Distribution System Operating Code

Version 6.1

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This document is approved by the National Energy Regulator of South Africa (NERSA)

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Table of Contents

1. OBJECTIVE 4

2. SCOPE OF APPLICATION 4

3. OPERATIONAL RESPONSIBILITIES OF *DISTRIBUTORS* 4

4. OPERATIONAL RESPONSIBILITIES OF *EMBEDDED GENERATORS* AND OTHER *CUSTOMERS* 5

5. OPERATIONAL AUTHORITY 6

6. OPERATING PROCEDURES 6

7. OPERATIONAL LIAISON 7

8. EMERGENCY AND CONTINGENCY PLANNING 7

9. OPERATION DURING *ABNORMAL CONDITIONS* 8

10. INDEPENDENT ACTIONS BY PARTICIPANTS 9

11. DEMAND AND VOLTAGE CONTROL 9

12. FAULT REPORTING AND ANALYSIS/INCIDENT INVESTIGATION 10

13. DISTRIBUTOR MAINTENANCE PROGRAM 11

14. TESTING AND MONITORING 11

15. SAFETY CO-ORDINATION 11

16. DISCONNECTION AND RECONNECTION 12

17. COMMISSIONING AND CONNECTION 12

18. OUTAGE SCHEDULING AND CO-ORDINATION 13

18.1 RESPONSIBILITIES OF THE *DISTRIBUTOR* 13
18.2 RISK-RELATED OUTAGES 14
18.3 COMMUNICATION OF SYSTEM CONDITIONS, OPERATIONAL INFORMATION AND *DISTRIBUTION SYSTEM* PERFORMANCE 14
18.4 UNPLANNED INTERRUPTIONS OR OUTAGES 14
18.5 REFUSAL/CANCELLATION OF OUTAGES 15
18.6 PLANNED INTERRUPTIONS OR OUTAGES 15

19. TELECONTROL 15

1. Objective

(1) To set out the responsibilities and roles of the *participants* as far as the operation of the *Distribution System* is concerned and more specifically issues related to:

(a) economic operation, *reliability* and security of the *Distribution System*

(b) operational authority, communication and contingency planning of the *Distribution System*

(c) management of power quality

(d) operation of the *Distribution System* under normal and abnormal conditions

(e) field operation, maintenance and maintenance coordination/ outage planning

(f) safety of personnel and public

2. Scope of Application

(1) The *Distribution System Operating Code* shall apply to all *Users* of the *Distribution System* including:

(a) Distributors

(b) Embedded Generators

(c) Generators

(d) *End-use customers*

(e) *Traders / Retailers*

(f) Resellers

(g) Any other entities with equipment connected to the *Distribution System* (for example *transmission national service providers (TNSPs))*

(h) System Operator (SO)

3. Operational Responsibilities of *Distributors*

(1) The *Distributor* shall operate the *Distribution System* to achieve the highest degree of reliability and shall promptly take appropriate remedial action to relieve any condition that may jeopardise reliability.

(2) The *Distributor* shall co-ordinate voltage control, demand control, operating on the *Distribution System* and security monitoring in order to ensure safe, reliable, and economic operation of the *Distribution System*.

(3) In the event of an *embedded generator* having to shutdown or *island* plant because of a disturbance on the *Distribution network*, the *Distributor* shall carry out network restoration to minimise the time required to resynchronise the shed embedded generating *units*.

(4) Ensuring that the availability and reliability of every power station supply is maximised at all times under normal and abnormal conditions

(5) The *Distributor* may shed *customer* load to maintain system integrity. Following such action, *customer* load shall be restored as soon as possible after restoring and maintaining system integrity.

(6) The *Distributor* shall operate the *Distribution System* as far as practical so that instability, uncontrolled separation or cascading outages do not occur.

(7) The *Distributor* is responsible for efficient restoration of the *Distribution System* after *supply interruptions.* The restoration plans shall be prioritised in accordance with customer requirements and as described in *NRS 047*.

(8) The *Distributor* shall ensure it has sufficient *resources* to continuously monitor and operate the *Distribution System*.

(9) The *Distributor* shall establish and implement operating instructions, procedures, standards and guidelines to cover the operation of the *Distribution System* under normal and abnormal system conditions.

(10) The *Distributor* shall operate the *Distribution System* within defined technical standards and equipment operational ratings.

(11) The *Distributor* shall ensure adequate and reliable communications to all major users of the *Distribution System*. Communication with all *customers* shall be provided in terms of *NERSA* license requirement.

4. Operational Responsibilities of *Embedded Generators* and Other *Customers*

(1) When conditions on the *Distribution System,* under normal or abnormal conditions, become such that it may jeopardise plant or personnel of *customers, customers* shall immediately disconnect from the *Distribution Syste*m.

(2) The *Embedded Generator* shall ensure that its *generating units* are operated within the capabilities defined in the *Connection Agreement* entered into with the *Distributor*.

