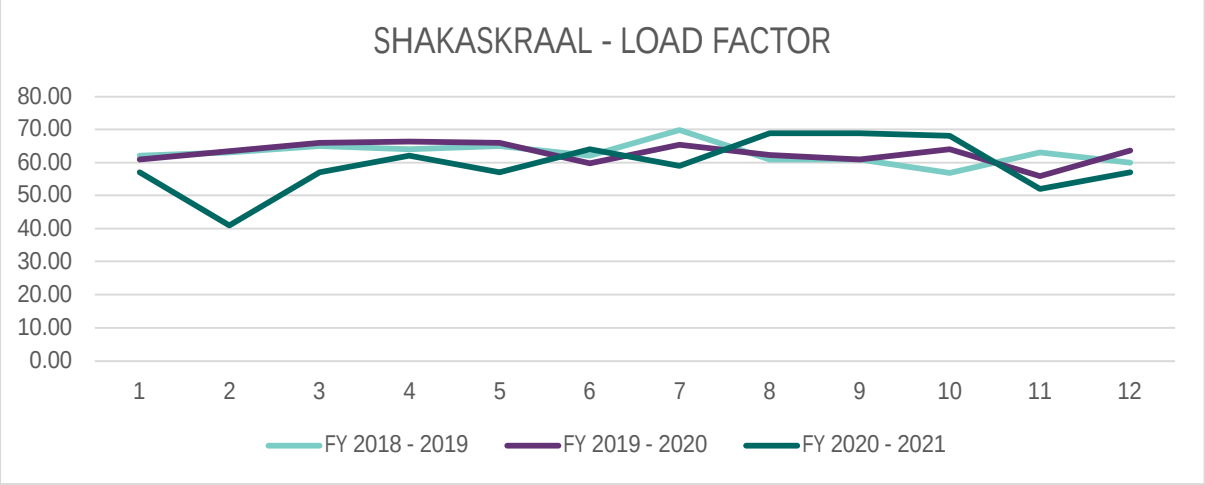
SHAKASKRAAL INTAKE POINT

The graphs below provide an overview of the Shakaskraal 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.

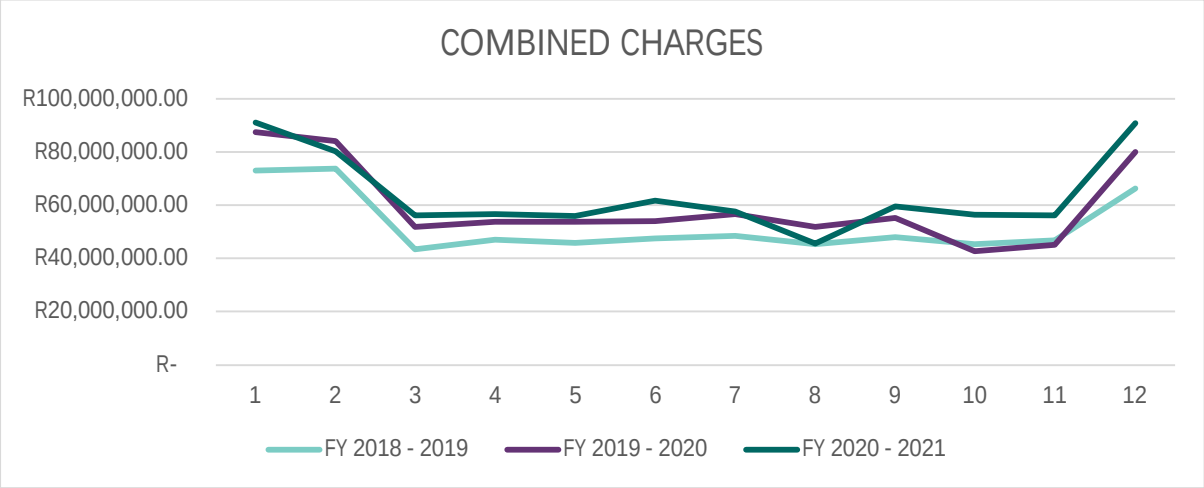






COMBINED CHARGES

The graph below depicts the combined charges for all three intake points per month per financial year.



Observations:

The following observations have been made from the assessment of the ESKOM invoicing data received:

- On average consumption charges amounts to 77% of total charges with ancillary charges making up the balance.
- Shakaskraal is the only intake point on which a monthly service charge is also levied based on the number of days in a month. This is on average an additional R 140 333 to the Shakaskraal invoice.
- Shakaskraal registered a huge drop in consumption in February 2021, resulting in charges for that month being approximately R 13m less than the average of just over R 18m of the other months. This discrepancy can only be attributed to a metering fault on the part of ESKOM. A single incident of this nature is not considered to be indicative of untrustworthy data from ESKOM.
- Interest charges for late payment were observed on the July 2020 invoice. This was however reversed the following month and no other charges of this nature were observed. This indicates that KDM pays ESKOM timeously every month.
- Charges are considerably higher for the high season months, July, August, and June, compared to the low season months.

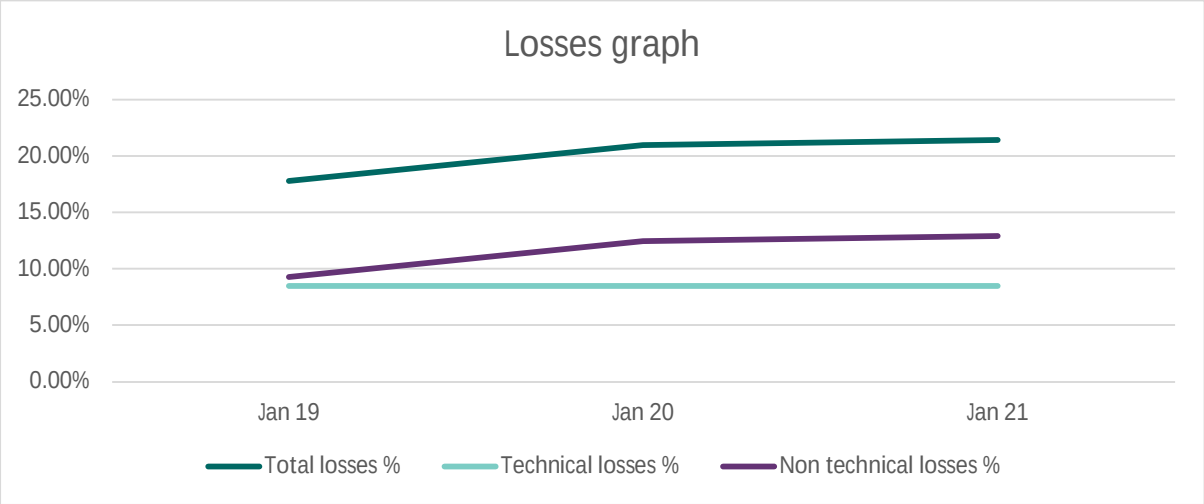
NERSA D FORMS

The NERSA D forms for the three financial years were analysed to obtain a picture of electricity purchased vs electricity (broken down per customer type) and the resultant total losses. The below table provides and overview of the analysis.

NERSA D FORMS SUMMARY	FINANCIAL YEAR ENDING		
	Jul-19	Jul-20	Jul-21
Energy Purchased in kWh	674,809,144	655,647,276	661,912,957

Energy Sold in kWh	Units	% of Energy bought	Units	% of Energy bought	Units	% of Energy bought
Free basic electricity	8,296,542	1.25%	7,203,742	1.09%	7,623,352	1.15%
Domestic (prepaid)	78,301,215	11.83%	77,923,591	11.77%	80,198,280	12.12%
Domestic (conventional)	124,323,584	18.78%	119,444,205	18.05%	127,231,550	19.22%
Commerial (prepaid)	17,729,029	2.68%	7,912,835	1.20%	8,199,487	1.24%
Commerial (conventional)	333,417,335	50.37%	311,321,719	47.03%	300,944,379	45.47%
Sales to other municipalities	982,001	0.15%	1,747,758	0.26%	3,393,340	0.51%
Total Sales	554,753,164	83.81%	518,350,108	78.31%	519,967,036	78.56%

Total losses in kWh	120,055,980	137,297,168	141,945,921
Total losses %	17.79%	20.94%	21.44%
Technical losses %	8.50%	8.50%	8.50%
Non technical losses %	9.29%	12.44%	12.94%



Observations:

The following observations have been made from the assessment of the NERSA D forms data:

- Total losses are showing a constant increase, and cause for concern. NERSA benchmark for total losses is 11 %. KDM is on its way to be double the standard.
- An average of 8.5% for technical losses have been used based on our assessment of section 2: Technical losses. The implication is that non-technical losses have been in the region of what **total** losses should be for FYE July 2020 and July 2021.
- The table below depicts the impact of possible additional review, should KDM be able to achieve the benchmark of 11% total losses.

NERSA benchmark 11 % total losses	74,229,006	72,121,200	72,810,425
Additional sales	45,826,974	65,175,968	69,135,496
Annual average selling price per unit	R 1.4225	R 1.6279	R 1.6826
Potential additional revenue at benchmark losses	R 65,188,870.74	R 106,099,957.72	R 116,327,385.12

	2018/2019			2019/2020			2020/2021		
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	8,296,542	9,299	892.2	7,203,742	9,031	797.67	7,623,352	10,161	750.26
Domestic (prepaid)	78,301,215	46,830	1,672.03	77,923,591	51,001	1,527.88	80,198,280	55,542	1,443.92
Domestic (conventional)	124,323,584	10,814	11,496.54	119,444,205	111,164	1,074.49	127,231,550	11,891	10,699.82
Commercial (conventional)	333,417,335	2,025	164,650.54	311,321,719	2,080	149,673.90	300,944,379	1,990	151,228.33
Commercial (prepaid)	17,729,029	523	33,898.72	7,912,835	535	14,790.35	8,199,487	690	11,883.31
Other sales	982,001	56	17,535.73	1,747,758	130	13,444.29	3,393,340	160	21,208.38
Total Sales	**554,753,164**	**69,547**	**7,976.67**	**518,350,108**	**173,941**	**2,980.03**	**519,967,036**	**80,434**	**6,464.52**

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

Reference information received in this regard, consists of:

- Excel list of High Use Customers
- Excel sheet of billing data for the period April 2021 to September 2021.
- Excel sheet of billing data for the period October 2021 to March 2022.
- Excel spreadsheets of Meter reading data per month for North, South, SAPPI and Time of Use Customers
- PDF document titled “Background on KDM energy stat”.

An analysis of the document titled “Background on KDM energy stat” showed that an assessment was done in 2020 to ascertain the extent of customers that need to be moved to smart metering systems as per Regulation 773 of the Energy Regulation Act. This act requires that all customers with monthly consumption of over 1000kWh have a smart meter installed.

The assessment conducted in 2020 has identified the following,

1. There were 13095 customers on the billing list.
2. 1892 were found to be consuming over 1000kWh over a period of 6 months and as per regulation 773 these should be Automatic Meter Reading (AMR).
3. 593 customers with maximum demand meters and modems installed for remote billing.
4. The balance of the information speaks to SPU customers (conventional and prepaid) and is thus not applicable to this section.

Based on the billing data for the year 2022, the utility currently has 489 High Use Customers in KwaDukuza. The list shows 493 however certain accounts are duplicated due to more than one meter linked to certain accounts. Out of the 489 bulk customers, there are 85 bulk meters with AMR within the Northern region which includes Sappi Stanger a high end-user, and 40 bulk meters with AMR within the Southern region.

To obtain a holistic view of metering and billing accuracy for LPU Customers, the various Excel documents were combined into one overview document. The process involved several processes of cross-referencing the various documents and took a considerable amount of time as many of the records had to be cross-referenced manually due to some differences in certain instances.

The account number for certain AMR customers differed in the AMR reading data and the billing data as an example. One such example is customer Equispark (Pty) Ltd with meter number 3514111229032. The account number in the billing data is 5141363 and in the AMR data it is 2022773. A possible explanation may be that a new debtor was created in the billing system, but the AMR data was not updated accordingly.

The same issue presents itself with AMR meter numbers in the billing data differing from the meter number in the AMR data. In some instances, it is just the first and last digit of the meter that is missing in the AMR data. There were a few isolated instances where the number differs completely.

To obtain a better understanding of how MUNSOFT works, Zutari also had a representative attend training at MUNSOFT’s head office to get an overview of especially the Customer Management module.

Observations:

From an analysis of the data, the following observations have been made:

- Various reports can be exported from the system, each serving its own purpose, as the above list of Excel reports indicate. To get to a holistic overview for data analysis purposes and addressing anomalies, this however seems to be a challenge.

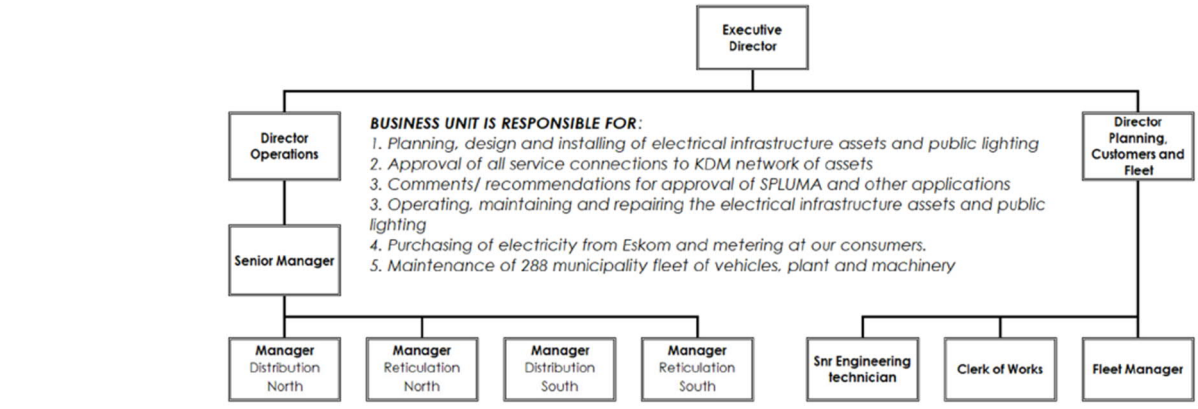
- Some LPU Customers have no account number reflected in the billing data. This was cross-referenced with the AMR data and accounts numbers could be obtained for all.
- Based on September billing data, 53 customers are being interim billed, indicating a problem with obtaining meter readings.
- Billing data suggest 44 Time of Use customers, however only 22 are listed on the TOU reading report received.
- Some disparity exists between the 2020 report and what our analysis has found.

4.1.3.5 Roles & Responsibilities

4.1.3.5.1 Provision of electrical services in general

Reference information received in this regard consists of the current and future planned organograms of the electricity department.

The organogram below reflects the current compilation of the electricity department:



		Filled	Vacant	Filled	Vacant	Filled	Vacant	Filled	Vacant	Filled	Vacant	Filled	Vacant	Filled	Vacant
1	Manager	1	0	0	1	1	0	1	0	0	0	0	0	1	0
2	Technicians/ superintendant	0	0	0	0	0	0	0	0	2	0	1	0	1	0
3	Artisans	6	2	5	1	6	2	5	1	0	0	0	0	3	0
4	Linesman/ senior supervisor	1	0	0	0	1	0	0	0	0	0	0	0	0	0
5	Senior handyman/ streetlight attendant	0	0	0	2	0	0	1	1	0	0	0	0	0	0
6	Senior driver	1	0	0	0	1	0	0	0	0	0	0	0	0	0
7	Artisan assistant/ handman	2	7	2	7	2	7	2	7	0	0	0	0	2	2
8	Control room attendant	6	2	0	0	0	0	0	0	0	0	0	0	0	0
9	Principal clerk	1	0	1	0	1	0	1	0	1	0	0	0	0	0
10	Senior clerk	0	0	0	0	0	0	0	0	0	0	0	0	1	0
11	Messenger	0	0	0	0	0	0	0	0	1	0	0	0	0	0
12	Data capturer	0	0	0	0	0	0	0	0	0	0	0	0	0	1
13	Tyre attendant	0	0	0	0	0	0	0	0	0	0	0	0	0	1
14	General assiostant	6	6	7	6	6	6	6	7	0	0	0	0	4	1

Figure 9: KDM Electrical Organogram

Observations:

- The current department seems well structured, there is however a need to expand and fill vacant positions.
- A shortage of especially artisans and artisan assistants is noted.
- The are currently three key branches that have not been developed within the current structure and this is the Network Control & Support, Protection Telecontrol & Metering and Projects & Assets branch.

- Future plans have been noted regarding a Control Room branch for the SCADA system as well as a dedicated Protection Telecontrol and Metering branch responsible for meter repairs/replacements and protection of critical Electrical Network Protection equipment. The existing and proposed organogram is shown under Annexure 3.

4.1.3.5.2 Meter readings & billing

Reference information received in this regard consists of the current compilation of the billing and meter reading department as depicted below.

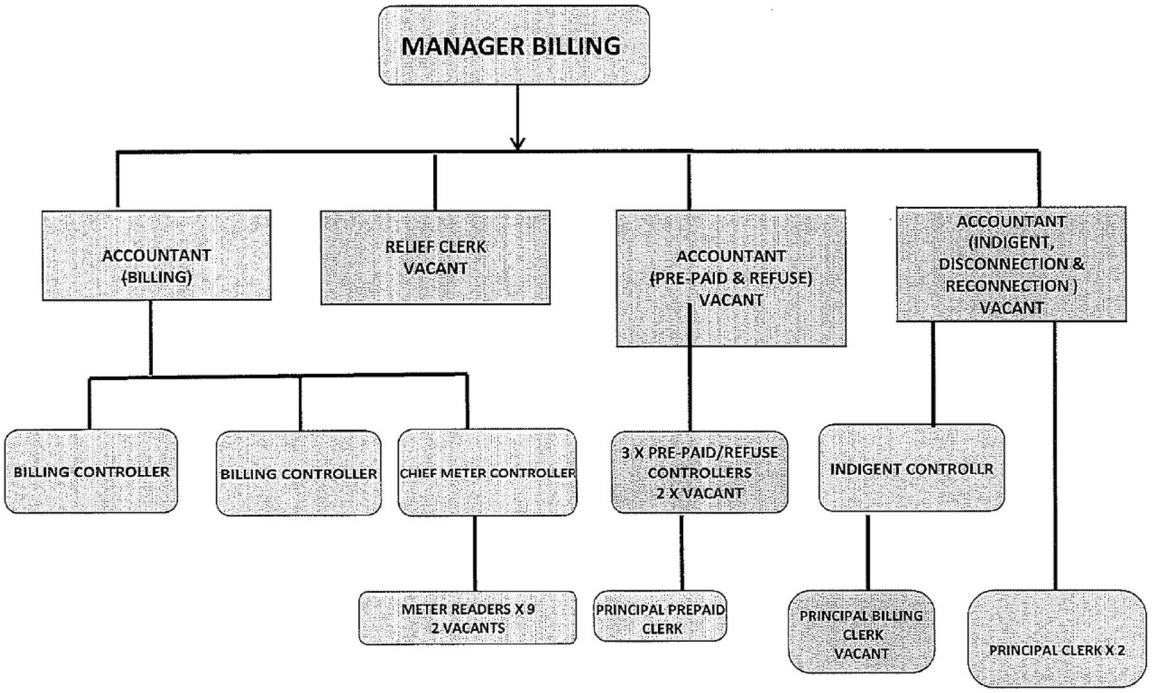


Figure 10: Billing Department Organogram

Observations:

- Several vacancies should be a cause for concern.

4.1.3.5.3 Revenue collection

Reference information received in this regard consists of the current compilation of the credit control department as depicted below.

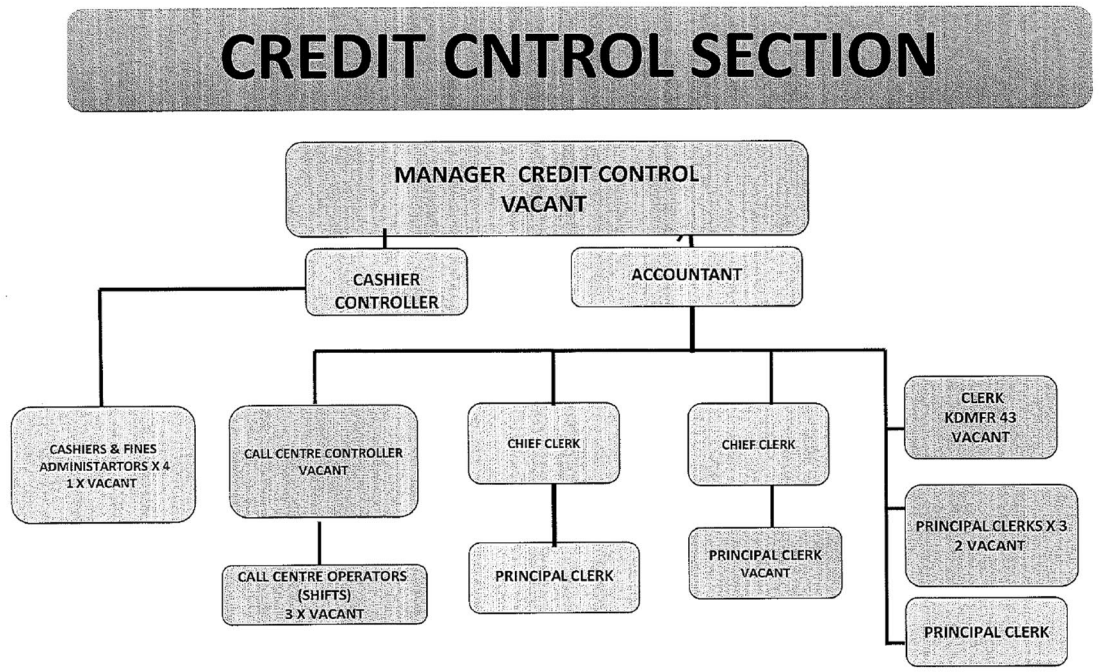


Figure 11: Credit Control Organogram

Observations:

- Several vacancies should be a cause for concern, most notably the position of Manager: Credit Control.
- The analysis of the debtor's book under 4.3.3.9 suggests this vacant position has a direct impact on challenges experienced with collections.

4.1.3.5.4 Operations & maintenance of electricity services infrastructure

The current structure does not have a dedicated breakdown of personnel for Operations and Maintenance. Operations and maintenance are done mainly by KDM teams, but portions of this work are contracted to private service providers. Maintenance is currently being done on assets but there is a backlog and general lack of preventative maintenance on critical infrastructure due to resource constraints. The current maintenance staff compliment is typically adequate for daily operational functions. The proposed organogram planned for 2023/2024 has identified a structure and associated resources required for maintenance and repairs. The proposed organograms can be found under Annexure 3.

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

Reference information received in this regard, consists of:

- KDM Electricity Supply Bylaws
- KDM Asset Management, Tariff, and Indigent Policy
- KDM IDP 2021/22
- KDM Asset Management Plan
- KDM Draft Electricity Asset System Document

- KDM Energy Losses Reduction Action Items Progress Report
- KDM Tariff of Charges 2020/21 & Draft 2021/2022

4.1.3.6.1 Bylaws

KwaDukuza Municipality 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 bylaws provided indicate that these were last updated in 2010 and may therefore be out of date with a need for review and revision.

4.1.3.6.2 Policies

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

Asset Management Policy: the objective of the policy is to ensure consistent asset management principles, implements accurate accounting, safeguards and controls the assets and complies with the MFMA and other related legislation.

Indigent Policy: the policy is to ensure that the Municipality is providing and regulate access to free basic services to all registered indigents. The indigent policy covers criteria for qualification, extend of support, arrears, non-compliance of households covered regarded as indigents, termination of support etc. To support this policy the utility has a standard operating procedure in place for 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.

Tariff Policy: the tariff policy prescribes the procedures and principles for calculating tariffs charged to the consumers. The policy is required in terms of Section 74 of the Local Government Municipal Systems Act, Act of 32 of 2000. The tariff policy covers the objectives, principles, categories of consumers, tariff types, tariff determination process etc.

Credit Control and Debt Collection: 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. The credit control procedures cover application for services, applicable charges, subsidised services, payment options, etc. The debt collection procedures cover arrear on account, tampering and theft of service, debt arrangement etc.

4.1.3.6.3 Tariff Setting

The KwaDukuza municipality has an updated tariff policy for 2021/2022. The objective of this policy is to ensure the municipality's tariffs comply with legislations prevailing at the time of implementation, the Municipal services are financially sustainable, affordable, and equitable, and aligned to the principles of the Municipal System Act.

The tariff structure of KwaDukuza Municipality makes provision for different categories of customers such as,

- Domestic
- Commercial
- Industrial
- Agricultural
- Rural

- Municipal services
- Public sector
- Special agreements

The tariff policy acknowledges the need for free basic electricity, tariff affordability, and an indigent assistant scheme. The tariff determination process is reviewed during the preparation of the annual budget in accordance with the Tariff policy and the goal where possible is to provide a cost-reflective service charge. The KwaDukuza municipality currently has a final tariff of charges for the year 2020/2021 and a draft Tariff of charges for 2021/2022, these can be found under Annexure 4. The tariffs indicated overs the 2 past two financial years indicate a general increase across energy tariff and service charges. As per the tariff policy principles, Tariff must include the cost reasonably associated with rendering the service, including capital, operating, maintenance, administration, replacement and interest charges. The current methodology for tariff increases is expected to align with the current policy and principles however the methodology for the current Tariff setting is not documented.

A progress report compiled for EXCO on Energy Losses Reduction noted that according to municipal officials there may be a disparity between the bulk cost of electricity and the set tariffs which the municipality charge to their customers, leading to revenue losses. This statement alludes to the fact that there may be a need for a comprehensive tariff study.

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. This AMP 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.

KDM is a category B municipality and is coming off a low asset management practice. There is relatively low asset management practice maturity, especially in the field of physical asset management within the utility. These poor asset management practices are often related to skill challenges and constrained budgets. Based on the AMP assessment there is currently a relatively low level of asset management practice maturity, especially in the “physical asset management” category, in line with many municipalities in SA.

The Electrical Engineering Services department has compiled a draft Electricity Asset Management System document that is a planned system to be implemented for electrical infrastructure. This plan is comprehensive and is aimed at demonstrating how its electrical network asset portfolio will meet the service delivery needs of its customers. This plan is expected to overcome the current status of 80% corrective maintenance and 20% preventative maintenance to 20% corrective maintenance and 80% preventative maintenance.

4.1.3.6.5 Budget for Operations & maintenance

KwaDukuza has been proactive in identifying its operations and maintenance needs as well as capital projects with support from the associated master planning assessments. KwaDukuza has an Operations and Maintenance plan for electricity in place which was tabled to council in March 2020 and was adopted and subsequently implemented as per the 2021/2022 IDP. The 2021/2024 financial year repairs and maintenance budgets are tabled below,

Table 14: Planned Repair and Maintenance Budgets

REPAIR AND MAINTENANCE VOTE	2021/22	2022/23	2023/24
Electricty - Rural North (Dept 430)	R 7 391 241,80	R 7 686 891,47	R 7 994 367,13
Electricty - Rural South (Dept 490)	R 3 949 000,20	R 4 106 960,21	R 4 271 238,62
Electricty - SAPPI (Dept 440)	R 1 845 371,40	R 1 919 186,26	R 1 995 953,71
Electricty - Urban North (Dept 450)	R 6 228 873,24	R 6 481 166,95	R 6 744 494,05
Electricty - Urban South (Dept 420)	R 5 725 693,84	R 5 954 721,59	R 6 192 910,46
Streetlights (Dept 171)	R 4 765 082,00	R 4 955 685,28	R 5 153 912,69
Grand Total	**R 29 905 262,48**	**R 31 104 611,76**	**R 32 352 876,65**

In addition to the above, the utility has identified network strengthening and expansion projects that will assist in catering to the expected load growth and increased reliability of supply. A list of the key capital projects currently underway is tabled below.

Table 15: Key Capital Projects Initiated

Project Name	Description	Project Budget	Comment
Dukuza Substation	Establishment of 160MVA 132/33/11kV substation	R 256 000 000,00	Contractor appointed, construction to commence. Funding from DTI and DMRE is required.
Sappi Substation Refurbishment	Refurbishment of Sappi 45MVA 33/11kV substation	R 58 000 000,00	Consultant appointed to do design and assist with DTI grant application.
Gizenga Substation	Establishment of 20MVA 33/11kV substation	R 45 000 000,00	Contractor appointed, and construction underway. Part funding from DMRE is required.

The KDM D forms were assessed over the past 3 financial years and the following expenses under the income statement were identified in Table 16 below over the past 3 financial years. The detailed breakdown of revenue, expenses, electricity purchases and sales etc. can be found under Annexure 5 Distribution Forms.

Table 16: KDM Expenses over three financial years

Description	Expenses 2019	Expenses 2020	Expenses 2021
Electricity Purchase Eskom	R 630 318 190,00	R 716 028 548,00	R 767 317 204,00
Repairs and Maintenance	R 15 352 312,00	R 26 995 957,00	R 28 812 873,00
Salaries, Wages & Allowances	R 44 203 793,00	R 52 292 138,00	R 48 831 696,00
Financial Costs (Interest)	R 14 730 420,00	R 14 193 474,00	R 13 056 582,00
Notified Maximum Demand Costs	R 170 612,00	R 0	R 0
Other Expenses (Bad debts,	R 10 021 748,00	R 10 835 445,00	R 1 680 469,00

FBE to Eskom)			
General Expenses (Depreciation, Collection Costs, audit fees etc.)	R 29 627 726,00	R 28 832 140,00	R 43 969 365,00
Total	**R 744 428 801,00**	**R 849 168 702,00**	**R 903 668 189,00**

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 the 2% range of electricity sales in 2019 and 3% for 2020 and 2021. The financial cost in terms of interest has been relatively consistent over the last 3 years. The other expenses such as Free Basic Electricity (FBE) have decreased significantly from around R 10 mil to R 1 mil. The general expenses have increased in the last financial year and this can be attributed to the inclusion of audit and insurance costs under the expense category.

4.1.3.7 Technical Management Information Systems

Reference information received in this regard, consists of:

- KDM Systems Assessment and Improvement Pan
- KDM GIS Data
- KDM Asset Register
- KDM SCADA Functional Design Specification
- KDM Energy Losses Reduction Action Items Progress Report

The extent of information systems within the utility is documented at a high level within the Information Systems Assessment and Improvement Plan compiled for KwaDukuza in 2019. It can be noted that there is a general lack of information systems to support electricity service delivery, maintenance and asset management. The business unit has identified gaps in relation to service provision with one of these being electricity information management systems.

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 system 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.

Figure 12 overleaf provides a breakdown of the current and proposed operational and database systems within KDM.

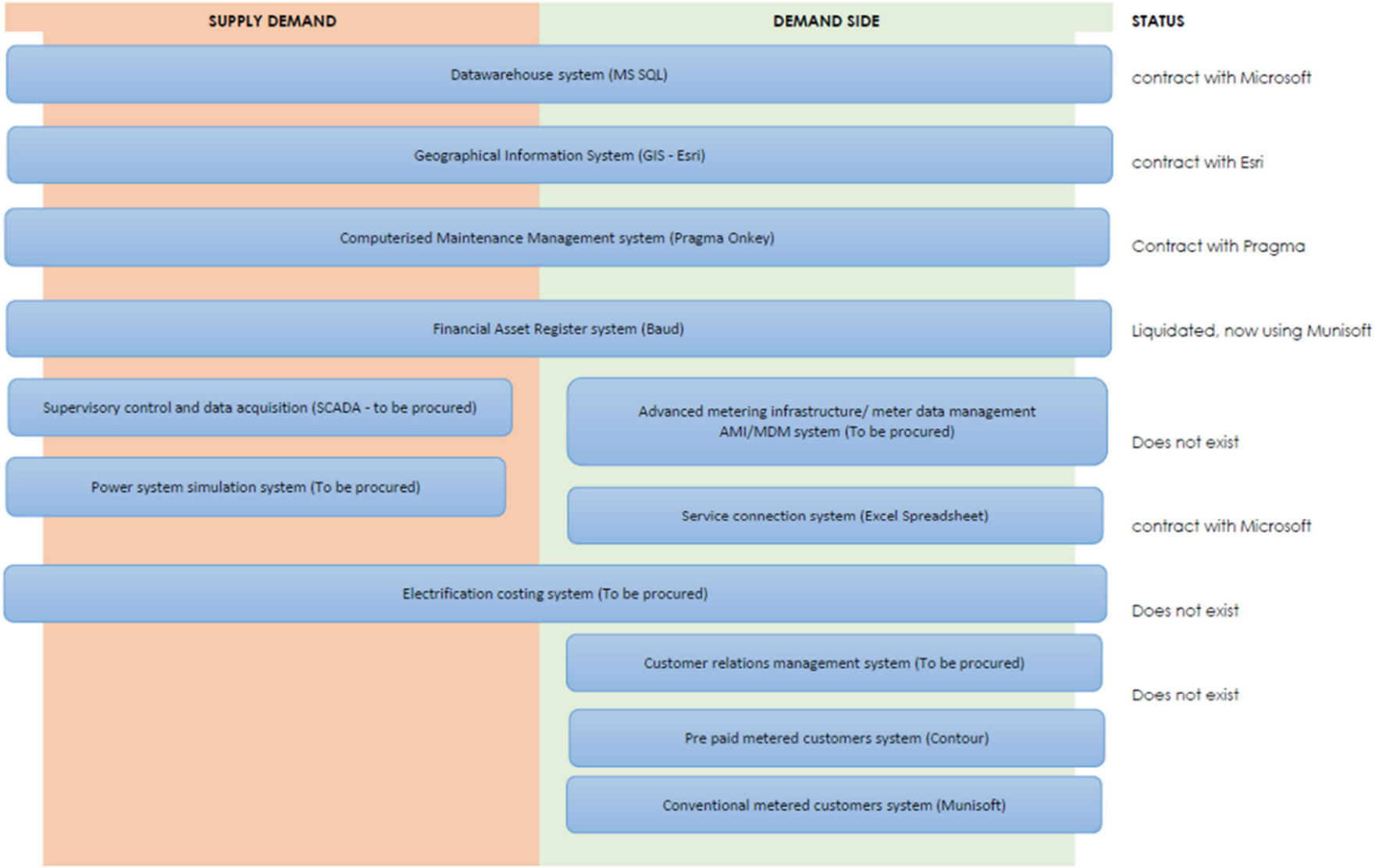


Figure 12: ***Operational & Database System***

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. KDM utilises the ESRI ArcGIS platform with ESRI South Africa as the service provider. The software is fully licensed with a maintenance plan and website interface. The GIS software currently does not have any interface with any other systems.

The bulk electrical infrastructure as shown in previous sections has been captured and available in GIS and excludes any LV electrical infrastructure. This data is however not updated regularly as there is no drawing office currently in place although there is a GIS officer within the planning and development department.

Financial Management and Billing: KwaDukuza utilise MUNSOFT version 8.3.16.25 which is an integrated financial management and internal control system which is mSCOA compliant. Payroll is excluded from this platform and conducted on an independent system called Sage VIP Premier. The service provider for Munsoft is Munsoft Pty (Ltd) and KDM has an associated service level agreement for maintenance and support. The Munsoft software is currently utilised by more than 30 users and currently has no interfaces to other systems. Please refer to section 4.3.3.3 in this regard for a more detailed assessment.

Asset Register: Baudnext was previously used for the movable and immovable asset register until the company liquidated. The asset register data has now been migrated to Munsoft software and is currently utilised within this platform. Munsoft provides an asset module that KDM utilise for asset capture and asset management for fixed assets. These fixed assets life cycle is monitored within this tool and includes depreciation adjustments, repairs performed, condition etc. and are updated with a physical verification every 3 years with sample verifications done on a yearly basis. The Munsoft Asset management tool currently has no interfaces to other software except the Munsoft financial system. This therefore allows for goods captured within the supply chain or procurement module to be classified as a fixed asset and moved to the asset register.

Asset Planning & Asset Creation: Typically done in Excel and then migrated to Munsoft Asset Management Tool.

Maintenance Management System (MMS): Maintenance management systems are used to manage the maintenance of electrical network infrastructure. KwaDukuza historically had software in place called ARAMIS intended for maintenance management, this was however never functional, and the utility looked at an alternate tool for this purpose. In 2015 KwaDukuza implemented a computerised maintenance management solution for electricity infrastructure. The project was implemented, however not fully successful as it is currently not being utilised fully. The software utilised is the On Key web-based Enterprise Asset Management System which is licensed with more than 10 users. The service provider for this software is Pragma and currently has no interfaces to other systems.

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 and control room to control and manage electrical services in the KwaDukuza Municipality was developed in 2019. The purpose of the functional specification was to ensure that the SCADA system is suitably designed to ensure safe, reliable operation and is simple to maintain. The SCADA system configuration and the related equipment necessary for the complete installation, was detailed in this design specification and technical data sheets. KwaDukuza subsequently appointed a consultant for the review, verification, compilation of tender document and construction project management. This project has gone out for tender and is currently in the adjudication phase of appointing a contractor to carry out the works.

The SCADA system will allow for remote monitoring of infrastructure, control of infrastructure and provide information on the electrical system in real time and through customised user reports. This

information, specifically statistical metering data is crucial in conducting technical losses assessments as it will provide the correct loading on the network, both in terms of maximum demand and the load profile of the various loads on the network. Phase 1 of the project will include all major Distribution substations, phase 2 will include 36 key switching substations and phase 3 will include a smart metering system where power flow through 244 x 11kV feeders and 1405 reticulation transformers will be metered.

The Asset Management Information Systems (AMIS): As part of the Vuthela Ilembe LED Programme, an AMIS scoping study was conducted for KDM. 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

Customer Relationship Management (CRM): KDM have a control which is manned 24/7. There is a three-shift system used where there are two employees at each shift. There are 6 employees which makes the coverage for the three-shift system to be inadequate, basically short by two staff to make a 40-hour week rotation. The control room has two functions,

- Attendance of consumer queries through the communication channels of telephone, WhatsApp, Facebook page, and walk-ins. The telephone system being utilized is a normal office telephone and not a call centre type telephone that has ability to queue calls, record calls and provide call reporting. Every time a call is logged a reference number is provided by utilizing the Onkey system (this is the computerised maintenance management software). The Pragma Onkey software is a web-based system where the database sits within the Pragma Cape Office server, which impacts the speed of the system as advised by KDM.
- Dispatching of field resources. The reference number generated by the Onkey system is used as a job card number. After hours work is handled by the standby staff, and they are notified through the control room.

Outage Management System: Outages are partially handled through the Onkey system by capturing power outages on the Onkey system. KDM have developed a proposed works management procedure that will be implemented with the new SCADA and Control Centre establishment.

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 17: Technical Loss Deliverable breakdown

Number	Assessment Item	Reference Material	Source	Received
2.1	Assess Worldbank Group Study on 33kv & 11 kv networks of KDM	Worldbank Group technical losses study (T)	WBG	Y
2.2	Determine energy balance ito: - Quantum of electricity loss - Key elements in grid where losses are occurring - Reasons / causes of losses	Worldbank Group technical losses study (T)	WBG	Y
		KDM distribution losses report 2018-2019 **(A)** (R)	Energy	Y
		KDM Energy Losses report 2020 **(A)** (R)	Energy	Y
		Network model used by Worldbank? (Z)	Energy	

4.2.3 Situational Analysis Findings

4.2.3.1 Technical Losses Analysis

Reference information received in this regard, consists of:

- KDM Electrical energy losses calculations and action plan report
- KDM EMP
- KDM Estimation of technical losses HV & MV Networks
- Distribution losses recon 2018/2019

The extent of technical losses studies compiled for the KwaDukuza electrical networks are limited to an internal estimate by the Electrical Engineering Services and two independent assessments,

1. KDM currently experiences technical losses in the distribution of electricity in the order of between 6 and 8 % as per the Electrical Engineering Services estimate. There are 2 methods for calculating losses and these are conducted monthly,

   1.1. The first method uses the following calculation,
   - Total Losses = Electrical energy purchased – (Energy sales Prepaid + Energy sales Conventional & AMR).
   - Technical losses = 10% of Total Losses and Non-Technical Losses = Total losses – Technical losses.

   The shortfall of this method is the estimate of the technical losses.

   1.2. The second method the methodology of NRS 080 and utilises loss factors for technical losses which depend on network classification per voltage level and customer type. KDM utilise the urban loss factor for voltage levels between 500V and 66000V. This method uses the following calculation,

   - Technical Losses = Energy Delivered *(Loss Factor – 1). The energy delivered is the Eskom metered usage at the 3 main intake points and the loss factor is 1.056 as per NRS 080.

   The shortfall of this method is that the required metering infrastructure across each feeder is currently not installed and secondly the associated customer numbers connected to these feeders are unknown as they are currently not linked.

2. As part of the 2019 Master Plan Revision, technical losses for the KDM 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 estimated technical losses for the Northern and Southern regions were estimated to be 6% and 8% respectively. The breakdown of percentage losses estimated from the analysis are tabled overleaf.

Table 18: EMP Technical Losses Estimate

Loss Type	North	South
LV Copper Losses	4%	5%
MV Copper Losses	0.5%	1%
Magnetizing Losses	1%	2%
Estimated Technical Losses	6%	8%

3. An estimation of the technical energy losses on the HV/MV networks of KDM were conducted in 2021 by a World Bank Consultant as part of the Vuthela Ilembe LED Support Programme. The following approach was taken to conduct the study,

    - Develop a virtual distribution network that represents the current Urban topology of the 33kV and 11kV system of KDM. This is a typical Eskom 33kV supply to a 33/11kV Distribution substation with three 10MVA transformers and associated 11kV feeders and 11/0.4kV reticulation transformers. The electrical equipment is based on information available within the EMP and parameters are derived from manufacture data sheets.
    - A power profile was developed using 2018/2019 energy consumption and maximum demand data for the purpose of estimating technical power and energy losses. The profile was broken down into three scenarios within a 24-hour day as tabled below,

Table 19: Loading Scenarios

Demand Type	Hours in day	Pmax (MW)	E (MWh/day)
Low Demand	7.4	6.1	45
Medium Demand	10.6	17.2	181
High Demand	6	25.6	154

    - Power flow studies were conducted on the virtual network for the maximum demand day as tabled above and related power loss across the network was calculated.

    The estimated technical losses from the virtual network study are equal to 4.92%, it must be noted that this does however exclude the LV network. This study has further concluded that this can be considered a worst-case scenario and 4.5% is a good reference for technical losses on the 33kV and 11kV networks. The breakdown of percentage losses estimated from the analysis are tabled below.

Table 20: Virtual Network Technical Losses Estimate

Load Profile			Energy Loss				
Demand Type	h	MWh/day	**Total**	33kV Line	33/11kV Tx	11kV Network	11/0.4 Tx
Low Demand	7.4	45	4.25%	0.48%	1.57%	0.26%	1.94%
Medium Demand	10.6	181	4.36%	1.45%	1.13%	0.75%	1.03%
High Demand	6	154	5.77%	2.25%	1.34%	1.13%	1.05%
Total	24	380	**4.92%**	**1.66%**	**1.27%**	**0.85%**	**1.14%**

Based on the analysis conducted to date it can be noted that the estimate of losses varies based on the different approaches taken. The utility calculations are indicative at best and provide a high-level indication of potential losses.

The independent analysis conducted follows different methodology with one taking a pragmatic approach utilising a combination of network modelling and typical equipment losses to estimate both the MV and LV network technical losses.

The other analysis utilises a typical sample network of the utilities Distribution system with accompanying metering data at the supply point to best estimate the 33kV – 11kV Distribution losses. In this study the LV network losses were not calculated.

A comparison of the two studies indicates that the sample "virtual network" has higher technical losses in the range of 1.5%, with the EMP study indicating a 3% loss and the sample network analysis concluding the technical loss estimation at 4.5% on the MV Distribution networks. The estimate of LV losses is in the range of 4% which is considered a fair estimate when compared to similar utilities. This total technical loss estimate is therefore 8.5% based on the analysis conducted to date.

KDM conducted a Distribution losses recon for the 2018/2019 financial year indicating an 18.05% total loss for both technical and non-technical losses. This equates to 122,149,967kWh at a cost of R115,101,490. With technical losses estimated to be 8.5%, this indicates a typical loss of R54,202, 917 per year.

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 and the effort required to construct such a model is extensive. The study that has been conducted is based on network segmentation which utilises a sample of networks and provides a reasonable range that the level of losses that would fall in. The preferred would be the ideal method that is used on a comprehensive network model that would provide a higher level of accuracy. This method would however require statistical metering data across the network which is unfortunately not available for the KDM electrical network. Therefore, understanding the reasons and areas of loss in the network is currently challenging and requires further analysis. The KDM Electricity department

and previous analysis have not identified any specific sections of the network that are linked to excessive technical losses to zone in on.

4.2.3.3 Technical Losses Interventions

KDM have identified the following list of activities to support the reduction of technical losses in the network,

- Appoint service provider
- Model and analyse electrical energy flow
- Determine technical energy losses per feeder
- List energy consuming loads
- Install statistical meters
- Energy consumption analysis for 6 months

To date none of these have been complete, however statistical metering is currently being addressed at substation level as part of the SCADA project which is at the tender stage. The availability of this metering data will provide the basis for the first iteration of more detail analysis. The associated budget required to procure the power system simulation package for the calculation of technical losses has been allocated under a capital vote.

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. Refer to section 4.1.3.3 where non-technical losses have been between 9% (FY 2018-2019) and almost 13% (FY 2020-2021). The trend also indicates that non-technical losses are constantly climbing.

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 21: 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)	SOPB003 - Meter Movement (A)	Finance
			SOPB006 - Meter Reading (A)	Finance
			SOPB004 - Prepaid (A)	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	Customer Data base from financial system (Z)	Finance

		systems wrt: - Metering & billing (PP & Conv) - Historical payment levels - Collections - Cost recovery - Implementation of credit control policies - Ring-fencing of electricity accounts - Free basic electrcity - Credit control & debtor management - Revenue enhancement - Customer account management	PFM data cleansing project report (T)	Vuthela
			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
			SOPB001- Disconnection non-payment (A)	Finance
			KDM Revenue enhancement program 09-2020 (A)	Any
			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
			Valuation roll (T)	Finance
			Customer Data Management System Report (A)	Any
			Cadastral data (T)	Finance
	3.5	Review report on Customer Relations Management System and / or Information Systems	PFM report on CRM / IS for query logging (T)	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:	Customer data base with reading and billing history (Z	Finance
			Billed revenue vs collected	Finance

		- Accuracy of billing - Billed revenue vs collected revenue - Returned mail billings - Rd cheque register - Unallocated receipts - Clearing of suspense accounts - Updating debtor's ledgers	revenue report (Z)	
			Returned mail billings? (Z)	Finance
			RD cheque register (Z)	Finance
			Unallocated receipts report (Z)	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
			Energy tariffs 2020/21 (A)	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	PFM Indigent register study (T)	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

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.

Despite several requests, this information was not received. After attendance of the MUNSOFT system overview training by the Zutari representative on 21 April 2022, it was determined that this information is not readily available from the MUNSOFT front end.