(3) The *Embedded Generator* shall reasonably cooperate with the *Distributor* in executing all the operational activities during an emergency generation condition.

(4) *Customers* shall assist the *Distributors* in correcting *quality of supply* problems caused by the *Customer's* equipment connected to the *Distribution System*.

(5) *Customers* shall at all times operate their equipment in such a manner to ensure that they comply with the conditions specified in their supply agreement.

(6) All customers must declare any generating plant except for Embedded Generators that may be paralleled with the Distribution network via switching, and specify the interlocking mechanism to prevent inadvertent parallel operation with the Distributor network.

(7) *Embedded generators* shall have the required protection to trip in the event of a momentary supply loss causing an island condition to prevent paralleling out of synchronism due to auto-reclose functionality on the *Distributor's* network.

5. Operational Authority

(1) The *Distributor* shall have the authority to instruct operating on the *Distribution System*. Operational authority for other networks shall lie with the respective asset owners.

(2) Network control, as it affects the interface between the *Distributor* and a *customer*, shall be in accordance with the *operating agreements* between the *participants*.

(3) Except where otherwise stated in this code, no *participant* shall be permitted to operate the equipment of another without the permission of such other *participant*. In such an event the asset owner shall have the right to test and authorise the relevant operating staff in accordance with its own standards before such permission is granted.

(4) Notwithstanding the provisions of section 3 of this code, *participants* shall retain the right to safeguard their own equipment.

6. Operating Procedures

(1) The *Distributor* shall develop and maintain operating procedures for the safe operating of the *Distribution System*, and for assets connected to the *Distribution System*. These operating procedures shall be adhered to by *participants* when operating equipment on the *Distribution System* or connected to the *Distribution System*.

(2) Each *customer* shall be responsible for his own safety rules and procedures at least in compliance with the relevant safety legislation. *Customers* shall ensure that these rules and procedures are compatible with the *Distributor* developed procedures defined in paragraph 6 (1) above.

(3) *Customers* and service providers shall enter into operating agreements where not included in the supply agreement, as defined in the *service provider* licenses.

7. Operational Liaison

(1) The *Distributor* shall be responsible for ensuring adequate operational liaison with connected *participants*.

(2) The *participants* shall appoint competent personnel to operate their network and where needed shall establish direct communication channels amongst themselves to ensure the flow of operational information between the *participants*.

(3) If any *participant* experiences an emergency, the *Distributor* may call upon other *participants* to assist to an extent as may be necessary to ensure that such emergency does not jeopardise the integrity of the *Distribution System*.

(4) Pursuant to 7(3) above, the relevant *participant* shall ensure that the emergency notification contain sufficient details in describing the event including the cause, timing and recording of the event to assist the *Distributor* in assessing the risk and implications to the *Distribution System* and all the affected *Customers'* equipment.

(5) For planned events, which have an identified operational effect on the Distribution System, or on *Customers'* equipment connected to the *Distribution System*, the relevant *participant* shall notify the *Distributor*.

(6) Where it is possible for a *customer* to *parallel supply points* or transfer load or *embedded generation* from one *point of supply* to another by performing switching operations on the *customer's* network, the *operating agreement* shall cover at least the operational communication, notice period requirements and switching procedures for such operations.

(7) The *Distributor* and *customers* shall agree on the busbar configuration(s) at each point of supply during normal and emergency conditions. The *Distributor* and *customers* shall agree on the busbar configuration(s) at each *point of supply* during normal and emergency conditions. The *Distributor* shall keep updated records of such agreements.

8. Emergency and Contingency Planning

(1) The *Distributor* shall develop and maintain emergency and contingency plans to manage the system contingencies and emergencies that affect the delivery of the *Distribution System* and the Interconnected Power System. Such plans shall be developed in consultation with all affected *participants*, and shall be consistent with internationally acceptable practices, and shall include but not be limited to:

(a) under-frequency load shedding

(b) Prevention of voltage slide and collapse

(c) meeting any national disaster management requirements including the necessary minimum load requirements
(d) forced outages at any point of connection
(e) restoration and continuation of supply to every power station during normal and abnormal conditions is to be classified as a high priority
(f) supply restoration.

(2) Emergency plans shall enable the safe and orderly recovery from a partial or complete system collapse, with minimum impact on *customers*.
(3) All contingency and emergency plans shall be reviewed biennially or in accordance with changes in network conditions.
(4) All contingency and emergency plans shall be verified by audits, if possible by using onsite inspections and actual tests. In the event of such tests causing undue risk or undue cost to a participant, the *Distributor* shall take such risks or costs into consideration when deciding whether to conduct the tests. Any tests shall be carried out at a time that is least disruptive to the *participants*. The costs of these tests shall be borne by the respective asset owners. The *Distributor* shall ensure the co-ordination of the tests in consultation with all affected *participants*.
(5) The *Distributor* shall, in consultation with the *NTC* and *SO*, set the requirements and implement:
(a) Automatic and manual under frequency load shedding in accordance with the *System Operator's* requirements.
(b) Automatic and manual under voltage load shedding to prevent voltage collapse.
(c) Manual load shedding to maintain network integrity.

(6) *Participants* shall make available loads and schemes to comply with these requirements.
(7) The *Distributor* shall be responsible for determining emergency operational limits on the *Distribution System*, updating these periodically and making these available to the *participants*.
(8) The *Distributor* shall conduct network studies which may include but not be limited to load flow, fault *level,* stability and resonance studies to determine the effect that various component failures would have on the reliability of the *Distribution System*.

9. Operation during *Abnormal Conditions*

(1) During *abnormal operating conditions* the *Distributor* shall be obliged to take necessary precautionary measures to prevent network disturbances from spreading and to restore supply to *consumers*.

(2) The *Distributor* shall cooperate with the *SO* and *TNSP* in taking corrective measures in the event of abnormal conditions on the *Distribution System*. The corrective measures shall include both supply-side and demand-side options. Where possible, warnings shall be issued by the *Distributor* to affected *participants* on expected utilisation of any contingency resources.

(3) The *Distributor* shall be entitled to disrupt some sections of the network in the event of a prolonged disturbance resulting from unsuccessful corrective measures undertaken.

(4) Termination of the use of emergency resources shall occur as the order of return being determined by the most critical loads, first in terms of safety and then plant.

(5) During emergencies that require load shedding, the request to shed load shall be initiated in accordance with procedures prepared by the *Distributor*.

10. Independent Actions by Participants

(1) Each *participant* shall have the right to reduce supply or demand, or disconnect a *point of connection* under emergency conditions, if such action is necessary for the protection of life or equipment and shall give advance notice of such action where possible.

11. Demand and Voltage Control

(1) The *Distributor* shall implement demand control measures when:
   (a) Instructed to by the *SO*
   (b) Abnormal conditions exist on the *Distribution System*,
   (c) Multiple outage contingency exists resulting in *island* grid operation
   (d) Any other operational event the *Distributor* deems to warrant the implementation of demand control measures for the safe operation of the *Distribution System*.

(2) Demand control shall include but not limited to:
   (a) *Customer* demand management
   (b) Automatic under-frequency load shedding
   (c) Automatic under-voltage load shedding
   (d) Emergency manual load shedding
   (e) Voluntary load curtailment

(3) The *Distributor* shall develop load reduction procedures, which shall be regularly updated, to reduce load in a controlled manner taking cognisance of the type of load.

(4) *The Distributor* shall endeavour to maintain system voltage to be within statutory limits at the *points of supply* or otherwise as agreed in the operating / supply agreement**.**

12. Fault Reporting and Analysis/Incident Investigation

(1) The *end-use customers* and *Embedded Generators* shall report the loss of major loads or *generation* (as agreed by the *participants*) to the *Distributor* within 15 minutes of the event occurring. Notice of the intention to reconnect such shall be given with at least 15 minutes advance notice to enable the *Distributor* to take any necessary action required.

(2) The *Distributor* shall investigate all incidents that materially affected the quality of supply to another *participant*. The *Distributor* shall initiate and co-ordinate such an investigation and make available the findings of such investigation to affected *participants* on request.

(3) The findings of such an investigation shall include where relevant:

(a) Date and time of the incident

(b) Location of the incident

(c) Duration of the incident

(d) Equipment involved

(e) Cause of the incident in compliance with *NRS048*.

(f) Demand control measures undertaken specifically recording the customer MWs shed and energy lost as a result of the measures taken.

(g) Supply restoration details.

(h) *Embedded Generation* interrupted

(i) Under-frequency Load Shedding response

(j) Estimated date and time of return to normal service

(k) *Customer* load tripped MW and energy lost when incident occurred or as a direct result of incident not including any Demand Control Measures taken

(l) Estimate number of *customers* having lost supply.

(m) Recommendations

(4) Any *participant* shall have a right to request an independent audit of the findings, at its own cost. If these audit findings disagree with the original findings, the *participant* may follow the dispute resolution mechanism as specified in the *Governance Code*.

13. Distributor Maintenance Program

(1) Each *Distributor* shall have a maintenance philosophy against which their maintenance practices and programs are compiled and documented in accordance with *NRS082*. These documented maintenance programs must be auditable.

(2) The *Distributor* shall compile at least an annual maintenance plan in line with the budget period.

(3) Accurate records of maintenance done shall be kept for a period of at least 5 years.

(4) Scheduling of planned outages should coincide with the maintenance requirements of other *participants* connected to the affected network.

(5) All participants that may be affected by the planned outages will be informed at least 2 days or 48 hours in advance.

14. Testing and Monitoring

(1) A *participant* has the right to request to test and / or monitor any equipment at the p*oint of connection* to the *Distribution System* to ensure that the *participants* are not operating outside the technical parameters specified in any part of the *Distribution Grid Code* and other applicable standards which the *participants* are required to comply with. Such testing and / or monitoring shall be carried out as mutually agreed by the *parties*.