In this regard a letter of approval was obtained to obtain this information from MUNSOFT. This data was eventually obtained from Munsoft in a set of .CSV or .XLS exports. The filed received consisted of:

- Valuation Master File.xls
- CsmMeterMaster_KWADUK_S01_220614_114112.xls
- CsmMeterHist_KWADUK_202107-202206_S01_220614_115741.csv
- Consumer Master File.xlsx
- Consumer Erf Master.xls

This information was then combined into a single view SQL data file. The following fields were used to generate a unique 27-digit ERF code for purposes of using as primary key to link the information together:

- ERF_EXTENSION
- ERF_LOT_NUMBER
- ERF_SUB_DIVISION
- ERF_UNIT_NUMBER

From this view we were then able to make the following analysis and conclusions for this aspect.:

- There are 53 657 unique stands in the Munsoft data
- 233 Stands does not have a valid stand key and have been discarded in this analysis
- The table below provides an overview of stands, whether a customer is linked to the stand and whether a meter is linked to the stand.

Customer linked to stand		Linked Customer Status		Meter linked to Stand		Meter Type Linked		
Y	N	Active	Inactive	Y	N	Conventional	Prepaid	No Type
48953	4704	43707	5246	48953	4704	9405	11269	28279

- All stands with a customer linked, also have at least one meter linked to the stand
- A large number of meters have no type in the system

Below tables indicate the extent of account types of vs tariff code types for conventional meters as well as prepaid meters. The tables have been limited to the first three account types for ease of reading.

Conventional

Count of ERFKEY	ACCOUNT_TYPE_DESCRIPTION		
METER_TARIFF_DESCRIPTION	COMMERCIAL	DOMESTIC	FARM LAND
015 GROUP ACCOUNT	3		
020 GROUP ACCOUNT	4	16	
025 GROUP ACCOUNT		1	
026 GROUP ACCOUNT		3	
028 GROUP ACCOUNT		1	
030 GROUP ACCOUNT	1	2	
031 GROUP ACCOUNT			
032 GROUP ACCOUNT	1		
041 GROUP ACCOUNT		1	
042 GROUP ACCOUNT	1	1	
046 GROUP ACCOUNT		1	
070 GROUP ACCOUNT		2	
154 GROUP ACCOUNT		1	
156 GROUP ACCOUNT		1	
165 GROUP ACCOUNT	1	2	
171 GROUP ACCOUNT	2	6	
210 GROUP ACCOUNT		1	
215 GROUP ACCOUNT		1	
220 GROUP ACCOUNT			
400 GROUP ACCOUNT	1	5	
CR ADJUST ON OLD COMM TARIFF			
ELEC ARRANGEMENT		1	
ELEC COMM < 80 AMP NORTH	71	242	
ELEC COMM > 80 AMP SOUTH	90	134	
ELEC COMM < 80 AMP SOUTH	130	167	
ELEC COMM > 80 AMP NORTH	47	132	
ELEC DEPARTM < 80 AMP SOUTH		3	
ELEC DEPM MAX DEM UNITS SOUTH		1	
ELEC DOMESTIC NORTH	31	2165	3
ELEC DOMESTIC SOUTH	67	7449	5
ELEC FLAT KVA UNIT SOUTH	23	76	
ELEC FLATS KVA UNITS NORTH		2	
ELEC IRIGATION			
ELEC KVA UNIT NORTH	33	74	1
ELEC KVA OFF PEAK UNITS NORTH		1	
ELEC MAX DEM < 65 KVA SOUTH	60	109	1
ELEC MAX DEM UNITS >1000 SOUTH			
ELEC METERED STR LIGHTS SOUTH	1		
ELEC PENDING METERS	7	40	
ELEC PREPAID	11	118	
ELEC RELIGIOUS NORTH	7	25	
ELEC RELIGIOUS SOUTH	1	13	
ELEC SIZA COM > 80 AMPS	16		
ELEC SIZA COMM -80 AMPS	4	1	
ELEC SIZA COMM KVA UNIT	4	2	
ELEC STR LIGHT PRIVATE		7	
ELEC STREET LIGHTS SOUTH	2	4	
ELEC STREETLIGHTS NORTH	5	3	
ELEC SUGARMILL NORTH			
ELECTRICITY RELIGIOUS		1	
INDIGENT ELEC			
MD TIME OF USE			
TIME OF USE KWH OFF-PEAK			
TOU BASIC CHARGE < 65 KVA	1	4	
Grand Total	625	10819	10

Prepaid

Count of ERFKEY	ACCOUNT_TYPE_DESCRIPTION		
METER_TARIFF_DESCRIPTION	COMMERCIAL	DOMESTIC	FARM LAND
CR. ADJUST ON OLD DOM TARIFF	1		
ELEC COMM > 80 AMP NORTH			
ELEC DOMESTIC SOUTH		3	
ELEC PENDING METERS		1	
ELEC PREPAID	104	6514	2
PREPAID		2	
REFUSE COMM 6X WEEK NORTH		1	
(blank)	39	11107	1
Grand Total	144	17628	3

The table below depicts an analysis of stand with a blank account description as well as a blank Meter Tariff Description.

Count of ERFKEY	ACCOUNT_TYPE_DESCRIPTION	
METER_TARIFF_DESCRIPTION	(blank)	Grand Total
(blank)	29681	29681
Grand Total	29681	29681

We also learned that tariff codes are not hard coded in the MUNSOFT system to land use or zone codes, indicating that there is a risk of operator errors when accounts are being created and the required tariffs are linked to the account.

Observations:

- A lot of tariff descriptions are being used which seemingly does not link back to a tariff structure.
- Errors could be seen between the type of account and the tariff type. Commercial and domestic account types are for example linked to streetlight tariffs.
- A large number of stands (29681) have no tariff, nor account type description.
- In general, the data within Munsoft in our view requires a lot of data cleansing.

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

Reference information obtained in this regard consist of:

- SOPB003 – Meter movement
- SOPB0006 – Meter reading
- SOPB004 – Prepaid

Additional reference information deemed necessary and requested but not received consist of:

- SOP for new connections (covered under the SOPB004 for prepaid new connections)
- SOP for connection upgrade
- SOP for connection removal
- Applicable policies

This assessment will therefore focus on the ones received.

4.3.3.2.1 SOPB003 – Meter movement

This SOP relates to the replacement of an electricity meter.

The SOP is highlighted in the table below.

Table 22: Meter Movement SOP

NO	PROCEDURE	RESP OFF
	Receipt and processing of meter movement forms	
1	Electrician/ representative from the Electricity Department/ Contractor presents the original meter change document to the Accountant Revenue/ Billing.	Accountant Billing
2	The Accountant signs the copy of each meter movement form received from the Electrician/ representative of Electrical department/ Contractor on the register and also signs the copy to be handed back to the Electrical Department.	Accountant Billing
3	The Accountant to keep a register of all received meter movements with 2 columns for signatures and dates. This is to be signed by Accountant Billing when allocating meter movement forms and by the Billing Controller/Prepayment Supervisor on receipt of the same.	Accountant Billing/ Billing Controller/ Prepayment Supervisor
4	Accountant to scan the meter movement, save a soft copy in the documents folder and hand the hard copy to the respective staff being Billing Controller or Prepayment Supervisor.	Accountant Billing
5	Billing Controller/Prepayment Supervisor is to: • Sign the register for receiving the meter movement form from the Accountant, • Scrutinize the meter movement form to ensure all the relevant fields have been completed by the Electrical department/ Contractor. The Billing Controller/Prepayment Supervisor is to contact the Electrical department/ Contractor if there is any information outstanding. • Process the meter movement form by updating the details/master file changes on the billing and prepayment systems and processing debit/credit adjustments if necessary. This is to be done with 5 days of receipt of the meter movement form. • Advice consumer of any changes made to his/her account [where adjustments had to be processed].	Billing Controller/ Prepayment Supervisor
6	Safely file the document in number order in the file clearly marked METER MOVEMENTS.	Billing Controller/ Prepayment Supervisor

Observations:

- SOP suggests that proper controls are in place from a finance management perspective to receive the necessary forms and process accordingly.
- It assumes that quality assurance of meter changes is controlled by the energy department, especially in the case of meters replaced by contractors.
- Although the accountant is required to scrutinize the form to ensure all fields are completed, it assumes that quality of information is 100% correct as completed by the energy department. Considerations needs to be given on how the energy department exercises quality assurance of installation and data to ensure integrity of data entering the financial system.

4.3.3.2.2 SOPB006 – Meter reading

The SOP is highlighted in the table below and covers the process of obtaining meter readings on conventional meters.

NO	PROCEDURE	RESP OFF
	Monthly meter reading processes	
1	Prepare a meter reading schedule monthly by taking the following into account: • Number of meters/routes to be read • Number of meter readers available • Dates by which readings must be completed to meet the deadline for billing, taking into account weekends and public holidays if applicable • Rotation of Meter Readers across routes The meter reading schedule is to be provided to the Manger: Billing, Accountant: Billing and all Meter Readers prior to the start of each reading cycle	Senior Meter Reader
2	Extract a meter reading route list from the financial system, without the prior month readings, for all meters that are to be read and forward to the Senior Meter Reader	Accountant: Billing
3	Print and distribute the meter reading route lists to the Meter Readers according to the meter reading schedule	Senior Meter Reader
4	Perform meter readings as meter reading schedule. The meter reading route list is to be completely read and valid comments are to be recorded where readings could not be obtained. There should be no meters on the list without a comment or a reading	Senior Meter Reader/Meter Readers
5	Ensure that completed route lists are submitted to the Senior Meter Reader immediately upon completion of a route and before commencement of reading a new route and that there is no deviation from the meter reading schedule	Meter Readers
6	Deviations from the meter reading schedule is to be reported on a daily basis to the Accountant Billing to ensure that mitigating measures could be effected	Senior Meter Reader
7	Completed meter reading route lists must be submitted immediately after receipt to the IT Data Capturer for capturing of meter readings	Senior Meter Reader
8	Capture meter readings onto the financial system and stamp the route list as “captured” once all readings have been captured	IT Data Capturer
9	Immediately after meter readings have been captured, create and analyze exception reports from the financial system to identify zero consumptions, negative consumptions and large consumptions, etc. in order to ensure that meters are captured correctly on the financial system	Billing Controllers
10	Create variance reports and submit to the Senior Meter Reader for onward allocation to the Meter Readers to follow up on zero consumptions, negative consumptions and large consumptions, etc.	Billing Controllers
11	Follow up, investigate, verify and correct meter readings on the financial system ,received from the Senior Meter Reader/Meter Readers, arising from the variance report readings received	Billing Controllers
12	Investigate, report and follow up possible problems/concerns, faulty meters, locked properties, access issues, bush, jammed meter kiosks, etc. to the responsible business unit and inform the consumer immediately	Billing Controllers
13	On a monthly basis, create exception reports for meters estimated for a period longer than 3 consecutive months and implement controls to investigate those and obtain meter readings	Accountant: Billing

14	Completed and captured route lists and variance reports where applicable are to be filed on a monthly basis (per region North and South), clearly labelled and in route number order together with the meter reading schedule.	Billing Controllers

- The SOP suggests that the process is still mostly a manual process, however confirmation was received that readings are captured on handheld devices and imported from the device into the system. SOP needs to be updated in this regard with a newer release.
- It is assumed that the reading files that are prepared without the previous month's readings is to eradicate abuse of the process by fabricating readings as opposed to getting actual readings. This is an advantage but could also be a disadvantage as meter readers cannot report when a meter does not register consumption.
- Meters that cannot be read are only reported as faulty without an indication of what the fault is. An indication of the reason for the meter being faulty will assist the energy department in addressing faulty meters. The MUNSOFT software does provide for a municipality to list fault reasons under the No Access field.
- A further advantage of a detailed fault list is that not all faults (No Access) will be the responsibility of the energy department wrt electricity meters. When access to a meter is problematic due to the reader not getting access to the property, a detailed No Access code may assist in flagging certain meters to be read after hours or getting the consumer to phone a reading in or sending a Whatsapp.

4.3.3.2.3 SOPB004 – Prepaid Meters

This SOP covers the process of a new connection for a Prepaid meter as well as a meter replacement.

The SOP is highlighted in the table below.

NO	PROCEDURE	RESP OFF
	Master file amendments to the prepayment database	
A	**NEW CONNECTIONS**	
	• Receiving applications for new connections/new meter registrations from the Consumer • Make a copy of the Certificate of Compliance (COC) and Consumers ID and attach to the application form • Process the application by updating the master file of the prepayment database. Ensure that all relevant fields are accurately and completely updated (Name, Surname, Identity Number, Address, Next of Kin, Contact Details, etc.) • Update the same information on the Daily duties spread sheet for statistics purposes	Prepaid Clerk/ Relief Clerk/ Prepayment Supervisor
B	**METER CHANGES/REPLACEMENTS**	
	• Receives meter movement forms for meters that were replaced/changed from Consumer • Scrutinize the meter movement form to ensure all the relevant fields have been completed by the Electrical department/ Contractor. Refer this to the Prepayment Supervisor, who is to contact the Electrical department/ Contractor, if there is any	Prepaid Clerk/ Relief Clerk/ Prepayment Supervisor

	information outstanding • Extract a purchases report on the old meter number and analyse purchasing pattern. Should the purchasing pattern be irregular/there are no purchases or a long period, refer this to the Prepayment Supervisor who is contact the Electricity Department to inform them of the same and enquire the reason for the meter change and is there was a case of tampering. Illegal/direct connections establish whether the Consumer was issued with a tamper fine and it was paid. • Process the meter change, only if the above is in order, on the prepayment system by using the "meter change" field and record all relevant information (old meter number, new meter number, reason for change, etc.) and also update/confirm Consumers contact details • Record all meter changes information on the daily duties spread sheet for stats purposes	

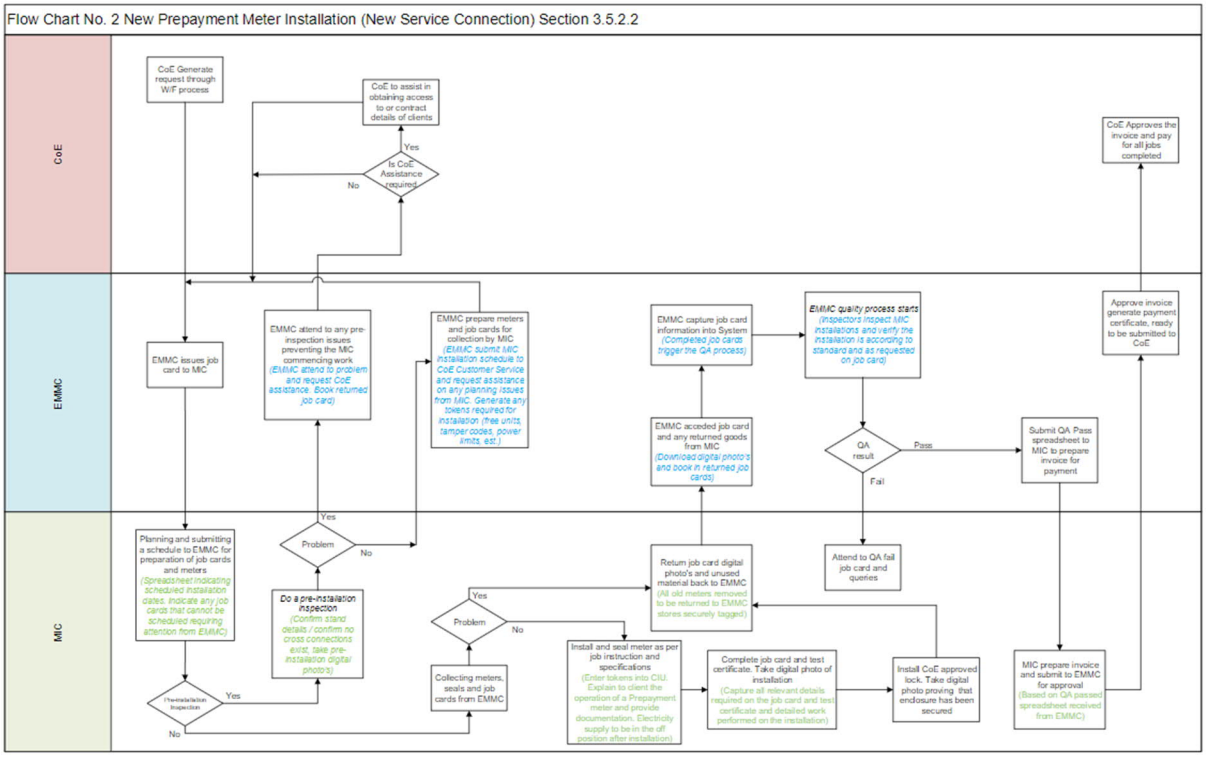
Observations:

- For new connections:
  - The process only highlights receiving of an application form from a consumer and processing on the prepayment database. This database is understood to be separate from the MUNSOFT financial system. Since the consumer must present to CoC as well, it indicates a process of meter installation prior to this process as a CoC can only be issued once a meter installation has been completed.
  - The SOP is silent on where the prepaid meter information will come from, consumer / electricity department and whether the consumer must first approach the electricity department for a meter installation.
  - There is also no indication of whether the prepaid meter number is recorded on the financial system as well. It seems that it only happens in the prepaid data base and therefore no link back the financial system for a complete customer data base overview.

- For meter changes / replacements
  - The SOP only highlights the process of the preplacement of a prepaid meter with a prepaid meter. Replacement of a conventional meter with a prepaid meter is not mentioned in any of the SOP's received for review.
  - It mentions that the meter change / replacement form is received from the consumer and not the electricity department. This is viewed as a risk as it involved one more stakeholder in the process allowing for more opportunities for things to go wrong.
  - It assumes that quality assurance of meter changes is controlled by the energy department, especially in the case of meters replaced by contractors.
  - Although the accountant is required to scrutinize the form to ensure all fields are completed, it assumes that quality of information is 100% correct as completed by the energy department. Considerations needs to be given on how the energy department exercises quality assurance of installation and data to ensure integrity of data entering the financial system.
  - There is also no indication of whether the prepaid meter number is recorded on the financial system as well. It seems that it only happens in the prepaid data base and therefore no link back to the financial system for a complete customer data base overview.

4.3.3.2.4 SOPs in general

- It is recommended that SOPs are reviewed and replaced with a process flow type with “swim lanes” for each stakeholder (department / consumer / contractor etc) indicating each one’s responsibilities in this regard. Below illustration is an example of such a process for with “swim lanes”



- SOPs are usually informed by policies. It is recommended that the applicable policy be referenced in the SOP as well.

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:

- Vuthela PFM data cleansing project report
- At least a 6-month meter reading & consumption history for all electricity meters
- 12-month billing data of all electricity meters
- 12-month purchase history for prepaid meters
- SOP for prepaid metering
- SOP for PP vending system
- Meter reading error report (faulty meter report)
- SOP for disconnection of non-paying customers
- KDM revenue enhancement program 09-2020 document

Reference information considered to be critical but not received consisted of a complete customer data set.

From the assessments it was determined that KwaDukuza use the following systems:

- MUNSOFT integrated Financial Management & Internal Control System – this is the main system in use for all aspects of financial management & control within the municipality.
- Contour Technology providing the platform and service for prepaid electricity vending.
- Automated Meter Reading (AMR) service provider for certain High Use Customers

MUNSOFT

To obtain a good understanding of the MUNSOFT software, Zutari had a representative attend a system overview training session at the MUNSOFT head office in Roodepoort. Key take aways from this session were:

- MUNSOFT is mSCOA (Municipal Standard Chart of Accounts) compliant. mSCOA was implemented in July 2017 by National treasury with the aim of improving data quality & integrity and a uniform method of financial reporting.15 Business processes are defined within mSCOA that encapsulates all aspects of municipal financial management.
    - Corporate governance
    - Municipal budgeting, planning & financial modelling
    - Financial accounting
    - Costing & reporting
    - Project accounting
    - Treasury & cash management
    - Procurement cycle:
        - Supply chain management
        - Expenditure management

        - Contract management
        - Accounts payable
    - Grant management
    - Full asset life cycle management including maintenance management
    - Real estate & resource management
    - Human resource & payroll management
    - Land use & building control management
    - Valuation roll management
    - Revenue cycle:
        - Meter reading
        - Billing accounts receivable
        - Revenue management
        - Receipting
    - Customer care, credit control & debt collection

- From the above it is clear that KwaDukuza municipality is making use of a compliant system covering all aspects of financial management
- Quarterly software updates are released to ensure the MUNSOFT system stays mSCOA compliant.
- Annual releases also take place to align the software to changes within mSCOA. Refresher courses are provided by MUNSOFT in this regard, either in person or virtual.
- Manuals of all processes within MUNSOFT are available withing the system for all operators to download and improve their knowledge.
- At least 68 local and district municipalities make use of the MUNSOFT software.

SUPPLEMENTARY SYSTEMS

The AMR system and the Prepaid vending system can be seen as supplementary systems to the main financial management & control system, serving a specific purpose.

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 Contour Technology as an STS member, implying that their system is STS compliant.

<u>Observations</u>

- We can confirm that KwaDukuza indeed make use of compliant systems
- Integration of systems does seem a bit of a challenge. Refer to the section on SOP's where we highlighted that it does not look as if prepaid meter information gets recorded within the financial system but is only housed within the prepaid 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.

- As indicated previously MUNSOFT is comprehensive and various reports are available, however the system cannot produce an overall customer data set as highlighted under 4.3.3.1.
- It also does not seem that there is a process of data verification prior to capturing / importing data into the system. This may lead to data of questionable quality being captured / imported, leading to subsequent data integrity issues. From the RUMAS report on data cleansing of June 2021, it seems that a data cleansing process did indeed take place. As previously reported though certain data quality issues were identified such as missing account numbers in the billing data files and AMR meter number differs issues between AMR reading data and billing data.

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.

Reference information received in this regard consist of the KDM cadastral data, the valuation roll, as well as the Munsoft Customer data base.

A comparative analysis was done between the cadastral data and the valuation roll. The table overleaf provides a summary overview of the analysis.

Item	Cadastral	Valuation roll	Munsoft Customer Data base
Stand records	34438	50236	72655
Stand showing multiple times	6	2111	10978
Unique stand records	34426	47852	53890
Stands having SG21code		45552	47206
Stands showing same SG21code 3 times		831	
Stands showing same SG21code 2 times		1648	
Stands without SG21code		11623	6684
Stands with correct SG21 code length		33385	34614
Stands with incorrect SG21 code length		12168	18075

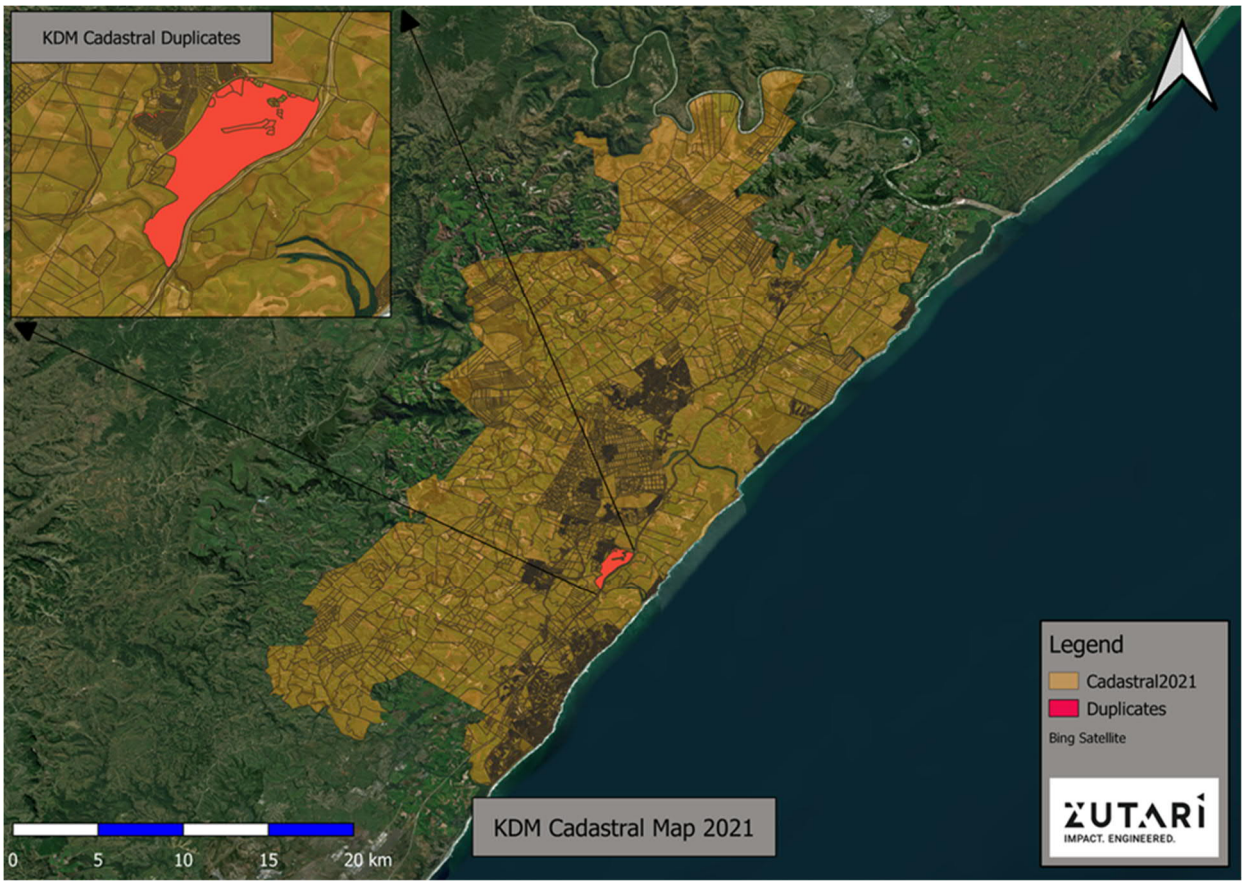
It was also observed that 4 409 stands have multiple prepaid meters linked to it. Below table indicate the top 20 stands in this regard. A possible explanation for this is the linking of multiple meters on

sectional title stands, as opposed to bulk supplying these stands and leaving downstream metering to the responsibility of the governing body.

	PRE-PAID		PRE-PAID Total
ERFKEY	ACTIVE	INACTIVE	
CB###~000005451~000000~0000	130	23	153
RP###~000007704~000000~0000	59	15	74
GV###~000000967~000000~0000	47	1	48
CB###~000000284~000000~0000	45		45
STG##~000009062~000000~0000	35		35
CB###~000000127~000000~0000	31		31
CB###~000000077~000000~0000	22	2	24
CB###~000000168~000000~0000	23		23
CB###~000002390~000000~0000	22		22
GV###~000000872~000000~0000	19		19
NP###~000003297~000000~0000	14	4	18
CB###~000002692~000000~0000	18		18
CB###~000000161~000000~0000	17		17
GV###~000001086~000000~0000	16		16
STG##~000003208~000000~0000	12	2	14
GV###~000000890~000000~0000	14		14
CB###~000000123~000000~0000	14		14
STG##~000008498~000000~0000	7	6	13
STG##~000008499~000000~0000	12	1	13
GV###~000001104~000000~0000	12	1	13
GV###~000001153~000000~0000	13		13

Observations

- As cadastral data makes use of the unique 21-digit Surveyor general stand code as the primary key, duplicates in records should not occur. Six stands however do duplicate. See below map of the cadastral data. The stands in red are the ones duplicating and require further investigation.
- Officially KDM should thus have 34 438 registered stands. The valuation roll and the Munssoft Customer data base however have quite a bit more than this with various forms of anomalies. This is viewed to be indicative of a data quality issue within the MUNSOFT financial system. It is assumed that the valuation roll is drawn from the same customer data base from which electricity customers are managed.
- Our conclusion is that a lot of data cleansing is needed to align what is in the cadastral data with the valuation roll and the customer data base.



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.

Reference information considered relevant and requested consist of:

- Customer data base with reading and billing history
- Billed revenue vs collected revenue report
- Returned mail billings report
- RD cheque register
- Unallocated receipts report
- Unallocated receipts procedure
- SOP's related to revenue management / protection

The only records received consisted of meter readings and billing history as well as prepaid purchase history report.

Observations:

<u>Conventional meters</u>

- When it comes to conventional meters, the first goal should always be to obtain a high as possible % readings onto bill. Put another way, as few as possible customers should be billed interims / estimates for two reasons:
    - Customers are more willing to pay for services when they can see what their actual consumption is.
    - All meters should be read at least once in 90 days. Meters not read for more than 90 days, and subsequently billed interims / estimates lead to audit queries. This is

considered a huge challenge for all municipalities with no simple solution as the reasons for meters not being read are many.

- An analysis of the billing data received indicates that approximate 52% of customers are billed estimates as of September 2021. This is a significant increase from accounts estimated in May 2021 of 27%. In our opinion a benchmark of at least 90% readings onto bill should be achieved.
- No interim / estimated billing report was received. From the billing history one can deduce though that a significant number of meters are being estimated for periods longer than 3 months.

Prepaid meters

Prepaid purchase history was received for the period July 2020 to June 2021.

The history contains records of 51 025 unique prepaid meter numbers with a 12 month purchase history.

An analysis of the purchase history revealed that:

- On average 27 725 (54%) meters show zero purchases
- 21 493 (42%) meters show no purchases for the entire year.
- 5 481 meters have no records of address, town, or consumer name.
- Total prepaid meters are more than registered stands as per cadastral data.

Conclusion:

- Just with the information received it is clear that KDM faces a huge challenge with percentage readings onto bill (meters that are estimated) and prepaid meters that are not purchasing.
- KDM is bleeding revenue in this regard.
- Credit control cannot be implemented as it should due to the high number of accounts estimated.
- As previously indicated, there seems to be no link back between the financial system and the prepaid vending system, leading to incomplete customer records. Without complete customers records it is going to be very difficult to determine whether all KDM customers are metered (conventional or prepaid) or not.
- Even though a cleansing exercise was undertaken, a lot more work is needed in this regard.

4.3.3.7 Investigate necessity of tariff study and review

Reference information received in this regard consist of the draft Tariff policy for 2021-2022.

Based on answers to a question posed to the Municipality, a tariff study has not been undertaken in the last few years.

Observations:

- The policy is understood to be a policy document for all tariffs to be levied to customers. It however only speaks to Electricity and Refuse removal.

- A search of the KDM website was done, but tariffs could not be found, although there are all sorts of other documents such as the valuation roll, policies etc. We are of the view that tariffs also be published to the website so that consumers can be informed.

Conclusion:

- A tariff study could well be considered, not just for KDM, but for the whole of iLembe.
- There are other factors though that places a bigger burden on revenue collection and protection as highlighted under section 4.3.3.6. A tariff study may indicate whether KDM can collect sufficient revenue from their customers to cover expenses. It is not going to ensure though that the revenue is correctly billed and collected.

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.

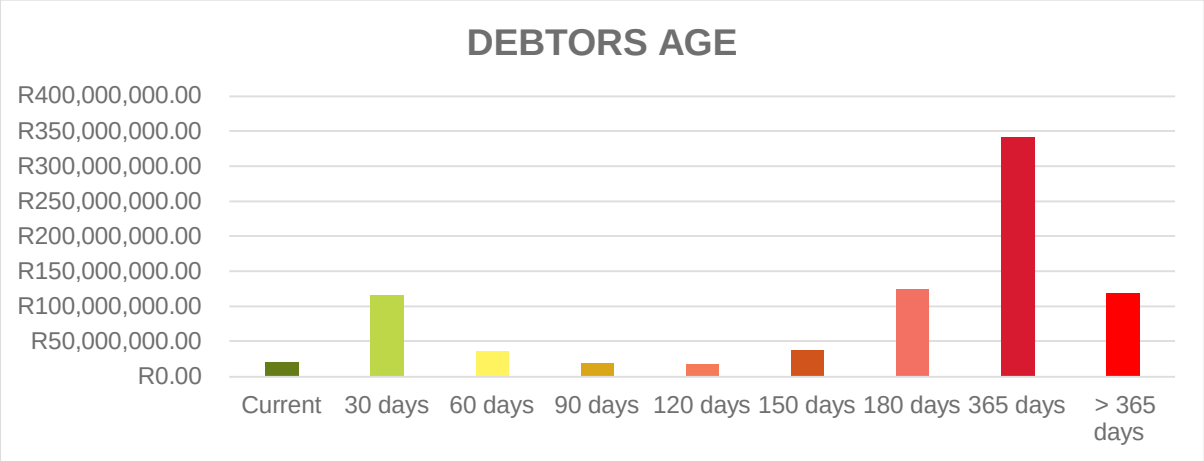
4.3.3.9 Review of Debt management

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

A debtor's age report was received as of June 2022. Below table and graph provides and overview of the age analysis of the debtor's book:

Age	Value	% Of Book
Current	R20,204,442.95	2.43%
30 days	R116,573,562.09	14.03%
60 days	R36,298,274.35	4.37%
90 days	R19,177,903.16	2.31%
120 days	R17,870,373.57	2.15%
150 days	R37,519,745.14	4.52%
180 days	R123,700,002.90	14.89%
365 days	R341,083,569.75	41.06%
> 365 days	R118,264,267.30	14.24%
Total	**R830,692,141.21**	**100.00%**



The table below provides an overview of the debtors age per customer type:

ACCOUNT_TYPE	Sum of Current	Sum of 30 Days	Sum of 60 Days	Sum of 90 Days	Sum of 120 Days	Sum of 150 Days	Sum of 180 Days	Sum of 210 Days to 1 Year	Sum of Over 1 Year	TOTAL
COMMERCIAL	-R 2,149,745.06	R 27,632,277.84	R 3,353,181.45	R 1,416,950.27	R 1,266,404.76	R 249,117.95	R 256,075.23	R 877,142.58	-R 4,530,523.45	R 28,370,881.57
DOMESTIC	-R 1,122,047.30	R 65,416,945.68	R 17,853,052.99	R 8,916,963.22	R 7,084,387.01	R 5,225,958.25	R 3,659,138.75	R 21,718,507.18	R 101,054,374.24	R 229,807,280.02
FARM LAND	R-	R 278,991.20	R 29,328.80	R 23,278.23	R 25,763.13	R 17,957.26	R 27,520.38	R 117,875.54	R 467,328.32	R 988,042.86
GOVERNMENT	-R 1,786.21	R 2,202,720.04	R 35,125.25	R 70,031.77	R 59,947.45	R 62,904.66	R 447,251.94	R 444,921.96	R 1,564,610.85	R 4,885,727.71
KDM PROPERTY	-R 5,216.94	R 674,687.26	R 267,882.19	R 304,387.05	R 65,601.84	R 51,712.21	R 57,526.20	R 310,387.14	R 1,419,443.60	R 3,146,410.55
LAND AFFAIR	-R 750.00	-R 5,106.66	R 1,316.85	R 931.51	-R 2,285.41	R 826.22	R 3,765.68	R 32,461.07	R 77,907.67	R 109,066.93
SCHOOL	-R 500.00	R 16,731.17	R 4,946.93	R 4,642.21	R 4,120.54	R 4,589.87	R 28,882.40	R 79,172.06	R 65,994.64	R 208,579.82
STATE OWNED	R-	R 7,132.51	R 2,820.19	R 2,362.61	R 2,345.78	R 2,346.25	R 29,622.17	R 44,013.26	-R 39,398.63	R 51,244.14
TO BE DEFINED	R-	R 3,986.83	-R 396.24	R-	R-	R-	R-	-R 0.24	-R 11,862.54	-R 8,272.19
(blank)	R 23,484,488.46	R 20,345,196.22	R 14,751,015.94	R 8,438,356.29	R 9,364,088.47	R 31,904,332.47	R 119,190,220.15	R 317,459,089.20	R 18,196,392.60	R 563,133,179.80
Grand Total	R20,204,442.95	R116,573,562.09	R36,298,274.35	R19,177,903.16	R17,870,373.57	R37,519,745.14	R123,700,002.90	R341,083,569.75	R118,264,267.30	R830,692,141.21

The Top 25 debtors are listed in below table:

ACCOUNT_NO	ACCOUNT_HOLDER	ACCOUNT_TYPE	STREET_ADDRESS	Current	30 Days	60 Days	90 Days	120 Days	150 Days	180 Days	1 Year	> 1 Year	Total
7013198	M & P DEV.PTY LTD	DOMESTIC	44 LEE BARNES BOULEVARD CALEDON ESTATE CALEDO	R -	R 47,016.98	R 46,770.59	R 35,033.75	R 46,407.36	R 34,540.97	R 34,294.57	R 202,127.90	R 2,320,586.79	R 2,766,778.91
7021027	NORTHGLOBAL PROPERTIES PTY LTD	DOMESTIC	ELALENI COASTAL FOREST ESTATE 910	R 85,159.77	R 102,792.16	R 361,619.91	R 4,368.32	R 4,368.32	R 4,515.45	R 107,922.72	R 523,653.17	R 1,034,280.87	R 2,228,680.69
3005363	MSOMI MSOMI INV (PTY) LTD	DOMESTIC	LEADWOOD CLOSE 3	R -	R 9,758.69	R 9,718.32	R 5,298.03	R 5,257.65	R 5,217.28	R 5,176.91	R 35,655.56	R 1,023,619.27	R 1,099,701.71
2081198	(B)ZWELABANTU DUBE CPA	DOMESTIC	FARM NEW GUELDERLAND NO. 1404 POR 91	R -	R 15,751.26	R 15,509.90	R 15,269.80	R 15,290.33	R 15,656.11	R 16,710.46	R 74,379.17	R 946,115.95	R 1,114,682.98
7018071	BCR DEVELOPMENTS PROPRIETARY LTD		NEW GUELDERLAND NO.3 POR 5	R -	R 24,871.77	R 9,360.75	R 583.91	R 9,232.89	R 181.87	R 4,830.85	R 42,346.73	R 903,699.39	R 995,108.16
2185398	HESTO HARNESSES	DOMESTIC	GLEDHOW MILL ROAD 1	R -	R -	R -	R -	R -	R -	R -	R 8,886.28	R 764,066.42	R 772,952.70
2080725	(B)ZWELABANTU DUBE CPA	DOMESTIC	FARM NEW GUELDERLAND NO. 1404 POR 91	R -	R 17,591.61	R 16,982.29	R 16,895.55	R 17,500.53	R 17,581.66	R 17,488.61	R 83,790.63	R 721,876.13	R 909,707.01
5112464	ROOPSINGH & SONS###	COMMERCIAL	MAIN ROAD 57	R -	R 18,290.49	R 16,539.99	R 17,239.19	R 17,241.37	R 15,016.53	R 14,458.57	R 62,309.94	R 669,733.33	R 830,829.41
3546199	PHINDANA PROPERTIES 217 PTY LT	DOMESTIC	MAHATMA GANDHI STREET 1	R 12,987.44	R 24,020.76	R 13,078.78	R 11,484.67	R 11,610.39	R 11,341.03	R 11,442.33	R 59,811.87	R 597,325.68	R 753,102.95
5603842	(R)JAYESEM 34 PTY LTD	DOMESTIC	SEA VIEW DRIVE 252	R -	R 5,658.38	R 5,635.33	R 3,222.31	R 3,199.28	R 3,176.23	R 3,153.18	R 20,257.11	R 582,906.22	R 627,208.04
7011034	BARLOWORLD LOGISTICS AFRICA PT	DOMESTIC	BALLITOVILLE 3719	R -	R 21,815.82	R 21,679.37	R 18,325.79	R 17,062.36	R 16,926.95	R 16,791.53	R 97,310.73	R 571,368.99	R 781,281.54
5605374	ESTATE LATE SAMUEL J M	DOMESTIC	OCEANVIEW DRIVE 57	R -	R 3,891.92	R 3,878.30	R 1,869.42	R 1,855.79	R 1,842.17	R 1,828.55	R 13,085.10	R 547,022.16	R 575,273.41
5609107	BADUL A & AMOD K S	DOMESTIC	SEAVIEW DRIVE 98	R -	R 2,675.87	R 2,674.85	R 480.15	R 479.12	R 478.10	R 3,210.88	R 32,955.34	R 536,467.76	R 579,422.07
2058496	SIMSI PROJECT MANAGEMENT CC	DOMESTIC	TOWNVIEW ROAD 23	R -	R -	R -	R -	R -	R -	R -	R 6,147.98	R 531,377.23	R 537,525.21
5382831	NAIDOO A		YELLOWWOOD DRIVE PORT ZIMBALI 62	R -	R 7,041.32	R 7,306.54	R 6,275.32	R 6,818.99	R 3,907.52	R 3,877.05	R 49,130.08	R 530,525.92	R 614,882.74
1121651	GEARWISE PROPERTIES CC	DOMESTIC	ERF 9046 STANGER	R -	R 3,590.66	R 3,588.19	R 547.10	R 544.63	R 542.16	R 539.69	R 44,018.81	R 523,140.54	R 576,511.78
1138889	ESTATE LATE PARVATHY &SOTHERS	DOMESTIC	TOWNVIEW ROAD 61	R -	R 10,680.90	R 9,605.39	R 9,516.50	R 10,517.98	R 8,344.57	R 10,910.99	R 58,684.24	R 522,833.93	R 641,094.50
5211186	(B)GOVENDER V	DOMESTIC	ROSEHILL ROAD 0	R -	R 6,544.71	R 5,122.91	R 6,382.12	R 6,939.09	R 5,622.22	R 6,645.40	R 29,242.81	R 501,607.68	R 568,106.94
5602817	R S A NATIONAL PUBLIC WORKS	GOVERNMENT	OCEAN VIEW DRIVE 59	R -	R 3,022.33	R 3,022.33	R 1,391.66	R 404.65	R 404.65	R 5,260.50	R 53,779.49	R 487,550.81	R 554,836.42
6004799	MODISANE M D L A & P P D	DOMESTIC	GINGER BEER ROAD 162	R -	R 2,267.15	R 2,261.20	R 893.61	R 887.66	R 881.71	R 875.77	R 14,605.82	R 461,410.57	R 484,083.49
7010392	JBV LOGISTICS CC	DOMESTIC	ZIMBALI SOUTH 1	R -	R 8,437.48	R 8,393.37	R 5,673.85	R 5,629.73	R 5,585.62	R 5,541.52	R 34,613.29	R 457,656.35	R 531,531.21
1122888	PADBRO INVESTMENTS & 6 OTHERS	DOMESTIC	KING SHAKA STREET 19	R -	R 9,103.41	R 8,948.08	R 7,111.67	R 7,128.00	R 7,040.70	R 6,986.26	R 39,082.92	R 423,604.87	R 509,005.91
6001244	NOETH J A	DOMESTIC	GINGER BEER ROAD 158	R -	R 2,717.32	R 2,709.53	R 1,126.66	R 1,118.85	R 1,111.06	R 1,103.27	R 9,547.64	R 422,887.29	R 442,321.62
7019233	MNISI FAMILY TRUST	DOMESTIC	WATERWOOD DRIVE PORT ZIMBALI 3	R -	R 12,535.62	R 29,767.88	R 10,297.64	R 11,497.80	R 9,483.72	R 12,093.62	R 65,983.70	R 414,106.25	R 565,766.23
5019907	ESTATE LATE NAICKER A & S	DOMESTIC	MILKWOOD DRIVE 33	R 2,509.76	R 3,415.58	R 3,401.96	R 1,908.13	R 1,894.50	R 1,880.88	R 1,867.26	R 12,248.55	R 411,874.59	R 441,001.21

Observations:

- General overview
  - 55% (R 459 347 837) of the total debtor's book is older than 180 days
  - 77% (R 638 437 958) of the debtor's book is older than 90 days
  - This is considered an unhealthy situation and indicates that current credit processes are ineffective in collecting revenue from KDM customers.
  - Debtors book does not specify which portion is for electricity billing.

- Overview per customer type
  - Of the identified customer types, domestic customers owe the largest amounts to KDM, with over R 100m older than 365 days.
  - Of the top 25 debtors, except for one government customer, one commercial and two that do not have a customer type, all the others are flagged as domestic customers.
  - Judging by the customers names though, it appears that at least 11 of those flagged as domestic, should be commercial.
  - The biggest portion (68%) is however not linked to any customer type (blank).
  - Both the last two bullet points are a further indication of possible data quality issues within the KDM financial system.

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 23: 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	Masakhane Campaign info (T)	Any
			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 KDM Communications department, through Mr Sifiso Zulu and Mrs Thandeka Mkhize. The following items were discussed:

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

There are currently no programmes or initiatives in place within KDM regarding any community awareness of the dangers of electricity theft and illegal connections. Flyers are sent out on rare occasions, but these involve the indigent population register only.

The Masakhane Campaign has not been implemented since 2017 up until the previous mayor had vacated the position and was seen as not being of any great success or benefit to the community.

The Communications team are still to send through any policies in place, as they were unsure if there were any available.

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

5 STATUS QUO REPORT SUMMARY & CONCLUSION

5.1 Situational Analysis

5.1.1 Key Network Installations

The KDM network data has been derived from previous studies and assessments which include Electricity Master Plans, Asset Verification Projects, 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,

- 33kV Single Line Diagrams (incl. Eskom Intake Points)
- 11kV Single Line Diagrams
- GIS layers of all the 33kV and 11kV infrastructure such as substations, switching substations, cables, overhead lines, mini substations, and transformers
- GIS Layers of Eskom bulk infrastructure
- Asset Register

The data available is a fair representation of the current 33kV and 11kV distribution system, however it must be noted that these drawings and GIS data sets are not being revised by KDM on an ongoing basis and as a result the information available is not current.

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 KwaDukuza 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 such as master plans and asset verification projects. The current asset register does not have a consistent naming convention to identify electrical assets with limited condition ratings across equipment.

The following can be noted with respect to substations,

- From the 13 existing substations, eight are between 25 and 45 years old which indicates a need for ongoing preventative maintenance.
- The transformers are typically in the adequate to good category with some of the transformers being refurbished in recent years with additional refurbishment needs at other substations.
- The switchgear is also in the adequate to good range with some of the switchgear being replaced over recent years. There is however a need to replace aged switchgear as well as oil switchgear that is still used in the network and poses a risk.

The following can be noted with respect to switching substations,

- Based on the condition identified across switching stations it can be noted that many are aged and fall within the marginal to adequate rating, however still functional. These will require

refurbishment and replacement of equipment within the medium term. Some switching stations are in good condition and have been refurbished or replaced within recent years.

- From the 36 switching substations around 35% are within the marginal category which indicates defective components and exceedance of useful life. Much of this switchgear are oil and in need of replacement.

With respect to the 33kV and 11kV cables and lines, no detailed assessments have been conducted previously only high-level assessments during the 2016 Master Plan Revision. It can however be noted that the 33kV lines and cable are considered to be in fair condition with minimal failures over time and are sized adequately for the current network load. The 11kV lines are upgraded on a yearly basis per section based on condition assessments as part of the KDM MV Upgrade Projects.

5.1.3 General Assessment of Metering & Meter Reading for bulk purchases

Eskom
Three Eskom intake points consisting of:

- Stanger
- Driefontein
- Shakaskraal

Analysis was done on the financial years 2018-2019, 2019-2020 and 2020-2021.
Observations:

- Shakaskraal is the only intake point with an additional monthly service charge – to be queried with Eskom
- No check meters in place, placing sole reliance on accuracy of Eskom metering.
- Eskom generally paid on time, avoiding interest and penalties for late payment.

NERSA D forms
Analysis was done on the D forms for the financial years 2018-2019, 2019-2020 and 2020-2021.
Observations:

- Total losses just about double the NERSA benchmark of 11% and constantly climbing.
- An average of 8.5% was used for total losses.
- Non-technical losses are then at percentages where total losses should be.
- If benchmark of 11% can be achieved, KDM would have earned a potential additional R 116m of revenue from electricity for the 2020-2021 financial year.

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

Observations summary:

- Not all LPU customers are on AMR.
- No data verification process / system in place to verify AMR data accuracy before imprting into financial system.
- Data inaccuracies in the AMR data and / or financial system, indicating a data deep dive analysis and clean-up to ensure data in the AMR system and the financial system mirrors each other.

5.1.5 Roles & Responsibilities

Electricity Provision

The provision of electrical services has been assessed using the current organogram which indicates the current structure and available staffing. The department seems well structured, there is however a need to expand and fill vacant positions such as artisans. There is currently a shortage of staff to conduct preventative maintenance which impacts the reliability of the system. There are three key branches that have not been developed within the current structure and this is the Network Control & Support, Protection Telecontrol & Metering and Projects & Assets branch. KDM have proactively identified the need for this expansion and included in their proposed organograms with an expectation to implement over the next two-three financial years.

Billing & Revenue

With respect to meter readings, it can be noted that the current structure indicates several vacancies available which is a cause for concern. The lack of key staff within the billing department is expected to impact the overall value chain and needs to be addressed. Similar can be noted for the credit control section with vacancies available for clerks, controllers, and operators.

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

Bylaws and Policies

KDM 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.

Tariff Setting

The Tariff setting is aligned to the Tariff Policy, Municipal Systems Act and NERSA Tariff guidelines. The tariff determination process is reviewed during the preparation of the annual budget in accordance with the Tariff policy and the goal where possible is to provide a cost-reflective service charge. 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. A progress report compiled for EXCO on Energy Losses Reduction noted that according to municipal officials there may be a disparity between the bulk cost of electricity and the set tariffs which the municipality charge to their customers, leading to revenue losses. This statement alludes to the fact that there is a need for a comprehensive tariff study.

Asset Management & Planning

KDM is a category B municipality and is coming off a low asset management practice. There is relatively low asset management practice maturity, especially in the field of physical asset management within the utility. These poor asset management practices are often related to skill challenges and constrained budgets. 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. The Electrical Engineering Services department has compiled a draft Electricity Asset Management System document that is a planned system to be implemented for electrical infrastructure. This plan is expected to overcome the current status of 80% corrective maintenance and 20% preventative maintenance to 20% corrective maintenance and 80% preventative maintenance.

Budget for Operations & Maintenance
KDM have been proactive in identifying its repairs and maintenance needs as well as capital projects with support from the associated master planning assessments. They have approved council budgets over the current and next two financial years for repairs and maintenance which equates to around R30 million per financial year. The actual expense for the year is however much greater and shown in Table 16 of this report. The total expense for the last financial year was R903 million with electricity purchase at R767 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 3% for 2020/2021 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 business unit has identified several gaps in relation to service provision with one of these being information management systems. The current systems still incorporate paper-based processes with a need for automated processes. The following information systems have been identified,

ESRI ArcGIS Software: KDM utilise ArcGIS within their planning and development department. The software is fully licensed with a maintenance plan and website interface, this software package is not linked to any other systems.

Munsoft: KDM utilise Munsoft for financial management and billing, fleet services as well as host and update their asset register. Munsoft is a versatile tool that provides the utilities current requirements and is mSCAO compliant. Munsoft does not have any interfaces to other systems currently.

Sage VIP Premier: KDM utilise Sage for payroll which is independent to Munsoft with no interface.
Microsoft: Excel, Projects etc. are used on a day-to-day basis, also typically used for asset planning and creation then transferred to Munsoft.

On Key: KDM utilise On Key Maintenance management system for electrical assets. The project was implemented, however not fully successful as it is currently not being utilised fully. This system currently has no interfaces to other systems.

SCADA: SCADA functionality currently does not exist in KDM, a project has however been initiated at substation level and has gone out for tender. Implementation is expected to be complete in the next financial year.

Asset Management Information Systems (AMIS): A 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 technical losses within KDM have been historically estimated at 10% with no detailed studies conducted to verify this estimate. In recent years there were two assessments completed and the following can be noted,

1. As part of the 2019 Master Plan Revision, technical losses for the KDM 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 estimated technical losses for the Northern and Southern regions were estimated to be 6% and 8%

2. An estimation of the technical energy losses on the HV/MV networks of KDM were conducted in 2021 by a World Bank Consultant as part of the Vuthela Ilembe LED Support Programme. The following approach was taken to conduct the study,

    - Develop a virtual distribution network that represents the current Urban topology of the 33kV and 11kV system of KDM. This is a typical Eskom 33kV supply to a 33/11kV Distribution substation with three 10MVA transformers and associated 11kV feeders and 11/0.4kV reticulation transformers. The electrical equipment is based on information available within the EMP and parameters are derived from manufacture data sheets.
    - A power profile was developed using 2018/2019 energy consumption and maximum demand data for the purpose of estimating technical power and energy losses.

The estimated technical losses from the virtual network study are equal to 4.92%, it must be noted that this does however exclude the LV network. The estimate of 4.92% was considered under the worst-case scenario and a more realistic estimate would be 4.5%.

A comparison of the two studies indicates that the sample “virtual network” has higher technical losses in the range of 1.5%, with the EMP study indicating a 3% loss and the sample network analysis concluding the technical loss estimation at 4.5% on the MV Distribution networks. The estimate of LV losses is in the range of 4% which is considered a fair estimate when compared to similar utilities. The total technical loss is therefore estimated at **8.5%** based on the analysis conducted to date.

5.3 Non-Technical Losses

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

A data dump was obtained from Munsoft. Refer section 4.3.3.1 on dteai regarding information received and the process to structure the data for analysis:

Finding:

- A lot of tariff descriptions are being used which seemingly does not link back to a tariff structure.
- Errors could be seen between the type of account and the tariff type. Commercial and domestic account types are for example linked to streetlight tariffs.
- A large number of stands (29681) have no tariff, nor account type description.
- Large need identified for data cleansing.

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

SOPs for the following were found to exist:

- SOPB003 – Meter movement
- SOPB0006 – Meter reading
- SOPB004 – Prepaid

Room for improvement was noted, specifically changing to a process flow type SOP with “Swim lanes” outlining responsible stakeholders and their respective responsibilities, linked a possible SLA (Service Level agreement)

5.3.3 Assess adequacy, effectiveness & efficiency of financial systems

Financial systems in use consist of:

- Main Financial management system
    - MUNSOFT system is in use
    - System is mSCOA compliant
        - Supplementary systems
    - Conlog Prepaid vending system
        - System is STS compliant
        - No interface between MUNSOFT and Contour Technology systems
        - No data mirroring of the two systems
    - AMR system
        - No data mirroring between the two 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

Cadastral data, the 2021 valuation roll and a Munsoft customer data dump was received and compared.

Aspects assessed indicted:

- Cadastral data indicates 34 438 registered stands.
- Some duplication of 6 stands in cadastral data to be investigated.
- Valuation roll and customer data base have considerably more stands in its records.
- Some stands have incorrect length SG code – should be 21 digits
- Some stands have the same SG code.
- 4409 stands have multiple prepaid meters linked to it.

Anomalies in valuation roll and comparative data from valuation roll and customer data base suggest a further data cleansing exercise.

KDM to also consider a different strategy on multiple meters linked to a specific stand.

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

KDM currently have a control room that is manned 24/7 and operated in shifts. They utilise a three-shift system and are currently short staffed with no supervisor. The KDM control has two key functions,

- Attendance to consumer queries through WhatsApp, Facebook page, and walk ins. The current phone system is a standard office telephone with no switchboard and all calls are logged on a Web-based system that forms part of CMMS.
- Dispatching of field resources, standby staff are notified through control for afterhours work.

Reports recommend a single platform Customer Care system for whole of iLembe. Our views support this recommendation.

5.3.6 Assess billing & revenue collection re electrical services provision

Assessment of 12-month conventional billing history and 12-month prepaid purchases history was conducted:

- As of September 2021, 52% of conventional customers were interim billed. A benchmark of 90% actual readings onto bill should be achieved. Reasons for interim billing could be any or a combination of below factors:
    - Tampered meters
    - Faulty meters
    - Problems getting access to meters
    - Meters on system but not in the field
- On average 54% of prepaid customers did not buy electricity during the financial year reviewed. Average was calculated by taking the number of meters showing zero purchases per month, averaging it out over the year and calculating that average value as % of total prepaid customers.
- 42% have not bought for the entire year reviewed.
- Prepaid meters also do not reflect in the financial system

Strategies to improve revenue from energy charges will have to include ensuring meters are read regularly and prepaid customers are buying, further supporting a data management system and processes to support such strategies.

5.3.7 Investigate necessity of tariff study and review

- No tariff study has been done in the last 5 years
- A tariff study and review are 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 is supported by this consultant’s analysis.

5.3.9 Review of Debt management

A debtor's age report as of June 2022 was received and analysed.

- Total debtors' book over R 890m.
- 55% older than 180 days
- 77% older than 90 days
- Biggest debtor by category user is domestic customers
- Of the top 25 debtors, 21 are domestic customers. Judging by the customer names though, it seems that at least 11 are incorrectly flagged as domestic, whereas they should be commercial.
- 68% of debtors book not linked to any customer type.

5.3.10 Conclusion

Data management and ensuring quality and integrity of data is a common thread throughout the non-technical losses assessment. None of the current systems can do data verification and ensuring integrity as they are not designed for this purpose. A separate supplementary and supporting system is needed for this.

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

KDM 33kV & 11kV Single Line Diagrams

ESKOM STANGER 132/33 kV
SUBSTATION
OPERATING DIAGRAM
DD/1737 rev 7

BUSBAR 2
FB2

BUSBAR 1
FB1

CUSTOMER EQUIPMENT
NMD 40 00-kVA

KWADUKUZA 33 kV
POINT OF SUPPLY
KDM-3001-DD-00

Busbar 2

Busbar 1

B/B ISOL

CAP BANK

POPLAR - 1 300m

95mm² XLPE
100m

GLEDHOW
33/11kV
SUBSTATION
KDM-4004-DD-00

NOT ON SITE

NOT CONNECTED

95mm² XLPE
60m

OAK - 1 400m

95mm² XLPE
300m

95mm² XLPE
100m

POPLAR - 3 220m

POPLAR - 3 220m

POPLAR - 3 220m

POPLAR - 3 000m

OAK

N/O

SAPPI
33/11kV
SUBSTATION
KDM-4002-DD-00

N/O

Busbar 3

Busbar 2

Busbar 1

2x95mm²
300m

GLENHILLS
33/11kV
SUBSTATION
KDM-4003-DD-00

LINE TO
SHAKASKRAAL
33kV SUBSTATION
RUNNING AT 11kV

150mm² XLPE - 2200m

GROUTVILLE
33/11kV
SUBSTATION
KDM-4013-DD-00

POPLAR - 1500m

95mm² XLPE

3x300mm²
(Single Core XLPE)
1 130m

LAVOIPIERRE
33/11kV
SUBSTATION
KDM-4001-DD-00

Busbar 2

Busbar 1

80m

20m

N/O

95mm² XLPE - 2200m

95mm² XLPE - 2200m

N/O

INDUSTRIAL
33/11kV
SUBSTATION
KDM-4005-DD-00

Busbar 2

Busbar 1

LEGEND

	95MM CABLE
	300MM CABLE
	150MM CABLE
	OAK CONDUCTOR
	POPLAR CONDUCTOR

CLIENT

KWADUKUZA MUNICIPALITY

APPROVED BY	SIGNATURE
DATE	

REV	DATE	REVISION DETAILS	APPROVED

PROJECT

108018

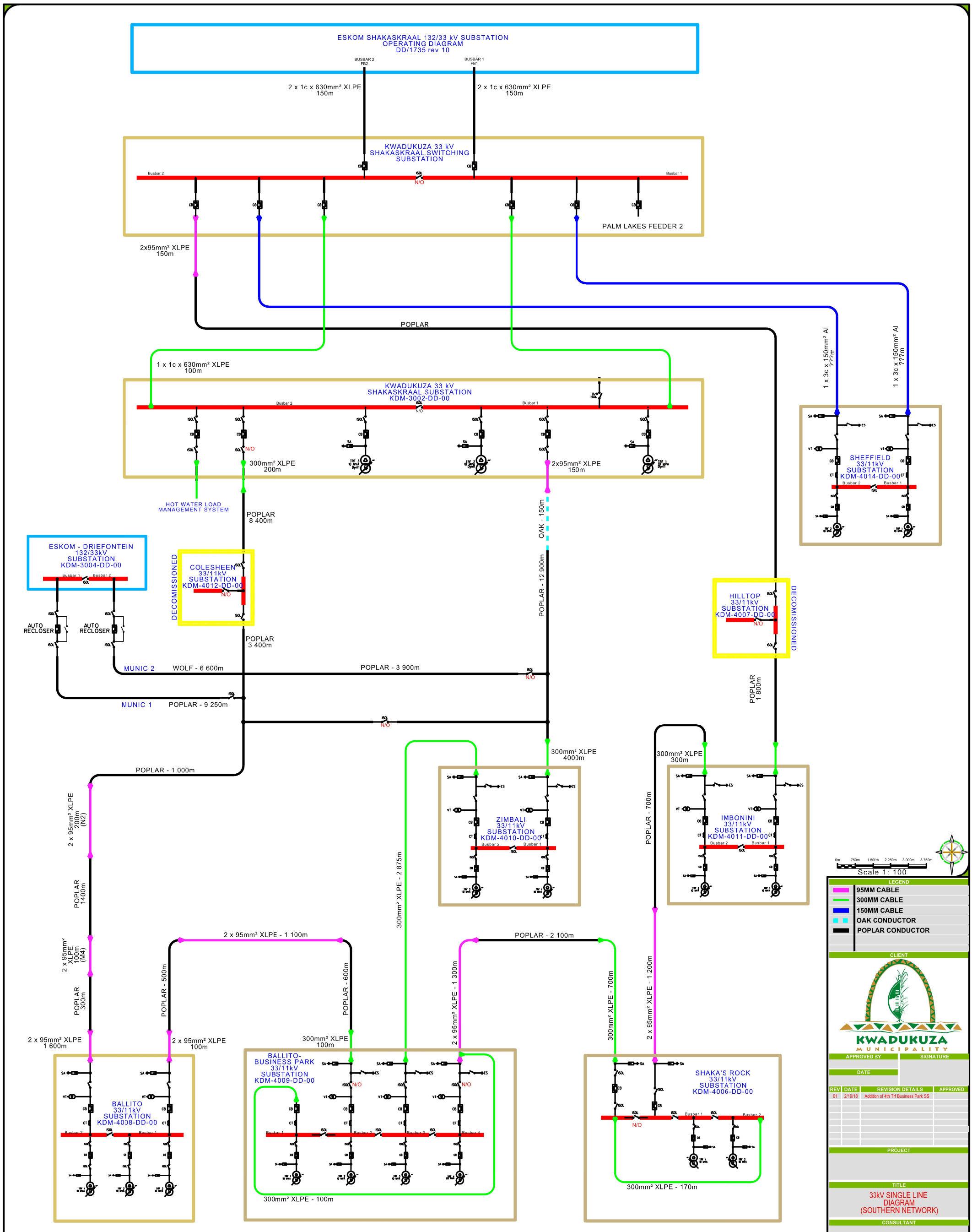
TITLE

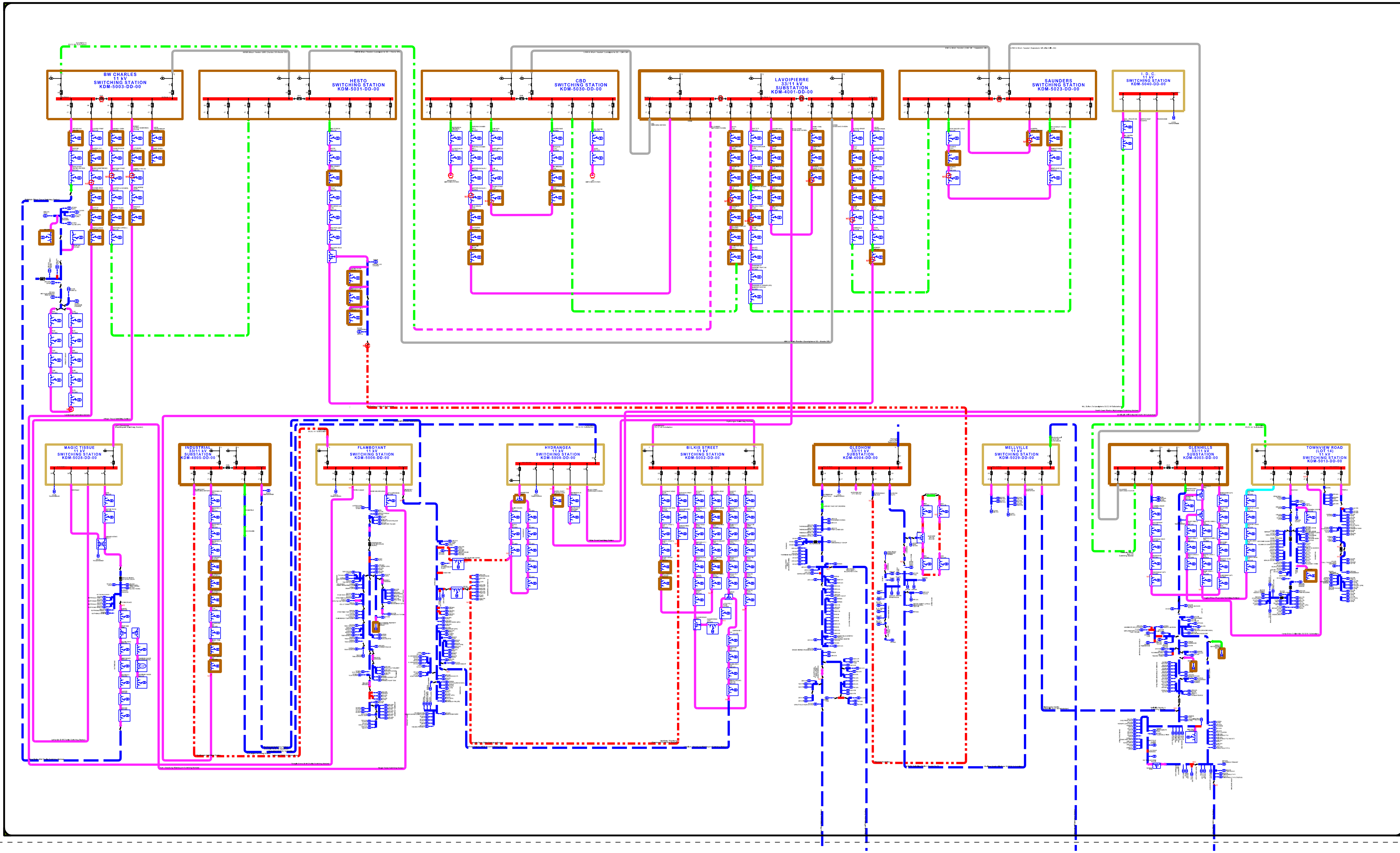
33kV SINGLE LINE
DIAGRAM
(NORTHERN NETWORK)

CONSULTANT

aurecon
éThekwini
4 - 10 School Road,
Park Row Building,
Pinetown
Tel: +27 31 714 2500
P.O.Box 932,
Pinetown,
3600
Fax: +27 31 702 0287

DRAWN	DESIGNED	
D NAICKER	D NAICKER	
CHECKED		PROJECT No.
P SEEBRAN		
APPROVED		SCALE / SIZE
M VENTER		NTS / A3L
		DRAWING No. / REV
		KDM-2010-00-01-00-A3 / 00


ESKOM SHAKASKRAAL 132/33 kV SUBSTATION
OPERATING DIAGRAM
DD/1735 rev 10
BUSBAR 2
FB2
BUSBAR 1
FB1
2 x 1c x 630mm² XLPE
150m
2 x 1c x 630mm² XLPE
150m
KWADUKUZA 33 kV
SHAKASKRAAL SWITCHING
SUBSTATION
Busbar 2
Busbar 1
N/O
PALM LAKES FEEDER 2
2x95mm² XLPE
150m
POPLAR
1 x 1c x 630mm² XLPE
100m
KWADUKUZA 33 kV
SHAKASKRAAL SUBSTATION
KDM-3002-DD-00
300mm² XLPE
200m
2x95mm² XLPE
150m
HOT WATER LOAD
MANAGEMENT SYSTEM
POPLAR
8 400m
OAK - 150m
POPLAR - 12 900m
1 x 3c x 150mm² Al
???m
1 x 3c x 150mm² Al
???m
SHEFFIELD
33/11kV
SUBSTATION
KDM-4014-DD-00
ESKOM - DRIEFONTEIN
132/33kV
SUBSTATION
KDM-3004-DD-00
DECOMISSIONED
COLESHEEN
33/11kV
SUBSTATION
KDM-4012-DD-00
AUTO
RECLOSER
AUTO
RECLOSER
POPLAR
3 400m
MUNIC 2
WOLF - 6 600m
POPLAR - 3 900m
MUNIC 1
POPLAR - 9 250m
HILLTOP
33/11kV
SUBSTATION
KDM-4007-DD-00
DECOMISSIONED
POPLAR
1 800m
300mm² XLPE
400m
POPLAR - 1 000m
ZIMBALI
33/11kV
SUBSTATION
KDM-4010-DD-00
300mm² XLPE
300m
POPLAR - 700m
IMBONINI
33/11kV
SUBSTATION
KDM-4011-DD-00
2 x 95mm² XLPE
200m
(N2)
POPLAR
1400m
300mm² XLPE - 2 875m
2 x 95mm² XLPE - 1 100m
POPLAR - 2 100m
2 x 95mm²
XLPE
100m
(M4)
POPLAR
300m
POPLAR - 500m
POPLAR - 600m
2 x 95mm² XLPE - 1 300m
300mm² XLPE - 700m
2 x 95mm² XLPE - 1 200m
2 x 95mm² XLPE
1 600m
2 x 95mm² XLPE
100m
300mm² XLPE
100m
BALLITO
33/11kV
SUBSTATION
KDM-4008-DD-00
BALLITO-
BUSINESS PARK
33/11kV
SUBSTATION
KDM-4009-DD-00
300mm² XLPE - 100m
SHAKA'S ROCK
33/11kV
SUBSTATION
KDM-4006-DD-00
300mm² XLPE - 170m
Scale 1: 100
LEGEND
95MM CABLE
300MM CABLE
150MM CABLE
OAK CONDUCTOR
POPLAR CONDUCTOR
CLIENT
KWADUKUZA
MUNICIPALITY
APPROVED BY
SIGNATURE
DATE
REV
DATE
REVISION DETAILS
APPROVED
01
2/19/18
Addition of 4th Trf Business Park SS
PROJECT
TITLE
33kV SINGLE LINE
DIAGRAM
(SOUTHERN NETWORK)
CONSULTANT
DRAWN
P SEEBRAN
DESIGNED
CHECKED
P SEEBRAN
APPROVED
PROJECT No.
108018
SCALE
NTS
SIZE
DRAWING No.
KDM-2010-50-01-00-A3
REV
01



KWADUKUZA MUNICIPALITY

APPROVED BY	SIGNATURE
DATE	

REV	DATE	REVISION DETAILS	APPROVED
01	12/10/13	UPDATED VIA SITE INSPECTION	
02	25/05/16	UPDATED VIA SITE INSPECTION	

PROJECT

KDM 33 & 11 kV Protection Grading

TITLE

NORTHERN 11 kV NETWORK DIAGRAM

CONSULTANT

aurecon éThekwini

4 - 10 School Road, Park Row Building, Pinetown
Tel: +27 31 714 2500

P.O.Box 932, Pinetown, 3600
Fax: +27 31 702 0287

DRAWN	DESIGNED	
J.J. Human	M. Venter	
CHECKED	PROJECT No.	
D. Naicker	108018	
APPROVED	SCALE	SIZE
		A0L
	DRAWING No.	REV
	KDM-2030-50-02	02

KWADUKUZA MUNICIPALITY

APPROVED BY	SIGNATURE
DATE	

REV	DATE	REVISION DETAILS	APPROVED
01	12/10/13	UPDATED VIA SITE INSPECTION	

PROJECT

KDM 33 & 11kV Protection Grading

TITLE

SOUTHERN 11kV NETWORK DIAGRAM

CONSULTANT

aurecon éThekwini

4 - 10 School Road, Park Row Building, Pinetown
Tel: +27 31 714 2500

P.O.Box 932, Pinetown, 3600
Fax: +27 31 702 0287

DRAWN	DESIGNED	
C. van Dyk	M. Venter	
CHECKED		PROJECT No.
D. Naicker		108018
APPROVED		SCALE / SIZE: A0L
		DRAWING No.: KDM-2030-50-02 / REV: 01

ANNEXURE 2

Eskom Billing Summary

Stanger intake point Eskom billing summary (3 years)

Intake Point		Stanger												
Premise ID		5433388634												
		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		65,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	*74,167*
Utilized Capacity		65,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	*74,167*
CONSUMPTION DETAILS														
HIGH SEASON ENERGY CONSUMPTION OFF PEAK kWH		13,423,040.76	13,093,006.64										12,635,916.42	**39,151,963.82**
LOW SEASON ENERGY CONSUMPTION OFF PEAK kWH				13,859,014.30	12,835,579.82	12,661,000.36	15,843,758.30	13,588,877.64	12,445,120.44	14,494,918.46	13,778,849.72	13,611,433.64		**123,118,552.68**
HIGH SEASON ENERGY CONSUMPTION STD kWh		12,115,758.06	12,486,642.74										10,569,165.00	**35,171,565.80**
LOW SEASON ENERGY CONSUMPTION STD kWh				11,182,958.28	12,801,123.76	12,255,643.26	10,785,379.96	12,366,690.92	11,309,054.42	11,698,930.60	11,198,153.92	12,425,463.94		**106,023,399.06**
HIGH SEASON ENERGY CONSUMPTION PEAK kWh		5,356,710.02	5,372,433.48										4,295,851.96	**15,024,995.46**
LOW SEASON ENERGY CONSUMPTION PEAK kWh				4,450,518.94	5,481,124.32	5,209,692.28	4,179,382.60	5,059,513.70	4,626,582.90	4,791,933.34	4,642,242.32	4,915,812.48		**43,356,802.88**
ENERGY CONSUMPTION ALL kWh		30,895,508.84	30,952,082.86	29,492,491.52	31,117,827.90	30,126,335.90	30,808,520.86	31,015,082.26	28,380,757.76	30,985,782.40	29,619,245.96	30,952,710.06	27,500,933.38	**361,847,279.70**
DEMAND CONSUMPTION - OFF PEAK		57,367.84	57,941.88	56,301.80	55,748.60	54,866.90	53,815.28	56,916.91	62,577.59	58,005.54	56,320.63	57,566.43	57,028.51	**684,457.91**
SEASON DEMAND CONSUMPTION - STD		56,878.70	57,084.29	56,640.68	56,811.62	57,422.57	58,739.20	56,231.70	57,681.04	58,696.48	58,289.97	60,754.88	55,846.79	**691,077.92**
DEMAND CONSUMPTION - PEAK		62,134.60	61,133.56	60,397.14	61,072.44	60,390.49	59,356.79	56,753.38	64,466.80	59,893.55	60,215.72	60,333.02	60,984.59	**727,132.08**
DEMAND READING - KW/KVA		62,134.60	61,133.56	60,397.14	61,072.44	60,390.49	59,356.79	56,916.91	64,466.80	59,893.55	60,215.72	60,754.88	60,984.59	**727,717.47**
REACTIVE ENERGY - OFF PEAK		4,951,561.44	4,471,007.04	5,432,585.28	5,002,436.64	5,231,722.08	6,277,080.48	5,295,010.56	4,999,754.88	5,711,952.00	5,807,919.84	5,553,759.84	4,627,777.44	**63,362,567.52**
REACTIVE ENERGY - STD		4,172,328.00	4,251,154.08	4,124,783.52	4,731,353.76	4,659,178.08	4,028,469.12	4,643,447.42	4,340,221.38	4,378,772.16	4,269,745.44	4,613,640.00	3,673,058.88	**51,886,151.84**
REACTIVE ENERGY - PEAK		1,646,251.88	1,642,862.88	1,520,055.84	1,937,155.20	1,878,822.72	1,507,231.68	1,843,183.76	1,705,391.52	1,729,566.24	1,695,903.36	1,735,034.88	1,340,133.12	**20,181,593.08**
EXCESS REACTIVE ENERGY		620,282.75	582,187.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	665,252.30	**1,867,722.33**
LOAD FACTOR		69.00	70.00	71.00	72.00	75.00	73.00	77.00	68.00	73.00	71.00	72.00	65.00	***71.33333333***
CHARGES DETAILS														
Administration Charge per day for monthdays	R 119.2000	R 3,695.20	R 3,695.20	R 3,576.00	R 3,695.20	R 3,576.00	R 3,695.20	R 3,695.20	R 3,337.60	R 3,695.20	R 3,576.00	R 3,695.20	R 3,576.00	R **43,508.00**
TX Network Capacity Charge ?kVA	R 7.7100	R 501,150.00	R 578,250.00	R 578,250.00	R 578,250.00	R 578,250.00	R 578,250.00	R 578,250.00	R 578,250.00	R 578,250.00	R 578,250.00	R 578,250.00	R 578,250.00	R **6,861,900.00**
Network Capacity Charge /kVA	R 15.2900	R 993,850.00	R 1,146,750.00	R 1,146,750.00	R 1,146,750.00	R 1,146,750.00	R 1,146,750.00	R 1,146,750.00	R 1,146,750.00	R 1,146,750.00	R 1,146,750.00	R 1,146,750.00	R 1,146,750.00	R **13,608,100.00**
Excess Network Capacity Charge 8,776.23 kVa @ R26.60	R 26.6000													
Network Demand Charge /kVA	R 28.9900	R 1,801,282.05	R 1,772,261.90	R 1,750,913.09	R 1,770,490.04	R 1,750,720.31	R 1,720,753.34	R 1,650,021.22	R 1,868,892.53	R 1,736,314.01	R 1,745,653.72	R 1,761,283.97	R 1,767,943.26	R **21,096,529.46**
Ancillary Service Charge /kWh	R 0.0038	R 117,402.93	R 117,617.92	R 112,071.47	R 118,247.75	R 114,480.08	R 117,072.38	R 117,857.31	R 107,846.88	R 117,745.97	R 112,553.13	R 117,620.30	R 104,503.55	R **1,375,019.66**
High Season Off Peak Energy Charge /kWh	R 0.4909	R 6,589,370.83	R 6,427,357.14	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 6,202,971.16	R **19,219,699.13**
Low Season Off Peak Energy Charge /kWh	R 0.4250	R -	R -	R 5,890,080.95	R 5,455,121.50	R 5,380,925.00	R 6,733,597.15	R 5,775,273.15	R 5,289,176.00	R 6,160,340.15	R 5,856,011.25	R 5,784,859.45	R -	R **52,325,384.60**
High Season Standard Energy Charge /kWh	R 0.9040	R 10,952,645.23	R 11,287,925.27	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 9,554,525.16	R **31,795,095.66**
Low Season Standard Energy Charge /kWh	R 0.6700	R -	R -	R 7,492,581.86	R 8,576,753.08	R 8,211,280.81	R 7,226,204.60	R 8,285,682.97	R 7,577,066.18	R 7,838,283.77	R 7,502,763.18	R 8,325,060.88	R -	R **71,035,677.33**
High Season Peak Energy Charge / kWh	R 2.9840	R 15,984,422.64	R 16,031,340.07	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 12,818,822.37	R **44,834,585.08**
Low Season Peak Energy Charge / kWh	R 0.9735	R -	R -	R 4,332,580.25	R 5,335,874.21	R 5,071,635.16	R 4,068,629.35	R 4,925,436.88	R 4,503,978.55	R 4,664,946.78	R 4,519,222.59	R 4,785,542.98	R -	R **42,207,846.75**
Electrification and Rural Subsidy /kWh	R 0.0742	R 2,292,446.77	R 2,296,644.56	R 2,188,342.91	R 2,308,942.84	R 2,235,374.13	R 2,285,992.26	R 2,301,319.08	R 2,105,852.24	R 2,299,145.02	R 2,197,748.05	R 2,296,691.08	R 2,040,569.23	R **26,849,068.18**
High Season Reactive energy Charge /kvarh	R 0.1340	R 83,117.92	R 78,013.06	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 89,143.77	R **250,274.75**
Total Charges		**R 39,319,383.58**	**R 39,739,855.12**	**R 23,495,146.52**	**R 25,294,124.61**	**R 24,492,991.49**	**R 23,880,944.28**	**R 24,784,285.82**	**R 23,181,149.99**	**R 24,545,470.91**	**R 23,662,527.93**	**R 24,799,753.86**	**R 34,307,054.50**	**R 331,502,688.59**
Consumption Charges		R 33,526,438.70	R 33,746,622.48	R 17,715,243.06	R 19,367,748.79	R 18,663,840.97	R 18,028,431.10	R 18,986,393.00	R 17,370,220.73	R 18,663,570.70	R 17,877,997.02	R 18,895,463.31	R 28,576,318.69	**R 261,418,288.55**
Ancillary Charges		R 5,792,944.88	R 5,993,232.64	R 5,779,903.46	R 5,926,375.82	R 5,829,150.51	R 5,852,513.18	R 5,797,892.82	R 5,810,929.26	R 5,881,900.21	R 5,784,530.91	R 5,904,290.55	R 5,730,735.81	**R 70,084,400.04**
Consumption Charges as % of Total Charges		85.27%	84.92%	75.40%	76.57%	76.20%	75.49%	76.61%	74.93%	76.04%	75.55%	76.19%	83.30%	**78.04%**
Ancillary Charges as % of Total Charges		14.73%	15.08%	24.60%	23.43%	23.80%	24.51%	23.39%	25.07%	23.96%	24.45%	23.81%	16.70%	**21.96%**

Intake Point		Stanger												
Premise ID		5433388634												
		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		75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	*75,000*
Utilized Capacity		75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	*75,000*
CONSUMPTION DETAILS														
HIGH SEASON ENERGY CONSUMPTION OFF PEAK kWH		12,721,054.12	13,577,628.92										12,863,069.28	**39,161,752.32**
LOW SEASON ENERGY CONSUMPTION OFF PEAK kWH				13,362,945.30	12,641,437.26	13,304,290.08	15,436,915.20	13,758,640.80	12,306,957.12	13,629,527.04	11,666,693.76	11,609,950.08		**117,717,356.64**
HIGH SEASON ENERGY CONSUMPTION STD kWh		12,509,584.76	12,372,006.90										12,414,419.52	**37,296,011.18**
LOW SEASON ENERGY CONSUMPTION STD kWh				11,610,700.00	12,383,710.88	12,486,643.68	11,085,582.72	12,302,817.60	11,085,507.12	11,953,599.84	9,220,687.68	10,158,937.92		**102,288,187.44**
HIGH SEASON ENERGY CONSUMPTION PEAK kWh		5,631,247.16	5,179,865.54										5,171,957.28	**15,983,069.98**
LOW SEASON ENERGY CONSUMPTION PEAK kWh				4,778,607.38	5,370,889.96	5,007,479.99	4,191,594.24	5,044,247.52	4,485,421.68	5,034,057.12	3,630,331.20	4,022,280.48		**41,564,909.57**
ENERGY CONSUMPTION ALL kWh		30,861,886.04	31,129,501.36	29,752,252.68	30,396,038.10	30,798,413.75	30,714,092.16	31,105,705.92	27,877,885.92	30,617,184.00	24,517,712.64	25,791,168.48	30,449,446.08	**354,011,287.13**
DEMAND CONSUMPTION - OFF PEAK		58,434.72	57,032.04	56,765.73	55,880.58	54,630.71	54,049.49	58,901.92	59,672.27	56,168.93	55,885.46	57,607.08	60,987.11	**686,016.04**
SEASON DEMAND CONSUMPTION - STD		58,739.79	56,724.29	61,146.61	55,998.75	60,908.01	58,147.19	56,436.01	61,014.69	58,187.51	53,777.43	60,364.93	61,648.10	**703,093.31**
DEMAND CONSUMPTION - PEAK		61,620.64	62,006.53	62,198.70	58,570.08	60,406.12	62,150.45	60,983.51	58,291.08	64,833.05	53,883.87	59,324.45	64,395.51	**728,663.99**
DEMAND READING - KW/KVA		61,620.64	62,006.53	62,198.70	58,570.08	60,908.01	62,150.35	60,983.51	61,014.69	64,833.05	55,885.46	60,364.93	64,395.51	**734,931.46**
REACTIVE ENERGY - OFF PEAK		4,790,241.12	5,168,725.92	5,896,507.20	4,251,419.03	4,724,361.59	5,487,696.48	5,110,010.88	4,605,960.00	4,847,805.60	4,193,470.56	4,090,809.60	3,908,286.72	**57,075,294.70**
REACTIVE ENERGY - STD		4,426,742.40	4,341,801.60	4,681,585.92	3,942,279.35	4,278,361.59	3,697,071.36	4,420,332.00	3,985,822.08	4,037,495.52	3,038,401.44	3,210,824.64	3,479,445.12	**47,540,163.02**
REACTIVE ENERGY - PEAK		1,763,144.64	1,628,635.68	1,834,151.52	1,628,880.00	1,659,815.99	1,351,651.20	1,746,130.56	1,573,962.72	1,613,785.92	1,173,697.44	1,195,984.32	1,319,506.08	**18,489,346.07**
EXCESS REACTIVE ENERGY		783,044.41	728,510.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53,444.11	**1,564,998.89**
LOAD FACTOR		70.00	70.00	70.00	72.00	73.00	69.00	71.00	68.00	65.00	63.00	58.00	67.00	*68*
CHARGES DETAILS														
Administration Charge per day for monthdays	R 137.8300	R 4,272.73	R 4,272.73	R 4,134.90	R 4,272.73	R 4,134.90	R 4,272.73	R 4,272.73	R 3,997.07	R 4,272.73	R 4,134.90	R 4,272.73	R 4,134.90	R **50,445.78**
TX Network Capacity Charge ?kVA	R 8.9200	R 669,000.00	R 669,000.00	R 669,000.00	R 669,000.00	R 669,000.00	R 669,000.00	R 669,000.00	R 669,000.00	R 669,000.00	R 669,000.00	R 669,000.00	R 669,000.00	R **8,028,000.00**
Network Capacity Charge /kVA	R 17.6800	R 1,326,000.00	R 1,326,000.00	R 1,326,000.00	R 1,326,000.00	R 1,326,000.00	R 1,326,000.00	R 1,326,000.00	R 1,326,000.00	R 1,326,000.00	R 1,326,000.00	R 1,326,000.00	R 1,326,000.00	R **15,912,000.00**
Excess Network Capacity Charge 8,776.23 kVa @ R26.60	R 26.6000													
Network Demand Charge /kVA	R 33.5200	R 2,065,523.85	R 2,078,458.89	R 2,084,900.42	R 1,963,269.08	R 2,041,636.50	R 2,083,279.73	R 2,044,167.26	R 2,045,212.41	R 2,173,203.84	R 1,873,280.62	R 2,023,432.45	R 2,158,537.50	R **24,634,902.54**
Ancillary Service Charge /kWh	R 0.0044	R 135,792.30	R 136,969.80	R 130,909.91	R 133,742.57	R 135,513.02	R 135,142.00	R 136,865.11	R 122,662.70	R 134,715.61	R 107,877.94	R 113,481.14	R 133,977.56	R **1,557,649.66**
High Season Off Peak Energy Charge /kWh	R 0.5676	R 7,220,470.25	R 7,706,662.22	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 7,301,077.96	R **22,228,210.44**
Low Season Off Peak Energy Charge /kWh	R 0.4914	R -	R -	R 6,566,551.17	R 6,212,002.14	R 6,537,728.11	R 7,585,700.03	R 6,760,996.19	R 6,047,638.67	R 6,697,549.57	R 5,733,013.43	R 5,705,129.43	R -	R **57,846,308.74**
High Season Standard Energy Charge /kWh	R 1.0453	R 13,076,269.20	R 12,932,458.92	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 12,976,793.23	R **38,985,521.34**
Low Season Standard Energy Charge /kWh	R 0.7747	R -	R -	R 8,994,809.29	R 9,593,660.91	R 9,673,403.11	R 8,588,001.15	R 9,530,993.10	R 8,587,942.27	R 9,260,453.92	R 7,143,266.99	R 7,870,129.27	R -	R **79,242,660.02**
High Season Peak Energy Charge/ kWh	R 3.4504	R 19,430,054.65	R 17,872,609.65	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 17,845,320.43	R **55,147,984.73**
Low Season Peak Energy Charge / kWh	R 1.1257	R -	R -	R 5,379,277.90	R 6,046,010.87	R 5,636,920.24	R 4,718,477.37	R 5,678,309.97	R 5,049,239.55	R 5,666,837.96	R 4,086,663.61	R 4,527,880.60	R -	R **46,789,618.06**
Electrification and Rural Subsidy /kWh	R 0.0858	R 2,647,949.82	R 2,670,911.19	R 2,552,743.31	R 2,607,980.06	R 2,642,503.92	R 2,635,269.09	R 2,668,869.57	R 2,391,922.62	R 2,626,954.39	R 2,103,619.78	R 2,212,882.21	R 2,612,562.47	R **30,374,168.42**
High Season Reactive energy Charge /kvarh	R 0.1549	R 121,293.52	R 112,846.20	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 8,278.48	R **242,418.19**
Total Charges		**R 46,696,626.32**	**R 45,510,189.59**	**R 27,708,326.91**	**R 28,555,938.37**	**R 28,666,839.79**	**R 27,745,142.11**	**R 28,819,473.93**	**R 26,243,615.28**	**R 28,558,988.02**	**R 23,046,857.26**	**R 24,452,207.83**	**R 45,035,682.52**	R **381,039,887.92**
Consumption Charges		R 39,726,794.10	R 38,511,730.78	R 20,940,638.36	R 21,851,673.93	R 21,848,051.45	R 20,892,178.55	R 21,970,299.27	R 19,684,820.49	R 21,624,841.45	R 16,962,944.03	R 18,103,139.29	R 38,123,191.62	R **300,240,303.32**
Ancillary Charges		R 6,969,832.22	R 6,998,458.80	R 6,767,688.54	R 6,704,264.44	R 6,818,788.34	R 6,852,963.56	R 6,849,174.67	R 6,558,794.80	R 6,934,146.56	R 6,083,913.23	R 6,349,068.54	R 6,912,490.90	R **80,799,584.60**
Consumption Charges as % of Total Charges		85.07%	84.62%	75.58%	76.52%	76.21%	75.30%	76.23%	75.01%	75.72%	73.60%	74.03%	84.65%	**77.71%**
Ancillary Charges as % of Total Charges		14.93%	15.38%	24.42%	23.48%	23.79%	24.70%	23.77%	24.99%	24.28%	26.40%	25.97%	15.35%	**22.29%**

Intake Point	Stanger
Premise ID	5433388634

	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	
Notified Max Demand	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	*75,000*
Utilized Capacity	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	*75,000*
CONSUMPTION DETAILS													
ENERGY CONSUMPTION OFF PEAK kWH	12,397,639.68	12,314,873.76	12,894,239.52	12,086,374.08	13,376,526.00	14,764,758.24	14,351,078.88	12,195,355.20	13,313,538.72	14,299,260.48	13,456,136.64	13,062,192.48	**158,511,973.68**
ENERGY CONSUMPTION STD kWh	12,962,915.76	10,579,920.00	11,830,046.88	12,062,087.04	11,745,758.88	11,955,607.68	11,391,393.60	11,340,637.44	12,602,118.72	11,144,733.12	11,724,319.20	12,035,288.16	**141,374,826.48**
ENERGY CONSUMPTION PEAK kWh	5,705,367.12	4,348,204.80	5,060,016.00	5,017,932.00	4,888,082.64	4,957,141.92	4,595,602.08	4,574,414.88	5,160,509.28	4,483,237.92	4,880,995.20	5,150,265.60	**58,821,769.44**
ENERGY CONSUMPTION ALL kWh	31,065,922.56	27,242,998.56	29,784,302.40	29,166,393.12	30,010,367.52	31,677,507.84	30,338,074.56	28,110,407.52	31,076,166.72	29,927,231.52	30,061,451.04	30,247,746.24	**358,708,569.60**
DEMAND CONSUMPTION - OFF PEAK	60,014.13	61,462.13	56,310.06	55,909.11	54,415.12	56,611.54	53,488.50	53,753.51	59,200.38	57,398.71	54,983.17	59,098.11	**682,644.47**
DEMAND CONSUMPTION - STD	61,879.61	60,621.48	63,888.63	57,305.63	56,763.25	59,589.18	58,070.02	56,900.30	57,568.23	57,557.58	59,616.63	60,427.03	**710,187.57**
DEMAND CONSUMPTION - PEAK	65,801.88	64,587.26	66,775.44	59,771.26	58,384.64	60,125.91	56,488.32	58,144.41	62,504.49	58,974.92	59,610.49	63,647.26	**734,816.28**
DEMAND READING - KW/KVA	65,801.89	64,587.27	66,775.44	59,771.27	58,384.65	60,125.91	58,070.03	58,144.42	62,504.50	58,974.93	59,616.63	63,647.27	**736,404.21**
REACTIVE ENERGY - OFF PEAK	3,714,166.56	4,335,425.76	4,108,893.12	3,866,848.80	4,592,764.80	5,487,510.24	4,820,098.56	4,078,744.80	4,550,119.20	4,916,180.16	4,117,608.00	3,847,509.12	**52,435,869.12**
REACTIVE ENERGY - STD	3,568,098.24	33,372,721.92	3,484,713.12	3,748,439.04	3,913,831.20	4,183,441.44	3,738,395.52	3,731,592.48	4,193,537.76	3,608,680.80	34,600,007.04	3,408,442.56	**105,551,901.12**
REACTIVE ENERGY - PEAK	1,426,005.12	1,264,218.24	1,409,515.68	1,495,392.48	15,558,493.76	1,672,933.44	1,461,916.80	1,436,120.64	1,640,296.32	1,382,837.28	1,373,324.64	1,278,012.00	**31,399,066.40**
EXCESS REACTIVE ENERGY	39,349.44	406,287.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	67,782.52	**513,419.46**
LOAD FACTOR	64.00	58.00	63.00	67.00	74.00	74.00	73.00	74.00	69.00	73.00	69.00	67.00	***68.75***
CHARGES DETAILS													
Administration Charge @ R147.34 per day for monthdays	R 4,567.54	R 4,567.54	R 4,420.20	R 4,567.54	R 4,420.20	R 4,567.54	R 4,567.54	R 4,125.52	R 4,567.54	R 4,420.20	R 4,567.54	R 4,420.20	**R 53,779.10**
TX Network Capacity Charge R9.54/kVA	R 715,500.00	R 715,500.00	R 715,500.00	R 715,500.00	R 715,500.00	R 715,500.00	R 715,500.00	R 715,500.00	R 715,500.00	R 715,500.00	R 715,500.00	R 715,500.00	**R 8,586,000.00**
Network Capacity Charge R18.90/kVA	R 1,417,500.00	R 1,417,500.00	R 1,417,500.00	R 1,417,500.00	R 1,417,500.00	R 1,417,500.00	R 1,417,500.00	R 1,417,500.00	R 1,417,500.00	R 1,417,500.00	R 1,417,500.00	R 1,417,500.00	**R 17,010,000.00**
Network Demand Charge R35.83 /kVA	R 2,357,681.72	R 2,314,161.88	R 2,392,564.02	R 2,141,604.60	R 2,091,922.01	R 2,154,311.36	R 2,080,649.17	R 2,083,314.57	R 2,239,536.24	R 2,113,071.74	R 2,136,063.85	R 2,280,481.68	**R 26,385,362.84**
Ancillary Service Charge @ R0.0047 /kWh	R 146,009.84	R 128,042.10	R 139,986.22	R 137,082.05	R 141,048.73	R 148,884.29	R 142,588.95	R 132,118.92	R 146,057.98	R 140,657.99	R 141,288.82	R 142,164.41	**R 1,685,930.29**
High Season Off Peak Energy Charge @ R0.6068 /kWh	R 7,522,887.95	R 7,472,665.54	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 7,926,138.11	**R 22,921,691.60**
Low Season Off Peak Energy Charge @ R0.5253 /kWh			R 6,773,344.27	R 6,348,972.26	R 7,026,689.11	R 7,755,927.38	R 7,538,621.80	R 6,406,219.98	R 6,993,602.04	R 7,511,401.28	R 7,068,508.77	R -	**R 63,423,286.88**
High Season Peak Energy Charge @ R3.6885 / kWh	R 21,044,246.18	R 16,038,354.14	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 18,996,756.14	**R 56,079,356.46**
Low Season Peak Energy Charge @ R1.2034 / kWh			R 6,089,223.25	R 6,038,579.37	R 5,882,319.08	R 5,965,424.68	R 5,530,347.45	R 5,504,851.01	R 6,210,156.53	R 5,395,128.61	R 5,873,789.38	R -	**R 52,489,819.37**
High Season Standard Energy Charge @ R1.1174 /kWh	R 14,484,762.34	R 11,822,002.61		R -	R -	R -	R -	R -	R -	R -	R -	R 13,448,230.81	**R 39,754,995.76**
Low Season Standard Energy Charge @ R0.8282 /kWh			R 9,797,644.93	R 9,989,820.45	R 9,727,837.60	R 9,901,634.55	R 9,434,352.51	R 9,392,315.56	R 10,437,074.96	R 9,230,067.87	R 9,710,081.00	R -	**R 87,620,829.42**
Electrification and Rural Subsidy @ R0.0917 /kWh	R 2,848,745.14	R 2,498,183.01	R 2,731,220.49	R 2,674,558.24	R 2,751,950.75	R 2,904,827.48	R 2,782,001.48	R 2,577,724.41	R 2,849,684.51	R 2,744,327.17	R 2,756,635.06	R 2,773,718.31	**R 32,893,576.05**
High Season Reactive energy Charge @ R0.1656 /kvarh	R 6,516.19	R 67,281.29	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 11,224.86	**R 85,022.35**
Total Charges	**R 50,548,416.90**	**R 42,478,258.11**	**R 30,061,403.38**	**R 29,468,184.51**	**R 29,759,187.48**	**R 30,968,577.28**	**R 29,646,128.90**	**R 28,233,669.97**	**R 31,013,679.80**	**R 29,272,074.86**	**R 29,823,934.42**	**R 47,716,134.52**	**R 408,989,650.13**
Consumption Charges	R 43,051,896.47	R 35,333,022.29	R 22,660,212.45	R 22,377,372.08	R 22,636,845.79	R 23,622,986.61	R 22,503,321.76	R 21,303,386.56	R 23,640,833.52	R 22,136,597.76	R 22,652,379.14	R 40,371,125.06	**R 322,289,979.50**
Ancillary Charges	R 7,496,520.43	R 7,145,235.82	R 7,401,190.93	R 7,090,812.43	R 7,122,341.68	R 7,345,590.67	R 7,142,807.14	R 6,930,283.42	R 7,372,846.27	R 7,135,477.11	R 7,171,555.27	R 7,345,009.46	**R 86,699,670.64**
Consumption Charges as % of Total Charges	85.17%	83.18%	75.38%	75.94%	76.07%	76.28%	75.91%	75.45%	76.23%	75.62%	75.95%	84.61%	**77.98%**
Ancillary Charges as % of Total Charges	14.83%	14.14%	14.64%	14.03%	14.09%	14.53%	14.13%	13.71%	14.59%	14.12%	14.19%	14.53%	**14.29%**