(2) A *participant* found to be operating outside the technical parameters shall, within such time agreed upon by the parties involved, remedy the situation or disconnect from its network the equipment causing problems.

(3) Any dispute arising out of the test and monitoring process shall be resolved through the *dispute resolution* mechanism in the *Governance Code*.

15. Safety Co-ordination

(1) The *Distributor* shall comply with relevant legislation and develop Operating Regulations to ensure safety of personnel whilst operating on the *Distribution System* or any equipment connected to the *Distribution System*.

(2) Where operational boundaries exist, there shall be a joint agreement on operating procedures to be complied with by all affected *participants*.

(3) There shall be written authorisation of personnel who operate on or work on live equipment forming part of or connected to the *Distribution System*.

(4) The “Operating Regulations” referred to in section 15 (1) of this code shall include rules and regulations for the safe operating of plant, continuity of supply and authorisation of personnel related to the operating of *HV*, *MV* and *LV* equipment.

16. Disconnection and Reconnection

(1) The *Distributor* may disconnect supply to the ***customer's*** supply address if the *customer* fails to comply with the written notice of non-compliance issued by the *Distributor* or any arrangement entered into by the *Distributor* and the *customer* which the *customer* has failed to comply with including non-compliance with the *Distributor* applicable standards.

(2) The *Distributor* shall have the right to interrupt or disconnect supply if a threat of injury or material damage is anticipated as a result of the malfunctioning of the electrical installation equipment on the ***Customer's*** premises or on the *Distribution System.*

(3) The *Distributor* may disconnect immediately without notice the supply to the ***customer's*** supply address if:

(a) The supply of electricity to a *customer* is used anywhere else other than at the ***customer's*** premises as specified in the *connection agreement*.

(b) A *customer* takes at the ***customer's*** supply address electricity supplied to another *customer*.

(c) A *customer* is tampering with or permits tampering with the meter and associated components.

(d) A *customer* allows electricity supply to bypass the meter without the ***Distributor's*** consent.

(4) *Customer* (connected at *MV* and *HV* levels) shall give written notice to the *Distributors* of any intended voluntary disconnection.

(5) The *Distributor* shall reconnect supply to the *customer* on request by the customer or retailer on behalf of the *customer* subject to compliance with the relevant provisions of the *Distribution Code* and other *Distributor* applicable standards including the timing of reconnection and any reconnection charge imposed by the *Distributor*.

17. Commissioning and connection

(1) *MV* and *HV customers* shall supply commissioning programmes to the *Distributor* control and operating facility at least 1 month in advance. Subsequently, a notice of first connection shall be given to the *Distributor* control and operating facility at least 2 weeks before actual

connection. Details of the information required shall include but not be limited to the following:

(a) Commissioning procedures and programmes
(b) Documents and drawings required
(c) Proof of compliance with standards
(d) Documentary proof of the completion of all required tests
(e) SCADA information, to be available and tested before commissioning
(f) Site responsibilities and authorities.

(2) When commissioning equipment at the point of connection, the *Distributor* shall liaise with the affected participants on all aspects that could potentially affect their operation.

(3) The *Distributor* and *customers* shall perform all commissioning tests required in order to confirm that the *Distributor's* and the *customers'* plant and equipment meet all the requirements of the *Distribution Code* before being connected to and energised from the *Distribution* system.

18. Outage scheduling and co-ordination

18.1 Responsibilities of the *Distributor*

(1) *Distributors* shall, with reference to the relevant network *Service Providers* outage plans and relevant *Generators* outage programs, compile the daily outage schedule which shall:

(a) endeavour to cater for the planned maintenance and commissioning of new equipment
(b) describe the planned outage
(c) identifies the risks and impact on network performance in accordance with NRS 047
(d) describe the practical contingency plans devised to counter risks, and
(e) define the roles and responsibilities of the personnel designated to manage and minimise the impact of these outages on the *Distribution System* and its users.

(2) Not withstanding clause 18.1 (1) above, the *Distributor* shall co-ordinate relevant outages with the *SO.*

(3) In addition to paragraph 18.1 (1) above, the *Distributor* may require information from the *Customers* regarding major plant and associated equipment which may affect the performance of the *Distribution System* and may require additional resources to be committed during the outage planning process.

(4) *Customers* with co-generation and *Embedded Generators* with the maximum capacity greater than 1MW shall furnish to the *Distributor* information on *planned outages* in order for the *Distributor* to properly plan, and coordinate its control, maintenance and operation activities.

(5) The *Distribution* outage schedule shall be submitted to the *NERS*A upon request.

18.2 Risk-related Outages

(1) All risk-related outages shall be scheduled with an executable contingency plan in place. The compilation of the contingency plan is the responsibility of the relevant *Distributor*.

(2) Contingency plans shall address:

(a) Safety of personnel

(b) Security and rating of equipment

(c) Continuity of supply

(3) The relevant control centres shall confirm that it is possible to execute the contingency plan successfully.