Driefontein intake point Eskom summary (3 years)

Intake Point		Driefontein												
Premise ID		7032344358												
		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		30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	3,000	30,000	*27,750*
Utilized Capacity		30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	32,829.37	32,829.37	32,829.37	32,829.37	32,829.37	32,829.37	32,829.37	*31,650*
CONSUMPTION DETAILS														
HIGH SEASON ENERGY CONSUMPTION OFF PEAK kWH		3,234,120.00	3,150,420.00										4,606,860.00	**10,991,400.00**
LOW SEASON ENERGY CONSUMPTION OFF PEAK kWH				3,333,420.00	3,151,260.00	2,773,620.00	6,563,100.00	5,144,100.00	4,740,360.00	5,439,180.00	4,551,660.00	4,515,060.00		**40,211,760.00**
HIGH SEASON ENERGY CONSUMPTION STD kWh		3,485,400.00	3,623,400.00										4,531,800.00	**11,640,600.00**
LOW SEASON ENERGY CONSUMPTION STD kWh				3,146,760.00	3,831,420.00	3,208,500.00	5,081,520.00	5,722,440.00	5,274,300.00	5,455,500.00	4,727,280.00	5,061,180.00		**41,508,900.00**
HIGH SEASON ENERGY CONSUMPTION PEAK kWh		1,399,560.00	1,420,800.00										1,623,480.00	**4,443,840.00**
LOW SEASON ENERGY CONSUMPTION PEAK kWh				1,238,460.00	1,604,340.00	1,355,100.00	1,931,640.00	2,254,920.00	2,044,020.00	2,122,860.00	1,914,840.00	1,921,020.00		**16,387,200.00**
ENERGY CONSUMPTION ALL kWh		8,119,080.00	8,194,620.00	7,718,640.00	8,587,020.00	7,337,220.00	13,576,260.00	13,121,460.00	12,058,680.00	13,017,540.00	11,193,780.00	11,497,260.00	10,762,140.00	**125,183,700.00**
DEMAND CONSUMPTION - OFF PEAK		14,382.48	14,361.94	14,786.80	21,249.48	14,642.95	27,482.35	26,114.82	26,309.57	25,747.20	23,263.91	21,713.36	19,820.35	**249,875.21**
SEASON DEMAND CONSUMPTION - STD		16,615.55	19,933.36	15,840.45	22,829.34	25,959.96	32,829.37	29,296.22	29,643.88	32,294.27	25,431.50	25,006.68	21,713.03	**297,393.61**
DEMAND CONSUMPTION - PEAK		15,466.97	19,019.14	15,749.28	22,302.25	24,792.41	32,180.14	28,613.89	28,426.83	29,608.64	25,713.90	24,101.78	20,929.94	**286,905.17**
DEMAND READING - KW/KVA		16,615.55	19,933.36	15,840.45	22,829.34	25,959.96	32,829.37	29,296.22	29,643.88	32,294.27	25,713.90	25,006.68	21,713.03	**297,676.01**
REACTIVE ENERGY - OFF PEAK		502,620.00	578,520.00	729,480.00	616,200.00	621,120.00	1,614,060.00	1,217,100.00	1,179,360.00	1,329,180.00	1,209,300.00	885,060.00	828,180.00	**11,310,180.00**
REACTIVE ENERGY - STD		626,700.00	749,460.00	740,700.00	866,220.00	787,920.00	1,408,140.00	1,592,940.00	1,482,360.00	1,497,660.00	1,429,080.00	1,237,260.00	1,001,280.00	**13,419,720.00**
REACTIVE ENERGY - PEAK		219,660.00	262,980.00	271,140.00	342,280.00	310,080.00	506,580.00	589,080.00	542,220.00	556,200.00	544,740.00	439,080.00	319,020.00	**4,903,060.00**
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		66.00	56.00	69.00	52.00	41.00	58.00	63.00	63.00	56.00	62.00	64.00	70.00	*60*
CHARGES DETAILS														
Administration Charge per day for monthdays	R 119.2000	R 3,695.20	R 3,695.20	R 3,576.00	R 3,695.20	R 3,576.00	R 3,695.20	R 3,695.20	R 3,337.60	R 3,695.20	R 3,576.00	R 3,695.20	R 3,576.00	R **43,508.00**
TX Network Capacity Charge /kVA	R 7.7100	R 231,300.00	R 231,300.00	R 231,300.00	R 231,300.00	R 231,300.00	R 253,114.44	R 253,114.44	R 253,114.44	R 253,114.44	R 253,114.44	R 253,114.44	R 253,114.44	R **2,928,301.10**
Network Capacity Charge /kVA	R 15.2900	R 458,700.00	R 458,700.00	R 458,700.00	R 458,700.00	R 458,700.00	R 501,961.07	R 501,961.07	R 501,961.07	R 501,961.07	R 501,961.07	R 501,961.07	R 501,961.07	R **5,807,227.47**
Excess Network Capacity Charge 8,776.23 kVa @ R26.60	R 26.6000						R 65,075.74			R 105,536.42				
Network Demand Charge /kVA	R 28.9900	R 481,684.79	R 577,868.11	R 459,214.65	R 661,822.57	R 752,579.24	R 951,723.44	R 849,297.42	R 859,376.08	R 936,210.89	R 745,445.96	R 724,943.65	R 629,460.74	R **8,629,627.53**
Ancillary Service Charge /kWh	R 0.0038	R 30,852.50	R 31,139.56	R 29,330.83	R 32,630.68	R 27,881.44	R 51,589.79	R 49,861.55	R 45,822.98	R 49,466.65	R 42,536.36	R 43,689.59	R 40,896.13	R **475,698.06**
High Season Off Peak Energy Charge /kWh	R 0.4909	R 1,587,629.51	R 1,546,541.18	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 2,261,507.57	R **5,395,678.26**
Low Season Off Peak Energy Charge /kWh	R 0.4250	R -	R -	R 1,416,703.50	R 1,339,285.50	R 1,178,788.50	R 2,789,317.50	R 2,186,242.50	R 2,014,653.00	R 2,311,651.50	R 1,934,455.50	R 1,918,900.50	R -	R **17,089,998.00**
High Season Standard Energy Charge /kWh	R 0.9040	R 3,150,801.60	R 3,275,553.60	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 4,096,747.20	R **10,523,102.40**
Low Season Standard Energy Charge /kWh	R 0.6700	R -	R -	R 2,108,329.20	R 2,567,051.40	R 2,149,695.00	R 3,404,618.40	R 3,834,034.80	R 3,533,781.00	R 3,655,185.00	R 3,167,277.60	R 3,390,990.60	R -	R **27,810,963.00**
High Season Peak Energy Charge / kWh	R 2.9840	R 4,176,287.04	R 4,239,667.20	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 4,844,464.32	R **13,260,418.56**
Low Season Peak Energy Charge / kWh	R 0.9735	R -	R -	R 1,205,640.81	R 1,561,824.99	R 1,319,189.85	R 1,880,451.54	R 2,195,164.62	R 1,989,853.47	R 2,066,604.21	R 1,864,096.74	R 1,870,112.97	R -	R **15,952,939.20**
Electrification and Rural Subsidy /kWh	R 0.0742	R 602,435.74	R 608,040.80	R 572,723.09	R 637,156.88	R 544,421.72	R 1,007,358.49	R 973,612.33	R 894,754.06	R 965,901.47	R 830,578.48	R 853,096.69	R 798,550.79	R **9,288,630.54**
High Season Reactive energy Charge /kvarh	R 0.1340	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R **-**
Total Charges		**R 10,723,386.38**	**R 10,972,505.64**	**R 6,485,518.08**	**R 7,493,467.22**	**R 6,666,131.75**	**R 10,908,905.61**	**R 10,846,983.93**	**R 10,096,653.70**	**R 10,849,326.85**	**R 9,343,042.15**	**R 9,560,504.71**	**R 13,430,278.26**	**R 117,206,092.12**
Consumption Charges		R 8,914,718.15	R 9,061,761.98	R 4,730,673.51	R 5,468,161.89	R 4,647,673.35	R 8,074,387.44	R 8,215,441.92	R 7,538,287.47	R 8,033,440.71	R 6,965,829.84	R 7,180,004.07	R 11,202,719.09	R **90,033,099.42**
Ancillary Charges		R 1,808,668.23	R 1,910,743.67	R 1,754,844.57	R 2,025,305.33	R 2,018,458.40	R 2,834,518.17	R 2,631,542.01	R 2,558,366.23	R 2,815,886.14	R 2,377,212.31	R 2,380,500.64	R 2,227,559.17	R **27,172,992.70**
Consumption Charges as % of Total Charges		83.13%	82.59%	72.94%	72.97%	69.72%	74.02%	75.74%	74.66%	74.05%	74.56%	75.10%	83.41%	**76.07%**
Ancillary Charges as % of Total Charges		16.87%	17.41%	27.06%	27.03%	30.28%	25.98%	24.26%	25.34%	25.95%	25.44%	24.90%	16.59%	**23.93%**

Intake Point		Driefontein												
Premise ID		7032344358												
		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		30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	3,000	30,000	*27,750*
Utilized Capacity		32,829.37	32,829.37	32,829.37	32,829.37	32,829.37	34,388.11	34,388.11	34,388.11	34,388.11	34,388.11	34,388.11	34,388.11	*33,739*
CONSUMPTION DETAILS														
HIGH SEASON ENERGY CONSUMPTION OFF PEAK kWH		4,108,980.00	4,157,700.00										3,582,120.00	**11,848,800.00**
LOW SEASON ENERGY CONSUMPTION OFF PEAK kWH				4,491,060.00	4,322,640.01	4,550,040.00	6,130,740.00	4,973,820.00	4,958,400.00	4,866,540.00	3,641,640.00	3,720,420.00		**41,655,300.01**
HIGH SEASON ENERGY CONSUMPTION STD kWh		5,031,840.00	4,724,100.00										3,966,240.00	**13,722,180.00**
LOW SEASON ENERGY CONSUMPTION STD kWh				4,554,780.00	4,917,480.00	5,186,160.00	5,117,400.00	5,225,520.00	5,262,420.00	5,132,580.00	2,817,360.00	3,429,480.00		**41,643,180.00**
HIGH SEASON ENERGY CONSUMPTION PEAK kWh		1,949,100.00	1,715,760.00										1,499,280.00	**5,164,140.00**
LOW SEASON ENERGY CONSUMPTION PEAK kWh				1,796,700.00	2,060,460.00	2,003,820.00	1,827,780.00	2,101,320.00	2,018,520.00	2,080,620.00	1,123,800.00	1,299,840.00		**16,312,860.00**
ENERGY CONSUMPTION ALL kWh		11,089,920.00	10,597,560.00	10,842,540.00	11,300,580.01	11,740,020.00	13,075,920.00	12,300,660.00	12,239,340.00	12,079,740.00	7,582,800.00	8,449,740.00	9,047,640.00	**130,346,460.01**
DEMAND CONSUMPTION - OFF PEAK		20,201.38	20,256.90	21,512.48	21,398.05	25,700.45	27,632.32	24,779.63	28,499.58	25,241.39	13,696.83	20,242.68	16,258.86	**265,420.55**
SEASON DEMAND CONSUMPTION - STD		22,647.91	21,163.93	23,838.65	24,333.67	28,620.44	34,388.11	28,391.09	31,348.30	28,056.65	14,190.98	20,201.38	18,591.86	**295,772.97**
DEMAND CONSUMPTION - PEAK		21,229.48	20,221.69	23,539.58	23,137.91	26,851.32	30,576.46	27,826.80	30,206.17	30,230.47	13,932.40	15,391.84	18,333.31	**281,477.43**
DEMAND READING - KW/KVA		22,647.91	21,163.93	23,838.65	24,333.67	28,620.44	34,388.11	28,391.09	31,384.30	30,230.47	14,190.98	20,242.68	18,591.86	**298,024.09**
REACTIVE ENERGY - OFF PEAK		687,200.00	706,800.00	950,700.00	851,520.00	903,960.00	1,418,220.00	1,393,800.00	1,399,740.00	1,281,000.00	705,180.00	557,280.00	541,080.00	**11,396,480.00**
REACTIVE ENERGY - STD		1,048,860.00	954,720.00	1,091,460.00	1,102,500.00	1,201,620.00	1,239,240.00	1,568,460.00	1,570,320.00	1,438,260.00	533,280.00	563,100.00	672,780.00	**12,984,600.00**
REACTIVE ENERGY - PEAK		358,200.00	310,920.00	402,960.00	426,540.00	432,240.00	418,140.00	598,080.00	564,900.00	541,860.00	203,340.00	195,120.00	232,560.00	**4,684,860.00**
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		67.00	69.00	66.00	64.00	59.00	52.00	60.00	58.00	55.00	75.00	57.00	68.00	***62.5***
CHARGES DETAILS														
Administration Charge per day for monthdays	R 137.8300	R 4,272.73	R 4,272.73	R 4,134.90	R 4,272.73	R 4,134.90	R 4,272.73	R 4,272.73	R 3,997.07	R 4,272.73	R 4,134.90	R 4,272.73	R 4,134.90	**R 50,445.78**
TX Network Capacity Charge /kVA	R 8.9200	R 292,837.98	R 292,837.98	R 292,837.98	R 292,837.98	R 292,837.98	R 306,741.94	R 306,741.94	R 306,741.94	R 306,741.94	R 306,741.94	R 306,741.94	R 306,741.94	**R 3,611,383.49**
Network Capacity Charge /kVA	R 17.6800	R 580,423.26	R 580,423.26	R 580,423.26	R 580,423.26	R 580,423.26	R 607,981.78	R 607,981.78	R 607,981.78	R 607,981.78	R 607,981.78	R 607,981.78	R 607,981.78	**R 7,157,988.80**
Excess Network Capacity Charge 8,776.23 kVa @ R26.60	R 26.6000						R 233,447.72							
Network Demand Charge /kVA	R 33.5200	R 759,157.94	R 709,414.93	R 799,071.55	R 815,664.62	R 959,357.15	R 1,152,689.45	R 951,669.34	R 1,052,001.74	R 1,013,325.35	R 475,681.65	R 678,534.63	R 623,199.15	**R 9,989,767.50**
Ancillary Service Charge /kWh	R 0.0044	R 48,795.65	R 46,629.26	R 47,707.18	R 49,722.55	R 51,656.09	R 57,534.05	R 54,122.90	R 53,853.10	R 53,150.86	R 33,364.32	R 37,178.86	R 39,809.62	**R 573,524.42**
High Season Off Peak Energy Charge /kWh	R 0.5676	R 2,332,257.05	R 2,359,910.52	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 2,033,211.31	**R 6,725,378.88**
Low Season Off Peak Energy Charge /kWh	R 0.4914	R -	R -	R 2,206,906.88	R 2,124,145.30	R 2,235,889.66	R 3,012,645.64	R 2,444,135.15	R 2,436,557.76	R 2,391,417.76	R 1,789,501.90	R 1,828,214.39	R -	**R 20,469,414.42**
High Season Standard Energy Charge /kWh	R 1.0453	R 5,259,782.35	R 4,938,101.73	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 4,145,910.67	**R 14,343,794.75**
Low Season Standard Energy Charge /kWh	R 0.7747	R -	R -	R 3,528,588.07	R 3,809,571.76	R 4,017,718.15	R 3,964,449.78	R 4,048,210.34	R 4,076,796.77	R 3,976,209.73	R 2,182,608.79	R 2,656,818.16	R -	**R 32,260,971.55**
High Season Peak Energy Charge/ kWh	R 3.4504	R 6,725,174.64	R 5,920,058.30	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 5,173,115.71	**R 17,818,348.66**
Low Season Peak Energy Charge /kWh	R 1.1257	R -	R -	R 2,022,545.19	R 2,319,459.82	R 2,255,700.17	R 2,057,531.95	R 2,365,455.92	R 2,272,247.96	R 2,342,153.93	R 1,265,061.66	R 1,463,229.89	R -	**R 18,363,386.50**
Electrification and Rural Subsidy /kWh	R 0.0858	R 951,515.14	R 909,270.65	R 930,289.93	R 969,589.76	R 1,007,293.72	R 1,121,913.94	R 1,055,396.63	R 1,050,135.37	R 1,036,441.69	R 650,604.24	R 724,987.69	R 776,287.51	**R 11,183,726.27**
High Season Reactive energy Charge /kvarh	R 0.1549	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	**R -**
Total Charges		**R 16,954,216.74**	**R 15,760,919.37**	**R 10,412,504.94**	**R 10,965,687.78**	**R 11,405,011.08**	**R 12,519,208.97**	**R 11,837,986.74**	**R 11,860,313.50**	**R 11,731,695.77**	**R 7,315,681.18**	**R 8,307,960.07**	**R 13,710,392.60**	**R 142,548,131.02**
Consumption Charges		R 14,317,214.04	R 13,218,070.55	R 7,758,040.14	R 8,253,176.87	R 8,509,307.98	R 9,034,627.36	R 8,857,801.42	R 8,785,602.50	R 8,709,781.42	R 5,237,172.35	R 5,948,262.43	R 11,352,237.70	**R 109,981,294.76**
Ancillary Charges		R 2,637,002.70	R 2,542,848.82	R 2,654,464.80	R 2,712,510.91	R 2,895,703.09	R 3,484,581.61	R 2,980,185.32	R 3,074,711.00	R 3,021,914.36	R 2,078,508.84	R 2,359,697.64	R 2,358,154.90	**R 32,566,836.26**
Consumption Charges as % of Total Charges		84.45%	83.87%	74.51%	75.26%	74.61%	72.17%	74.83%	74.08%	74.24%	71.59%	71.60%	82.80%	**76.17%**
Ancillary Charges as % of Total Charges		15.55%	16.13%	25.49%	24.74%	25.39%	27.83%	25.17%	25.92%	25.76%	28.41%	28.40%	17.20%	**23.83%**

Intake Point	Driefontein
Premise ID	7032344358

	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	
Notified Max Demand	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	***30,000***
Utilized Capacity	34,388.11	34,388.11	34,388.11	34,388.11	34,388.11	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	***31,828.38***
CONSUMPTION DETAILS													
ENERGY CONSUMPTION OFF PEAK kWH	3,535,800.00	4,184,880.00	3,968,520.00	4,106,460.00	4,503,540.00	5,757,720.00	5,485,920.00	4,612,440.00	4,847,940.00	5,127,060.00	4,400,400.00	3,954,840.00	**54,485,520.00**
ENERGY CONSUMPTION STD kWh	4,216,860.00	4,033,500.00	4,168,620.00	4,737,420.00	4,739,640.00	5,590,980.00	5,135,520.00	5,015,400.00	5,277,960.00	4,665,840.00	4,500,120.00	4,364,040.00	**56,445,900.00**
ENERGY CONSUMPTION PEAK kWh	1,715,640.00	1,549,140.00	1,754,940.00	1,886,880.00	1,899,600.00	2,244,300.00	1,913,340.00	1,916,880.00	2,046,960.00	1,805,640.00	1,807,800.00	1,735,620.00	**22,276,740.00**
ENERGY CONSUMPTION ALL kWh	9,468,300.00	9,767,520.00	9,892,080.00	10,730,760.00	11,142,780.00	13,593,000.00	12,534,780.00	11,544,720.00	12,172,860.00	11,598,540.00	10,708,320.00	10,054,500.00	**133,208,160.00**
DEMAND CONSUMPTION - OFF PEAK	20,478.90	17,955.14	19,077.35	19,511.35	20,491.91	27,125.57	23,228.29	25,994.61	25,365.17	23,264.22	19,960.44	19,772.34	**262,225.29**
DEMAND CONSUMPTION - STD	22,475.90	21,622.65	23,016.23	24,705.14	23,803.89	29,818.24	27,609.65	28,349.73	27,952.53	25,403.74	22,850.47	23,945.03	**301,553.20**
DEMAND CONSUMPTION - PEAK	18,278.24	18,667.61	22,621.51	24,668.68	23,150.98	29,342.88	27,543.85	28,576.38	28,015.82	25,091.19	21,148.95	25,146.51	**292,252.60**
DEMAND READING - KW/KVA	22,475.91	21,622.65	23,016.24	24,705.14	23,803.90	29,818.25	27,609.65	28,576.38	28,015.82	25,403.75	22,850.47	25,146.51	**303,044.67**
REACTIVE ENERGY - OFF PEAK	425,280.00	5,602,220.00	609,720.00	656,940.00	943,080.00	1,190,760.00	1,096,620.00	1,195,620.00	1,511,100.00	1,511,100.00	1,103,220.00	767,160.00	**16,612,820.00**
REACTIVE ENERGY - STD	602,880.00	600,420.00	717,600.00	941,340.00	1,195,440.00	1,380,360.00	1,229,880.00	1,421,160.00	1,578,960.00	1,578,960.00	1,326,960.00	944,340.00	**13,518,300.00**
REACTIVE ENERGY - PEAK	228,420.00	211,860.00	277,980.00	347,280.00	439,140.00	519,240.00	422,160.00	506,400.00	579,720.00	579,720.00	499,080.00	361,500.00	**4,972,500.00**
EXCESS REACTIVE ENERGY	6.00	24.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	648.00	**678.00**
LOAD FACTOR	57.00	61.00	60.00	61.00	67.00	63.00	63.00	63.00	63.00	68.00	65.00	57.00	***62.33***
CHARGES DETAILS													
Administration Charge @ R147.34 per day for monthdays	R 4,567.54	R 4,567.54	R 4,420.20	R 4,567.54	R 4,420.20	R 4,567.54	R 4,567.54	R 4,125.52	R 4,567.54	R 4,420.20	R 4,567.54	R 4,420.20	**R 53,779.10**
TX Network Capacity Charge R9.54/kVA	R 328,062.57	R 328,062.57	R 328,062.57	R 328,062.57	R 328,062.57	R 286,200.00	R 286,200.00	R 286,200.00	R 286,200.00	R 286,200.00	R 286,200.00	R 286,200.00	**R 3,643,712.85**
Network Capacity Charge R18.90/kVA	R 649,935.28	R 649,935.28	R 649,935.28	R 649,935.28	R 649,935.28	R 567,000.00	R 567,000.00	R 567,000.00	R 567,000.00	R 567,000.00	R 567,000.00	R 567,000.00	**R 7,218,676.40**
Network Demand Charge R35.83 /kVA	R 805,311.86	R 774,739.55	R 824,671.88	R 885,185.17	R 852,893.74	R 1,068,387.90	R 989,253.76	R 1,023,891.70	R 1,003,806.83	R 910,216.36	R 818,732.34	R 900,999.45	**R 10,858,090.53**
Ancillary Service Charge @ R0.0047 /kWh	R 44,501.01	R 45,907.34	R 46,492.78	R 50,434.57	R 52,371.07	R 63,887.10	R 58,913.47	R 54,260.18	R 57,212.44	R 54,513.14	R 50,329.10	R 47,256.15	**R 626,078.35**
High Season Off Peak Energy Charge @ R0.6068 /kWh	R 2,145,523.44	R 2,539,385.18	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 2,399,796.91	**R 7,084,705.54**
Low Season Off Peak Energy Charge @ R0.5253 /kWh			R 2,084,663.56	R 2,157,123.44	R 2,365,709.56	R 3,024,530.32	R 2,881,753.78	R 2,422,914.73	R 2,546,622.88	R 2,693,244.62	R 2,311,530.12	R -	**R 22,488,093.00**
High Season Peak Energy Charge @ R3.6885 / kWh	R 6,328,138.14	R 5,714,002.89	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 6,401,834.37	**R 18,443,975.40**
Low Season Peak Energy Charge @ R1.2034 / kWh			R 2,111,894.80	R 2,270,671.39	R 2,285,978.64	R 2,700,790.62	R 2,302,513.36	R 2,306,773.39	R 2,463,311.66	R 2,172,907.18	R 2,175,506.52	R -	**R 20,790,347.56**
High Season Standard Energy Charge @ R1.1174 /kWh	R 4,711,919.36	R 4,507,032.90		R -	R -	R -	R -	R -	R -	R -	R -	R 4,876,378.30	**R 14,095,330.56**
Low Season Standard Energy Charge @ R0.8282 /kWh			R 3,452,451.08	R 3,923,531.24	R 3,925,369.85	R 4,630,449.64	R 4,253,237.66	R 4,153,754.28	R 4,371,206.47	R 3,864,248.69	R 3,726,999.38	R -	**R 36,301,248.30**
Electrification and Rural Subsidy @ R0.0917 /kWh	R 868,243.11	R 895,681.58	R 907,103.74	R 984,010.69	R 1,021,792.93	R 1,246,478.10	R 1,149,439.33	R 1,058,650.82	R 1,116,251.26	R 1,063,586.12	R 981,952.94	R 921,997.65	**R 12,215,188.27**
High Season Reactive energy Charge @ R0.1656 /kvarh	R 0.99	R 3.97	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 107.31	**R 112.28**
Total Charges	**R 15,886,203.30**	**R 15,459,318.80**	**R 10,409,695.89**	**R 11,253,521.89**	**R 11,486,533.84**	**R 13,592,291.22**	**R 12,492,878.90**	**R 11,877,570.62**	**R 12,416,179.08**	**R 11,616,336.31**	**R 10,922,817.94**	**R 16,405,990.34**	**R 153,819,338.12**
Consumption Charges	R 13,185,580.94	R 12,760,420.97	R 7,649,009.44	R 8,351,326.07	R 8,577,058.05	R 10,355,770.57	R 9,437,504.80	R 8,883,442.40	R 9,381,141.02	R 8,730,400.48	R 8,214,036.02	R 13,678,009.58	**R 119,203,700.35**
Ancillary Charges	R 2,700,622.36	R 2,698,897.83	R 2,760,686.45	R 2,902,195.82	R 2,909,475.79	R 3,236,520.65	R 3,055,374.10	R 2,994,128.22	R 3,035,038.06	R 2,885,935.83	R 2,708,781.92	R 2,727,980.76	**R 34,615,637.77**
Consumption Charges as % of Total Charges	83.00%	82.54%	73.48%	74.21%	74.67%	76.19%	75.54%	74.79%	75.56%	75.16%	75.20%	83.37%	**76.98%**
Ancillary Charges as % of Total Charges	17.00%	16.99%	17.38%	18.27%	18.31%	20.37%	19.23%	18.85%	19.10%	18.17%	17.05%	17.17%	**18.16%**

Shakaskraal intake point Eskom summary (3 years)

Intake Point		Shakaskraal												
Premise ID		8851805893												
		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		42,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	*46,583*
Utilized Capacity		42,000.00	47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	*46,583*
CONSUMPTION DETAILS														
HIGH SEASON ENERGY CONSUMPTION OFF PEAK kWH		6,582,935.14	6,491,306.23										5,835,749.04	**18,909,990.41**
LOW SEASON ENERGY CONSUMPTION OFF PEAK kWH				6,956,718.99	6,164,374.67	6,629,000.85	7,653,097.03	6,338,944.14	5,793,125.02	6,632,026.92	6,291,795.96	5,841,822.24		**58,300,905.82**
HIGH SEASON ENERGY CONSUMPTION STD kWh		7,323,620.51	7,452,011.00										5,685,804.00	**20,461,435.51**
LOW SEASON ENERGY CONSUMPTION STD kWh				6,691,656.24	7,263,886.56	7,484,747.96	5,641,944.95	6,307,348.93	5,857,290.23	5,955,935.22	5,695,510.68	6,227,922.96		**57,126,243.73**
HIGH SEASON ENERGY CONSUMPTION PEAK kWh		3,188,355.46	3,169,214.40										2,409,710.58	**8,767,280.44**
LOW SEASON ENERGY CONSUMPTION PEAK kWh				2,707,080.98	3,201,943.14	3,274,282.46	2,242,358.48	2,708,306.93	2,463,517.04	2,540,143.98	2,477,925.00	2,596,750.56		**24,212,308.57**
ENERGY CONSUMPTION ALL kWh		17,094,911.11	17,112,531.63	16,355,456.21	16,630,204.37	17,388,031.27	15,537,400.46	15,354,600.00	14,113,932.29	15,128,106.12	14,465,231.64	14,666,495.76	13,931,263.62	**187,778,164.48**
DEMAND CONSUMPTION - OFF PEAK		32,646.87	34,941.29	31,734.52	30,734.04	32,774.54	30,651.79	30,467.54	30,756.72	30,611.28	36,322.24	28,807.61	28,274.24	**378,722.68**
SEASON DEMAND CONSUMPTION - STD		33,970.61	34,151.85	33,950.90	35,014.74	38,365.18	31,239.31	29,436.80	30,317.66	32,988.48	33,160.95	31,976.59	29,306.44	**393,879.51**
DEMAND CONSUMPTION - PEAK		37,777.76	37,436.31	35,788.03	35,551.74	37,942.27	34,768.42	30,117.04	35,088.82	34,510.90	32,118.05	32,145.46	33,001.88	**416,246.68**
DEMAND READING - KW/KVA		37,777.76	37,436.31	35,788.03	35,551.74	38,365.18	34,768.42	30,467.54	35,088.82	34,510.90	33,160.95	32,145.46	33,001.88	**418,062.99**
REACTIVE ENERGY - OFF PEAK		1,700,129.16	1,668,253.68	1,883,862.54	1,937,781.36	2,105,712.18	2,496,942.54	2,035,421.46	1,867,280.58	2,112,721.20	1,829,501.64	1,707,719.04	1,592,345.70	**22,937,671.08**
REACTIVE ENERGY - STD		2,134,936.26	2,148,311.70	1,977,711.30	2,376,939.24	2,486,667.42	1,849,569.84	2,045,304.36	1,993,168.62	2,018,884.68	1,790,959.68	1,895,144.40	1,676,616.66	**24,394,214.16**
REACTIVE ENERGY - PEAK		795,647.34	787,167.72	738,405.72	970,403.94	1,016,668.08	682,418.88	820,528.38	775,796.22	805,544.18	720,503.10	724,837.50	607,026.96	**9,444,948.02**
EXCESS REACTIVE ENERGY		69,612.55	69,262.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	87,392.08	**226,267.40**
LOAD FACTOR		62.00	63.00	65.00	64.00	65.00	62.00	70.00	61.00	61.00	57.00	63.00	60.00	*62.75*
CHARGES DETAILS														
Administration Charge per day for monthdays	R 119.2000	R 3,695.20	R 3,695.20	R 3,576.00	R 3,695.20	R 3,576.00	R 3,695.20	R 3,695.20	R 3,337.60	R 3,695.20	R 3,576.00	R 3,695.20	R 3,576.00	**R 43,508.00**
TX Network Capacity Charge /kVA	R 7.7100	R 323,820.00	R 362,370.00	R 362,370.00	R 362,370.00	R 362,370.00	R 362,370.00	R 362,370.00	R 362,370.00	R 362,370.00	R 362,370.00	R 362,370.00	R 362,370.00	**R 4,309,890.00**
Network Capacity Charge /kVA	R 15.2900	R 642,180.00	R 718,630.00	R 718,630.00	R 718,630.00	R 718,630.00	R 718,630.00	R 718,630.00	R 718,630.00	R 718,630.00	R 718,630.00	R 718,630.00	R 718,630.00	**R 8,547,110.00**
Excess Network Capacity Charge 8,776.23 kVa @ R26.60	R 26.6000													
Network Demand Charge /kVA	R 28.9900	R 1,095,177.26	R 1,085,278.63	R 1,037,494.99	R 1,030,644.94	R 1,112,206.57	R 1,007,936.50	R 883,253.98	R 1,017,224.89	R 1,000,470.99	R 961,335.94	R 931,896.89	R 956,724.50	**R 12,119,646.08**
Ancillary Service Charge /kWh	R 0.0038	R 64,960.66	R 65,027.62	R 62,150.73	R 63,194.78	R 66,074.52	R 59,042.12	R 58,347.48	R 53,632.94	R 57,486.80	R 54,967.88	R 55,732.68	R 52,938.80	**R 713,557.02**
High Season Off Peak Energy Charge /kWh	R 0.4909	R 3,231,562.79	R 3,186,582.12	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 2,864,769.18	**R 9,282,914.09**
Low Season Off Peak Energy Charge /kWh	R 0.4250	R -	R -	R 2,956,605.58	R 2,619,859.38	R 2,817,325.43	R 3,252,566.23	R 2,694,051.20	R 2,462,078.13	R 2,818,611.48	R 2,674,013.30	R 2,482,774.35	R -	**R 24,777,885.05**
High Season Standard Energy Charge /kWh	R 0.9040	R 6,620,553.38	R 6,736,617.94	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 5,139,966.82	**R 18,497,138.14**
Low Season Standard Energy Charge /kWh	R 0.6700	R -	R -	R 4,483,409.52	R 4,866,804.29	R 5,014,781.16	R 3,780,103.15	R 4,225,923.83	R 3,924,384.30	R 3,990,476.45	R 3,815,992.37	R 4,172,708.41	R -	**R 38,274,583.48**
High Season Peak Energy Charge / kWh	R 2.9840	R 9,514,051.32	R 9,456,934.58	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 7,190,577.62	**R 26,161,563.52**
Low Season Peak Energy Charge / kWh	R 0.9735	R -	R -	R 2,635,343.35	R 3,117,091.51	R 3,187,513.53	R 2,182,935.51	R 2,636,536.86	R 2,398,233.80	R 2,472,830.18	R 2,412,259.99	R 2,527,937.10	R -	**R 23,570,681.84**
Electrification and Rural Subsidy /kWh	R 0.0742	R 1,268,442.40	R 1,269,749.87	R 1,213,574.84	R 1,233,961.14	R 1,290,191.90	R 1,152,875.08	R 1,139,311.32	R 1,047,253.75	R 1,122,505.47	R 1,073,320.21	R 1,088,254.00	R 1,033,699.79	**R 13,933,139.77**
High Season Reactive energy Charge /kvarh	R 0.1340	R 9,328.14	R 9,281.24	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 11,710.53	**R 30,319.91**
Service charge	R 3,732.5100	R 115,707.81	R 115,707.81	R 111,975.30	R 115,707.81	R 111,975.30	R 115,707.81	R 115,707.81	R 104,510.28	R 115,707.81	R 111,975.30	R 115,707.81	R 111,975.30	**R 47,338.37**
Total Charges		**R 22,889,478.97**	**R 23,009,875.01**	**R 13,585,130.31**	**R 14,131,959.04**	**R 14,684,644.40**	**R 12,635,861.59**	**R 12,837,827.69**	**R 12,091,655.69**	**R 12,662,784.38**	**R 12,188,440.99**	**R 12,459,706.44**	**R 18,446,938.55**	**R 180,309,275.28**
Consumption Charges		R 19,366,167.50	R 19,380,134.64	R 10,075,358.45	R 10,603,755.18	R 11,019,620.11	R 9,215,604.89	R 9,556,511.89	R 8,784,696.22	R 9,281,918.11	R 8,902,265.66	R 9,183,419.86	R 15,195,313.62	**R 140,564,766.12**
Ancillary Charges		R 3,523,311.47	R 3,629,740.37	R 3,509,771.86	R 3,528,203.86	R 3,665,024.29	R 3,420,256.71	R 3,281,315.79	R 3,306,959.47	R 3,380,866.27	R 3,286,175.34	R 3,276,286.58	R 3,251,624.92	**R 39,697,170.78**
Consumption Charges as % of Total Charges		84.61%	84.23%	74.16%	75.03%	75.04%	72.93%	74.44%	72.65%	73.30%	73.04%	73.70%	82.37%	**76.29%**
Ancillary Charges as % of Total Charges		15.39%	15.77%	25.84%	24.97%	24.96%	27.07%	25.56%	27.35%	26.70%	26.96%	26.30%	17.63%	**23.71%**

Intake Point		Shakaskraal												
Premise ID		8851805893												
		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		47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	*47,000*
Utilized Capacity		47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	*47,000*
CONSUMPTION DETAILS														
HIGH SEASON ENERGY CONSUMPTION OFF PEAK kWH		5,283,380.16	5,660,539.74										5,091,613.56	**16,035,533.46**
LOW SEASON ENERGY CONSUMPTION OFF PEAK kWH				5,632,413.12	5,394,425.93	5,504,684.39	6,900,584.40	6,854,392.08	5,910,968.16	6,290,176.86	5,786,408.88	5,241,301.02		**53,515,354.84**
HIGH SEASON ENERGY CONSUMPTION STD kWh		6,399,956.16	6,144,723.54										5,725,159.38	**18,269,839.08**
LOW SEASON ENERGY CONSUMPTION STD kWh				5,738,523.66	6,089,319.53	5,922,580.85	5,329,542.96	6,840,480.42	5,607,093.24	6,231,992.58	4,904,090.28	5,009,781.60		**51,673,405.12**
HIGH SEASON ENERGY CONSUMPTION PEAK kWh		2,956,763.16	2,636,671.50										2,483,532.36	**8,076,967.02**
LOW SEASON ENERGY CONSUMPTION PEAK kWh				2,481,910.74	2,802,870.35	2,492,103.77	2,021,274.90	2,832,887.34	2,337,895.62	2,707,400.70	1,987,310.52	2,056,544.10		**21,720,198.04**
ENERGY CONSUMPTION ALL kWh		14,640,099.48	14,441,934.78	13,852,847.52	14,286,615.81	13,919,369.01	14,251,402.26	16,527,759.84	13,855,957.02	15,229,570.14	12,677,809.68	12,307,626.72	13,300,305.30	**169,291,297.56**
DEMAND CONSUMPTION - OFF PEAK		29,801.44	33,212.33	27,494.06	27,491.74	26,375.07	28,091.83	31,702.95	31,275.85	30,628.56	29,290.40	28,449.48	30,095.53	**353,909.24**
SEASON DEMAND CONSUMPTION - STD		29,880.11	37,369.39	31,226.24	29,134.76	29,170.29	34,322.96	36,437.85	31,228.09	32,018.68	33,042.42	31,819.84	30,875.59	**386,526.22**
DEMAND CONSUMPTION - PEAK		33,117.55	38,789.60	31,215.32	31,040.33	30,588.07	31,478.31	35,619.77	33,460.99	33,723.58	30,068.09	30,904.68	33,941.47	**393,947.76**
DEMAND READING - KW/KVA		33,117.55	38,789.60	31,226.24	31,040.33	30,588.07	34,322.96	36,437.85	33,460.99	33,723.58	33,042.42	31,819.84	33,941.47	**401,510.90**
REACTIVE ENERGY - OFF PEAK		1,478,295.36	1,595,492.82	1,590,137.10	1,578,172.14	1,642,836.42	2,407,688.46	2,640,211.38	2,170,873.26	2,110,771.98	1,866,394.44	1,732,374.54	1,530,207.90	**22,343,455.80**
REACTIVE ENERGY - STD		2,012,377.50	1,843,583.76	1,710,142.20	1,846,413.54	1,855,916.10	1,778,505.30	2,819,847.06	2,056,709.16	2,118,381.12	1,437,636.78	1,588,330.08	1,774,638.90	**22,842,481.50**
REACTIVE ENERGY - PEAK		762,178.50	665,599.86	682,275.96	767,388.60	720,357.47	641,091.24	1,120,367.70	812,451.60	851,777.28	548,049.78	612,091.26	656,947.08	**8,840,576.33**
EXCESS REACTIVE ENERGY		176,651.92	128,953.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	127,624.82	**433,230.54**
LOAD FACTOR		61.00	51.00	62.00	63.00	66.00	58.00	65.00	61.00	63.00	54.00	53.00	56.00	***59.41666667***
CHARGES DETAILS														
Administration Charge per day for monthdays	R 137.8300	R 4,272.73	R 4,272.73	R 4,134.90	R 4,272.73	R 4,134.90	R 4,272.73	R 4,272.73	R 3,997.07	R 4,272.73	R 4,134.90	R 4,272.73	R 4,134.90	R **50,445.78**
TX Network Capacity Charge /kVA	R 8.9200	R 419,240.00	R 419,240.00	R 419,240.00	R 419,240.00	R 419,240.00	R 419,240.00	R 419,240.00	R 419,240.00	R 419,240.00	R 419,240.00	R 419,240.00	R 419,240.00	R **5,030,880.00**
Network Capacity Charge /kVA	R 17.6800	R 830,960.00	R 830,960.00	R 830,960.00	R 830,960.00	R 830,960.00	R 830,960.00	R 830,960.00	R 830,960.00	R 830,960.00	R 830,960.00	R 830,960.00	R 830,960.00	R **9,971,520.00**
Excess Network Capacity Charge 8,776.23 kVa @ R26.60	R 26.6000													
Network Demand Charge /kVA	R 33.5200	R 1,110,100.28	R 1,300,227.39	R 1,046,708.56	R 1,040,471.86	R 1,025,312.11	R 1,150,505.62	R 1,221,396.73	R 1,121,612.38	R 1,130,414.40	R 1,107,581.92	R 1,066,601.04	R 1,137,718.07	R **13,458,645.37**
Ancillary Service Charge /kWh	R 0.0044	R 64,416.44	R 63,544.51	R 60,952.53	R 62,861.11	R 61,245.22	R 62,706.17	R 72,722.14	R 60,966.21	R 67,010.11	R 55,782.36	R 54,153.56	R 58,521.34	R **744,881.71**
High Season Off Peak Energy Charge /kWh	R 0.5676	R 2,998,846.49	R 3,212,922.50	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 2,890,000.11	R **9,101,769.10**
Low Season Off Peak Energy Charge /kWh	R 0.4914	R -	R -	R 2,767,767.75	R 2,650,820.94	R 2,705,001.72	R 3,390,946.98	R 3,368,248.23	R 2,904,649.68	R 3,090,992.98	R 2,843,441.38	R 2,575,575.31	R -	R **26,297,444.96**
High Season Standard Energy Charge /kWh	R 1.0453	R 6,689,874.01	R 6,423,080.00	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 5,984,508.70	R **19,097,462.71**
Low Season Standard Energy Charge /kWh	R 0.7747	R -	R -	R 4,445,634.54	R 4,717,396.20	R 4,588,223.50	R 4,128,796.96	R 5,299,319.86	R 4,343,814.95	R 4,827,924.98	R 3,799,198.52	R 3,881,078.12	R -	R **40,031,387.63**
High Season Peak Energy Charge / kWh	R 3.4504	R 10,202,015.06	R 9,097,573.07	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 8,569,178.81	R **27,868,766.94**
Low Season Peak Energy Charge / kWh	R 1.1257	R -	R -	R 2,793,887.21	R 3,155,190.76	R 2,805,361.47	R 2,275,349.27	R 3,188,980.90	R 2,631,769.53	R 3,047,721.31	R 2,237,115.99	R 2,315,051.58	R -	R **24,450,428.01**
Electrification and Rural Subsidy /kWh	R 0.0858	R 1,256,120.49	R 1,239,118.02	R 1,188,574.36	R 1,225,791.65	R 1,194,281.86	R 1,222,770.29	R 1,418,081.81	R 1,188,841.11	R 1,306,697.11	R 1,087,756.10	R 1,055,994.40	R 1,141,166.17	R **14,525,193.37**
High Season Reactive energy Charge /kvarh	R 0.1549	R 27,363.39	R 19,974.97	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 19,769.11	R **67,107.48**
Service charge	R 4,315.8900	R 133,792.59	R 133,792.59	R 129,476.70	R 133,792.59	R 129,476.70	R 133,792.59	R 133,792.59	R 125,160.81	R 133,792.59	R 129,476.70	R 133,792.59	R 129,476.70	R **47,338.37**
Total Charges		**R 23,737,001.47**	**R 22,744,705.79**	**R 13,687,331.56**	**R 14,240,797.84**	**R 13,763,237.48**	**R 13,619,340.61**	**R 15,957,014.98**	**R 13,631,011.74**	**R 14,859,026.20**	**R 12,514,687.88**	**R 12,336,719.32**	**R 21,184,673.92**	**R 190,743,271.42**
Consumption Charges		R 19,890,735.55	R 18,733,575.57	R 10,007,289.50	R 10,523,407.90	R 10,098,586.69	R 9,795,093.21	R 11,856,548.98	R 9,880,234.15	R 10,966,639.26	R 8,879,755.90	R 8,771,705.01	R 17,443,687.62	R **146,847,259.34**
Ancillary Charges		R 3,846,265.92	R 4,011,130.22	R 3,680,042.05	R 3,717,389.94	R 3,664,650.79	R 3,824,247.40	R 4,100,466.00	R 3,750,777.59	R 3,892,386.94	R 3,634,931.98	R 3,565,014.31	R 3,740,986.30	R **43,848,673.71**
Consumption Charges as % of Total Charges		83.80%	82.36%	73.11%	73.90%	73.37%	71.92%	74.30%	72.48%	73.80%	70.95%	71.10%	82.34%	**75.29%**
Ancillary Charges as % of Total Charges		16.20%	17.64%	26.89%	26.10%	26.63%	28.08%	25.70%	27.52%	26.20%	29.05%	28.90%	17.66%	**24.71%**

Intake Point	Shakaskraal
Premise ID	8851805893

	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	
Notified Max Demand	47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	***47,000***
Utilized Capacity	47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	47,000.00	***47,000.00***
CONSUMPTION DETAILS													
ENERGY CONSUMPTION OFF PEAK kWH	5,079,768.84	5,655,926.52	5,547,622.50	5,799,046.50	7,740,054.00	7,518,303.00	6,639,201.54	1,827,280.26	6,184,017.58	7,828,512.26	5,664,027.85	6,062,004.00	**71,545,764.85**
ENERGY CONSUMPTION STD kWh	6,200,036.46	5,437,242.27	6,289,011.00	6,450,444.00	4,957,002.00	6,584,197.50	5,875,279.38	1,849,180.86	6,678,568.61	5,817,595.66	6,071,152.34	6,694,299.00	**68,904,009.08**
ENERGY CONSUMPTION PEAK kWh	2,837,722.50	2,384,108.82	2,773,944.00	2,783,952.00	1,826,280.00	2,791,012.50	2,396,727.18	755,961.66	2,694,422.54	1,997,116.44	2,570,575.50	2,997,558.00	**28,809,381.14**
ENERGY CONSUMPTION ALL kWh	14,117,527.80	13,477,277.61	14,610,577.50	15,033,442.50	14,523,336.00	16,893,513.00	14,911,208.10	4,432,422.78	15,557,008.73	15,643,224.36	14,305,755.69	15,753,861.00	**169,259,155.07**
DEMAND CONSUMPTION - OFF PEAK	29,183.67	44,039.88	35,767.12	28,473.81	34,662.86	35,987.18	31,095.79	8,517.60	25,823.24	31,252.60	37,133.16	33,596.22	**375,533.13**
DEMAND CONSUMPTION - STD	30,347.78	32,064.79	33,592.34	32,459.68	35,767.12	34,405.89	34,685.98	9,455.40	31,006.35	31,381.87	36,368.18	33,877.40	**375,412.78**
DEMAND CONSUMPTION - PEAK	33,991.53	34,508.41	34,662.86	33,263.08	31,084.72	34,926.62	34,543.53	9,034.20	30,126.09	32,336.00	36,316.15	38,695.17	**383,488.36**
DEMAND READING - KW/KVA	33,991.53	34,508.42	34,662.86	33,263.08	35,767.13	34,926.62	34,685.98	9,455.40	31,006.36	32,336.01	36,368.19	38,695.17	**389,666.75**
REACTIVE ENERGY - OFF PEAK	1,450,449.72	5,602,220.00	1,419,660.00	1,551,330.00	1,857,802.50	2,150,973.00	1,787,751.36	0.00	1,403,771.90	1,777,072.21	1,114,010.53	1,491,565.50	**21,606,606.72**
REACTIVE ENERGY - STD	1,870,567.02	600,420.00	1,674,607.50	1,807,240.50	1,318,171.50	1,954,174.50	1,736,014.50	0.00	1,516,035.10	1,320,594.16	1,139,169.67	1,770,912.00	**16,707,906.45**
REACTIVE ENERGY - PEAK	738,880.92	211,860.00	661,554.00	714,397.50	531,522.00	773,554.50	661,050.00	0.00	611,633.94	453,345.43	437,463.00	662,571.00	**6,457,832.29**
EXCESS REACTIVE ENERGY	98,302.34	99,655.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25,011.00	**222,969.21**
LOAD FACTOR	57.00	41.00	57.00	62.00	57.00	64.00	59.00	69.00	69.00	68.00	52.00	57.00	***59.33***
CHARGES DETAILS													
Administration Charge @ R147.34 per day for monthdays	R 4,567.54	R 4,567.54	R 4,420.20	R 4,567.54	R 4,420.20	R 4,567.54	R 4,567.54	R 4,125.52	R 4,567.54	R 4,420.20	R 4,567.54	R 4,420.20	**R 53,779.10**
TX Network Capacity Charge R9.54/kVA	R 448,380.00	R 448,380.00	R 448,380.00	R 448,380.00	R 448,380.00	R 448,380.00	R 448,380.00	R 448,380.00	R 448,380.00	R 448,380.00	R 448,380.00	R 448,380.00	**R 5,380,560.00**
Network Capacity Charge R18.90/kVA	R 888,300.00	R 888,300.00	R 888,300.00	R 888,300.00	R 888,300.00	R 888,300.00	R 888,300.00	R 888,300.00	R 888,300.00	R 888,300.00	R 888,300.00	R 888,300.00	**R 10,659,600.00**
Network Demand Charge R35.83 /kVA	R 1,217,916.52	R 1,236,436.69	R 1,241,970.27	R 1,191,816.16	R 1,281,536.27	R 1,251,420.79	R 1,242,798.66	R 338,786.98	R 1,110,957.88	R 1,158,599.24	R 1,303,072.25	R 1,386,447.94	**R 13,961,759.65**
Ancillary Service Charge @ R0.0047 /kWh	R 66,352.38	R 63,343.21	R 68,669.72	R 70,657.18	R 68,259.68	R 79,399.51	R 70,082.68	R 20,832.39	R 73,117.94	R 73,523.15	R 67,237.05	R 74,043.15	**R 795,518.04**
High Season Off Peak Energy Charge @ R0.6068 /kWh	R 3,082,403.83	R 3,432,016.50	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 3,678,424.03	**R 10,192,844.36**
Low Season Off Peak Energy Charge @ R0.5253 /kWh			R 2,914,166.36	R 3,046,239.39	R 4,065,850.37	R 3,949,364.57	R 3,487,572.81	R 959,870.18	R 3,248,464.66	R 4,112,317.35	R 2,975,313.91	R -	**R 28,759,159.60**
High Season Peak Energy Charge @ R3.6885 / kWh	R 10,466,941.29	R 8,793,786.05	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 11,056,492.68	**R 30,317,220.02**
Low Season Peak Energy Charge @ R1.2034 / kWh			R 3,338,164.21	R 3,350,207.84	R 2,197,745.35	R 3,358,705.04	R 2,884,221.27	R 909,724.67	R 3,242,468.64	R 2,403,329.39	R 3,093,431.16	R -	**R 24,777,997.58**
High Season Standard Energy Charge @ R1.1174 /kWh	R 6,927,920.23	R 6,075,574.21		R -	R -	R -	R -	R -	R -	R -	R -	R 7,480,209.70	**R 20,483,704.14**
Low Season Standard Energy Charge @ R0.8282 /kWh			R 5,208,558.91	R 5,342,257.72	R 4,105,389.06	R 5,453,032.78	R 4,865,906.07	R 1,531,491.70	R 5,531,190.85	R 4,818,133.01	R 5,028,128.09	R -	**R 41,884,088.18**
Electrification and Rural Subsidy @ R0.0917 /kWh	R 1,294,577.32	R 1,235,866.39	R 1,339,790.00	R 1,378,566.72	R 1,331,789.91	R 1,549,135.14	R 1,367,357.77	R 406,453.19	R 1,426,577.73	R 1,434,483.64	R 1,311,837.83	R 1,444,629.05	**R 15,521,064.70**
High Season Reactive energy Charge @ R0.1656 /kvarh	R 16,278.81	R 16,503.03	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 4,141.82	**R 36,923.67**
Service Charge	R 143,024.39	R 143,024.39	R 138,410.70	R 143,024.39	R 138,410.70	R 143,024.39	R 143,024.39	R 129,183.32	R 143,024.39	R 138,410.70	R 143,024.39	R 138,410.70	**R 1,683,996.85**
Total Charges	**R 24,556,662.31**	**R 22,337,798.01**	**R 15,590,830.37**	**R 15,864,016.94**	**R 14,530,081.54**	**R 17,125,329.76**	**R 15,402,211.19**	**R 5,637,147.95**	**R 16,117,049.63**	**R 15,479,896.68**	**R 15,263,292.22**	**R 26,603,899.27**	**R 202,824,219.02**
Consumption Charges	R 20,477,265.34	R 18,301,376.76	R 11,460,889.48	R 11,738,704.95	R 10,368,984.77	R 12,761,102.39	R 11,237,700.15	R 3,401,086.56	R 12,022,124.14	R 11,333,779.76	R 11,096,873.15	R 22,215,126.41	**R 156,415,013.87**
Ancillary Charges	R 4,079,396.97	R 4,036,421.25	R 4,129,940.89	R 4,125,311.99	R 4,161,096.77	R 4,364,227.37	R 4,164,511.04	R 2,236,061.39	R 4,094,925.49	R 4,146,116.92	R 4,166,419.07	R 4,388,772.85	**R 46,409,205.15**
Consumption Charges as % of Total Charges	83.39%	81.93%	73.51%	74.00%	71.36%	74.52%	72.96%	60.33%	74.59%	73.22%	72.70%	83.50%	**74.67%**
Ancillary Charges as % of Total Charges	16.61%	16.44%	16.82%	16.80%	16.94%	17.77%	16.96%	9.11%	16.68%	16.88%	16.97%	17.87%	**16.32%**

Combined intake point Eskom summary (3 years)

Intake Point	Combined
Premise ID	5433388634 / 7032344358 / 8851805893

	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	
Notified Max Demand	137,000	152,000	152,000	152,000	152,000	152,000	152,000	152,000	152,000	152,000	125,000	152,000	***148,500***
Utilized Capacity	137,000.00	152,000.00	152,000.00	152,000.00	152,000.00	154,829.37	154,829.37	154,829.37	154,829.37	154,829.37	154,829.37	154,829.37	***152,400.47***
CONSUMPTION DETAILS													
HIGH SEASON ENERGY CONSUMPTION OFF PEAK kWH	23,240,095.90	22,734,732.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23,078,525.46	**69,053,354.23**
LOW SEASON ENERGY CONSUMPTION OFF PEAK kWH	0.00	0.00	24,149,153.29	22,151,214.49	22,063,621.21	30,059,955.33	25,071,921.78	22,978,605.46	26,566,125.38	24,622,305.68	23,968,315.88	0.00	
HIGH SEASON ENERGY CONSUMPTION STD kWh	22,924,778.57	23,562,053.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20,786,769.00	**67,273,601.31**
LOW SEASON ENERGY CONSUMPTION STD kWh	0.00	0.00	21,021,374.52	23,896,430.32	22,948,891.22	21,508,844.91	24,396,479.85	22,440,644.65	23,110,365.82	21,620,944.60	23,714,566.90	0.00	
HIGH SEASON ENERGY CONSUMPTION PEAK kWh	9,944,625.48	9,962,447.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8,329,042.54	**28,236,115.90**
LOW SEASON ENERGY CONSUMPTION PEAK kWh	0.00	0.00	8,396,059.92	10,287,407.46	9,839,074.74	8,353,381.08	10,022,740.63	9,134,119.94	9,454,937.32	9,035,007.32	9,433,583.04	0.00	
ENERGY CONSUMPTION ALL kWh	56,109,499.95	56,259,234.49	53,566,587.73	56,335,052.27	54,851,587.17	59,922,181.32	59,491,142.26	54,553,370.05	59,131,428.52	55,278,257.60	57,116,465.82	52,194,337.00	**674,809,144.18**
DEMAND CONSUMPTION - OFF PEAK	104,397.19	107,245.11	102,823.12	107,732.12	102,284.39	111,949.42	113,499.27	119,643.88	114,364.02	115,906.78	108,087.40	105,123.10	**1,313,055.80**
DEMAND CONSUMPTION - STD	107,464.86	111,169.50	106,432.03	114,655.70	121,747.71	122,807.88	114,964.72	117,642.58	123,979.23	116,882.42	117,738.15	106,866.26	**1,382,351.04**
DEMAND CONSUMPTION - PEAK	115,379.33	117,589.01	111,934.45	118,926.43	123,125.17	126,305.35	115,484.31	127,982.45	124,013.09	118,047.67	116,580.26	114,916.41	**1,430,283.93**
DEMAND READING - KW/KVA	116,527.91	118,503.23	112,025.62	119,453.52	124,715.63	126,954.58	116,680.67	129,199.50	126,698.72	119,090.57	117,907.02	115,699.50	**1,443,456.47**
REACTIVE ENERGY - OFF PEAK	7,154,310.60	6,717,780.72	8,045,927.82	7,556,418.00	7,958,554.26	10,388,083.02	8,547,532.02	8,046,395.46	9,153,853.20	8,846,721.48	8,146,538.88	7,048,303.14	**97,610,418.60**
REACTIVE ENERGY - STD	6,933,964.26	7,148,925.78	6,843,194.82	7,974,513.00	7,933,765.50	7,286,178.96	8,281,691.78	7,815,750.00	7,895,316.84	7,489,785.12	7,746,044.40	6,350,955.54	**89,700,086.00**
REACTIVE ENERGY - PEAK	2,661,559.22	2,693,010.60	2,529,601.56	3,249,839.14	3,205,570.80	2,696,230.56	3,252,792.14	3,023,407.74	3,091,310.42	2,961,146.46	2,898,952.38	2,266,180.08	**34,529,601.10**
EXCESS REACTIVE ENERGY	689,895.30	651,450.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	752,644.38	**2,093,989.73**
LOAD FACTOR	65.67	63.00	68.33	62.67	60.33	64.33	70.00	64.00	63.33	63.33	66.33	65.00	***64.69***
CHARGES DETAILS													
Administration Charge @ R147.34 per day for monthdays	R 11,085.60	R 11,085.60	R 10,728.00	R 11,085.60	R 10,728.00	R 11,085.60	R 11,085.60	R 10,012.80	R 11,085.60	R 10,728.00	R 11,085.60	R 10,728.00	**R 130,524.00**
TX Network Capacity Charge R9.54/kVA	R 1,056,270.00	R 1,171,920.00	R 1,171,920.00	R 1,171,920.00	R 1,171,920.00	R 1,193,734.44	R 1,193,734.44	R 1,193,734.44	R 1,193,734.44	R 1,193,734.44	R 1,193,734.44	R 1,193,734.44	**R 14,100,091.10**
Network Capacity Charge R18.90/kVA	R 2,094,730.00	R 2,324,080.00	R 2,324,080.00	R 2,324,080.00	R 2,324,080.00	R 2,367,341.07	R 2,367,341.07	R 2,367,341.07	R 2,367,341.07	R 2,367,341.07	R 2,367,341.07	R 2,367,341.07	**R 27,962,437.47**
Excess Network Capacity Charge 8,776.23 kVa @ R26.60	R -	R -	R -	R -	R -	R 65,075.74	R -	R -	R 105,536.42	R -	R -	R -	
Network Demand Charge R35.83 /kVA	R 3,378,144.11	R 3,435,408.64	R 3,247,622.72	R 3,462,957.54	R 3,615,506.11	R 3,680,413.27	R 3,382,572.62	R 3,745,493.51	R 3,672,995.89	R 3,452,435.62	R 3,418,124.51	R 3,354,128.51	**R 41,845,803.07**
Ancillary Service Charge @ R0.0047 /kWh	R 213,216.10	R 213,785.09	R 203,553.03	R 214,073.20	R 208,436.03	R 227,704.29	R 226,066.34	R 207,302.81	R 224,699.43	R 210,057.38	R 217,042.57	R 198,338.48	**R 2,564,274.75**
High Season Off Peak Energy Charge @ R0.6068 /kWh	R 11,408,563.13	R 11,160,480.43	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 11,329,247.92	**R 33,898,291.48**
Low Season Off Peak Energy Charge @ R0.5253 /kWh	R -	R -	R 10,263,390.03	R 9,414,266.38	R 9,377,038.93	R 12,775,480.88	R 10,655,566.85	R 9,765,907.13	R 11,290,603.13	R 10,464,480.05	R 10,186,534.30	R -	**R 94,193,267.65**
High Season Peak Energy Charge @ R3.6885 / kWh	R 20,724,000.22	R 21,300,096.82	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 18,791,239.18	**R 60,815,336.21**
Low Season Peak Energy Charge @ R1.2034 / kWh	R -	R -	R 14,084,320.58	R 16,010,608.77	R 15,375,756.97	R 14,410,926.15	R 16,345,641.60	R 15,035,231.48	R 15,483,945.22	R 14,486,033.15	R 15,888,759.89	R -	**R 137,121,223.81**
High Season Standard Energy Charge @ R1.1174 /kWh	R 29,674,761.00	R 29,727,941.85	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 24,853,864.31	**R 84,256,567.16**
Low Season Standard Energy Charge @ R0.8282 /kWh	R -	R -	R 8,173,564.41	R 10,014,790.71	R 9,578,338.54	R 8,132,016.40	R 9,757,138.36	R 8,892,065.82	R 9,204,381.17	R 8,795,579.31	R 9,183,593.05	R -	**R 81,731,467.79**
Electrification and Rural Subsidy @ R0.0917 /kWh	R 4,163,324.90	R 4,174,435.24	R 3,974,640.83	R 4,180,060.86	R 4,069,987.76	R 4,446,225.83	R 4,414,242.74	R 4,047,860.05	R 4,387,551.96	R 4,101,646.74	R 4,238,041.78	R 3,872,819.81	**R 50,070,838.48**
High Season Reactive energy Charge @ R0.1656 /kvarh	R 92,446.06	R 87,294.30	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 100,854.30	**R 280,594.66**
Service Charge	R 115,707.81	R 115,707.81	R 111,975.30	R 115,707.81	R 111,975.30	R 115,707.81	R 115,707.81	R 104,510.28	R 115,707.81	R 111,975.30	R 115,707.81	R 111,975.30	**R 1,362,366.15**
Total Charges	**R 72,932,248.94**	**R 73,722,235.77**	**R 43,565,794.91**	**R 46,919,550.87**	**R 45,843,767.65**	**R 47,425,711.49**	**R 48,469,097.44**	**R 45,369,459.36**	**R 48,057,582.13**	**R 45,194,011.07**	**R 46,819,965.02**	**R 66,184,271.30**	**R 628,970,717.62**
Consumption Charges	R 61,807,324.34	R 62,188,519.09	R 32,521,275.02	R 35,439,665.86	R 34,331,134.43	R 35,318,423.43	R 36,758,346.81	R 33,693,204.43	R 35,978,929.51	R 33,746,092.51	R 35,258,887.24	R 54,974,351.41	**R 492,016,154.09**
Ancillary Charges	R 11,124,924.59	R 11,533,716.68	R 11,044,519.90	R 11,479,885.01	R 11,512,633.22	R 12,107,288.06	R 11,710,750.63	R 11,676,254.94	R 12,078,652.62	R 11,447,918.56	R 11,561,077.78	R 11,209,919.89	**R 136,954,563.53**
Consumption Charges as % of Total Charges	84.75%	84.36%	74.65%	75.53%	74.89%	74.47%	75.84%	74.26%	74.87%	74.67%	75.31%	83.06%	**77.22%**
Ancillary Charges as % of Total Charges	15.25%	15.64%	25.35%	24.47%	25.11%	25.53%	24.16%	25.74%	25.13%	25.33%	24.69%	16.94%	**22.78%**

Intake Point	Combined
Premise ID	5433388634 / 7032344358 / 8851805893

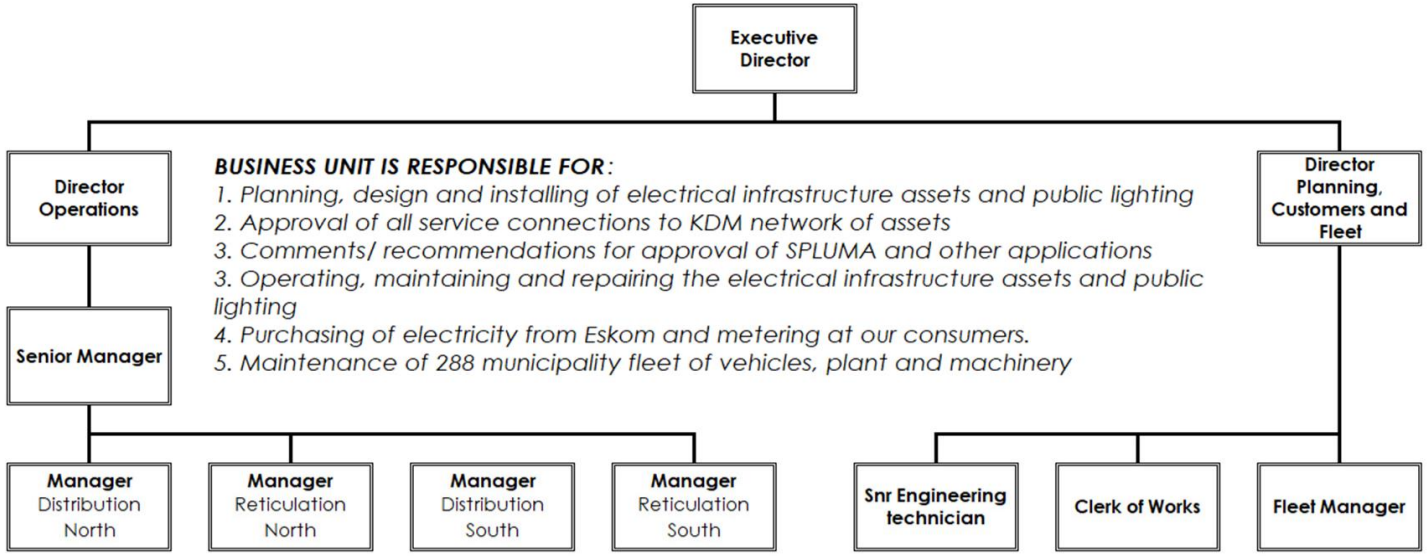
	Month												Totals / *Averages*
	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	
Notified Max Demand	152,000	152,000	152,000	152,000	152,000	152,000	152,000	152,000	152,000	152,000	125,000	152,000	*149,750*
Utilized Capacity	154,829.37	154,829.37	154,829.37	154,829.37	154,829.37	156,388.11	156,388.11	156,388.11	156,388.11	156,388.11	156,388.11	156,388.11	*155,738.64*
CONSUMPTION DETAILS													
HIGH SEASON ENERGY CONSUMPTION OFF PEAK kWH	22,113,414.28	23,395,868.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21,536,802.84	**67,046,085.78**
LOW SEASON ENERGY CONSUMPTION OFF PEAK kWH	0.00	0.00	23,486,418.42	22,358,503.20	23,359,014.47	28,468,239.60	25,586,852.88	23,176,325.28	24,786,243.90	21,094,742.64	20,571,671.10	0.00	
HIGH SEASON ENERGY CONSUMPTION STD kWh	23,941,380.92	23,240,830.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22,105,818.90	**69,288,030.26**
LOW SEASON ENERGY CONSUMPTION STD kWh	0.00	0.00	21,904,003.66	23,390,510.41	23,595,384.53	21,532,525.68	24,368,818.02	21,955,020.36	23,318,172.42	16,942,137.96	18,598,199.52	0.00	
HIGH SEASON ENERGY CONSUMPTION PEAK kWh	10,537,110.32	9,532,297.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9,154,769.64	**29,224,177.00**
LOW SEASON ENERGY CONSUMPTION PEAK kWh	0.00	0.00	9,057,218.12	10,234,220.31	9,503,403.76	8,040,649.14	9,978,454.86	8,841,837.30	9,822,077.82	6,741,441.72	7,378,664.58	0.00	
ENERGY CONSUMPTION ALL kWh	56,591,905.52	56,168,996.14	54,447,640.20	55,983,233.92	56,457,802.76	58,041,414.42	59,934,125.76	53,973,182.94	57,926,494.14	44,778,322.32	46,548,535.20	52,797,391.38	**653,649,044.70**
DEMAND CONSUMPTION - OFF PEAK	108,437.54	110,501.27	105,772.27	104,770.37	106,706.23	109,773.64	115,384.50	119,447.70	112,038.88	98,872.69	106,299.24	107,341.50	**1,305,345.83**
DEMAND CONSUMPTION - STD	111,267.81	115,257.61	116,211.50	109,467.18	118,698.74	126,858.26	121,264.95	123,591.08	118,262.84	101,010.83	112,386.15	111,115.55	**1,385,392.50**
DEMAND CONSUMPTION - PEAK	115,967.67	121,017.82	116,953.60	112,748.32	117,845.51	124,205.22	124,430.08	121,958.24	128,787.10	97,884.36	105,620.97	116,670.29	**1,404,089.18**
DEMAND READING - KW/KVA	117,386.10	121,960.06	117,263.59	113,944.08	120,116.52	130,861.42	125,812.45	125,859.98	128,787.10	103,118.86	112,427.45	116,928.84	**1,434,466.45**
REACTIVE ENERGY - OFF PEAK	6,955,736.48	7,471,018.74	8,437,344.30	6,681,111.17	7,271,158.01	9,313,604.94	9,144,022.26	8,176,573.26	8,239,577.58	6,765,045.00	6,380,464.14	5,979,574.62	**90,815,230.50**
REACTIVE ENERGY - STD	7,487,979.90	7,140,105.36	7,483,188.12	6,891,192.89	7,335,897.69	6,714,816.66	8,808,639.06	7,612,851.24	7,594,136.64	5,009,318.22	5,362,254.72	5,926,864.02	**83,367,244.52**
REACTIVE ENERGY - PEAK	2,883,523.14	2,605,155.54	2,919,387.48	2,822,808.60	2,812,413.46	2,410,882.44	3,464,578.26	2,951,314.32	3,007,423.20	1,925,087.22	2,003,195.58	2,209,013.16	**32,014,782.40**
EXCESS REACTIVE ENERGY	959,696.33	857,464.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	181,068.93	**1,998,229.43**
LOAD FACTOR	66.00	63.33	66.00	66.33	66.00	59.67	65.33	62.33	61.00	64.00	56.00	63.67	*63.31*
CHARGES DETAILS													
Administration Charge @ R147.34 per day for monthdays	R 12,818.19	R 12,818.19	R 12,404.70	R 12,818.19	R 12,404.70	R 12,818.19	R 12,818.19	R 11,991.21	R 12,818.19	R 12,404.70	R 12,818.19	R 12,404.70	**R 151,337.34**
TX Network Capacity Charge R9.54/kVA	R 1,381,077.98	R 1,381,077.98	R 1,381,077.98	R 1,381,077.98	R 1,381,077.98	R 1,394,981.94	R 1,394,981.94	R 1,394,981.94	R 1,394,981.94	R 1,394,981.94	R 1,394,981.94	R 1,394,981.94	**R 16,670,263.49**
Network Capacity Charge R18.90/kVA	R 2,737,383.26	R 2,737,383.26	R 2,737,383.26	R 2,737,383.26	R 2,737,383.26	R 2,764,941.78	R 2,764,941.78	R 2,764,941.78	R 2,764,941.78	R 2,764,941.78	R 2,764,941.78	R 2,764,941.78	**R 33,041,508.80**
Excess Network Capacity Charge 8,776.23 kVa @ R26.60	R -	R -	R -	R -	R -	R 233,447.72	R -	R -	R -	R -	R -	R -	
Network Demand Charge R35.83 /kVA	R 3,934,782.07	R 4,088,101.21	R 3,930,675.54	R 3,819,405.56	R 4,026,305.75	R 4,386,474.80	R 4,217,233.32	R 4,218,826.53	R 4,316,943.59	R 3,456,544.19	R 3,768,568.12	R 3,919,454.72	**R 48,083,315.40**
Ancillary Service Charge @ R0.0047 /kWh	R 249,004.38	R 247,143.58	R 239,569.62	R 246,326.23	R 248,414.33	R 255,382.22	R 263,710.15	R 237,482.01	R 254,876.57	R 197,024.62	R 204,813.55	R 232,308.52	**R 2,876,055.80**
High Season Off Peak Energy Charge @ R0.6068 /kWh	R 12,551,573.79	R 13,279,495.24	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 12,224,289.38	**R 38,055,358.41**
Low Season Off Peak Energy Charge @ R0.5253 /kWh	R -	R -	R 11,541,225.81	R 10,986,968.37	R 11,478,619.48	R 13,989,292.64	R 12,573,379.56	R 11,388,846.11	R 12,179,960.30	R 10,365,956.71	R 10,108,919.13	R -	**R 104,613,168.11**
High Season Peak Energy Charge @ R3.6885 / kWh	R 25,025,925.56	R 24,293,640.64	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 23,107,212.60	**R 72,426,778.80**
Low Season Peak Energy Charge @ R1.2034 / kWh	R -	R -	R 16,969,031.90	R 18,120,628.87	R 18,279,344.76	R 16,681,247.89	R 18,878,523.30	R 17,008,553.99	R 18,064,588.62	R 13,125,074.31	R 14,408,025.54	R -	**R 151,535,019.19**
High Season Standard Energy Charge @ R1.1174 /kWh	R 36,357,244.34	R 32,890,241.02	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 31,587,614.96	**R 100,835,100.32**
Low Season Standard Energy Charge @ R0.8282 /kWh	R -	R -	R 10,195,710.30	R 11,520,661.45	R 10,697,981.88	R 9,051,358.58	R 11,232,746.79	R 9,953,257.04	R 11,056,713.20	R 7,588,841.26	R 8,306,162.06	R -	**R 89,603,432.58**
Electrification and Rural Subsidy @ R0.0917 /kWh	R 4,855,585.45	R 4,819,299.86	R 4,671,607.60	R 4,803,361.48	R 4,844,079.50	R 4,979,953.32	R 5,142,348.01	R 4,630,899.10	R 4,970,093.19	R 3,841,980.11	R 3,993,864.30	R 4,530,016.15	**R 56,083,088.06**
High Season Reactive energy Charge @ R0.1656 /kvarh	R 148,656.91	R 132,821.17	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 28,047.59	**R 309,525.67**
Service Charge	R 133,792.59	R 133,792.59	R 129,476.70	R 133,792.59	R 129,476.70	R 133,792.59	R 133,792.59	R 125,160.81	R 133,792.59	R 129,476.70	R 133,792.59	R 129,476.70	**R 1,579,615.74**
Total Charges	**R 87,387,844.54**	**R 84,015,814.75**	**R 51,808,163.41**	**R 53,762,423.99**	**R 53,835,088.36**	**R 53,883,691.69**	**R 56,614,475.67**	**R 51,734,940.50**	**R 55,149,709.99**	**R 42,877,226.33**	**R 45,096,887.22**	**R 79,930,749.03**	**R 714,283,951.99**
Consumption Charges	R 73,934,743.69	R 70,463,376.91	R 38,705,968.01	R 40,628,258.70	R 40,455,946.12	R 39,721,899.12	R 42,684,649.66	R 38,350,657.14	R 41,301,262.13	R 31,079,872.28	R 32,823,106.73	R 66,919,116.94	**R 557,068,857.42**
Ancillary Charges	R 13,453,100.85	R 13,552,437.85	R 13,102,195.41	R 13,134,165.29	R 13,379,142.24	R 14,161,792.58	R 13,929,826.01	R 13,384,283.36	R 13,848,447.86	R 11,797,354.05	R 12,273,780.49	R 13,011,632.09	**R 157,215,094.57**
Consumption Charges as % of Total Charges	84.61%	83.87%	74.71%	75.57%	75.15%	73.72%	75.40%	74.13%	74.89%	72.49%	72.78%	83.72%	**76.75%**
Ancillary Charges as % of Total Charges	15.39%	16.13%	25.29%	24.43%	24.85%	26.28%	24.60%	25.87%	25.11%	27.51%	27.22%	16.28%	**23.25%**

Intake Point	Combined												
Premise ID	5433388634 / 7032344358 / 8851805893												
	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	
Notified Max Demand	152,000	152,000	152,000	152,000	152,000	152,000	152,000	152,000	152,000	152,000	152,000	152,000	*152,000*
Utilized Capacity	156,388.11	156,388.11	156,388.11	156,388.11	156,388.11	152,000.00	152,000.00	152,000.00	152,000.00	152,000.00	152,000.00	152,000.00	*153,828.38*
CONSUMPTION DETAILS													
ENERGY CONSUMPTION OFF PEAK kWH	21,013,208.52	22,155,680.28	22,410,382.02	21,991,880.58	25,620,120.00	28,040,781.24	26,476,200.42	18,635,075.46	24,345,496.30	27,254,832.74	23,520,564.49	23,079,036.48	**284,543,258.53**
ENERGY CONSUMPTION STD kWh	23,379,812.22	20,050,662.27	22,287,677.88	23,249,951.04	21,442,400.88	24,130,785.18	22,402,192.98	18,205,218.30	24,558,647.33	21,628,168.78	22,295,591.54	23,093,627.16	**266,724,735.56**
ENERGY CONSUMPTION PEAK kWh	10,258,729.62	8,281,453.62	9,588,900.00	9,688,764.00	8,613,962.64	9,992,454.42	8,905,669.26	7,247,256.54	9,901,891.82	8,285,994.36	9,259,370.70	9,883,443.60	**109,907,890.58**
ENERGY CONSUMPTION ALL kWh	54,651,750.36	50,487,796.17	54,286,959.90	54,930,595.62	55,676,483.52	62,164,020.84	57,784,062.66	44,087,550.30	58,806,035.45	57,168,995.88	55,075,526.73	56,056,107.24	**661,175,884.67**
DEMAND CONSUMPTION - OFF PEAK	109,676.70	123,457.15	111,154.53	103,894.27	109,569.89	119,724.29	107,812.58	88,265.72	110,388.79	111,915.53	112,076.77	112,466.67	**1,320,402.89**
DEMAND CONSUMPTION - STD	114,703.29	114,308.92	120,497.20	114,470.45	116,334.26	123,813.31	120,365.65	94,705.43	116,527.11	114,343.19	118,835.28	118,249.46	**1,387,153.55**
DEMAND CONSUMPTION - PEAK	118,071.65	117,763.28	124,059.81	117,703.02	112,620.34	124,395.41	118,575.70	95,754.99	120,646.40	116,402.11	117,075.59	127,488.94	**1,410,557.24**
DEMAND READING - KW/KVA	122,269.33	120,718.34	124,454.54	117,739.49	117,955.68	124,870.78	120,365.66	96,176.20	121,526.68	116,714.69	118,835.29	127,488.95	**1,429,115.63**
REACTIVE ENERGY - OFF PEAK	5,589,896.28	15,539,865.76	6,138,273.12	6,075,118.80	7,393,647.30	8,829,243.24	7,704,469.92	5,274,364.80	7,464,991.10	8,204,352.37	6,334,838.53	6,106,234.62	**90,655,295.84**
REACTIVE ENERGY - STD	6,041,545.26	34,573,561.92	5,876,920.62	6,497,019.54	6,427,442.70	7,517,975.94	6,704,290.02	5,152,752.48	7,288,532.86	6,508,234.96	37,066,136.71	6,123,694.56	**135,778,107.57**
REACTIVE ENERGY - PEAK	2,393,306.04	1,687,938.24	2,349,049.68	2,557,069.98	16,529,155.76	2,965,727.94	2,545,126.80	1,942,520.64	2,831,650.26	2,415,902.71	2,309,867.64	2,302,083.00	**42,829,398.69**
EXCESS REACTIVE ENERGY	137,657.78	505,967.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	93,441.52	**737,066.67**
LOAD FACTOR	178.00	160.00	180.00	190.00	198.00	201.00	195.00	206.00	201.00	209.00	186.00	181.00	*190.42*
CHARGES DETAILS													
Administration Charge @ R147.34 per day for monthdays	R 13,702.62	R 13,702.62	R 13,260.60	R 13,702.62	R 13,260.60	R 13,702.62	R 13,702.62	R 12,376.56	R 13,702.62	R 13,260.60	R 13,702.62	R 13,260.60	**R 161,337.30**
TX Network Capacity Charge R9.54/kVA	R 1,491,942.57	R 1,491,942.57	R 1,491,942.57	R 1,491,942.57	R 1,491,942.57	R 1,450,080.00	R 1,450,080.00	R 1,450,080.00	R 1,450,080.00	R 1,450,080.00	R 1,450,080.00	R 1,450,080.00	**R 17,610,272.85**
Network Capacity Charge R18.90/kVA	R 2,955,735.28	R 2,955,735.28	R 2,955,735.28	R 2,955,735.28	R 2,955,735.28	R 2,872,800.00	R 2,872,800.00	R 2,872,800.00	R 2,872,800.00	R 2,872,800.00	R 2,872,800.00	R 2,872,800.00	**R 34,888,276.40**
Network Demand Charge R35.83 /kVA	R 4,380,910.09	R 4,325,338.12	R 4,459,206.17	R 4,218,605.93	R 4,226,352.01	R 4,474,120.05	R 4,312,701.60	R 3,445,993.25	R 4,354,300.94	R 4,181,887.34	R 4,257,868.44	R 4,567,929.08	**R 51,205,213.02**
Ancillary Service Charge @ R0.0047 /kWh	R 256,863.23	R 237,292.65	R 255,148.71	R 258,173.80	R 261,679.47	R 292,170.90	R 271,585.10	R 207,211.49	R 276,388.37	R 268,694.28	R 258,854.98	R 263,463.70	**R 3,107,526.68**
High Season Off Peak Energy Charge @ R0.6068 /kWh	R 12,750,815.22	R 13,444,067.23	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 14,004,359.04	**R 40,199,241.50**
Low Season Off Peak Energy Charge @ R0.5253 /kWh	R -	R -	R 11,772,174.19	R 11,552,335.09	R 13,458,249.04	R 14,729,822.26	R 13,907,948.39	R 9,789,004.90	R 12,788,689.57	R 14,316,963.25	R 12,355,352.79	R -	**R 114,670,539.48**
High Season Peak Energy Charge @ R3.6885 / kWh	R 37,839,325.61	R 30,546,143.08	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 36,455,083.19	**R 104,840,551.88**
Low Season Peak Energy Charge @ R1.2034 / kWh	R -	R -	R 11,539,282.26	R 11,659,458.60	R 10,366,043.07	R 12,024,920.35	R 10,717,082.07	R 8,721,349.07	R 11,915,936.83	R 9,971,365.18	R 11,142,727.06	R -	**R 98,058,164.50**
High Season Standard Energy Charge @ R1.1174 /kWh	R 26,124,601.93	R 22,404,609.72	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 25,804,818.81	**R 74,334,030.46**
Low Season Standard Energy Charge @ R0.8282 /kWh	R -	R -	R 18,458,654.92	R 19,255,609.42	R 17,758,596.51	R 19,985,116.97	R 18,553,496.24	R 15,077,561.55	R 20,339,472.27	R 17,912,449.57	R 18,465,208.47	R -	**R 165,806,165.91**
Electrification and Rural Subsidy @ R0.0917 /kWh	R 5,011,565.57	R 4,629,730.98	R 4,978,114.23	R 5,037,135.65	R 5,105,533.58	R 5,700,440.73	R 5,298,798.58	R 4,042,828.43	R 5,392,513.50	R 5,242,396.93	R 5,050,425.83	R 5,140,345.01	**R 60,629,829.02**
High Season Reactive energy Charge @ R0.1656 /kvarh	R 22,796.00	R 83,788.30	R -	R -	R -	R -	R -	R -	R -	R -	R -	R 15,474.00	**R 122,058.30**
Service Charge	R 143,024.39	R 143,024.39	R 138,410.70	R 143,024.39	R 138,410.70	R 143,024.39	R 143,024.39	R 129,183.32	R 143,024.39	R 138,410.70	R 143,024.39	R 138,410.70	**R 1,683,996.85**
Total Charges	**R 90,991,282.51**	**R 80,275,374.94**	**R 56,061,929.64**	**R 56,585,723.34**	**R 55,775,802.86**	**R 61,686,198.26**	**R 57,541,218.99**	**R 45,748,388.54**	**R 59,546,908.51**	**R 56,368,307.85**	**R 56,010,044.58**	**R 90,726,024.13**	**R 765,633,207.28**
Consumption Charges	R 76,714,742.76	R 66,394,820.03	R 41,770,111.37	R 42,467,403.11	R 41,582,888.62	R 46,739,859.57	R 43,178,526.70	R 33,587,915.52	R 45,044,098.68	R 42,200,778.00	R 41,963,288.32	R 76,264,261.05	**R 597,908,693.72**
Ancillary Charges	R 14,276,539.76	R 13,880,554.91	R 14,291,818.27	R 14,118,320.24	R 14,192,914.24	R 14,946,338.69	R 14,362,692.29	R 12,160,473.02	R 14,502,809.82	R 14,167,529.86	R 14,046,756.25	R 14,461,763.08	**R 167,724,513.56**
Other Charges	**R 500,206.74**	**-R 500,206.74**	**R -**	**R -**	**R -**	**R -**	**R -**	**R -**	**R -**	**R -**	**R -**	**R -**	**R -**
Adjustment - Interest on overdue account	R 235,188.06	-R 235,188.06	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -
Adjustment - Interest on overdue account	R 148,278.44	-R 148,278.44	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -
Adjustment - Interest on overdue account	R 45,141.00	-R 45,141.00	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -
Adjustment - Interest on overdue account	R 71,599.24	-R 71,599.24	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -	R -
Total Charges before VAT	**R 91,491,489.25**	**R 79,775,168.20**	**R 56,061,929.64**	**R 56,585,723.34**	**R 55,775,802.86**	**R 61,686,198.26**	**R 57,541,218.99**	**R 45,748,388.54**	**R 59,546,908.51**	**R 56,368,307.85**	**R 56,010,044.58**	**R 90,726,024.13**	**R 765,633,207.28**
Consumption Charges as % of Total Charges	84.31%	82.71%	74.51%	75.05%	74.55%	75.77%	75.04%	73.42%	75.64%	74.87%	74.92%	84.06%	**77.07%**
Ancillary Charges as % of Total Charges	15.69%	17.29%	25.49%	24.95%	25.45%	24.23%	24.96%	26.58%	24.36%	25.13%	25.08%	15.94%	**22.93%**

ANNEXURE 3

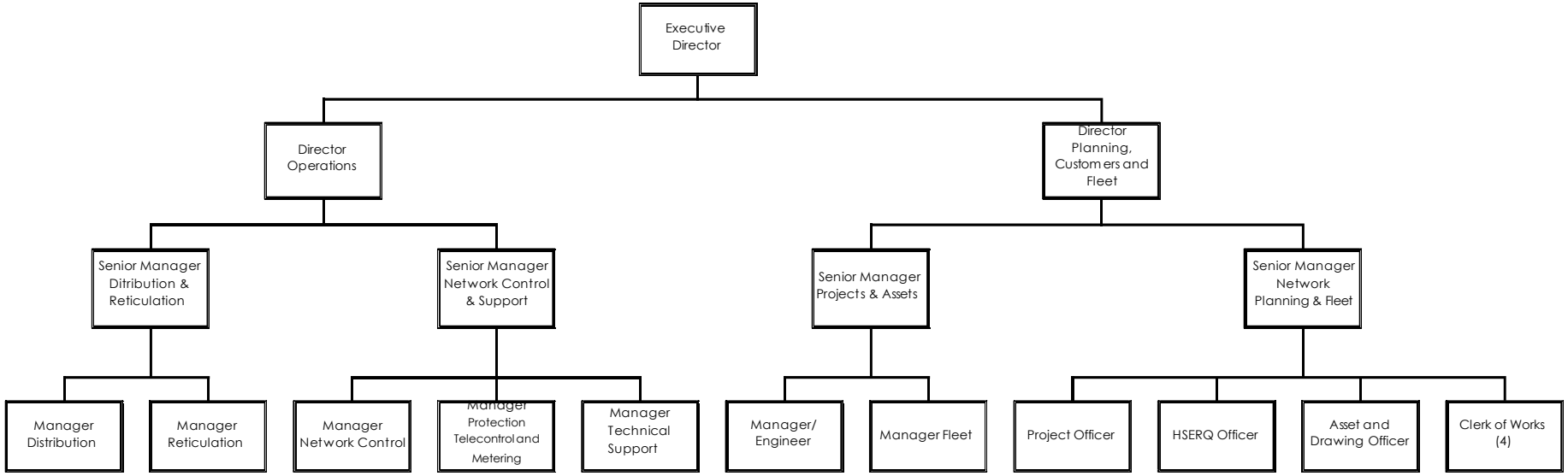
Current & Proposed Organograms

Current Organogram

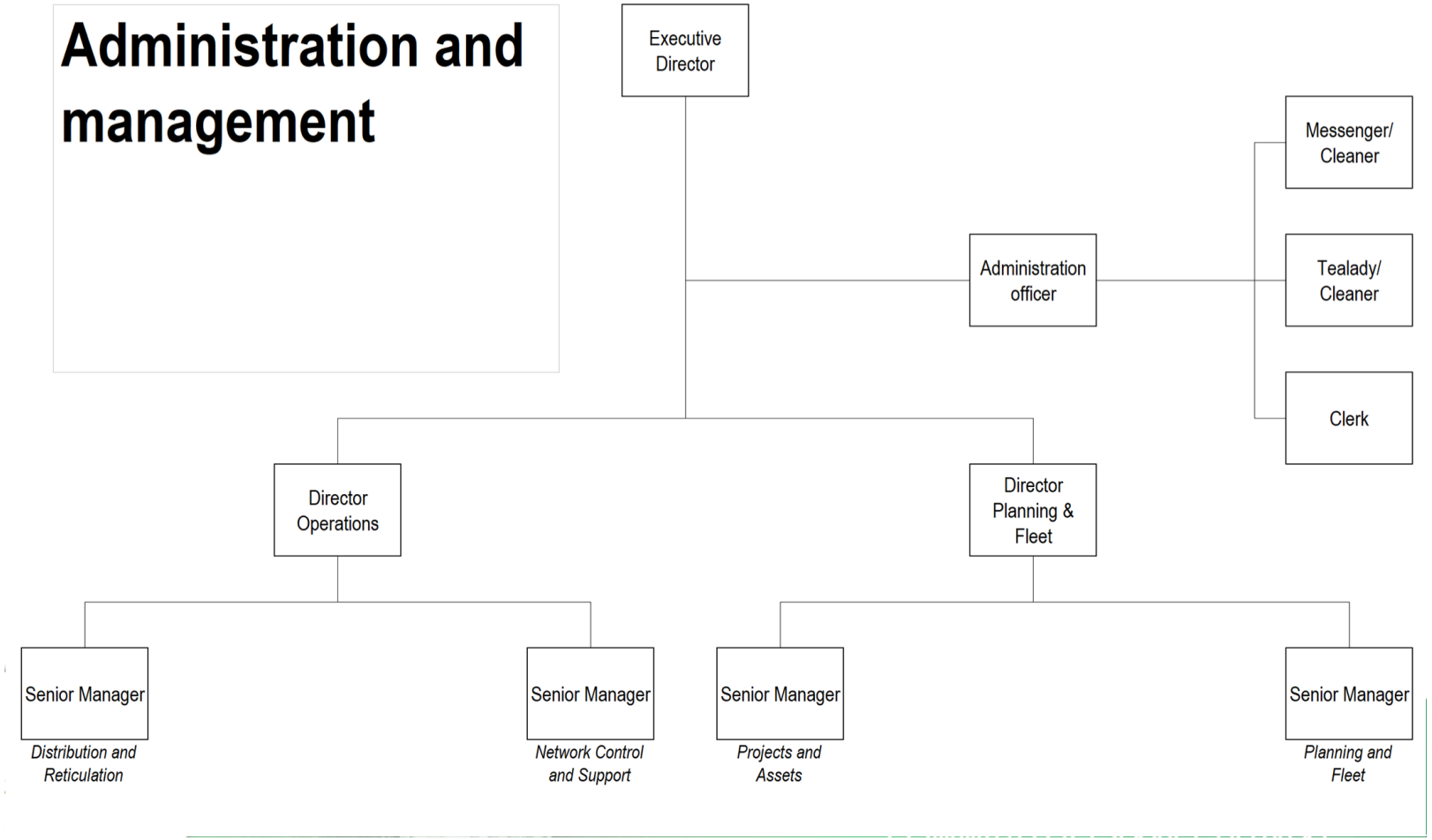


		Filled	Vacant	Filled	Vacant	Filled	Vacant	Filled	Vacant	Filled	Vacant	Filled	Vacant	Filled	Vacant
1	Manager	1	0	0	1	1	0	1	0	0	0	0	0	1	0
2	Technicians/ superintendant	0	0	0	0	0	0	0	0	2	0	1	0	1	0
3	Artisans	6	2	5	1	6	2	5	1	0	0	0	0	3	0
4	Linesman/ senior supervisor	1	0	0	0	1	0	0	0	0	0	0	0	0	0
5	Senior handyman/ streetlight attendant	0	0	0	2	0	0	1	1	0	0	0	0	0	0
6	Senior driver	1	0	0	0	1	0	0	0	0	0	0	0	0	0
7	Artisan assistant/ handman	2	7	2	7	2	7	2	7	0	0	0	0	2	2
8	Control room attendant	6	2	0	0	0	0	0	0	0	0	0	0	0	0
9	Principal clerk	1	0	1	0	1	0	1	0	1	0	0	0	0	0
10	Senior clerk	0	0	0	0	0	0	0	0	0	0	0	0	1	0
11	Messenger	0	0	0	0	0	0	0	0	1	0	0	0	0	0
12	Data capturer	0	0	0	0	0	0	0	0	0	0	0	0	0	1
13	Tyre attendant	0	0	0	0	0	0	0	0	0	0	0	0	0	1
14	General assiostant	6	6	7	6	6	6	6	7	0	0	0	0	4	1