18.3 Communication of System Conditions, Operational Information and *Distribution System* Performance

(1) The *Distributor* shall be responsible for providing *participants* with operational information as may be agreed from time to time. This shall include information regarding *planned* and *forced outages* on the *Distributor*.

(2) The *Distributor* shall inform *participants* of any network condition that is likely to impact the short and long-term operation of that *participant*.

(3) The *Distributor* shall record operational information as specified in the *Information Exchange Code*. This information shall be made available to all *participants* on request.

18.4 Unplanned Interruptions or Outages

(1) In case of unplanned interruptions or *outages* the *Distributor* may require a *customer* to comply with reasonable and appropriate instructions from the *Distributors* and may further:

(a) Require the *customer* to provide the *Distributor* emergency access to *customer* owned distribution equipment normally operated by the *Distributor* or *Distributor* owned equipment on *customer's* property.
(b) Interrupt supply to the *customer* to effect repairs to the *Distribution System*.

(2) Subsequent to clause 18.4 (1), the *Distributor* shall make arrangements to keep customers informed about the expected duration and other details following unplanned interruptions.

18.5 Refusal/Cancellation of Outages

(1) No *participant* may unreasonably refuse an outage request. No *participant* may unreasonably postpone or cancel a previously accepted outage.
(2) The direct costs related to the cancellation/postponement of an outage shall be borne by the respective asset owners.

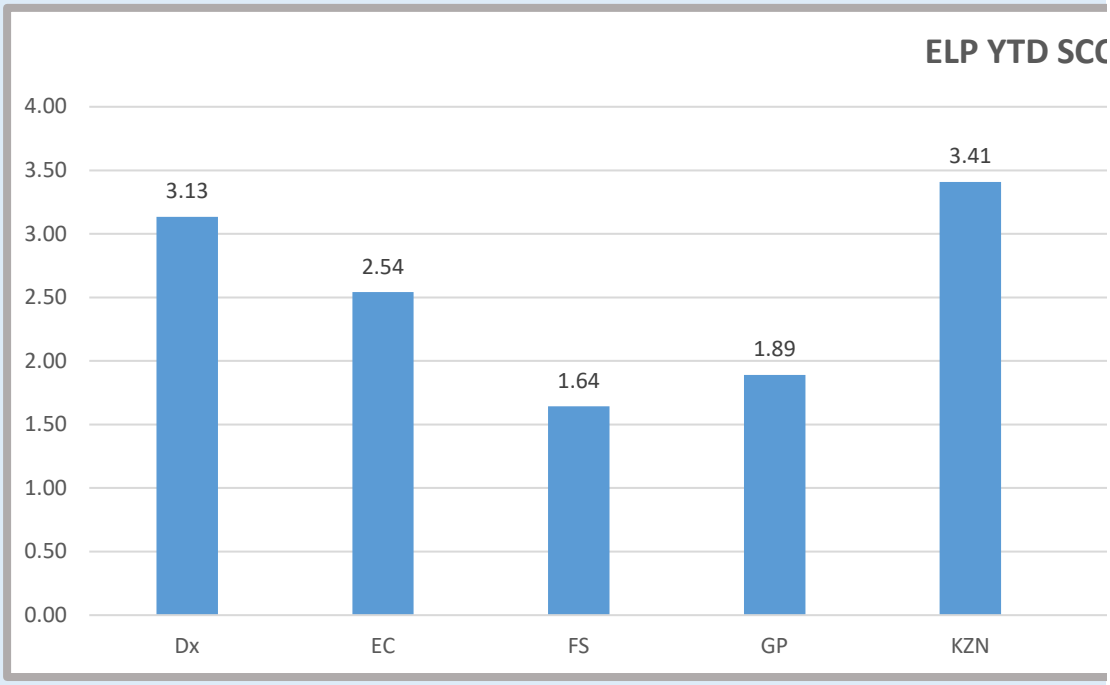
18.6 Planned Interruptions or Outages

(1) For planned interruptions or outages the *Distributor* shall act in accordance with *NRS047* and provide the affected *Customers* with information relating to the expected date of the outage, time and duration of the outage and shall established reasonable means of communication to the *Customers* for outage related enquiries.