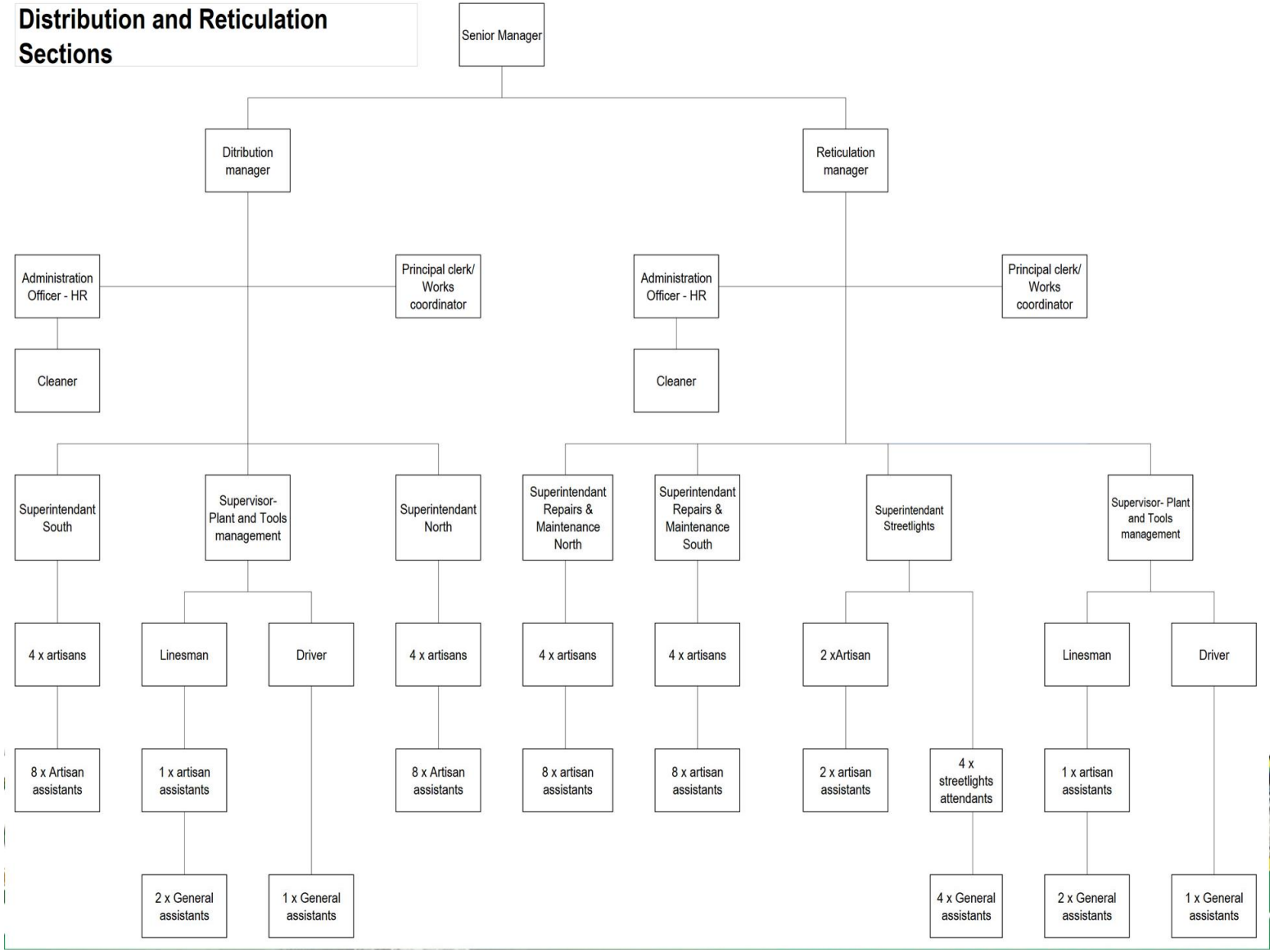
Projected Organogram 2023/2024



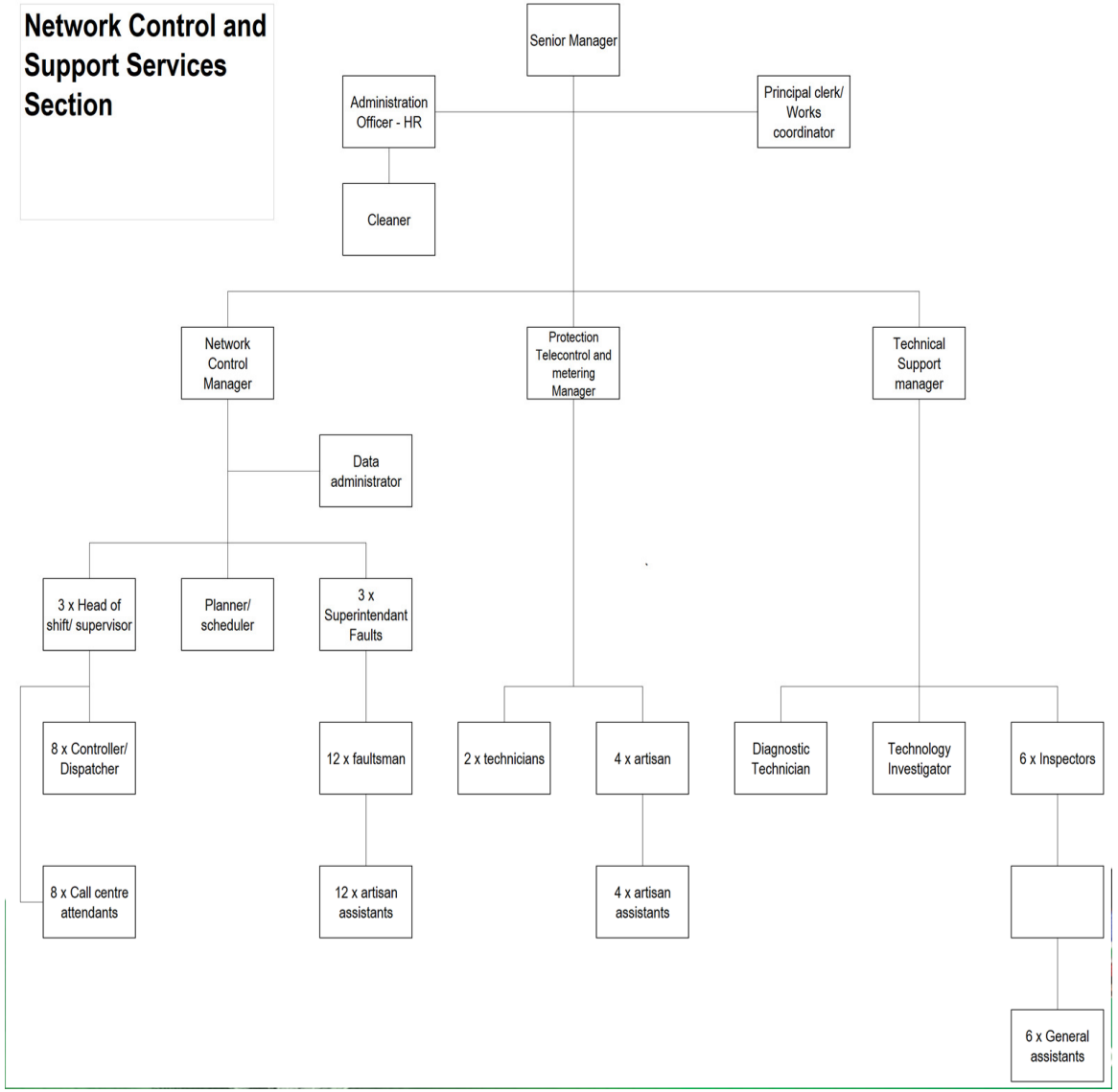
Projected Organogram 2023/2024



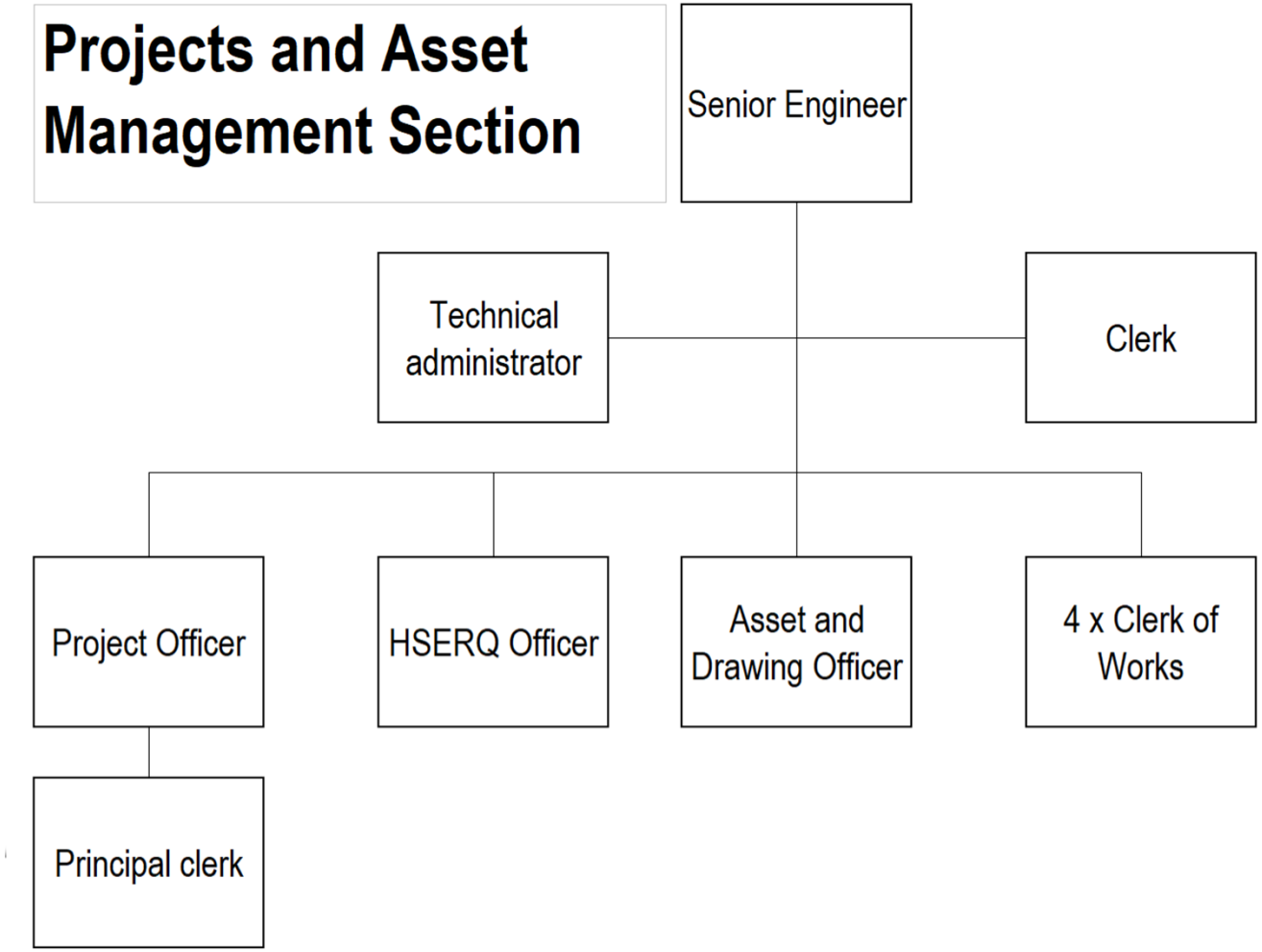
Projected Organogram 2023/2024



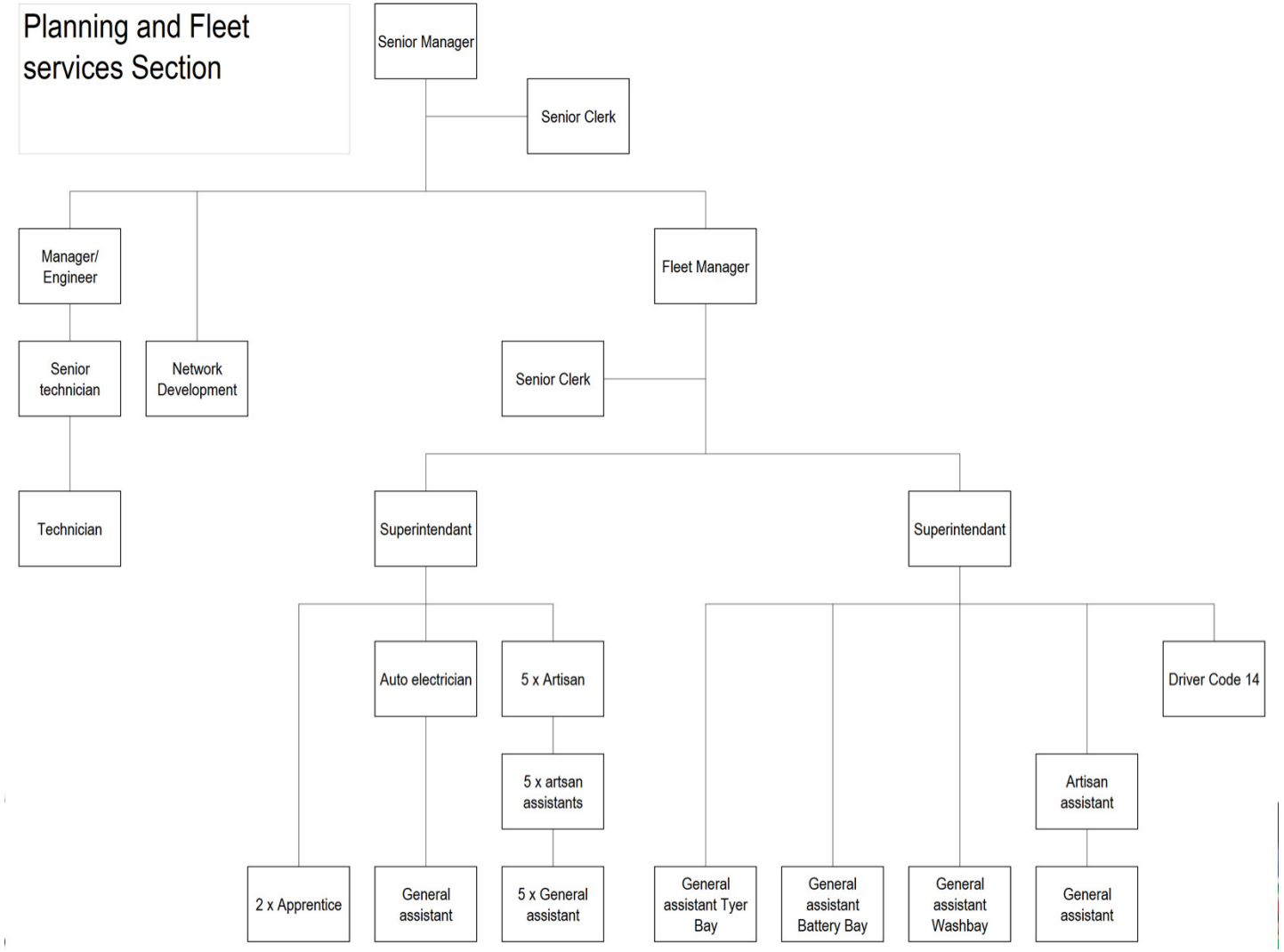
Projected Organogram 2023/2024



Projected Organogram 2023/2024



Projected Organogram 2023/2024



ANNEXURE 4

Electricity Tariff Book 2020/21 & 2021/2022

FINAL TARIFF OF CHARGES

2020/2021

				2020/21 (EXCL VAT)	2020/21 (INCL VAT)	COMMENTS	2019/20 (EXCL VAT)	2019/20 (INCL VAT)	COMMENTS
1. VALUE ADDED TAX MUST BE ADDED TO ALL TARIFFS LISTED BELOW (EXCEPT TO FINES, REFUNDABLE DEPOSITS, INTEREST CHARGES OR WHERE INDICATED AS INCLUSIVE OF VALUE ADDED TAX) 2. ALL APPROVALS OF APPLICATIONS FOR SERVICES LISTED BELOW SHALL BE SUBJECT TO THE APPLICANT OBTAINING A CLEARANCE TO THE EFFECT THAT KWADUKUZA MUNICIPAL ACCOUNTS IN THE NAME OF THE APPLICANT/OWNER ARE NOT IN ARREARS									
A 1	**OUTDOOR ADVERTISING**								
ALL APPLICATIONS SHALL BE IN TERMS OF THE KWADUKUZA MUNICIPALITY'S OUTDOOR ADVERTISING POLICY AND BY-LAWS.									
DISCLAIMER: 1.ALL DISPLAY FEES ARE A MINIMUM CHARGE AND MAY VARY IN TERMS OF PROPOSALS/ AGREEMENTS WITH SERVICE PROVIDERS FROM TIME TO TIME									
DISCLAIMER:2. ALL DISPLAY FEES OWED TO THE KWADUKUZA MUNICIPALITY WILL BE CHARGED AS PER THE TARRIFF STRUCTURE FOR THE SPECIFIC FINANCIAL YEAR.							**NEW**		
DISCLAIMER:3.NO FUTURE APPLICATIONS WILL BE ACCEPTED BY KWADUKUZA MUNICIPALITY FROM APPLICANTS THAT HAVE DEFAULTED IN PAYMENT OF ANNUAL/MONTHLY DISPLAY FEES, AND REFUSE TO SETTLE OUTSTANDING AMOUNTS.							**NEW**		
	(a)		Pre-strutiny for all applications excluding Billboards	**225.22**	**259.00**		**212.17**	**244.00**	
	NON-PERMANENT SIGNS								
	(b)	**General advertisements of both commercial and non-commercial nature:**							
		(i)	Up to 50 posters, or part thereof	**1,295.65**	**1,490.00**		**1,222.61**	**1,406.00**	
		(iii))	Each poster thereafter, an additional	**30.43**	**35.00**		**28.70**	**33.00**	
		(iii)	Refundable deposit (refer to note below)	**500.00**	**500.00**		**500.00**	**500.00**	
	(c)	**General advertisements for non-profit organisations (subject to the submission of an NPO certificate from the relevant authority - eg government)**							
		(aa)	Up to 50 posters, or part thereof						
		(bb)	Each poster thereafter, an additional						

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		(iv)	Disposal of special waste generated outside of KDM, per quarter of metric ton	**176.52**	**203.00**				
X1	**SUPPLY OF ELECTRICITY**								
	Designated electrical installations shall mean electrical wiring installations within dwelling units, community halls, or such like public facilities, subsidized by National, Provincial, or Local Government								
X1.1	**INSTALLATION OF ELECTRICITY SERVICES:**								
X1.1.1	(a)		The charges payable to the KwaDukuza Municipality ("KDM") for the "installation" of services shall be as per the tariffs listed hereunder.						
	(b)		Any and all headings used in this section are for convenience only. Although the heading of this section contains the word "Installation", this section does not only deal with installation but contains the KDM's charges for both the provision and installation of electrical and allied services.						
	(c)		All the charges referred to in this section, whether estimated or final, shall be paid to KDM prior to any connection or installation.						
	(d)		All the charges listed hereunder must be paid unless exempted in terms of a written agreement concluded with the municipality.						
	(e)		In the case of a proposed sectional title development, or a proposed share block scheme, or a proposed commercial development, only the registered owner at the time (and not any future owner(s) or "developer") may apply for and be granted electrical services.						
X1.1.2		**Standard Services**							
			Only prepayment or electronic meters with online reading facilities will be installed in farm areas						
X1.1.3		**DEMAND BASED COMPONENT ("DBC")**							
	(a)	(i)	Indigent persons: The DBC charge is not applicable to any dwelling or unit occupied by person(s) registered as being indigent with the KDM / its Council. In the case of dwelling units within which persons registered with Council as being indigent residence, the circuit breaker capacity shall be limited to 20 Ampere Single Phase.						
		(ii)	**NEW Installations (Council Developed)**						
			Low Income Unit						
			Community Residential Unit	**Exempt**	**Exempt**		**Exempt**		
			Social Housing Units	**Exempt**	**Exempt**		**Exempt**		

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			Affordable/ Gap Unit (Approved as FLISP)	**50% OF THE FEES PAID BY NORMAL DEVELOPMENT**	**50% OF THE FEES PAID BY NORMAL DEVELOPMENT**		**50% OF THE FEES PAID BY NORMAL DEVELOPMENT**		
	(b)		Irrespective of any payment made by the developer for the provision of a firm bulk electrical supply in terms of a services agreement entered into between the Municipality and the developer concerned, the DBC charge shall be payable as stated in X1.1.3 (c) below unless exempted by written agreement concluded with KDM.						
	(c)		The DBC charge is levied and payable by and in respect of –						
		(i)	each unit / dwelling / flat on a property (owner occupied or owner let properties);						
		(ii)	each and every unit / dwelling unit / section in a sectional title or shareblock development, irrespective of whether or not there is a change in the erf number.						
	(d)	**The charges for the DBC are-**							
			The charge per kVA applied for as recorded on the official supply application document PER kVA shall be	**R3,895.50**	**R4,479.83**		**R 3,710.00**	**R 4,266.50**	
		(i)	Single phase *60 Amp = 13.8 kVA Load - KVA (admin) = 4.7 kVA*						
			Basic Demand Based Component	**R18,309.26**	**R21,055.65**		**R 17,437.39**	**R 20,053.00**	
			Plus: Complete Service Connection Component including cables etc	**Cost + 10%**	**Cost + 10%**		**Cost + 10%**		
			OR Partial Service connection (Not including cables)	**Cost + 10%**	**Cost + 10%**		**Cost + 10%**		
			Places of worship: (a) 50% rebate be applicable at the time of application						
			(b) Demand contribution is payable over six months without attracting interest						
			(c) The rebate structure is only granted once to a religious organisation						
			(d) Should the premises be sold off at a later stage and should the use of the premises change, the new owner will be compelled to pay in the difference between the full approved tariff of charges at that point in time and what was paid in as a charge at the time of application for electricity by the religious organisation.						
		(ii)	Three Phase *(Maximum 60A) - (1.73x4.7 = 8.131kVA)*						
			Basic Demand Based Component	**R31,674.39**	**R36,425.55**		**R30,166.09**	**R34,691.00**	
			Plus: Complete Service Connection Component including cables etc	**Cost + 10%**	**Cost + 10%**		**Cost + 10%**		
			OR Partial Service connection (Not including cables)	**Cost + 10%**	**Cost + 10%**		**Cost + 10%**		
			Places of worship: (a)75% rebate be applicable at the time of application						
			(b)Demand contribution is payable over six months without attracting interest						

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			(c)The rebate structure is only granted once to a religious organisation						
			(d)Should the premises be sold off at a later stage and should the use of the premises change, the new owner will be compelled to pay in the difference between the full approved tariff of charges at that point in time and what was paid in as a charge at the time of application for electricity by the religious organisation.						
		(iii)	Three Phase *(Maximum 150A) - 1.73x2.5x4.7=20.33kVA)*						
			Basic Demand Based Component	**R79,195.57**	**R91,074.90**		**R 75,424.35**	**R 86,738.00**	
			Plus: Service Connection Component	**Cost + 10%**	**Cost + 10%**		**Cost + 10%**		
			Places of worship: (a)75% rebate be applicable at the time of application						
			(b)Demand contribution is payable over six months without attracting interest						
			(c)The rebate structure is only granted once to a religious organisation						
			(d)Should the premises be sold off at a later stage and should the use of the premises change, the new owner will be compelled to pay in the difference between the full approved tariff of charges at that point in time and what was paid in as a charge at the time of application for electricity by the religious organisation.						
		(iv)	Three Phase (Maximum 80 A) - (1.73x1.33*4.7=10.81)						
			Basic Demand Based Component	**R42,110.48**	**R48,427.05**		**R 40,105.22**	**R 46,121.00**	
			Plus: Complete Service Connection Component including cables etc	**Cost + 10%**	**Cost + 10%**		**Cost + 10%**		
			OR Partial Service connection (Not including cables)	**Cost + 10%**	**Cost + 10%**		**Cost + 10%**		
			Places of worship: (a)75% rebate be applicable at the time of application						
			(b)Demand contribution is payable over six months without attracting interest						
			(c)The rebate structure is only granted once to a religious organisation						
			(d)Should the premises be sold off at a later stage and should the use of the premises change, the new owner will be compelled to pay in the difference between the full approved tariff of charges at that point in time and what was paid in as a charge at the time of application for electricity by the religious organisation.						
		(v)	Basic Demand Based Component for every 3X25A or part thereof (= 17.25kVA) - (1.73x0.42x4.7=3.42)	**R13,323.13**	**R15,321.60**		**R12,688.70**	**R14,592.00**	
			Plus: Service Connection Component	**Cost + 10%**	**Cost + 10%**		**Cost + 10%**		
			Places of worship: (a)75% rebate be applicable at the time of application						
			(b)Demand contribution is payable over six months without attracting interest						
			(c)The rebate structure is only granted once to a religious organisation						

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			(d)Should the premises be sold off at a later stage and should the use of the premises change, the new owner will be compelled to pay in the difference between the full approved tariff of charges at that point in time and what was paid in as a charge at the time of application for electricity by the religious organisation.							
X1.1.4			**Service Connection Component**		**Cost + 10%**	**Cost + 10%**		**Cost + 10%**	**Cost + 10%**	
X1.1.5			**Network connection charge**		**Cost + 10%**	**Cost + 10%**		**Cost + 10%**	**Cost + 1%**	
			The fees calculated must be paid upfront by the developer prior to any electrical supply being made available							
X1.1.6		**Bulk Supplies and Internal Services for Developments**								
		(a)	KDM's charges for bulk supplies and internal services for developments are usually regulated by a written agreement between a party and the KDM in accordance with the Council approved policy in respect of Developer contribution as may be amended from time to time.							
		(b)	The developer / registered owner is liable for all wiring and reticulation costs from any bulk meter to the individual units, and also liable for all "internal" wiring and reticulation costs.							
X1.1.7			Ad Hoc 11kV/420 V Installations for Commercial and Service Industry (excluding residential developments)							
			Basic Demand Based Component …. Per kVA		**R3,895.50**	**R4,479.83**		**R3,710.00**	**R4,266.50**	
			Plus: Service Connection Component As indicated below		**Cost + 10%**	**Cost + 10%**		**Cost + 10%**		
X1.1.8			**General**							
		(a)	Where the requirements of any one or more consumers / Applicant(s) ("consumer") necessitate, in the opinion of the KDM, the specific installation of one or more transformers together with associated switchgear, such consumer shall be responsible for the cost of such installation.							
		(b)	In designing such an installation, as provided for above, it shall be competent for the Council to install a transformer with a larger capacity than that called for by the Applicant(s), provided that :-							
			(aa)	The amount payable by the Applicant(s) shall be pro-rated accordingly; and council shall have the right to use any such excess capacity for such other needs as it deems fit.						
			(bb)	In respect of all such installations, the Applicant(s) shall be required to provide a chamber, to the Council's requirements, in which any such transformers, switchgear and equipment shall be accommodated.						

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		(c)	Where application is made for an increased supply and sufficient spare capacity exists on the transformer of greater capacity, the consumer(s) shall in addition to the charges as provided for in these bylaws, be charged the pro-rata cost of the addition							
		(d)	**Approved unmetered supplies for Floodlighting. Telephone Booth Lighting, Illuminated Displays, Streetlights, traffic control installation, Electronic boom controllers, Levels indicators, Security Cameras, and Two Way Radio Installations:-**							
				Basic Demand Based Component per luminaire	**R140.61**	**R161.70**		**R 133.91**	**R 154.00**	
				Basic Demand Based Component per signal head	**R140.61**	**R161.70**		**R 133.91**	**R 154.00**	
				Basic Demand Based Component Per Installation/site	**R140.61**	**R161.70**		**R 133.91**	**R 154.00**	
				Plus Supply Connection Component						
X1.1.9		**Conversion of existing connection**								
		(a)	It is recorded that to the conversion charge in X1.1.9(b) below, must be added the charges in X1.1.3, X1.1.4, X1.1.5, X1.1.6, and X1.1.7 above.							
		(b)	The conversion of any existing supply shall be		**Cost + 10% plus difference between existing kVA and conversion kVA plus the difference in the demand based component**	**Cost + 10% plus difference between existing kVA and conversion kVA plus the difference in the demand based component**		**Cost + 10% plus difference between existing kVA and conversion kVA plus the difference in the demand based component**		
		Installation of Subsidised Budget Energy Controller								
		(i)	A complete service connection inclusive of conventional ready board payable prior to connection, applicable in designated areas only, via a single span connection in areas approved by Council shall be		**R 0.00**	**R 0.00**		**R 0.00**	**R 0.00**	
		(ii)	A complete service connection inclusive of conventional ready board payable prior to connection, applicable in designated areas only, via a single span connection in areas approved by Council shall be		**R63.00**	**R72.45**		**R 60.00**	**R 69.00**	
		(iii)	Conversion of existing conventional metering installation to BEC after the approval of an application received for indigent support (excluding hot plate)		**No Charge**			**No Charge**		
		(iv)	Duplicate Meter Identity Access Cards for the buying of power from Validators		**R24.65**	**R28.35**		**R 23.48**	**R 27.00**	
X1.2	**TESTING OF SERVICE METERS**									
	a)	Installation inside municipal area payable prior to the service being rendered			**Cost plus 10%**	**Cost plus 10%**		**R 553.04**	**R 636.00**	
X1.3	**ADDITIONAL METERS:**									

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	a)	Where an extra single phase meter is required on premises already connected to the Council's mains and where the load can, in the opinion of the Engineer, be safely carried on the existing service connection, the charge shall be		**Cost plus 10%**	**Cost plus 10%**		**Cost plus 10%**		
		Subject to a deposit calculated to cover the full estimated cost of work, which payment shall be adjusted either way, on completion of the work.							
	b)	Where off-peak metering equipment is required by a consumer such installation shall be carried out at the consumer's expense		**Cost plus 10%**	**Cost plus 10%**		**Cost plus 10%**		
		Subject to a deposit calculated to cover the full estimated cost of work, which payment shall be adjusted either way, on completion of the work.							
		The Council shall by resolution, determine the hours during which the off-peak tariffs shall be effective.							
X1.4	**DISCONNECTION AND RECONNECTION CHARGES**								
	a)	If any person neglects to pay any charge for electricity or any other sum due to the council in respect of the supply thereof or the rendering of any service including refuse removal or of the installation or supply of fittings, apparatus, appliances or other items in connection therewith, by the date stipulated on the account rendered, the Council may cut off such supply and for that purpose may cut or disconnect any pipe, electric wire, line or other work through which the electricity or water may be supplied, and may, until such charge or other sum together with the cost incurred by the Council in cutting off and reconnecting such supply of electricity or water, is fully paid, discontinue the supply thereof to such person								
	b)	The charges where a written notice for the non-payment of an account have been issued shall be		**Cost of registered letter**	**Cost of registered letter**		**Cost of registered letter**		
	c)	The charges where a written notice for non-compliances of an installation shall be		**Cost of registered letter**	**Cost of registered letter**		**Cost of registered letter**		
	d)	The charge for disconnection/reconnection of any premises from the mains for the non-payment of an account by a meter reader personnel /contractor shall be		**R739.57**	**R850.50**		**R 704.35**	**R 810.00**	
	e)	The charge for any disconnection or reconnection of any premises for any reason, which involves or necessitates the services of Council's Electrical maintenance personnel shall be		**Cost plus 10%**	**Cost plus 10%**		**Cost plus 10%**		
	f)	(i) The charge for meter tampering for domestic properties:							
		(aa)	First offence plus averaged consumption monitored over a 6 month period	**R7,170.13**	**R8,245.65**		**R 6,828.70**	**R 7,853.00**	
		(bb)	Second offence in terms of the Credit Control Policy	**R9,859.04**	**R11,337.90**		**R 9,389.57**	**R 10,798.00**	

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		(ii) The charge for illegal connection to the electricity supply network for residential properties:							
		(aa)	First offence without legal connection from Council (where demand based component is not raised)	**R10 755. 64 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	**R12 368. 99 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**		**R10 243.47 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	**R11 780.00 + New services connection fee as determined by the Technical Services Dept + Demand Based**	
		(bb)	Second offence without legal connection from Council (where demand based component is not raised)	**R13 444. 56 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	**R15 461. 24 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**		**R12 804.34 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	**R14 725.00+ New services connection fee as determined by the Technical Services Dept + Demand Based**	
	g)	(i) The charge for meter tampering for commercial properties will be:-							
		(aa)	First offence plus averaged consumption monitored over a 6 month period	**R10,755.65**	**R12,369.00**		**R 10,243.48**	**R 11,780.00**	
		(bb)	Second offence in terms of the Credit Control Policy	**R14,340.26**	**R16,491.30**		**R 13,657.39**	**R 15,706.00**	
		(ii) The charge for illegal connection to the electricity supply network for commercial properties:							
		(aa)	First offence without legal connection from Council (where demand based component is not raised)	**R14 340. 25 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	**R16 491.30 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**		**R13 657.39 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	**R15 706.00 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	

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		(bb)		Second offence without legal connection from Council (where demand based component is not raised)	**R17 029.17 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	**R19 583.55 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**		**R16 218.26 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	**R18 651.00 + New services connection fee as determined by the Technical Services Dept +**	
	h)			The charge for blocking/unblocking of pre-paid meters, for the non-payment of an account, by an official	**R58.43**	**R67.20**		**R 55.65**	**64.00**	
				Electricity metering and connection equipment remain the property of the Municipality at all times and anyone involved in instances of tampering, damaging or theft thereof is committing a criminal offence and will be liable for prosecution						
X1.5	**CONSUMER COMPLAINTS CALL OUTS**									
	a)			The charge in the case of call outs to repairs and restore a consumer's supply which has not resulted from defects in the Council's service apparatus, which charge shall be a charge against the monthly account of the consumer and for which the supply of power may be disconnected	**Cost plus 10%**	**Cost plus 10%**		**Cost plus 10%**		
X1.6	**TESTING OF INSTALLATIONS:**									
				The charge to be paid in advance to the Town Treasurer for a test on any installation shall be.	**Cost plus 10%**	**Cost plus 10%**		**Cost plus 10%**		
				The distance covered in all cases shall be assessed on both the outward and inward journeys and calculated to the nearest kilometer.						
X1.7	**CHARGES FOR ELECTRICITY SUPPLIED**									
	TARIFFS 1 TO 11 AS APPROVED BY NERSA									
	a)	**TARIFF 1**								
		Industrial, commercial and other consumers, excluding the use of electricity of farmers for irrigation purposes and domestic consumers with a notified maximum demand of 65KVA or more, but not exceeding 1000KVA:								
		(i)		A Service/basic/availability charge as approved by the National Electricity Regulator from time to time, which shall be payable whether or not any electricity is consumed;	**R1,533.60**	**R1,763.64**		**1,460.57**	**1,679.65**	
				PLUS						

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		(ii)	A kilovolt ampere (kVA) charge as approved by the National Electricity Regulator from time to time, for kilovolt ampere (kVA) registered during the standard period on a standard Maximum Demand(MD) meter. A minimum monthly charge of 46kva will apply for any demand registered less than 46kva. Demand greater than 46kva will be charged according to the demand registered.	**R105.16**	**R120.93**		**R 99.00**	**R 113.85**	
			PLUS						
		(iii)	An energy charge (Kwh) as approved by the National Electricity Regulator from time to time	**R1.6523**	**R1.9001**		**1.5555**	**1.7888**	
			Meters are read at least once every 2 months. Estimated charges are raised in months where no meter readings are taken and are adjusted when actual consumption is charged for. A security deposit to cover at least 2.5 months' consumption is required						
			Deposit calculated on the required maximum demand, multiplied by the tariff, multiplied by 2.5						
	a)	**TARIFF 2**							
		Domestic consumers, excluding the use of electricity of farmers for irrigation purposes and industrial/commercial consumers with a notified maximum demand not exceeding 1000KVA:							
		(i)	A Service/basic/availability charge as approved by the National Electricity Regulator from time to time, which shall be payable whether or not any electricity is consumed.	**R932.54**	**R1,072.42**		**R 888.13**	**R 1,021.35**	
			PLUS						
		(ii)	A kilovolt ampere (kVA) charge as approved by the National Electricity Regulator from time to time, for kilovolt ampere (kVA) registered during the standard period on a standard Maximum Demand(MD) meter. A minimum monthly charge of 46kva will apply for any demand registered less than 46kva. Demand greater than 46kva will be charged according to the demand registered.	**R105.15**	**R120.92**		**R 98.99**	**R 113.84**	
			PLUS						
		(iii)	An energy charge (kWh)as approved by the National Electricity Regulator from time to time.	**R1.5615**	**1.7957**		**R 1.47**	**R 1.70**	
			Meters are read at least once every 2 months. Estimated charges are raised in months where no meter readings are taken and are adjusted when actual consumption is charged for. A security deposit to cover at least 2.5 months' consumption is required						
			Deposit calculated on the required maximum demand, multiplied by the tariff, multiplied by 2.5						
	b)	**TARIFF 3:**							

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				Industrial and commercial consumers with a notified maximum demand of less than 65 kVA and all other consumers not incorporated in pursuant of these tariffs.						
		(i)		Service/basic/availability charge per point of connection:						
			a)	A Single Phases connection not exceeding 60 Ampere which shall be payable whether or not any electricity is consumed;	**R358.32**	**R412.07**		**R 341.26**	**R 392.44**	
			b)	A Three phase connection not exceeding 3 X 80 Ampere which shall be payable whether or not any electricity is consumed;	**R358.32**	**R412.07**		**R 341.26**	**R 392.44**	
				PLUS						
		(ii)		An energy charge as approved by the National Electricity Regulator from time to time.	**R2.0753**	**R2.3866**		**R 1.9538**	**R 2.2469**	
		(iii)		Whenever a circuit breaker is replaced with one of the reduced/increased capacity, the consumer requesting such exchange shall be liable for	**Cost plus 10%**	**Cost plus 10%**		**Cost plus 10%**		
				Meters are read at least once every 2 months. Estimated charges are raised in months where no meter readings are taken and are adjusted when actual consumption is charged for. A security deposit to cover at least 2.5 months' consumption is required OR a minimum deposit of	**R 5,000.00**			**R 5,000.00**		
	c)	**TARIFF 4:**								
		1A		**Domestic consumers.**						
				There shall be payable						
		(i)		A monthly service/basic/availability charge per connection point - as approved by the National Electricity Regulator from time to time, which shall be payable whether or not any electricity is consumed;	**R52.80**	**R60.72**		**R 50.29**	**R 57.84**	
				PLUS						
		(ii)		An energy charge as approved by the National Electricity Regulator from time to time.	**R1.9260**	**R2.2149**		**R 1.926**	**R 2.215**	
			a)	Energy consumed between ……...0 to 50						
				Energy consumed between ……50 to 350						
				Energy consumed between …...……351 to 600						
				Energy consumed between ……more than 600						
		1B		**Domestic consumers - Indigent**						
		(i)		First 75 kWh free for Indigent Customers and 250 kWh for child headed households qualifying in terms of policies set by Council	**R1.1507**	**R1.3233**		**R 1.1507**	**R 1.3233**	
		(ii)		Thereafter the cost per kWh shall be as approved by the National Electricity Regulator from time to time	**R1.5754**	**R1.8117**		**R 1.5754**	**R 1.8117**	

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			a)	Energy consumed between ……...0 to 50						
				Energy consumed between ……50 to 350						
				Energy consumed between …...……351 to 600						
				Energy consumed between ……more than 600						
			In the case of the initial exchange of circuit breakers and in the case of any subsequent replacement by circuit breakers of increased or reduced capacity, the cost of exchange shall be		**Cost plus 10%**	**Cost plus 10%**		**Cost plus 10%**		
		2	Meters are read at least once every 2 months. Estimated charges are raised in months where no meter readings are taken and are adjusted when actual consumption is charged for. A security deposit to cover at least 2.5 months' consumption is required OR a minimum deposit of		**R 2,500.000**			**R 2,500.000**		
	d)	**TARIFF 5:**								
		1A		**Religious and other organizations registered in terms of the act as welfare organizations**						
				There shall be payable						
		(i)	A monthly service/basic/availability charge per connection point - as approved by the National Electricity Regulator from time to time, which shall be payable whether or not any electricity is consumed;		**R 0.000**	**R 0.000**		**R 0.000**	**R 0.000**	
				PLUS						
		(ii)	An energy charge as approved by the National Electricity Regulator from time to time.		**R2.1102**	**R2.4267**		**1.9866**	**2.2846**	
			a)	Energy consumed between ……...0 to 50						
				Energy consumed between ……50 to 350						
				Energy consumed between …...……351 to 600						
				Energy consumed between ……more than 600						
		1B		**Religious and other organizations registered in terms of the act as welfare organizations with a notified maximum demand of 65KVA or more, but not exceeding 1000KVA:**						
		(i)	A Service/basic/availability charge as approved by the National Electricity Regulator from time to time, which shall be payable whether or not any electricity is consumed;		**R0.000**	**R0.000**		**R0.000**	**R0.000**	
				PLUS						

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		(ii)	A kilovolt ampere (kVA) charge as approved by the National Electricity Regulator from time to time, for kilovolt ampere (kVA) registered during the standard period on a standard Maximum Demand(MD) meter. A minimum monthly charge of 46kva will apply for any demand registered less than 46kva. Demand greater than 46kva will be charged according to the demand registered.		**R105.34**	**R121.14**		**R 99.17**	**R 114.05**	
				PLUS						
		(iii)	An energy charge (Kwh) as approved by the National Electricity Regulator from time to time		**R1.6517**	**R1.8995**		**1.555**	**1.788**	
			In the case of the initial exchange of circuit breakers and in the case of any subsequent replacement by circuit breakers of increased or reduced capacity, the cost of exchange shall be		**Cost plus 10%**	**Cost plus 10%**		**Cost plus 10%**		
			Meters are read at least once every 2 months. Estimated charges are raised in months where no meter readings are taken and are adjusted when actual consumption is charged for. A security deposit to cover at least 2.5 months' consumption is required OR a minimum deposit of		**R 2,500.000**			**R 2,500.000**		
				Energy consumed ……more than 600						
	e)	**TARIFF 6:**								
		Approved un-metered supplies for floodlighting, telephone booth lighting and street lighting.								
		A security deposit to cover at least 2 months' consumption is required								
		The following formula and tariffs shall apply to all unmetered supplies for floodlighting, street lighting,								
			Monthly Charge = W x 4000 x Tariff Divide by 1000 x 12							
				W = Total lamp wattage of the installation						
				4000 = Annual burning hours						
				1000 = Converting watt to kW						
				12 = Converting annual hours to monthly hours						
		(i)	Installation Maintained by customer							
				Energy charge per kWh	**R2.2263**	**R2.5602**		**R 2.096**	**R 2.411**	
				Per pole - new	**R83.36**	**R95.87**		**R 78.482**	**R 90.255**	
				Per pole up to 200kW	**R299.83**	**R344.80**		**R 282.416**	**R 324.779**	
				Per pole greater than 200Kw	**R350.97**	**R403.62**		**R 330.424**	**R 379.988**	
				Per Traffic Controller per signal head	**R350.97**	**R403.62**		**R 330.424**	**R 379.988**	
		(ii)	Installation Maintained by Municipality							
				Energy charge per kWh	**R2.2263**	**R2.5602**		**R 2.096**	**R 2.411**	
				Per pole up to 200kW	**R299.83**	**R344.80**		**R 282.416**	**R 324.779**	
				Per pole up greater than 200Kw	**R350.97**	**R403.62**		**R 330.424**	**R 379.988**	
				Per Traffic Controller per signal head	**R350.97**	**R403.62**		**R 330.424**	**R 379.988**	

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		(iii)	A charge per floodlight, telephone booth lighting and street lighting where the maintenance is maintained by Council as approved by the National Electricity Regulator from time to time, per pole shall be		**R350.97**	**R403.62**		**R 330.424**	**R 379.988**	
		(iv)	These lights shall operate with the Council's streetlights and any expenses incurred by the Council on the maintenance of such installation shall be recoverable from the consumer . The consumer may, at the discretion of the Engineer be required to provide material (spares)		**Cost plus 10%**	**Cost plus 10%**		**Cost plus 10%**		
		(v)	A charge per floodlight, telephone booth lighting and street lighting where the maintenance is maintained by the customer as approved by the National Electricity Regulator from time to time, per pole shall be		**R350.97**	**R403.62**		**R 330.424**	**R 379.988**	
		(vi)	A charge per traffic controller installation per signal head, shall be		**R350.97**	**R403.62**		**R 330.424**	**R 379.988**	
	f)	Approved unmetered low consumption installations.								
		(i)	A security deposit to cover at least 2 months' consumption is required							
			Such as 2 way radio installations; road traffic counter installation; water reservoir level indicators; security cameras, boom controls;							
				Per installation	**R350.97**	**R403.62**		**R 330.424**	**R 379.988**	
		(ii)	Illuminated advertising signs							
			Basic monthly charge		**R341.79**	**R393.06**		**R 325.523**	**R 374.351**	
			Energy charge as approved by the National Electricity Regulator from time to time		**R2.0532**	**R2.3612**		**R 1.933**	**R 2.223**	
	g)	**TARIFF 7:**								
		(aa)	Sappi Fine Paper by agreement		**By agreement - aligned to Eskom tariffs.**			**By agreement - aligned to Eskom tariffs.**		
			1	Basic Monthly Charge						
			(i)	**HIGH Seasons:** Demand tariff per month as approved by the National Electricity Regulator from time to time.	**R35.83**	**R41.20**		**33.520**	**38.548**	
			(ii)	**LOW Season:** Demand tariff per month as approved by the National Electricity Regulator from time to time.	**R35.83**	**R41.20**		**33.520**	**38.548**	
				PLUS						
			2	A Kwh energy charge as approved by the National Electricity Regulator from time to time.						
			(i)	Energy Charge : **Low Season : Off Peak**	**R0.5253**	**R0.6041**		**0.4910**	**0.5647**	
			(ii)	Energy Charge : **Low Season : Standard**	**R0.8282**	**R0.9524**		**0.7750**	**0.8913**	

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			(iii)	Energy Charge : **Low Season : Peak**	**R1.2034**	**R1.3839**		**1.1260**	**1.2949**	
			(iv)	Energy Charge : **High Season : Off Peak**	**R0.6068**	**R0.6978**		**0.5680**	**0.6532**	
			(v)	Energy Charge : **High Season : Standard**	**R1.1174**	**R1.2850**		**1.0450**	**1.2018**	
			(vi)	Energy Charge : **High Season : Peak**	**R3.6885**	**R4.2418**		**3.4500**	**3.9675**	
			3	**Other chrges**						
			(i)	TX Network capacity charge (per KVA)	**R9.54**	**R10.97**		**8.920**	**10.258**	
			(ii)	Network capacity charge (per KVA)	**R18.90**	**R21.74**		**17.680**	**20.332**	
			(iii)	Network demand charge (per KVA)	**R35.83**	**R41.20**		**33.520**	**38.548**	
			(iv)	Reactive Energy charge (per KVAR) - (**High Season)**	**R0.1656**	**R0.1904**		**0.1550**	**0.1783**	
			(v)	Ancilliary service charge (per KwH)	**R0.0047**	**R0.0054**		**0.0044**	**0.0051**	
			(vi)	Electrification and Rural Network Subsidy Charge	**R0.0917**	**R0.1055**		**0.8580**	**0.9867**	
			(vii)	Surcharge (5% of Total (i), (ii), (iii) & (iv))						
			(viii)	Surcharge (15% of Total kwh - Off Peak , Standard & Peak) + (Electrification & Rural Subsidy) + (Ancilliary Service Charge)						
			(ix)	Distribution Loss Charge (0,5% of Total Kwh - Off Peak , Standard & Peak) + (Electrification & Rural Subsidy) + (Ancilliary Service Charge)						
			(ii)	KvA high demand						
			(ii)	Energy low demand						
			(iii)	KvA low demand						
		(bb)	Supplies to large consumers exceeding 1 000 kVA							
			(i)	Basic Monthly charge	**R1,533.60**	**R1,763.64**		**R 1,460.57**	**R 1,679.65**	
			(ii)	A Demand tariff per month as approved by the National Electricity Regulator from time to time, for kilovolt ampere (kva) registered. A minimum monthly charge of 700kva will apply for any demand registered less than 700kva. Demand registered greater than 700kva will be charged according to the demand.	**R91.52**	**R105.25**		**R 86.16**	**R 99.08**	
				PLUS						

1. VALUE ADDED TAX MUST BE ADDED TO ALL TARIFFS LISTED BELOW (EXCEPT TO FINES, REFUNDABLE DEPOSITS, INTEREST CHARGES OR WHERE INDICATED AS INCLUSIVE OF VALUE ADDED TAX) 2. ALL APPROVALS OF APPLICATIONS FOR SERVICES LISTED BELOW SHALL BE SUBJECT TO THE APPLICANT OBTAINING A CLEARANCE TO THE EFFECT THAT KWADUKUZA MUNICIPAL ACCOUNTS IN THE NAME OF THE APPLICANT/OWNER ARE NOT IN ARREARS					2020/21 (EXCL VAT)	2020/21 (INCL VAT)	COMMENTS	2019/20 (EXCL VAT)	2019/20 (INCL VAT)	COMMENTS
			(iii)	an energy charge during the off peak/Low demand period as approved by the National Electricity Regulator from time to time	**R1.59**	**R1.83**		**R 1.50**	**R 1.73**	
				PLUS						
			Meters are read at least once every 2 months. Estimated charges are raised in months where no meter readings are taken and are adjusted when actual consumption is charged for. A security deposit to cover at least 2.5 months' consumption is required							
			Deposit calculated on the required maximum demand, multiplied by the tariff, multiplied by 2.5							
	H	**TARIFF 8:**								
				Premises equipped with Budget Energy Control Metering system						
		(i)	First 75 kWh free for Indigent Customers and 250 kWh for child headed households qualifying in terms of policies set by Council		**R1.2060**	**R1.3869**		**1.2060**	**1.3869**	
		(ii)	Thereafter the cost per kWh shall be as approved by the National Electricity Regulator from time to time, and shall be payable in advance.		**R1.8189**	**R2.0917**		**1.8189**	**2.0917**	
			a)	Energy consumed between ……...0 to 50						
				Energy consumed between ……50 to 350						
				Energy consumed between …...……351 to 600						
				Energy consumed between ……more than 600						
		(iii)	Domestic other than registered indigent customers - the cost per kWh shall be as approved by the National Electricity Regulator from time to time and shall be payable in advance per kWh be		**R1.8189**	**R2.0917**		**R 1.8189**	**R 2.0917**	
			a)	Energy consumed between ……...0 to 50						
				Energy consumed between ……50 to 350						
				Energy consumed between …...……351 to 600						
				Energy consumed between ……more than 600						
		(iv)	Commercial Prepaid metering		**R2.2667**	**R2.6067**		**R 2.134**	**R 2.454**	
			Customers on conventional type Maximum Demand metering cannot convert to prepaid metering							
	I	**TARIFF 9:**								
		1A		**TOU Industrial, Commercial and other customers with a notified maximum demand greater than 65kVa including shops, factories, hostels, boarding houses, restaurants, office buildings and residential buildings in which individual units are not separetely metered.**						
		(i)		Basic Monthly charge	**R1,533.60**	**R1,763.64**		**R 1,460.57**	**R 1,679.65**	

1. VALUE ADDED TAX MUST BE ADDED TO ALL TARIFFS LISTED BELOW (EXCEPT TO FINES, REFUNDABLE DEPOSITS, INTEREST CHARGES OR WHERE INDICATED AS INCLUSIVE OF VALUE ADDED TAX) 2. ALL APPROVALS OF APPLICATIONS FOR SERVICES LISTED BELOW SHALL BE SUBJECT TO THE APPLICANT OBTAINING A CLEARANCE TO THE EFFECT THAT KWADUKUZA MUNICIPAL ACCOUNTS IN THE NAME OF THE APPLICANT/OWNER ARE NOT IN ARREARS					2020/21 (EXCL VAT)	2020/21 (INCL VAT)	COMMENTS	2019/20 (EXCL VAT)	2019/20 (INCL VAT)	COMMENTS
		(ii)		Peak	**R4.5337**	**R5.2138**		**R 4.2682**	**R 4.9084**	
		(iii)		Standard	**R1.8618**	**R2.1411**		**R 1.7528**	**R 2.0157**	
		(iv)		Off peak	**R1.0087**	**R1.1600**		**R 0.9496**	**R 1.0920**	
		(v)		Demand tariff per kVa as approved by the National Electricity Regulator from time to time,	**R80.23**	**R92.26**		**R 75.53**	**R 86.86**	
		1B		**Seasonal - TOU Industrial, Commercial and other customers with a notified maximum demand greater than 65kVa including shops, factories, hostels, boarding houses, restaurants, office buildings and residential buildings in which individual units are not separetely metered.**						
		(i)		Basic Monthly charge	**R1,533.60**	**R1,763.64**		**R 1,460.57**	**R 1,679.66**	
		(ii)		HIGH Season: Demand tariff per kVa as approved by the National Electricity Regulator from time to time,	**R80.23**	**R92.26**		**R 75.53**	**R 86.86**	
		(iii)		LOW Season: Demand tariff per kVa as approved by the National Electricity Regulator from time to time.	**R80.23**	**R92.26**		**R 75.53**	**R 86.86**	
				PLUS						
		2		an energy charge during the off peak/**Low demand period** as approved by the National Electricity Regulator from time to time						
		(i)		Energy charge: Low Season: Off Peak	**R0.8026**	**R0.9230**		**R 0.7556**	**R 0.8689**	
		(ii)		Energy charge: Low Season: Standard	**R1.2211**	**R1.4042**		**R 1.1496**	**R 1.3220**	
		(iii)		Energy charge: Low Season: Peak	**R1.8594**	**R2.1383**		**R 1.7505**	**R 2.0131**	
		(iv)		Energy charge: High Season: Off Peak	**R1.0087**	**R1.1600**		**R 0.9496**	**R 1.0920**	
		(v)		Energy charge: High Season: Standard	**R1.8618**	**R2.1411**		**R 1.7528**	**R 2.0157**	
		(vi)		Energy charge: High Season: Peak	**R4.5337**	**R5.2138**		**R 4.2682**	**R 4.9085**	
				Meters are read at least once every 2 months. Estimated charges are raised in months where no meter readings are taken and are adjusted when actual consumption is charged for. A security deposit to cover at least 2.5 months' consumption is required						
				Any meter conversions relating to Tariff 9 shall be for the account of the applicant.						
				Deposit calculated on the required maximum demand, multiplied by the tariff, multiplied by 2.5						

					2020/21 (EXCL VAT)	2020/21 (INCL VAT)	COMMENTS	2019/20 (EXCL VAT)	2019/20 (INCL VAT)	COMMENTS
1. VALUE ADDED TAX MUST BE ADDED TO ALL TARIFFS LISTED BELOW (EXCEPT TO FINES, REFUNDABLE DEPOSITS, INTEREST CHARGES OR WHERE INDICATED AS INCLUSIVE OF VALUE ADDED TAX) 2. ALL APPROVALS OF APPLICATIONS FOR SERVICES LISTED BELOW SHALL BE SUBJECT TO THE APPLICANT OBTAINING A CLEARANCE TO THE EFFECT THAT KWADUKUZA MUNICIPAL ACCOUNTS IN THE NAME OF THE APPLICANT/OWNER ARE NOT IN ARREARS										
	Where no consumer agreements exist, the registered owner/owners of the property concerned shall be responsible for a minimum monthly charge as defined in the tariffs 1 to 7 above									
	J	**TARIFF 10:**								
				TOU Industrial, Commercial and other customers with a notified maximum demand of less than 65kVa including shops, factories, hostels, boarding houses, restaurants, office buildings and residential buildings in which individual units are not separetely metered.						
		(i)		Basic Monthly charge	**R1,533.60**	**R1,763.64**		**R 1,460.57**	**R 1,679.65**	
				PLUS						
				A kilovolt ampere (kVA) charge as approved by the National Electricity Regulator from time to time, for kilovolt ampere (kVA) registered during the standard period on a standard Maximum Demand(MD) meter. A minimum monthly charge of 46kva will apply for any demand registered less than 46kva. Demand greater than 46kva will be charged according to the demand registered.	**R105.16**	**R120.93**		**R 99.00**	**R 113.85**	
				PLUS						
				an energy charge of:						
		(ii)		Energy charge: Off Peak	**R0.609**	**R0.700**		**R 0.573**	**R 0.659**	
		(iii)		Energy charge: Standard	**R1.235**	**R1.420**		**R 1.162**	**R 1.337**	
		(iv)		Energy charge: Peak	**R3.912**	**R4.499**		**R 3.683**	**R 4.235**	
				Any meter conversions relating to Tariff 10 shall be for the account of the applicant.						
	K	**TARIFF 11:**								
				TOU : RESIDENTIAL						
		(i)		Basic Monthly charge	**R93.87**	**R107.96**		**R 89.40**	**R 102.82**	
				PLUS						
				an energy charge during the off peak/**Low demand period** as approved by the National Electricity Regulator from time to time						
		(i)		Energy charge: Off Peak	**R1.050**	**R1.207**		**R 0.988**	**R 1.136**	

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		(ii)		Energy charge: Standard	**R1.418**	**R1.631**		**R 1.335**	**R 1.535**	
		(iii)		Energy charge: Peak	**R2.837**	**R3.262**		**R 2.670**	**R 3.071**	
				Any meter conversions relating to Tariff 11 shall be for the account of the applicant.						
X1.8	**ELECTRICITY AVAILABILITY CHARGE**									
		In respect of any approved subdivision, with or without improvements, which is not connected to the Council's electricity scheme and which can reasonably be so connected, the owner shall pay to the Council an electricity availability charge as stipulated hereunder, in accordance with the Electricity By-Laws Item 18(1) provided that								
	a)	No charge shall be made against any subdivision which exceeds 2 ha;								
	b)	No charge shall be made against any property complying with the requirements of Section 17 (1) (i) of the Municipal Property Rates Act, No 6 of 2004								
	c)	No charge shall be made against one subdivision which is used for bona fide gardening purposes in conjunction with an adjoining subdivision on which there is erected a dwelling house which is connected to the Council's electricity scheme, if such subdivision is owned by the same person or the spouse of the person who owns such dwelling house;								
	d)	In any area where no town planning scheme in terms of the Ordinance 27 of 1949 is in existence, the charge shall be levied as if such property is zoned for special residential use.								
	e)	Depending on the zoning of such subdivision in terms of any town planning scheme in force from time to time, the monthly charges per subdivision shall be as follows:								
		(I)		Irrespective of the zoning of the property there shall be payable a monthly charge of	**R115.50**	**R132.83**		**R 110.00**	**R 126.50**	
				If zoned for other purposes	**R115.50**	**R132.83**		**R 110.00**	**R 126.50**	
X1.9	**GENERAL PROVISIONS**									
	a)			**Notified maximum demand:**						
		(I)		Every existing consumer with an installed load in excess of 60 A shall, when called upon to do so, notify the Council in writing of the maximum which he requires the Council to supply.						
		(ii)		Every new consumer requiring a supply of electricity in excess of 60A single phase or 20A three-phase shall give three months prior written notice of his requirements; provided that the period of notice may be reduced at the discretion of the Engineer.						

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		(iii)	Every existing consumer who wishes to increase his installed load shall give the Council three months prior written notice of his requirements, provided that the period of notice may be reduced at the discretion of the Engineer.						
		(iv)	With effect from the date on which the Council is in a position to meet the notified requirements or the date stipulated in the notice given under paragraph (bb) or (cc), whichever is the later, the amperage charge or the maximum demand charge applicable to such consumer shall be adjusted accordingly.						
		(v)	In the event of the actual consumption of any consumer exceeding his notified maximum demand, the Engineer may call upon such consumer to negotiate an increased notified maximum demand in terms of this Bylaw. Should such consumer fail to notify the Board of his increased requirements within thirty (30) days of being called upon to do so, the Engineer, after inspection of the consumer's installation may notify the Town Treasurer of such increased notified maximum demand as should, in his opinion apply to such consumer for accounting purposes and the charges therefore shall be adjusted accordingly.						
	b)	**Bulk Supply Installation**							
		(I)	Where the joint requirements of any two or more consumers necessitate, in the opinion of the Engineer, the specific installation of one or more transformers together with associated switch gear , such consumers shall jointly be responsible for the cost of such installation, in proportion to their individual requirements.						
		(ii)	In designing such a bulk supply installation, as provided for under item (i) above, it shall be competent for the Council to install a transformer with a larger capacity than that called for by the applicant, provided that						
		(iii)	The amount payable by the Applicant shall be pro-rated accordingly : and Council shall have the right to use any such excess capacity for such other needs as it deems fit.						
		(iv)	In respect of all bulk installations the applicant shall be required to provide a chamber, to the Council's requirements, in which any such transformers, switch gear and equipment shall be accommodated.						

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		(v)	Where application is made for an increased supply and sufficient spare capacity exists on the transformer of greater capacity, the consumer shall in addition to the charges as provided for in these by-laws, be charged the pro-rata cost of the additional transformer capacity based upon the cost of a new transformer or Mini Sub Station of that capacity at that time, plus 10%.							
X1.10	**REDUNDANT STREETLIGHT POLES**									
	a)	Whole poles, as is, per meter			**R39.09**	**R44.96**		**R 35.22**	**R 40.50**	
				(Maximum of 60 meters per person)						
Z 1	**SURCHARGE**									
		The Council may, by resolution, in respect of all consumers enforce a surcharge by means of a percentage on the total of the various tariffs, provided that such surcharge shall at no time exceed 50 (fifty) percentum.								
				COMPILED BY :						
				T P GUMEDE						
				N SINGH						
				CHECKED BY:						
				S I TSWANA						

DRAFT TARIFF OF CHARGES

2021/2022

				2021/22 (EXCL VAT)	2021/22 (INCL VAT)	2020/21 (EXCL VAT)	2020/21 (INCL VAT)	COMMENTS
1. VALUE ADDED TAX MUST BE ADDED TO ALL TARIFFS LISTED BELOW (EXCEPT TO FINES, REFUNDABLE DEPOSITS, INTEREST CHARGES OR WHERE INDICATED AS INCLUSIVE OF VALUE ADDED TAX) 2. ALL APPROVALS OF APPLICATIONS FOR SERVICES LISTED BELOW SHALL BE SUBJECT TO THE APPLICANT OBTAINING A CLEARANCE TO THE EFFECT THAT KWADUKUZA MUNICIPAL ACCOUNTS IN THE NAME OF THE APPLICANT/OWNER ARE NOT IN ARREARS								
A 1	**OUTDOOR ADVERTISING**							
ALL APPLICATIONS SHALL BE IN TERMS OF THE KWADUKUZA MUNICIPALITY'S OUTDOOR ADVERTISING POLICY AND BY-LAWS.								
DISCLAIMER: 1.ALL DISPLAY FEES ARE A MINIMUM CHARGE AND MAY VARY IN TERMS OF PROPOSALS/ AGREEMENTS WITH SERVICE PROVIDERS FROM TIME TO TIME								
DISCLAIMER:2. ALL DISPLAY FEES OWED TO THE KWADUKUZA MUNICIPALITY WILL BE CHARGED AS PER THE TARRIFF STRUCTURE FOR THE SPECIFIC FINANCIAL YEAR.								
DISCLAIMER:3.NO FUTURE APPLICATIONS WILL BE ACCEPTED BY KWADUKUZA MUNICIPALITY FROM APPLICANTS THAT HAVE DEFAULTED IN PAYMENT OF ANNUAL/MONTHLY DISPLAY FEES, AND REFUSE TO SETTLE OUTSTANDING AMOUNTS.								
	(a)	Pre-strutiny for all applications excluding Billboards		**231.97**	**266.77**	**225.22**	**259.00**	
	NON-PERMANENT SIGNS							
	(b)	**General advertisements of both commercial and non-commercial nature:**						
		(i)	Up to 50 posters, or part thereof	**1,334.52**	**1,534.70**	**1,295.65**	**1,490.00**	
		(iii))	Each poster thereafter, an additional	**31.35**	**36.05**	**30.43**	**35.00**	
		(iii)	Refundable deposit (refer to note below)	**500.00**	**500.00**	**500.00**	**500.00**	

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		(i)	Disposal Charge based on actual mass, per ton	**483.48**	**556.00**	**483.48**	**556.00**	
		(ii)	Disposal Charge based on carrying capacity, per ton	**483.48**	**556.00**	**483.48**	**556.00**	
		(iii)	Disposal Charge based on actual mass, per quarter of a metric ton	**120.87**	**139.00**	**120.87**	**139.00**	
	(d)	**General Waste: Received from outside the Municipal Area**						
		(i)	Disposal Charge based on actual mass, per ton	**628.70**	**723.00**	**628.70**	**723.00**	
		(ii)	Disposal Charge based on carrying capacity,per ton	**628.70**	**723.00**	**628.70**	**723.00**	
		(iii)	Disposal Charge based on actual mass, per quarter of a metric ton	**157.39**	**181.00**	**157.39**	**181.00**	
	(e)	**Special Waste: Based on Actual Mass**						
		(i)	Disposal of special waste generated inside of KDM, per metric ton	**640.87**	**737.00**	**640.87**	**737.00**	
		(ii)	Disposal of special waste generated outside of KDM. Per metric ton	**706.96**	**813.00**	**706.96**	**813.00**	
		(iii)	Disposal of special waste generated inside of KDM, per quarter of a metric ton	**160.17**	**184.20**	**160.17**	**184.20**	
		(iv)	Disposal of special waste generated outside of KDM, per quarter of metric ton	**176.52**	**203.00**	**176.52**	**203.00**	
X1	**SUPPLY OF ELECTRICITY**							
	Designated electrical installations shall mean electrical wiring installations within dwelling units, community halls, or such like public facilities, subsidized by National, Provincial, or Local Government							
X1.1	**INSTALLATION OF ELECTRICITY SERVICES:**							
X1.1.1	(a)	The charges payable to the KwaDukuza Municipality ("KDM") for the "installation" of services shall be as per the tariffs listed hereunder.						
	(b)	Any and all headings used in this section are for convenience only. Although the heading of this section contains the word "Installation", this section does not only deal with installation but contains the KDM's charges for both the provision and installation of electrical and allied services.						
	(c)	All the charges referred to in this section, whether estimated or final, shall be paid to KDM prior to any connection or installation.						
	(d)	All the charges listed hereunder must be paid unless exempted in terms of a written agreement concluded with the municipality.						

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	(e)	In the case of a proposed sectional title development, or a proposed share block scheme, or a proposed commercial development, only the registered owner at the time (and not any future owner(s) or "developer") may apply for and be granted electrical services.						
X1.1.2		**Standard Services**						
		Only prepayment or electronic meters with online reading facilities will be installed in farm areas						
X1.1.3		**DEMAND BASED COMPONENT ("DBC")**						
	(a)	(i)	Indigent persons: The DBC charge is not applicable to any dwelling or unit occupied by person(s) registered as being indigent with the KDM / its Council. In the case of dwelling units within which persons registered with Council as being indigent residence, the circuit breaker capacity shall be limited to 20 Ampere Single Phase.					
		(ii)	**NEW Installations (Council Developed)**					
			Low Income Unit	**Exempt**	**Exempt**			
			Community Residential Unit	**Exempt**	**Exempt**	**Exempt**	**Exempt**	
			Social Housing Units	**Exempt**	**Exempt**	**Exempt**	**Exempt**	
			Affordable/ Gap Unit (Approved as FLISP)	**50% OF THE FEES PAID BY NORMAL DEVELOPMENT**	**50% OF THE FEES PAID BY NORMAL DEVELOPMENT**	**50% OF THE FEES PAID BY NORMAL DEVELOPMENT**	**50% OF THE FEES PAID BY NORMAL DEVELOPMENT**	
	(b)		Irrespective of any payment made by the developer for the provision of a firm bulk electrical supply in terms of a services agreement entered into between the Municipality and the developer concerned, the DBC charge shall be payable as stated in X1.1.3 (c) below unless exempted by written agreement concluded with KDM.					
	(c)		The DBC charge is levied and payable by and in respect of –					
		(i)	each unit / dwelling / flat on a property (owner occupied or owner let properties);					
		(ii)	each and every unit / dwelling unit / section in a sectional title or shareblock development, irrespective of whether or not there is a change in the erf number.					
	(d)	**The charges for the DBC are-**						

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			The charge per kVA applied for as recorded on the official supply application document PER kVA shall be	**R4,090.28**	**R4,703.82**	**R3,895.50**	**R4,479.83**	
		(i)	Single phase *60 Amp = 13.8 kVA Load - KVA (admin) = 4.7 kVA*					
			Basic Demand Based Component	**R19,224.72**	**R22,108.43**	**R18,309.26**	**R21,055.65**	
			Plus: Complete Service Connection Component including cables etc	**Cost + 10%**	**Cost + 10%**	**Cost + 10%**	**Cost + 10%**	
			OR Partial Service connection (Not including cables)	**Cost + 10%**	**Cost + 10%**	**Cost + 10%**	**Cost + 10%**	
			Places of worship: (a) 50% rebate be applicable at the time of application					
			(b) Demand contribution is payable over six months without attracting interest					
			(c) The rebate structure is only granted once to a religious organisation					
			(d) Should the premises be sold off at a later stage and should the use of the premises change, the new owner will be compelled to pay in the difference between the full approved tariff of charges at that point in time and what was paid in as a charge at the time of application for electricity by the religious organisation.					
		(ii)	Three Phase *(Maximum 60A) - (1.73x4.7 = 8.131kVA)*					
			Basic Demand Based Component	**R33,258.11**	**R38,246.83**	**R31,674.39**	**R36,425.55**	
			Plus: Complete Service Connection Component including cables etc	**Cost + 10%**	**Cost + 10%**	**Cost + 10%**	**Cost + 10%**	
			OR Partial Service connection (Not including cables)	**Cost + 10%**	**Cost + 10%**	**Cost + 10%**	**Cost + 10%**	
			Places of worship: (a)75% rebate be applicable at the time of application					
			(b)Demand contribution is payable over six months without attracting interest					
			(c)The rebate structure is only granted once to a religious organisation					
			(d)Should the premises be sold off at a later stage and should the use of the premises change, the new owner will be compelled to pay in the difference between the full approved tariff of charges at that point in time and what was paid in as a charge at the time of application for electricity by the religious organisation.					
		(iii)	Three Phase *(Maximum 150A) - 1.73x2.5x4.7=20.33kVA)*					
			Basic Demand Based Component	**R83,155.34**	**R95,628.65**	**R79,195.57**	**R91,074.90**	
			Plus: Service Connection Component	**Cost + 10%**	**Cost + 10%**	**Cost + 10%**	**Cost + 10%**	
			Places of worship: (a)75% rebate be applicable at the time of application					
			(b)Demand contribution is payable over six months without attracting interest					

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			(c)The rebate structure is only granted once to a religious organisation					
			(d)Should the premises be sold off at a later stage and should the use of the premises change, the new owner will be compelled to pay in the difference between the full approved tariff of charges at that point in time and what was paid in as a charge at the time of application for electricity by the religious organisation.					
		(iv)	Three Phase (Maximum 80 A) - (1.73x1.33*4.7=10.81)					
			Basic Demand Based Component	**R44,216.00**	**R50,848.40**	**R42,110.48**	**R48,427.05**	
			Plus: Complete Service Connection Component including cables etc	**Cost + 10%**	**Cost + 10%**	**Cost + 10%**	**Cost + 10%**	
			OR Partial Service connection (Not including cables)	**Cost + 10%**	**Cost + 10%**	**Cost + 10%**	**Cost + 10%**	
			Places of worship: (a)75% rebate be applicable at the time of application					
			(b)Demand contribution is payable over six months without attracting interest					
			(c)The rebate structure is only granted once to a religious organisation					
			(d)Should the premises be sold off at a later stage and should the use of the premises change, the new owner will be compelled to pay in the difference between the full approved tariff of charges at that point in time and what was paid in as a charge at the time of application for electricity by the religious organisation.					
		(v)	Basic Demand Based Component for every 3X25A or part thereof (= 17.25kVA) - (1.73x0.42x4.7=3.42)	**R13,989.29**	**R16,087.68**	**R13,323.13**	**R15,321.60**	
			Plus: Service Connection Component	**Cost + 10%**	**Cost + 10%**	**Cost + 10%**	**Cost + 10%**	
			Places of worship: (a)75% rebate be applicable at the time of application					
			(b)Demand contribution is payable over six months without attracting interest					
			(c)The rebate structure is only granted once to a religious organisation					
			(d)Should the premises be sold off at a later stage and should the use of the premises change, the new owner will be compelled to pay in the difference between the full approved tariff of charges at that point in time and what was paid in as a charge at the time of application for electricity by the religious organisation.					
X1.1.4			**Service Connection Component**	**Cost + 10%**	**Cost + 10%**	**Cost + 10%**	**Cost + 10%**	
X1.1.5			**Network connection charge**	**Cost + 10%**	**Cost + 10%**	**Cost + 10%**	**Cost + 10%**	
			The fees calculated must be paid upfront by the developer prior to any electrical supply being made available					
X1.1.6		**Bulk Supplies and Internal Services for Developments**						

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		(a)	KDM's charges for bulk supplies and internal services for developments are usually regulated by a written agreement between a party and the KDM in accordance with the Council approved policy in respect of Developer contribution as may be amended from time to time.					
		(b)	The developer / registered owner is liable for all wiring and reticulation costs from any bulk meter to the individual units, and also liable for all "internal" wiring and reticulation costs.					
X1.1.7			Ad Hoc 11kV/420 V Installations for Commercial and Service Industry (excluding residential developments)					
			Basic Demand Based Component …. Per kVA	**R4,090.28**	**R4,703.82**	**R3,895.50**	**R4,479.83**	
			Plus: Service Connection Component As indicated below	**Cost + 10%**	**Cost + 10%**	**Cost + 10%**	**Cost + 10%**	
X1.1.8			**General**					
		(a)	Where the requirements of any one or more consumers / Applicant(s) ("consumer") necessitate, in the opinion of the KDM, the specific installation of one or more transformers together with associated switchgear, such consumer shall be responsible for the cost of such installation.					
		(b)	In designing such an installation, as provided for above, it shall be competent for the Council to install a transformer with a larger capacity than that called for by the Applicant(s), provided that :-					
			(aa) The amount payable by the Applicant(s) shall be pro-rated accordingly; and council shall have the right to use any such excess capacity for such other needs as it deems fit.					
			(bb) In respect of all such installations, the Applicant(s) shall be required to provide a chamber, to the Council's requirements, in which any such transformers, switchgear and equipment shall be accommodated.					
		(c)	Where application is made for an increased supply and sufficient spare capacity exists on the transformer of greater capacity, the consumer(s) shall in addition to the charges as provided for in these bylaws, be charged the pro-rata cost of the addition					
		(d)	A**pproved unmetered supplies for Floodlighting. Telephone Booth Lighting, Illuminated Displays, Streetlights, traffic control installation, Electronic boom controllers, Levels indicators, Security Cameras, and Two Way Radio Installations:-**					

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				Basic Demand Based Component per luminaire	**R147.64**	**R169.79**	**R140.61**	**R161.70**	
				Basic Demand Based Component per signal head	**R147.64**	**R169.79**	**R140.61**	**R161.70**	
				Basic Demand Based Component Per Installation/site	**R147.64**	**R169.79**	**R140.61**	**R161.70**	
				Plus Supply Connection Component					
X1.1.9		**Conversion of existing connection**							
		(a)		It is recorded that to the conversion charge in X1.1.9(b) below, must be added the charges in X1.1.3, X1.1.4, X1.1.5, X1.1.6, and X1.1.7 above.					
		(b)		The conversion of any existing supply shall be	**Cost + 10% plus difference between existing kVA and conversion kVA plus the difference in the demand based component**	**Cost + 10% plus difference between existing kVA and conversion kVA plus the difference in the demand based component**	**Cost + 10% plus difference between existing kVA and conversion kVA plus the difference in the demand based component**	**Cost + 10% plus difference between existing kVA and conversion kVA plus the difference in the demand based component**	
		Installation of Subsidised Budget Energy Controller							
		(i)		A complete service connection inclusive of conventional ready board payable prior to connection, applicable in designated areas only, via a single span connection in areas approved by Council shall be	**R 0.00**	**R 0.00**	**R 0.00**	**R 0.00**	
		(ii)		A complete service connection inclusive of conventional ready board payable prior to connection, applicable in designated areas only, via a single span connection in areas approved by Council shall be	**R66.15**	**R76.07**	**R63.00**	**R72.45**	
		(iii)		Conversion of existing conventional metering installation to BEC after the approval of an application received for indigent support (excluding hot plate)	**No Charge**		**No Charge**		
		(iv)		Duplicate Meter Identity Access Cards for the buying of power from Validators	**R24.65**	**R28.35**	**R24.65**	**R28.35**	
X1.2	**TESTING OF SERVICE METERS**								
	a)			Installation inside municipal area payable prior to the service being rendered	**Cost plus 10%**	**Cost plus 10%**	**Cost plus 10%**	**Cost plus 10%**	
X1.3	**ADDITIONAL METERS:**								
	a)			Where an extra single phase meter is required on premises already connected to the Council's mains and where the load can, in the opinion of the Engineer, be safely carried on the existing service connection, the charge shall be	**Cost plus 10%**	**Cost plus 10%**	**Cost plus 10%**	**Cost plus 10%**	
				Subject to a deposit calculated to cover the full estimated cost of work, which payment shall be adjusted either way, on completion of the work.					

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	b)	Where off-peak metering equipment is required by a consumer such installation shall be carried out at the consumer's expense		**Cost plus 10%**	**Cost plus 10%**	**Cost plus 10%**	**Cost plus 10%**	
		Subject to a deposit calculated to cover the full estimated cost of work, which payment shall be adjusted either way, on completion of the work.						
		The Council shall by resolution, determine the hours during which the off-peak tariffs shall be effective.						
X1.4	**DISCONNECTION AND RECONNECTION CHARGES**							
	a)	If any person neglects to pay any charge for electricity or any other sum due to the council in respect of the supply thereof or the rendering of any service including refuse removal or of the installation or supply of fittings, apparatus, appliances or other items in connection therewith, by the date stipulated on the account rendered, the Council may cut off such supply and for that purpose may cut or disconnect any pipe, electric wire, line or other work through which the electricity or water may be supplied, and may, until such charge or other sum together with the cost incurred by the Council in cutting off and reconnecting such supply of electricity or water, is fully paid, discontinue the supply thereof to such person						
	b)	The charges where a written notice for the non-payment of an account have been issued shall be		**Cost of registered letter**	**Cost of registered letter**	**Cost of registered letter**	**Cost of registered letter**	
	c)	The charges where a written notice for non-compliances of an installation shall be		**Cost of registered letter**	**Cost of registered letter**	**Cost of registered letter**	**Cost of registered letter**	
	d)	The charge for disconnection/reconnection of any premises from the mains for the non-payment of an account by a meter reader personnel /contractor shall be		**R739.57**	**R850.50**	**R739.57**	**R850.50**	
	e)	The charge for any disconnection or reconnection of any premises for any reason, which involves or necessitates the services of Council's Electrical maintenance personnel shall be		**Cost plus 10%**	**Cost plus 10%**	**Cost plus 10%**	**Cost plus 10%**	
	f)	(i) The charge for meter tampering for domestic properties:						
		(aa)	First offence plus averaged consumption monitored over a 6 month period	**R7,528.64**	**R8,657.93**	**R7,170.13**	**R8,245.65**	

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		(bb)	Second offence in terms of the Credit Control Policy	**R10 352. 00 + New services connection fee as determined by the Technical Services Dept**	**R11 904,80 + New services connection fee as determined by the Technical Services Dept**	**R9,859.04**	**R11,337.90**	
		(ii) The charge for illegal connection to the electricity supply network for residential properties:						
		(aa)	First offence without legal connection from Council (where demand based component is not raised)	**R10 755. 64 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	**R12 368. 99 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	**R10 755. 64 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	**R12 368. 99 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	
		(bb)	Second offence without legal connection from Council (where demand based component is not raised)	**R13 444. 56 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	**R15 461. 24 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	**R13 444. 56 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	**R15 461. 24 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	
	g)	(i) The charge for meter tampering for commercial properties will be (In case of sub letting, fine is per household or per business), Residential sub letting of more than 4 household is clasiffied commercial :-						
		(aa)	First offence plus averaged consumption monitored over a 6 month period	**R11,293.43**	**R12,987.45**	**R10,755.65**	**R12,369.00**	
		(bb)	Second offence in terms of the Credit Control Policy	**R15 057,27 + New services connection fee as determined by the Technical Services Dept**	**R17 315.87 + New services connection fee as determined by the Technical Services Dept**	**R14,340.26**	**R16,491.30**	

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		(ii) The charge for illegal connection to the electricity supply network for commercial properties (In case of sub letting, fine is per household or per business), Residential sub letting of more than 4 household is clasiffied commercial:							
		(aa)	First offence without legal connection from Council (where demand based component is not raised)		**R15 075. 26 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	**R17 315.85 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	**R14 340. 25 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	**R16 491.30 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	
		(bb)	Second offence without legal connection from Council (where demand based component is not raised)		**R17 880,63 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	**R20 562,72 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	**R17 029.17 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	**R19 583.55 + New services connection fee as determined by the Technical Services Dept + Demand Based Component**	
	h)	The charge for blocking/unblocking of pre-paid meters, for the non-payment of an account, by an official			**R58.43**	**R67.20**	**R58.43**	**R67.20**	
			Electricity metering and connection equipment remain the property of the Municipality at all times and anyone involved in instances of tampering, damaging or theft thereof is committing a criminal offence and will be liable for prosecution						
X1.5	**CONSUMER COMPLAINTS CALL OUTS**								
	a)	The charge in the case of call outs to repairs and restore a consumer's supply which has not resulted from defects in the Council's service apparatus, which charge shall be a charge against the monthly account of the consumer and for which the supply of power may be disconnected			**Cost plus 10%**	**Cost plus 10%**	**Cost plus 10%**	**Cost plus 10%**	
X1.6	**TESTING OF INSTALLATIONS:**								
				The charge to be paid in advance to the Town Treasurer for a test on any installation shall be.	**Cost plus 10%**	**Cost plus 10%**	**Cost plus 10%**	**Cost plus 10%**	

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				The distance covered in all cases shall be assessed on both the outward and inward journeys and calculated to the nearest kilometer.					
X1.7	**CHARGES FOR ELECTRICITY SUPPLIED**								
	TARIFFS 1 TO 11 AS APPROVED BY NERSA								
	a)	**TARIFF 1**							
		Industrial, commercial and other consumers, excluding the use of electricity of farmers for irrigation purposes and domestic consumers with a notified maximum demand of 65KVA or more, but not exceeding 1000KVA:							
		(i)		A Service/basic/availability charge as approved by the National Electricity Regulator from time to time, which shall be payable whether or not any electricity is consumed;	**R1,533.60**	**R1,763.64**	**R1,533.60**	**R1,763.64**	
				PLUS					
		(ii)		A kilovolt ampere (kVA) charge as approved by the National Electricity Regulator from time to time, for kilovolt ampere (kVA) registered during the standard period on a standard Maximum Demand(MD) meter. A minimum monthly charge of 46kva will apply for any demand registered less than 46kva. Demand greater than 46kva will be charged according to the demand registered.	**R120.50**	**R138.58**	**R105.16**	**R120.93**	
				PLUS					
		(iii)		An energy charge (Kwh) as approved by the National Electricity Regulator from time to time	**R1.8934**	**R2.1774**	**R1.6523**	**R1.9001**	
				Meters are read at least once after every 2 months. Estimated charges are raised in months where no meter readings are obtained and are adjusted when actual consumption is charged for. If estimated charges are applicable, this is calculated based on a six month prior billing daily average. A security deposit to cover at least 2.5 months' consumption is required					
				Deposit calculated on the required maximum demand, multiplied by the tariff, multiplied by 2.5					
	a)	**TARIFF 2**							
		Domestic consumers, excluding the use of electricity of farmers for irrigation purposes and industrial/commercial consumers with a notified maximum demand not exceeding 1000KVA:							
		(i)		A Service/basic/availability charge as approved by the National Electricity Regulator from time to time, which shall be payable whether or not any electricity is consumed.	**R932.54**	**R1,072.42**	**R932.54**	**R1,072.42**	
				PLUS					

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		(ii)		A kilovolt ampere (kVA) charge as approved by the National Electricity Regulator from time to time, for kilovolt ampere (kVA) registered during the standard period on a standard Maximum Demand(MD) meter. A minimum monthly charge of 46kva will apply for any demand registered less than 46kva. Demand greater than 46kva will be charged according to the demand registered.	**R120.49**	**R138.56**	**R105.15**	**R120.92**	
				PLUS					
		(iii)		An energy charge (kWh)as approved by the National Electricity Regulator from time to time.	**R1.7893**	**R2.0577**	**R1.5615**	**1.7957**	
				Meters are read at least once after every 2 months. Estimated charges are raised in months where no meter readings are obtained and are adjusted when actual consumption is charged for. If estimated charges are applicable, this is calculated based on a six month prior billing daily average. A security deposit to cover at least 2.5 months' consumption is required					
				Deposit calculated on the required maximum demand, multiplied by the tariff, multiplied by 2.5					
	b)	**TARIFF 3:**							
				Industrial and commercial consumers with a notified maximum demand of less than 65 kVA and all other consumers not incorporated in pursuant of these tariffs.					
		(i)		Service/basic/availability charge per point of connection:					
			a)	A Single Phases connection not exceeding 60 Ampere which shall be payable whether or not any electricity is consumed;	**R358.32**	**R412.07**	**R358.32**	**R412.07**	
			b)	A Three phase connection not exceeding 3 X 80 Ampere which shall be payable whether or not any electricity is consumed;	**R358.32**	**R412.07**	**R358.32**	**R412.07**	
				PLUS					
		(ii)		An energy charge as approved by the National Electricity Regulator from time to time.	**R2.3781**	**R2.7348**	**R2.0753**	**R2.3866**	
		(iii)		Whenever a circuit breaker is replaced with one of the reduced/increased capacity, the consumer requesting such exchange shall be liable for	**Cost plus 10%**	**Cost plus 10%**	**Cost plus 10%**	**Cost plus 10%**	
				Meters are read at least once after every 2 months. Estimated charges are raised in months where no meter readings are obtained and are adjusted when actual consumption is charged for. If estimated charges are applicable, this is calculated based on a six month prior billing daily average. A security deposit to cover at least 2.5 months' consumption is required	**R 5,000.00**		**R 5,000.00**		
	c)	**TARIFF 4:**							
		1A		**Domestic consumers.**					

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				There shall be payable					
		(i)	A monthly service/basic/availability charge per connection point - as approved by the National Electricity Regulator from time to time, which shall be payable whether or not any electricity is consumed;		**R52.80**	**R60.72**	**R52.80**	**R60.72**	
				PLUS					
		(ii)	An energy charge as approved by the National Electricity Regulator from time to time.		**R2.2070**	**R2.5381**	**R1.9260**	**R2.2149**	
			a)	Energy consumed between ……...0 to 50					
				Energy consumed between ……50 to 350					
				Energy consumed between …..……351 to 600					
				Energy consumed between ……more than 600					
		1B		**Domestic consumers - Indigent**					
		(i)	First 75 kWh free for Indigent Customers and 250 kWh for child headed households qualifying in terms of policies set by Council		**R1.3200**	**R1.5180**	**R1.1507**	**R1.3233**	
		(ii)	Thereafter the cost per kWh shall be as approved by the National Electricity Regulator from time to time		**R1.8053**	**R2.0760**	**R1.5754**	**R1.8117**	
			a)	Energy consumed between ……...0 to 50					
				Energy consumed between ……50 to 350					
				Energy consumed between …..……351 to 600					
				Energy consumed between ……more than 600					
			In the case of the initial exchange of circuit breakers and in the case of any subsequent replacement by circuit breakers of increased or reduced capacity, the cost of exchange shall be		**Cost plus 10%**	**Cost plus 10%**	**Cost plus 10%**	**Cost plus 10%**	
		2	Meters are read at least once after every 2 months. Estimated charges are raised in months where no meter readings are obtained and are adjusted when actual consumption is charged for. If estimated charges are applicable, this is calculated based on a six month prior billing daily average. A security deposit to cover at least 2.5 months' consumption is required		**R 2,500.000**		**R 2,500.000**		
	d)	**TARIFF 5:**							

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		1A		**Religious and other organizations registered in terms of the act as welfare organizations**					
				There shall be payable					
		(i)	A monthly service/basic/availability charge per connection point - as approved by the National Electricity Regulator from time to time, which shall be payable whether or not any electricity is consumed;		**R 0.000**	**R 0.000**	**R 0.000**	**R 0.000**	
				PLUS					
		(ii)	An energy charge as approved by the National Electricity Regulator from time to time.		**R2.4180**	**R2.7807**	**R2.1102**	**R2.4267**	
			a)	Energy consumed between ……...0 to 50					
				Energy consumed between ……50 to 350					
				Energy consumed between …...……351 to 600					
				Energy consumed between ……more than 600					
		1B		**Religious and other organizations registered in terms of the act as welfare organizations with a notified maximum demand of 65KVA or more, but not exceeding 1000KVA:**					
		(i)	A Service/basic/availability charge as approved by the National Electricity Regulator from time to time, which shall be payable whether or not any electricity is consumed;		**R0.000**	**R0.000**	**R0.000**	**R0.000**	
				PLUS					
		(ii)	A kilovolt ampere (kVA) charge as approved by the National Electricity Regulator from time to time, for kilovolt ampere (kVA) registered during the standard period on a standard Maximum Demand(MD) meter. A minimum monthly charge of 46kva will apply for any demand registered less than 46kva. Demand greater than 46kva will be charged according to the demand registered.		**R120.71**	**R138.81**	**R105.34**	**R121.14**	
				PLUS					
		(iii)	An energy charge (Kwh) as approved by the National Electricity Regulator from time to time		**R1.8927**	**R2.1766**	**R1.6517**	**R1.8995**	
			In the case of the initial exchange of circuit breakers and in the case of any subsequent replacement by circuit breakers of increased or reduced capacity, the cost of exchange shall be		**Cost plus 10%**	**Cost plus 10%**	**Cost plus 10%**	**Cost plus 10%**	

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			Meters are read at least once after every 2 months. Estimated charges are raised in months where no meter readings are obtained and are adjusted when actual consumption is charged for. If estimated charges are applicable, this is calculated based on a six month prior billing daily average. A security deposit to cover at least 2.5 months' consumption is required	**R 2,500.000**		**R 2,500.000**		
			Energy consumed ……more than 600					
	e)	**TARIFF 6:**						
		Approved un-metered supplies for floodlighting, telephone booth lighting and street lighting.						
		A security deposit to cover at least 2 months' consumption is required						
		The following formula and tariffs shall apply to all unmetered supplies for floodlighting, street lighting,						
			Monthly Charge = W x 4000 x Tariff Divide by 1000 x 12					
			W = Total lamp wattage of the installation					
			4000 = Annual burning hours					
			1000 = Converting watt to kW					
			12 = Converting annual hours to monthly hours					
		(i)	Installation Maintained by customer					
			Energy charge per kWh	**R2.5511**	**R2.9338**	**R2.2263**	**R2.5602**	
			Per pole - new	**R95.53**	**R109.86**	**R83.36**	**R95.87**	
			Per pole up to 200kW	**R343.58**	**R395.11**	**R299.83**	**R344.80**	
			Per pole greater than 200Kw	**R402.18**	**R462.50**	**R350.97**	**R403.62**	
			Per Traffic Controller per signal head	**R402.18**	**R462.50**	**R350.97**	**R403.62**	
		(ii)	Installation Maintained by Municipality					
			Energy charge per kWh	**R2.5511**	**R2.9338**	**R2.2263**	**R2.5602**	
			Per pole up to 200kW	**R343.58**	**R395.11**	**R299.83**	**R344.80**	
			Per pole up greater than 200Kw	**R402.18**	**R462.50**	**R350.97**	**R403.62**	
			Per Traffic Controller per signal head	**R402.18**	**R462.50**	**R350.97**	**R403.62**	
		(iii)	A charge per floodlight, telephone booth lighting and street lighting where the maintenance is maintained by Council as approved by the National Electricity Regulator from time to time, per pole shall be	**R402.18**	**R462.50**	**R350.97**	**R403.62**	
		(iv)	These lights shall operate with the Council's streetlights and any expenses incurred by the Council on the maintenance of such installation shall be recoverable from the consumer . The consumer may, at the discretion of the Engineer be required to provide material (spares)	**R402.18**	**R462.50**	**Cost plus 10%**	**Cost plus 10%**	