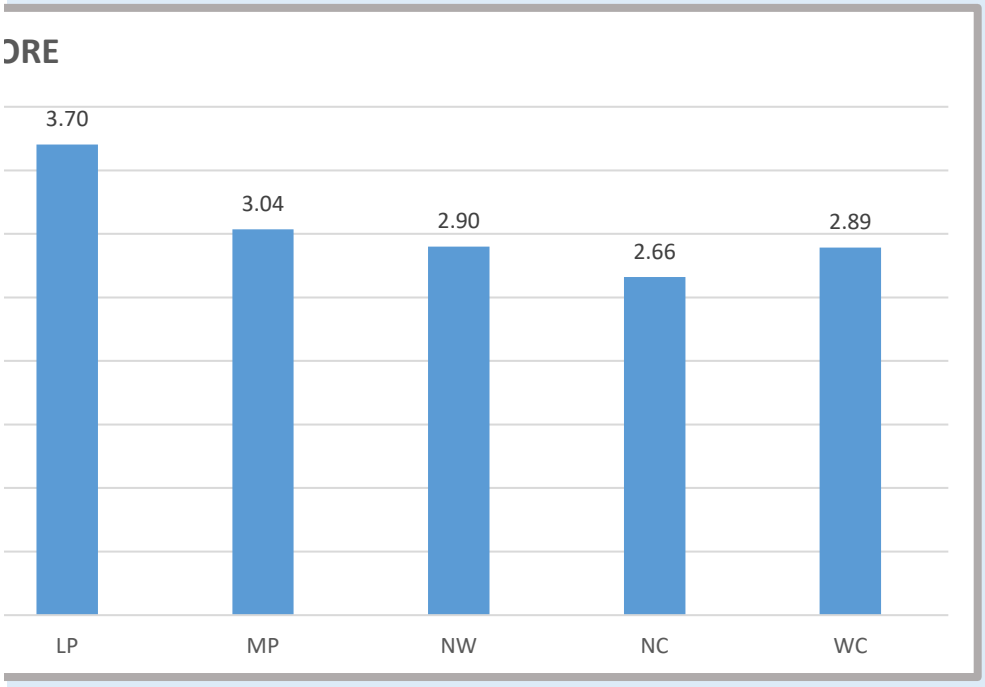
19. Telecontrol

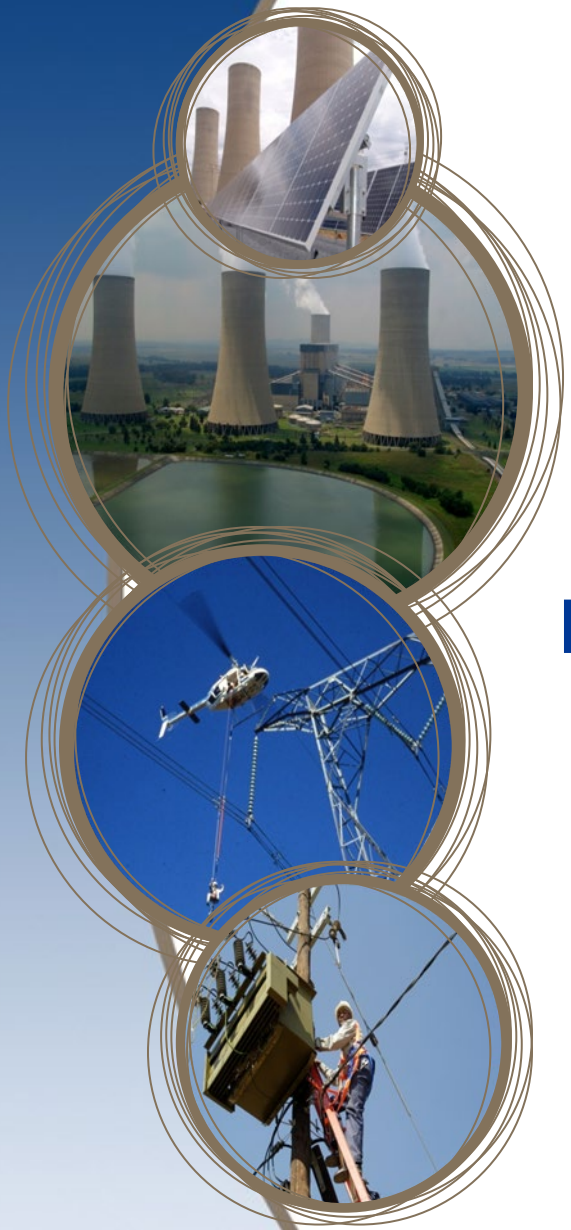
(1) Where Telecontrol facilities are shared between the *Distributor* and other *participants*, the *Distributor* shall ensure that operating procedures are established in consultation with the *participants*.

KPA	YTD Score	Dx	EC	FS
Total Losses	Total Losses GWh YTD	1.00	1.00	1.00
Revenue Recovery (R'm)	LPU & SPU Billed	4.44	5.00	2.14
	LPU & SPU Paid	2.28	5.00	1.04
	PPU Tamper Fines Paid	5.00	1.19	5.00
Stopped Losses	LPU & SPU	3.71	1.32	1.33
	PPU	1.12	1.00	1.21
TOTAL SCORE		3.13	2.54	1.64

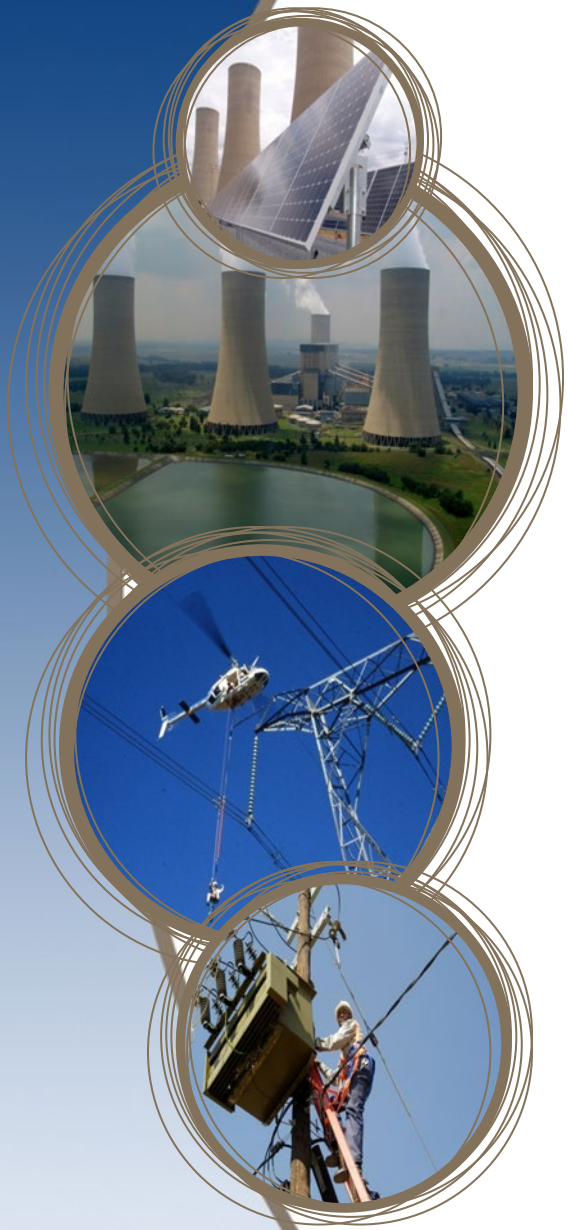


GP	KZN	LP	MP	NW	NC	WC
1.70	1.00	1.00	1.58	1.00	1.00	1.00
2.66	4.51	5.00	2.66	3.02	1.19	5.00
2.41	2.41	2.52	2.54	1.53	1.06	2.33
5.00	1.24	5.00	4.16	1.73	5.00	5.00
1.01	5.00	5.00	5.00	5.00	5.00	2.30
1.00	1.19	1.03	1.00	1.02	3.37	1.07
1.89	3.41	3.70	3.04	2.90	2.66	2.89