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		(v)	A charge per floodlight, telephone booth lighting and street lighting where the maintenance is maintained by the customer as approved by the National Electricity Regulator from time to time, per pole shall be		**R402.18**	**R462.50**	**R350.97**	**R403.62**	
		(vi)	A charge per traffic controller installation per signal head, shall be		**R402.18**	**R462.50**	**R350.97**	**R403.62**	
	f)	Approved unmetered low consumption installations.							
		(i)	A security deposit to cover at least 2 months' consumption is required						
			Such as 2 way radio installations; road traffic counter installation; water reservoir level indicators; security cameras, boom controls;						
				Per installation	**R402.18**	**R462.50**	**R350.97**	**R403.62**	
		(ii)	Illuminated advertising signs						
			Basic monthly charge		**R341.79**	**R393.06**	**R341.79**	**R393.06**	
			Energy charge as approved by the National Electricity Regulator from time to time		**R2.3528**	**R2.7057**	**R2.0532**	**R2.3612**	
	g)	**TARIFF 7:**							
		(aa)	Sappi Fine Paper by agreement				**By agreement - aligned to Eskom tariffs.**		
			1	Basic Monthly Charge					
			(i)	**HIGH Seasons:** Demand tariff per month as approved by the National Electricity Regulator from time to time.	**R42.21**		**R35.83**	**R41.20**	
			(ii)	**LOW Season:** Demand tariff per month as approved by the National Electricity Regulator from time to time.	**R42.21**		**R35.83**	**R41.20**	
				PLUS					
			2	A Kwh energy charge as approved by the National Electricity Regulator from time to time.					
			(i)	Energy Charge : **Low Season : Off Peak**	**R0.6188**	**R0.7116**	**R0.5253**	**R0.6041**	
			(ii)	Energy Charge : **Low Season : Standard**	**R0.9756**	**R1.1220**	**R0.8282**	**R0.9524**	
			(iii)	Energy Charge : **Low Season : Peak**	**R1.4176**	**R1.6302**	**R1.2034**	**R1.3839**	
			(iv)	Energy Charge : **High Season : Off Peak**	**R0.7148**	**R0.8220**	**R0.6068**	**R0.6978**	

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			(v)	Energy Charge : **High Season : Standard**	**R1.3163**	**R1.5137**	**R1.1174**	**R1.2850**	
			(vi)	Energy Charge : **High Season : Peak**	**R4.3451**	**R4.9968**	**R3.6885**	**R4.2418**	
			3	**Other chrges**					
			(i)	TX Network capacity charge (per KVA)	**R11.24**	**R12.92**	**R9.54**	**R10.97**	
			(ii)	Network capacity charge (per KVA)	**R22.26**	**R25.60**	**R18.90**	**R21.74**	
			(iii)	Network demand charge (per KVA)	**R42.21**	**R48.54**	**R35.83**	**R41.20**	
			(iv)	Reactive Energy charge (per KVAR) - (**High Season)**	**R0.1951**	**R0.2243**	**R0.1656**	**R0.1904**	
			(v)	Ancilliary service charge (per KwH)	**R0.0055**	**R0.0064**	**R0.0047**	**R0.0054**	
			(vi)	Electrification and Rural Network Subsidy Charge	**R0.1080**	**R0.1242**	**R0.0917**	**R0.1055**	
			(vii)	Surcharge (5% of Total (i), (ii), (iii) & (iv))					
			(viii)	Surcharge (15% of Total kwh - Off Peak , Standard & Peak) + (Electrification & Rural Subsidy) + (Ancilliary Service Charge)					
			(ix)	Distribution Loss Charge (0,5% of Total Kwh - Off Peak , Standard & Peak) + (Electrification & Rural Subsidy) + (Ancilliary Service Charge)					
			(ii)	KvA high demand					
			(ii)	Energy low demand					
			(iii)	KvA low demand					
		(bb)	Supplies to large consumers exceeding 1 000 kVA						
			(i)	Basic Monthly charge	**R1,533.60**	**R1,763.64**	**R1,533.60**	**R1,763.64**	
			(ii)	A Demand tariff per month as approved by the National Electricity Regulator from time to time, for kilovolt ampere (kva) registered. A minimum monthly charge of 700kva will apply for any demand registered less than 700kva. Demand registered greater than 700kva will be charged according to the demand.	**R104.87**	**R120.60**	**R91.52**	**R105.25**	

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				PLUS					
			(iii)	an energy charge during the off peak/Low demand period as approved by the National Electricity Regulator from time to time	**R1.82**	**R2.10**	**R1.59**	**R1.83**	
				PLUS					
			Meters are read at least once after every 2 months. Estimated charges are raised in months where no meter readings are obtained and are adjusted when actual consumption is charged for. If estimated charges are applicable, this is calculated based on a six month prior billing daily average. A security deposit to cover at least 2.5 months' consumption is required						
			Deposit calculated on the required maximum demand, multiplied by the tariff, multiplied by 2.5						
	H	**TARIFF 8:**							
				Premises equipped with Budget Energy Control Metering system					
		(i)	First 75 kWh free for Indigent Customers and 250 kWh for child headed households qualifying in terms of policies set by Council		**R1.38**	**R1.59**	**R1.2060**	**R1.3869**	
		(ii)	Thereafter the cost per kWh shall be as approved by the National Electricity Regulator from time to time, and shall be payable in advance.		**R2.0843**	**R2.3969**	**R1.8189**	**R2.0917**	
			a)	Energy consumed between ……...0 to 50					
				Energy consumed between ……50 to 350					
				Energy consumed between …...……351 to 600					
				Energy consumed between ……more than 600					
		(iii)	Domestic other than registered indigent customers - the cost per kWh shall be as approved by the National Electricity Regulator from time to time and shall be payable in advance per kWh be		**R2.0843**	**R2.3969**	**R1.8189**	**R2.0917**	
			a)	Energy consumed between ……...0 to 50					
				Energy consumed between ……50 to 350					
				Energy consumed between …...……351 to 600					
				Energy consumed between ……more than 600					
		(iv)	Commercial Prepaid metering		**R2.5974**	**R2.9870**	**R2.2667**	**R2.6067**	
			Customers on conventional type Maximum Demand metering cannot convert to prepaid metering						
	I	**TARIFF 9:**							

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		1A		**TOU Industrial, Commercial and other customers with a notified maximum demand greater than 65kVa including shops, factories, hostels, boarding houses, restaurants, office buildings and residential buildings in which individual units are not separetely metered.**					
		(i)		Basic Monthly charge	**R1,533.60**	**R1,763.64**	**R1,533.60**	**R1,763.64**	
		(ii)		Peak	**R5.1952**	**R5.9744**	**R4.5337**	**R5.2138**	
		(iii)		Standard	**R2.1334**	**R2.4535**	**R1.8618**	**R2.1411**	
		(iv)		Off peak	**R1.1559**	**R1.3292**	**R1.0087**	**R1.1600**	
		(v)		Demand tariff per kVa as approved by the National Electricity Regulator from time to time,	**R91.93**	**R105.72**	**R80.23**	**R92.26**	
		1B		**Seasonal - TOU Industrial, Commercial and other customers with a notified maximum demand greater than 65kVa including shops, factories, hostels, boarding houses, restaurants, office buildings and residential buildings in which individual units are not separetely metered.**					
		(i)		Basic Monthly charge	**R1,533.60**	**R1,763.64**	**R1,533.60**	**R1,763.64**	
		(ii)		HIGH Season: Demand tariff per kVa as approved by the National Electricity Regulator from time to time,	**R91.93**	**R105.72**	**R80.23**	**R92.26**	
		(iii)		LOW Season: Demand tariff per kVa as approved by the National Electricity Regulator from time to time.	**R91.93**	**R105.72**	**R80.23**	**R92.26**	
				PLUS					
		2		an energy charge during the off peak/**Low demand period** as approved by the National Electricity Regulator from time to time					
		(i)		Energy charge: Low Season: Off Peak	**R0.9197**	**R1.0577**	**R0.8026**	**R0.9230**	
		(ii)		Energy charge: Low Season: Standard	**R1.3992**	**R1.6091**	**R1.2211**	**R1.4042**	
		(iii)		Energy charge: Low Season: Peak	**R2.1307**	**R2.4503**	**R1.8594**	**R2.1383**	
		(iv)		Energy charge: High Season: Off Peak	**R1.1558**	**R1.3292**	**R1.0087**	**R1.1600**	
		(v)		Energy charge: High Season: Standard	**R2.1335**	**R2.4535**	**R1.8618**	**R2.1411**	

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		(vi)		Energy charge: High Season: Peak	**R5.1952**	**R5.9745**	**R4.5337**	**R5.2138**	
			Meters are read at least once after every 2 months. Estimated charges are raised in months where no meter readings are obtained and are adjusted when actual consumption is charged for. If estimated charges are applicable, this is calculated based on a six month prior billing daily average. A security deposit to cover at least 2.5 months' consumption is required						
				Any meter conversions relating to Tariff 9 shall be for the account of the applicant.					
				Deposit calculated on the required maximum demand, multiplied by the tariff, multiplied by 2.5					
	Where no consumer agreements exist, the registered owner/owners of the property concerned shall be responsible for a minimum monthly charge as defined in the tariffs 1 to 7 above								
	J	**TARIFF 10:**							
				TOU Industrial, Commercial and other customers with a notified maximum demand of less than 65kVa including shops, factories, hostels, boarding houses, restaurants, office buildings and residential buildings in which individual units are not separetely metered.					
		(i)		Basic Monthly charge	**R1,533.60**	**R1,763.64**	**R1,533.60**	**R1,763.64**	
				PLUS					
				A kilovolt ampere (kVA) charge as approved by the National Electricity Regulator from time to time, for kilovolt ampere (kVA) registered during the standard period on a standard Maximum Demand(MD) meter. A minimum monthly charge of 46kva will apply for any demand registered less than 46kva. Demand greater than 46kva will be charged according to the demand registered.	**R120.50**	**R138.57**	**R105.16**	**R120.93**	
				PLUS					
				an energy charge of:					
		(ii)		Energy charge: Off Peak	**R0.698**	**R0.802**	**R0.609**	**R0.700**	

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		(iii)		Energy charge: Standard	**R1.415**	**R1.627**	**R1.235**	**R1.420**	
		(iv)		Energy charge: Peak	**R4.482**	**R5.155**	**R3.912**	**R4.499**	
				Any meter conversions relating to Tariff 10 shall be for the account of the applicant.					
				Meters are read at least once after every 2 months. Estimated charges are raised in months where no meter readings are obtained and are adjusted when actual consumption is charged for. If estimated charges are applicable, this calculated based on a six month prior billing daily average. A security deposit to cover at least 2.5 months' consumption is required					
				Deposit calculated on the required maximum demand, multiplied by the tariff, multiplied by 2.5					
	K	**TARIFF 11:**							
				TOU : RESIDENTIAL					
		(i)		Basic Monthly charge	**R93.87**	**R107.96**	**R93.87**	**R107.96**	
				PLUS					
				an energy charge during the off peak/**Low demand period** as approved by the National Electricity Regulator from time to time					
		(i)		Energy charge: Off Peak	**R1.203**	**R1.383**	**R1.050**	**R1.207**	
		(ii)		Energy charge: Standard	**R1.625**	**R1.869**	**R1.418**	**R1.631**	
		(iii)		Energy charge: Peak	**R3.250**	**R3.738**	**R2.837**	**R3.262**	
				Any meter conversions relating to Tariff 11 shall be for the account of the applicant.					
				Meters are read at least once after every 2 months. Estimated charges are raised in months where no meter readings are obtained and are adjusted when actual consumption is charged for. If estimated charges are applicable, this is calculated based on a six month prior billing daily average. A security deposit to cover at least 2.5 months' consumption is required					
				Deposit calculated on the required maximum demand, multiplied by the tariff, multiplied by 2.5					

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X1.8	**ELECTRICITY AVAILABILITY CHARGE**								
		In respect of any approved subdivision, with or without improvements, which is not connected to the Council's electricity scheme and which can reasonably be so connected, the owner shall pay to the Council an electricity availability charge as stipulated hereunder, in accordance with the Electricity By-Laws Item 18(1) provided that							
	a)	No charge shall be made against any subdivision which exceeds 2 ha;							
	b)	No charge shall be made against any property complying with the requirements of Section 17 (1) (i) of the Municipal Property Rates Act, No 6 of 2004							
	c)	No charge shall be made against one subdivision which is used for bona fide gardening purposes in conjunction with an adjoining subdivision on which there is erected a dwelling house which is connected to the Council's electricity scheme, if such subdivision is owned by the same person or the spouse of the person who owns such dwelling house;							
	d)	In any area where no town planning scheme in terms of the Ordinance 27 of 1949 is in existence, the charge shall be levied as if such property is zoned for special residential use.							
	e)	Depending on the zoning of such subdivision in terms of any town planning scheme in force from time to time, the monthly charges per subdivision shall be as follows:							
		(I)	Irrespective of the zoning of the property there shall be payable a monthly charge of			**R122.61**	**R141.00**	**R115.50**	**R132.83**	
				If zoned for other purposes		**R122.61**	**R141.00**	**R115.50**	**R132.83**	
X1.9	**GENERAL PROVISIONS**								
	a)			**Notified maximum demand:**					
		(I)	Every existing consumer with an installed load in excess of 60 A shall, when called upon to do so, notify the Council in writing of the maximum which he requires the Council to supply.							
		(ii)	Every new consumer requiring a supply of electricity in excess of 60A single phase or 20A three-phase shall give three months prior written notice of his requirements; provided that the period of notice may be reduced at the discretion of the Engineer.							

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		(iii)	Every existing consumer who wishes to increase his installed load shall give the Council three months prior written notice of his requirements, provided that the period of notice may be reduced at the discretion of the Engineer.					
		(iv)	With effect from the date on which the Council is in a position to meet the notified requirements or the date stipulated in the notice given under paragraph (bb) or (cc), whichever is the later, the amperage charge or the maximum demand charge applicable to such consumer shall be adjusted accordingly.					
		(v)	In the event of the actual consumption of any consumer exceeding his notified maximum demand, the Engineer may call upon such consumer to negotiate an increased notified maximum demand in terms of this Bylaw. Should such consumer fail to notify the Board of his increased requirements within thirty (30) days of being called upon to do so, the Engineer, after inspection of the consumer's installation may notify the Town Treasurer of such increased notified maximum demand as should, in his opinion apply to such consumer for accounting purposes and the charges therefore shall be adjusted accordingly.					
	b)	**Bulk Supply Installation**						
		(I)	Where the joint requirements of any two or more consumers necessitate, in the opinion of the Engineer, the specific installation of one or more transformers together with associated switch gear , such consumers shall jointly be responsible for the cost of such installation, in proportion to their individual requirements.					
		(ii)	In designing such a bulk supply installation, as provided for under item (i) above, it shall be competent for the Council to install a transformer with a larger capacity than that called for by the applicant, provided that					
		(iii)	The amount payable by the Applicant shall be pro-rated accordingly : and Council shall have the right to use any such excess capacity for such other needs as it deems fit.					
		(iv)	In respect of all bulk installations the applicant shall be required to provide a chamber, to the Council's requirements, in which any such transformers, switch gear and equipment shall be accommodated.					

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		(v)	Where application is made for an increased supply and sufficient spare capacity exists on the transformer of greater capacity, the consumer shall in addition to the charges as provided for in these by-laws, be charged the pro-rata cost of the additional transformer capacity based upon the cost of a new transformer or Mini Sub Station of that capacity at that time, plus 10%.						
X1.10	**REDUNDANT STREETLIGHT POLES**								
	a)	Whole poles, as is, per meter				**R41.44**	**R47.65**	**R39.09**	**R44.96**	
				(Maximum of 60 meters per person)						
Z 1	**SURCHARGE**									
		The Council may, by resolution, in respect of all consumers enforce a surcharge by means of a percentage on the total of the various tariffs, provided that such surcharge shall at no time exceed 50 (fifty) percentum.								
				COMPILED BY :						
				T P GUMEDE						
				N SINGH						
				CHECKED BY:						

ANNEXURE 5

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	**KWADUKUZA MUNICIPALITY**
Licence number	**NER/D/KZ292**
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**	**NJ**	**Mdakane**	**032 437 5015**	**032 551 4274**	lindon@kwadukuza.gov.za
Chief Financial Officer:	**Mr**	**SM**	**Rajcoomar**	**032 437 5505**	**032 551 4274**	Shamirr@kwadukuza.gov.za
Contact Person:	**Mrs**	**C**	**Moodley**	**032 437 5573**	**032 551 4274**	Cindym@kwadukuza.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:	848,985,461	789,156,099	744,424,801	630,318,190	674,809,144 kWh	554,753,164 kWh	60,011	**Sign here and include the date:**
Chief Financial Officer:	848,985,461	789,156,099	744,424,801	630,318,190	674,809,144 kWh	554,753,164 kWh	60,011	**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 %
93%	85%	17.79%	2%

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	**KWADUKUZA MUNICIPALITY**
Licence number	**NER/D/KZ292**
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**	**P**	**Murugan**	**0790223746**	**0865062318**	poobalanm@kwadukuza.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 Complete the following:

Capital Employed		**Actual 2018/19**
Funds & reserves		0
Statutory funds	0	
Reserves	0	
(Accumulated deficit) Retained surplus		631,330,952
Trust funds		0
Long-term liabilities		199,339,202
Consumer deposits		33,500,617
Total		864,170,771
		864,170,771

Employment of Capital - Electricity Distribution Account			**Actual 2018/19**
Fixed assets			577,867,811
Buildings & other fixed assets		0	
Electricity distribution network and equipment		577,867,811	
Other (please specify below):			0
Type here		0	
Type here		0	
Type here		0	
Investments			0
Long-term debtors			0
Deferred charges			0
Total			577,867,811
NET CURRENT ASSETS / LIABILITIES			286,302,960

Current Assets		**Actual 2018/19**
Inventory		4,811,229
Debtors (a) + (b)		103,570,768
Less than 90 days (a)	88,114,049	
90 days or more (b)	15,456,719	
Cash		226,375,671
Short-term investments		53,102,739
Short-term portion of long-term debtors		0
Total		387,860,407

Current Liabilities	**Actual 2018/19**
Provisions	3,193,196
Creditors: Eskom	76,111,913
Creditors: Other	15,244,800
Short-term portion of long-term liabilities	7,007,538
Bank overdraft	0
Total	101,557,447
	864,170,771

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	KWADUKUZA MUNICIPALITY
Licence number	NER/D/KZ292
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulatory Reporting Specialist) dforms@nersa.org.za (012) 401-4600
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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**	**P**	**Murugan**	**0790223746**	**0865062346**	**Poobalanm@kwadukuza.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	Completed
Expenditure section	Completed	Completed

REVENUE:

Revenue from sale of electricity to the following consumers:	Actual 2018/19	Budget 2019/20
Domestic (pre-paid)	113,155,828	127,866,085
Domestic (conventional)	209,311,751	236,522,278
Agriculture	Type here	Type here
Mining & quarrying	Type here	Type here
Manufacturing / Industrial	Type here	Type here
Commercial (pre-paid)	26,319,720	29,741,284
Commercial (conventional)	430,243,058	486,174,655
Transport	Type here	Type here
Redistributors/Resellers	Type here	Type here
Other consumers (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
Total	779,030,356	880,304,302

Revenue from street lighting & sold to other municipal departments	Actual 2018/19	Budget 2019/20
Street lighting	8,106,244	9,160,055
Sold to other municipal departments	2,019,499	2,282,034
Total	10,125,742	11,442,089

Other income	Actual 2018/19	Budget 2019/20
Reconnection fees	753,762	317,700
New connections	5,121,666	5,428,966
Free Basic Electricity(Equitable share)	17,350,000	20,777,863
Other revenue (Please specify below)	36,603,935	26,880,175
Interest on investments	15,947,772	9,286,452
Demand based contribution	15,932,241	12,266,401
Sundry Income	4,723,922	5,327,322
6.	Type here	Type here
Other income	59,829,363	53,404,704

Summary Stats (for office use)		
Total Income	**Actual 2018/19**	**Budget 2019/20**
	848,985,461	945,151,095
Surplus	**104,560,660**	**45,945,800**

EXPENSES:

Electricity Purchases from:	Actual 2018/19	Budget 2019/20
Eskom	630,318,190	737,000,000
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	630,318,190	737,000,000

Repairs, Maintenance and Salaries	Actual 2018/19	Budget 2019/20
Repairs and Maintenance:	15,352,312	24,275,257
1. Salaries and allowances	0	Type here
2. Materials and supplies	7,824,074	12,277,025
3. Contracted Services	7,528,238	11,998,232
Salaries, wages and allowances including payments to consultants		
1. Salaries, wages and allowances (Excl. Repairs and Maintenance)	44,203,793	57,565,814
2. Payments to consultants (operational work)	Type here	Type here
Total	59,556,105	81,841,071

Financial Costs	Actual 2018/19	Budget 2019/20
Interest		
Total	0	0

Notified Maximum Demand Costs	Actual 2018/19	Budget 2019/20
NMD Costs	170,612	Type here
Total	170,612	0

Other Expenses	Actual 2018/19	Budget 2019/20
Bad debts	768,760	6,972,476
FBE paid to Eskom	9,252,988	20,777,863
Charges from other Municipal Departments	Type here	Type here
General Expenses (please specify below) (Group into 6-main categories)	44,358,146	52,613,885
1.Depreciation	22,113,233	27,891,821
2.Collection Costs (commision on electricity vending)	7,514,493	Type here
3.interest	14,730,420	9,600,000
4.		15,122,064
5.	Type here	Type here
6.	Type here	Type here
Total	54,379,894	80,364,224

	Actual 2018/19	**Budget 2019/20**
Total Expenditure	744,424,801	899,205,295

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	**KWADUKUZA MUNICIPALITY**
Licence number	**NER/D/KZ292**
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
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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:	**Ms**	**N**	**Singh**	**0844080571**	**0865062318**	**nisharas@kwadukuza.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	3,745,494	4,120,043	674,809,144	742,290,059	29	R/kVA/month	29	R/kVA/month	93.41 c/kWh	99.29 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	3,745,494	4,120,043	674,809,144 kWh	742,290,059 kWh	29	R/kVA/month	29	R/kVA/month	93.40688328 c/kWh	99.28733267 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	9,299	9,299	10,229	8,296,542	9,126,196	10,038,816	kWh				
Domestic (pre-paid)	46,830	46,830	51,513	78,301,215	86,131,337	94,744,471	kWh	144.51	148.45		
Domestic (conventional)	10,814	10,814	11,895	124,323,584	136,755,942	150,431,537	kWh	168.36	172.95		
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)	475	523	575	17,729,029	19,501,932	21,452,125	kWh	148.46	152.50		
Commercial (conventional)	1,841	2,025	2,228	333,417,335	366,759,069	403,434,976	kWh	129.04	132.56		
Transport	Type here	Type here	Type here	Type here	Type here	Type here	kWh				
Other consumers	Type here	Type here	Type here	Type here	Type here	Type here	kWh				
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				Type here	Type here	Type here	kWh				
Sold to other municipal departments	51	56	62	982,001	1,080,201	1,188,221	kWh	205.65	211.26		
Total	60,011	60,248	66,272	554,753,164 kWh	610,228,481 kWh	671,251,329	kWh	142.25	146.13		

System factors	Actual 2018/19	Budget 2019/20
Average system load factor	65	71
Average system power factor	Type here	Type here
Energy losses kWh	17.79%	17.79%

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	**KWADUKUZA MUNICIPALITY**
Licence number	**NER/D/KZ292**
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**	**SM**	**Jali**	**0324375087**	**0867338189**	**SibusisoJ@kwadukuza.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	**6**	Type here
Skilled Labour	**17**	**12**
Unskilled Labour	**49**	**3**
Trainees	**0**	**0**
Total staff	72	15
Vacancies	**61**	**1**

Grand total	**149**

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 KWADUKUZA MUNICIPALITY
Licence number NER/D/KZ292
Enquiries: Veli Mahlangu (Senior Statistician)
Thilivhali Nthakheni (Financial Regulatory Reporting Specialist)
dforms@nersa.org.za
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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:	Ms	N	Singh	084080571	0865062318	nisharas@kwadukuza.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	
Industrial Low Voltage	1	0	1	5.1	720	102,841,068 kWh	173,354,619	Type here	Type here	173,354,619	Type here	%
Domestic/ Sectional titles	2	0	2	5.1	225	22,766,493 kWh	37,135,804	Type here	Type here	37,135,804	Type here	%
Commercial conventional	3	6	4	5.1	1,061	21,501,464 kWh	37,034,467	Type here	Type here	37,034,467	Type here	%
Domestic customers conventional	4 (1a)	0	1	5.1	10,347	100,645,649 kWh	170,943,705	Type here	Type here	170,943,705	Type here	%
Domestic Conventional Indigent	4 (1b)	0	1	5.1	242	911,442 kWh	1,232,242	Type here	Type here	1,232,242	Type here	%
Domestic Religious org	5	0	1	5.1	52	491,811 kWh	892,740	Type here	Type here	892,740	Type here	%
Street lighting	6	4	1	5.1	33	3,082,107 kWh	8,106,244	Type here	Type here	8,106,244	Type here	%
Industrial >1000 kva - Sappi by agreement	7 (aa)	6	5	5.1	1	134,542,795 kWh	130,589,668	Type here	Type here	130,589,668	Type here	%
Industrial Medium-Commercial >1000 kva	7 (bb)	6	5	5.1	1	555,266 kWh	1,063,739	Type here	Type here	1,063,739	Type here	%
Prepaid domestic indigent	8a	0	1	5.1	9,057	7,385,100 kWh	7,876,948	Type here	Type here	7,876,948	Type here	%
Prepaid domestic low	8a	0	1	5.1	37,773	70,916,115 kWh	105,278,880	Type here	Type here	105,278,880	Type here	%
Prepaid Commercial	8b	6	4	5.1	475	17,729,029 kWh	26,319,720	Type here	Type here	26,319,720	Type here	%
Non STD Industrial	9	6	6	5.1	21	71,085,595 kWh	88,977,936	Type here	Type here	88,977,936	Type here	%
Industrial, Commercial & Other <65 kva	10	6	5	5.1	3	299,229 kWh	349,388	Type here	Type here	349,388	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					**60,011**	**554,753,163** kWh	**789,156,099**	**0**	**0**	**789,156,099**		

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	**KWADUKUZA MUNICIPALITY**
Licence number	**NER/D/KZ292**
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulatory Reporting Specialist) dforms@nersa.org.za (012) 401-4600
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Municipal Manager:	**Mr**	**NJ**	**Mdakane**	**032 437 5015**	**032 551 4274**	lindon@kwadukuza.gov.za
Chief Financial Officer:	**Mr**	**SM**	**Rajcoomar**	**032 437 5505**	**032 551 4274**	Shamirr@kwadukuza.gov.za
Contact Person:	**Mrs**	**C**	**Moodley**	**032 437 5573**	**032 551 4274**	Cindym@kwadukuza.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:	921,588,959	843,825,834	849,168,702	716,028,548	655,647,276 kWh	518,350,108 kWh	61,705	**Sign here and include the date:**
Chief Financial Officer:	921,588,959	843,825,834	849,168,702	716,028,548	655,647,276 kWh	518,350,108 kWh	61,705	**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 %
92%	84%	20.94%	3%

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	**KWADUKUZA MUNICIPALITY**
Licence number	**NER/D/KZ292**
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**	**P**	**Murugan**	**0790223746**	**0865062318**	poobalanm@kwadukuza.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 Complete the following:

Capital Employed		Actual 2019/20
Funds & reserves		**0**
Statutory funds	Type here	
Reserves	Type here	
(Accumulated deficit) Retained surplus		**940,181,583**
Trust funds		Type here
Long-term liabilities		**131,135,609**
Consumer deposits		**35,326,269**
Total		**1,106,643,461**

1,106,643,461

Employment of Capital - Electricity Distribution Account			Actual 2019/20
Fixed assets			**632,613,898**
Buildings & other fixed assets		**93,698,940**	
Electricity distribution network and equipment		**538,914,958**	
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			**632,613,898**

NET CURRENT ASSETS / LIABILITIES			**474,029,563**

Current Assets		Actual 2019/20
Inventory		**3,757,098**
Debtors (a) + (b)		**117,070,102**
Less than 90 days (a)	**101,828,213**	
90 days or more (b)	**15,241,889**	
Cash		**386,073,610**
Short-term investments		**86,339,806**
Short-term portion of long-term debtors		Type here
Total		**593,240,616**

Current Liabilities	Actual 2019/20
Provisions	**19,684,694**
Creditors: Eskom	**91,920,362**
Creditors: Other	Type here
Short-term portion of long-term liabilities	**7,605,997**
Bank overdraft	Type here
Total	**119,211,053**

1,106,643,461

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	**KWADUKUZA MUNICIPALITY**
Licence number	**NER/D/KZ292**
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**	**P**	**Murugan**	**0790223746**	**0865062318**	**poobalanm@kwadukuza.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:

	Actual	Budget
Your check list	**2019/20**	**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)	126,425,214	126,425,214
Domestic (conventional)	228,708,653	228,708,653
Agriculture	Type here	Type here
Mining & quarrying	Type here	Type here
Manufacturing / Industrial	Type here	Type here
Commercial (pre-paid)	13,284,702	14,111,011
Commercial (conventional)	462,174,648	526,888,926
Transport	Type here	Type here
Redistributors/Resellers	Type here	Type here
Other consumers (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
Total	830,593,218	896,133,804

Revenue from street lighting & sold to other municipal departments	Actual 2019/20	Budget 2020/21
Street lighting	3,151,936	3,347,986
Sold to other municipal departments	10,080,681	10,080,681
Total	13,232,617	13,428,667

Other Income	Actual 2019/20	Budget 2020/21
Reconnection fees	387,348	500,004
New connections	4,523,945	4,795,381
Free Basic Electricity(Equitable share)	9,433,863	14,110,200
Other revenue (Please specify below)	63,417,969	54,829,332
Interest on investments	26,128,848	17,632,368
Demand based contribution	13,484,249	15,247,716
Sundry Income	4,898,576	2,499,996
Electricity Basic Charges	18,906,296	19,449,252
5.	Type here	Type here
6.	Type here	Type here
Other Income	77,763,125	74,234,917

Summary Stats (for office use)		
Total Income	**Actual 2019/20**	**Budget 2020/21**
	921,588,959	983,797,388
Surplus	**72,420,257**	**34,569,106**

EXPENSES:

Electricity Purchases from:	Actual 2019/20	Budget 2020/21
Eskom	716,028,548	783,288,000
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	716,028,548	783,288,000

Repairs, Maintenance and Salaries	Actual 2019/20	Budget 2020/21
Repairs and Maintenance:	26,995,957	37,968,674
1. Salaries and allowances	Type here	Type here
2. Materials and supplies	7,014,763	12,425,714
3. Contracted Services	19,981,194	25,542,960
Salaries, wages and allowances including payments to consultants		
1. Salaries, wages and allowances (Excl. Repairs and Maintenance)	52,292,138	53,444,076
2. Payments to consultants (operational work)	0	0
Total	79,288,095	91,412,750

Financial Costs	Actual 2019/20	Budget 2020/21
Interest	14,193,474	20,234,892
Total	14,193,474	20,234,892

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	1,423,074	2,107,152
FBE paid to Eskom	9,412,371	9,882,990
Charges from other Municipal Departments	Type here	Type here
General Expenses (please specify below) (Group into 6-main categories)	28,823,140	42,302,499
Depreciation	22,497,446	34,302,495
Collection Costs (commission on electricity vending)	6,325,694	8,000,004
		0
		0
		0
6.	Type here	Type here
Total	39,658,585	54,292,641

	Actual 2019/20	**Budget 2020/21**
Total Expenditure	849,168,702	949,228,283

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	**KWADUKUZA MUNICIPALITY**
Licence number	**NER/D/KZ292**
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulato 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:	**Ms**	**N**	**Singh**	**0844080571**	**0865062318**	**nisharas@kwadukuza.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 2019/20	Budget 2020/21	Actual 2019/20	Budget 2020/21	Actual 2019/20		Budget 2020/21		Actual 2019/20	Budget 2020/21
Eskom	4,386,478	4,825,126	655,647,276	721,212,004	34	R/kVA/month	Type here	R/kVA/month	109.21 c/kWh	108.61 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	4,386,478	4,825,126	655,647,276 kWh	721,212,004 kWh	34	R/kVA/month	-	R/kVA/month	109.209414 c/kWh	108.6071774 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	8,210	9,031	9,934	7,203,742	7,924,116	8,716,528	kWh				
Domestic (pre-paid)	48,572	51,001	53,551	77,923,591	81,819,771	85,910,759	kWh	162.24	154.52		
Domestic (conventional)	10,632	11,164	11,722	119,444,205	125,416,415	131,687,236	kWh	191.48	182.36		
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)	486	535	588	7,912,835	8,704,119	9,574,530	kWh	167.89	162.12		
Commercial (conventional)	1,891	2,080	2,288	311,321,719	342,453,891	376,699,280	kWh	148.46	153.86		
Transport	Type here	Type here	Type here	Type here	Type here	Type here	kWh				
Other consumers	Type here	Type here	Type here	Type here	Type here	Type here	kWh				
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				Type here	Type here	Type here	kWh				
Sold to other municipal departments	124	130	137	1,747,758	1,835,146	1,926,903	kWh	576.78	549.31		
Total	61,705	64,909	68,285	518,350,108 kWh	560,229,342 kWh	605,798,709 kWh		162.79	162.36		

System factors	Actual 2019/20	Budget 2020/21
Average system load factor	63	66
Average system power factor	Type here	Type here
Energy losses kWh	20.94%	22.32%

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	**KWADUKUZA MUNICIPALITY**
Licence number	**NER/D/KZ292**
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**	**SM**	**Jali**	**0324375087**	**0867338189**	**SibusisoJ@kwadukuza.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	**7**	Type here
Skilled Labour	**28**	**1**
Unskilled Labour	**33**	**7**
Trainees	**4**	Type here
Total staff	72	8
Vacancies	**67**	**3**

Grand total	**150**

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	**KWADUKUZA MUNICIPALITY**
Licence number	**NER/D/KZ292**
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulatory Reporting Specialist) dforms@nersa.org.za (012) 401-4600
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1. On the NERSA website:	www.nersa.org.za
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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:	**Ms**	**N**	**Singh**	**0844080571**	**0865062318**	**nisharas@kwadukuza.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	
Industrial Low Voltage	1	0	1	5.1	848	88,333,017 kWh	179,074,100	Type here	Type here	179,074,100	Type here	%
Domestic/ Sectional titles	2	0	2	5.1	213	20,271,671 kWh	38,623,771	Type here	Type here	38,623,771	Type here	%
Commercial conventional	3	6	4	5.1	1,043	19,660,624 kWh	37,899,954	Type here	Type here	37,899,954	Type here	%
Domestic customers conventional	4 (1a)	0	1	5.1	10,235	98,676,867 kWh	189,189,444	Type here	Type here	189,189,444	Type here	%
Domestic Conventional Indigent	4 (1b)	0	1	5.1	184	495,667 kWh	895,439	Type here	Type here	895,439	Type here	%
Domestic Religious org	5	0	1	5.1	53	464,126 kWh	959,323	Type here	Type here	959,323	Type here	%
Street lighting	6	4	1	5.1	39	2,299,081 kWh	3,151,936	Type here	Type here	3,151,936	Type here	%
Industrial >1000 kva - Sappi by agreement	7 (aa)	6	5	5.1	1	127,774,106 kWh	146,195,465	Type here	Type here	146,195,465	Type here	%
Prepaid domestic indigent	8 (i)	0	1	5.1	8,026	6,708,075 kWh	6,862,894	Type here	Type here	6,862,894	Type here	%
Prepaid domestic low	8 (iii)	0	1	5.1	40,546	71,215,516 kWh	119,562,320	Type here	Type here	119,562,320	Type here	%
Prepaid Commercial	8 (iv)	6	4	5.1	486	7,912,835 kWh	13,284,702	Type here	Type here	13,284,702	Type here	%
Non STD Industrial	9	6	6	5.1	27	74,192,041 kWh	107,475,810	Type here	Type here	107,475,810	Type here	%
Industrial, Commercial & Other <65 kva	10	6	5	5.1	4	346,484 kWh	650,678	Type here	Type here	650,678	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					**61,705**	**518,350,109** kWh	**843,825,834**	**0**	**0**	**843,825,834**		

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	**KWADUKUZA MUNICIPALITY**
Licence number	**NER/D/KZ292**
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Chief Financial Officer:	**Mr**	**SM**	**Rajcoomar**	**032 437 5505**	**032 551 4274**	Shamirr@kwadukuza.gov.za
Contact Person:	**Mrs**	**C**	**Moodley**	**032 437 5573**	**032 551 4274**	Cindym@kwadukuza.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:	929,944,913	874,907,738	903,668,189	767,317,204	661,912,957 kWh	519,967,035 kWh	63,802	**Sign here and include the date:**
Chief Financial Officer:	929,944,913	874,907,738	903,668,189	767,317,204	661,912,957 kWh	519,967,035 kWh	63,802	**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 %
94%	85%	21.44%	3%

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	**KWADUKUZA MUNICIPALITY**
Licence number	**NER/D/KZ292**
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**	**P**	**Murugan**	**0790223746**	**0865062318**	poobalanm@kwadukuza.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 Complete the following:

Capital Employed		Actual 2020/21
Funds & reserves		**0**
Statutory funds	Type here	
Reserves	Type here	
(Accumulated deficit) Retained surplus		**828,980,980**
Trust funds		**0**
Long-term liabilities		**122,979,157**
Consumer deposits		**36,991,209**
Total		**988,951,346**

988,951,346

Employment of Capital - Electricity Distribution Account			Actual 2020/21
Fixed assets			**598,273,899**
Buildings & other fixed assets		**53,266,956**	
Electricity distribution network and equipment		**545,006,943**	
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			**598,273,899**

NET CURRENT ASSETS / LIABILITIES		**390,677,447**

Current Assets		Actual 2020/21
Inventory		**8,142,629**
Debtors (a) + (b)		**113,289,743**
Less than 90 days (a)	**104,892,551**	
90 days or more (b)	**8,397,192**	
Cash		**334,095,735**
Short-term investments		**60,228,952**
Short-term portion of long-term debtors		Type here
Total		**515,757,059**

Current Liabilities	Actual 2020/21
Provisions	**22,047,165**
Creditors: Eskom	**90,726,024**
Creditors: Other	**4,149,971**
Short-term portion of long-term liabilities	**8,156,452**
Bank overdraft	Type here
Total	**125,079,612**

988,951,346

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	**KWADUKUZA MUNICIPALITY**
Licence number	**NER/D/KZ292**
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: 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**	**P**	**Murugan**	**0790223746**	**0865062318**	**poobalanm@kwadukuza.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**	**Completed**
Expenditure section	**Completed**	**Completed**

REVENUE:

Revenue from sale of electricity to the following consumers:	**Actual 2020/21**	**Budget 2021/22**
Domestic (pre-paid)	**132,855,679**	**152,239,322**
Domestic (conventional)	**245,534,342**	**281,357,803**
Agriculture	**Type here**	**Type here**
Mining & quarrying	**Type here**	**Type here**
Manufacturing / Industrial	**Type here**	**Type here**
Commercial (pre-paid)	**13,903,753**	**15,932,311**
Commercial (conventional)	**469,474,663**	**537,971,016**
Transport	**Type here**	**Type here**
Redistributors/Resellers	**Type here**	**Type here**
Other consumers (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**
Total	**861,768,438**	**987,500,453**

Revenue from street lighting & sold to other municipal departments	**Actual 2020/21**	**Budget 2021/22**
Street lighting	**1,758,193**	**2,014,713**
Sold to other municipal departments	**11,381,107**	**13,041,611**
Total	**13,139,300**	**15,056,324**

Other Income	**Actual 2020/21**	**Budget 2021/22**
Reconnection fees	**1,156,672**	**850,000**
New connections	**643,748**	**800,000**
Free Basic Electricity(Equitable share)	**7,841,800**	**4,000,000**
Other revenue (Please specify below)	**45,394,955**	**49,008,991**
Demand based contributions	**10,754,685**	**16,485,102**
Electricity basic charges	**19,424,221**	**19,449,252**
Meter tampering fees	**2,544,290**	**1,500,000**
Interest on Investments	**11,781,370**	**10,809,637**
Sundry Income	**890,389**	**765,000**
6.	**Type here**	**Type here**
Other Income	**55,037,175**	**54,658,991**

Summary Stats (for office use)		
Total Income	**Actual 2020/21**	**Budget 2021/22**
	929,944,913	1,057,215,768
Surplus	**26,276,724**	**760,985**

EXPENSES:

Electricity Purchases from:	**Actual 2020/21**	**Budget 2021/22**
Eskom	**767,317,204**	**887,793,351**
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	**767,317,204**	**887,793,351**

Repairs, Maintenance and Salaries	**Actual 2020/21**	**Budget 2021/22**
Repairs and Maintenance:	**28,812,873**	**34,393,889**
1. Salaries and allowances	**Type here**	**Type here**
2. Materials and supplies	**4,251,188**	**6,149,988**
3. Contracted Services	**24,561,684**	**28,243,901**
Salaries, wages and allowances including payments to consultants		
1. Salaries, wages and allowances (Excl. Repairs and Maintenance)	**48,831,696**	**56,277,283**
2. Payments to consultants (operational work)	**Type here**	**Type here**
Total	**77,644,569**	**90,671,172**

Financial Costs	**Actual 2020/21**	**Budget 2021/22**
Interest	**13,056,582**	**17,086,640**
Total	**13,056,582**	**17,086,640**

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	**729,188**	**2,275,724**
FBE paid to Eskom	**951,281**	**1,300,000**
Charges from other Municipal Departments	**Type here**	**Type here**
General Expenses (please specify below) (Group into 6-main categories)	**43,969,365**	**57,327,896**
Depreciation	**22,799,051**	**32,569,543**
Collection costs - Contour	**6,391,187**	**7,280,004**
Replacement of faulty meters	**1,338,378**	**2,620,800**
External audit fees	**3,778,471**	**2,311,783**
Insurance Expenses	**1,267,263**	**1,641,049**
Other general expenses	**8,395,014**	**10,904,717**
Total	**45,649,834**	**60,903,620**

	Actual 2020/21	**Budget 2021/22**
Total Expenditure	903,668,189	1,056,454,783

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	**KWADUKUZA MUNICIPALITY**
Licence number	**NER/D/KZ292**
Enquiries:	Veli Mahlangu (Senior Statistician) Thilivhali Nthakheni (Financial Regulato 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**	**012401710**	**012401700**	dforms@nersa.org.za
Contact Person:	**Ms**	**N**	**Singh**	**0844080571**	**0865062318**	**nisharas@kwadukuza.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	4,567,929	5,024,722	661,912,957	728,104,253	36	R/kVA/month	39	R/kVA/month	115.92 c/kWh	121.93 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	4,567,929	5,024,722	661,912,957 kWh	728,104,253 kWh	36	R/kVA/month	39	R/kVA/month	115.9241855 c/kWh	121.9321749 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	9,237	10,161	11,177	7,263,352	7,989,687	8,788,656	kWh				
Domestic (pre-paid)	50,411	55,452	60,997	80,198,280	88,218,108	97,039,919	kWh	165.66	172.57		
Domestic (conventional)	10,810	11,891	13,080	127,231,550	139,954,705	153,950,175	kWh	192.98	201.03		
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)	627	690	759	8,199,487	9,019,435	9,921,379	kWh	169.57	176.64		
Commercial (conventional)	1,809	1,990	2,189	300,944,379	331,038,817	364,142,698	kWh	156.00	162.51		
Transport	Type here	Type here	Type here	Type here	Type here	Type here	kWh				
Other consumers	Type here	Type here	Type here	Type here	Type here	Type here	kWh				
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				Type here	Type here	Type here	kWh				
Sold to other municipal departments	145	160	175	3,393,340	3,732,673	4,105,941	kWh	335.40	349.39		
Total	63,802	70,182	77,200	519,967,035 kWh	571,963,738 kWh	629,160,112	kWh	168.26	175.28		

System factors	Actual 2020/21	Budget 2021/22
Average system load factor	63	70
Average system power factor	Type here	Type here
Energy losses kWh	21.44%	21.44%

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	**KWADUKUZA MUNICIPALITY**
Licence number	**NER/D/KZ292**
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**	**SM**	**Jali**	**0324375087**	**0867338189**	**SibusisoJ@kwadukuza.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	**7**	**Type here**
Skilled Labour	**28**	**1**
Unskilled Labour	**33**	**7**
Trainees	**4**	**Type here**
Total staff	72	8
Vacancies	**67**	**3**

Grand total	**150**

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	**KWADUKUZA MUNICIPALITY**
Licence number	**NER/D/KZ292**
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**
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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:	**Ms**	**n**	**Singh**	**0844080571**	**0865062318**	**nisharas@kwadukuza.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	
Industrial Low Voltage	1	0	1	5.1	807	78,872,791 kWh	169,424,998	Type here	Type here	169,424,998	Type here	%
Domestic/ Sectional titles	2	0	2	5.1	216	23,816,971.40 kWh	46,781,694	Type here	Type here	46,781,694	Type here	%
Commercial conventional	3	6	4	5.1	1,033	18,371,815 kWh	38,417,068	Type here	Type here	38,417,068	Type here	%
Domestic customers conv	4 (1a)	0	1	5.1	10,357	102,554,126 kWh	197,441,287	Type here	Type here	197,441,287	Type here	%
Domestic Conventional In	4 (1b)	0	1	5.1	237	860,452 kWh	1,311,361	Type here	Type here	1,311,361	Type here	%
Domestic Religious org	5	0	1	5.1	51	410,468 kWh	900,700	Type here	Type here	900,700	Type here	%
Street lighting	6	4	1	5.1	23	751,553 kWh	1,758,193	Type here	Type here	1,758,193	Type here	%
Industrial >1000 kva - Sap	7 (aa)	6	5	5.1	1	126,548,419 kWh	151,371,583	Type here	Type here	151,371,583	Type here	%
Prepaid domestic indigent	8 (i)	0	1	5.1	9,000	6,402,900 kWh	7,721,897	Type here	Type here	7,721,897	Type here	%
Prepaid domestic low	8 (iii)	0	1	5.1	41,411	73,795,380 kWh	125,133,781	Type here	Type here	125,133,781	Type here	%
Prepaid Commercial	8 (iv)	6	4	5.1	627	8,199,487 kWh	13,903,753	Type here	Type here	13,903,753	Type here	%
Non STD Industrial	9	6	6	5.1	35	79,054,534 kWh	120,086,664	Type here	Type here	120,086,664	Type here	%
Industrial, Commercial & (	10	6	5	5.1	4	328,138 kWh	654,758	Type here	Type here	654,758	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	%
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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	%
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	%
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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	%
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					**63,802**	**519,967,035** kWh	**874,907,738**	**0**	**0**	**874,907,738**		