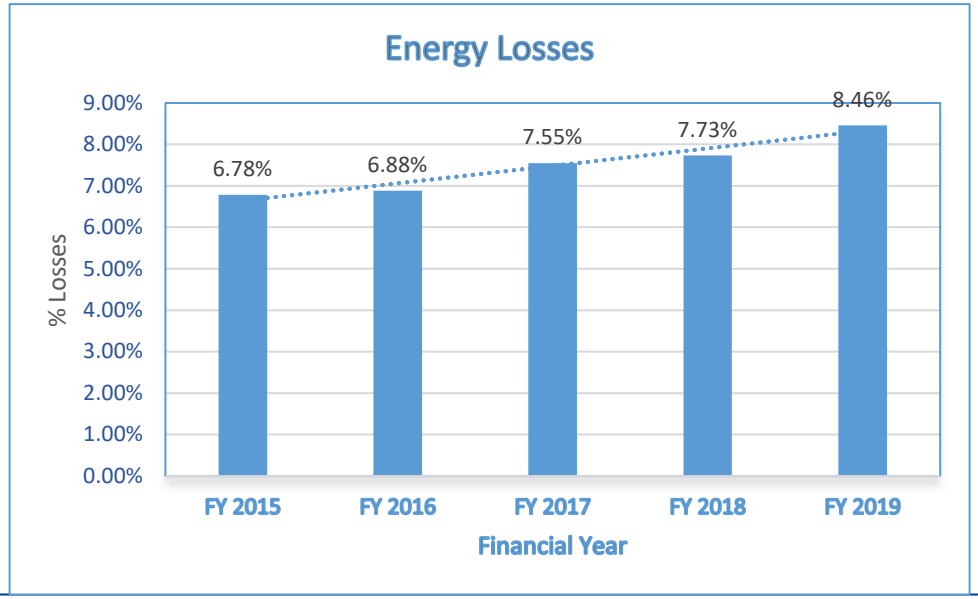


Energy Losses Management Strategy



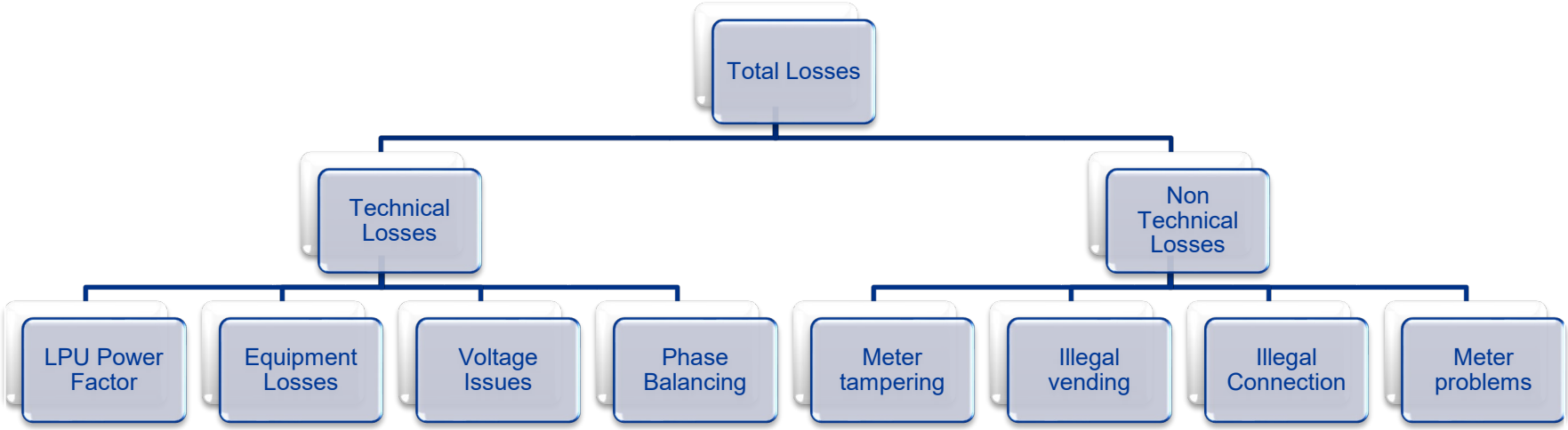
Total Losses

Eskom Distribution Total Losses History



- Over the past five years (2015 -2019) Distribution Energy Losses grew from just below 6,78 % to 8.46%. The growth in distribution energy losses can be explained by:
  - Increasing number of customers supplied at lower voltages (mainly due to electrification), while sales to the HV customers reduced significantly
  - Harsh economic conditions leading to potential high levels of electricity theft such as illegal connections and meter tampering
  - Ghost Vending and
  - Rogue Meters.
- The Trend line is indicating that Energy Losses at Distribution are increase – an unconventional strategies have to be implemented to reduce the energy Losses

Total Energy Losses



- Technical Losses are an inherent consequence of the operation of any electrical network and arise as power flows through equipment such as cables, overhead lines and transformers and other substation equipment that we use to transfer electricity – they can not be eliminated.
- Recent studies are indicating that Eskom Distribution Losses split between technical and non-technical losses of the 8.46 is 2.73 Technical Losses :5.73 Non technical Losses:
- and the ratio 30:70 (30 being technical and non-technical being 70%).
- Further details of the segmentation of the losses.
- **More focus should be on Non Technical Losses**

Please Note: The above number is the average between 8 OUs for Technical Losses.

Purchases Verification at MTSs

Dialing Tx Meters (Short Term)

- No meters on Dx feeders at MTSs
- DAS to dial into the Tx metering
- Manage the estimations - no data
- Store the data in the Dx MV90 system
- Use Data Analytics

MTS Balancing (Med Term)

- Link Customers to MTSs (Extension Of FBM)
- MTS Balancing Progress

Meter Installation (Long Term)

- Installation meters on all Dx feeders at the MTSs
- Shared MTS Immediate Need metering

Other Initiatives

OU's Purchases and Losses sign-off

- Enforcing accountability to the OU's

Sales Verification

- Metered vs Billed Data
  - OU collaboration led to the exception to drop to 104

Losses by Consumption

- Evaluate Losses using interval metering

Weekly Reports – Purchases and Losses

- Monitoring Purchases weekly
- Weekly Purchases sign-off by OUs

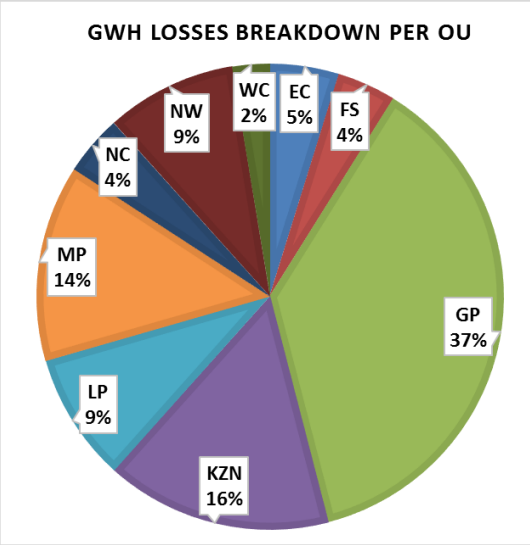
Target Setting Options

1	Bottom-up Approach	Consolidate Dx above target
2	% Approach	Inconsistency in volume reduction
3	Volume Approach	All OU's share the required reduction

	Mar '19	BUSINESS	FORECAST
Sales	196 411	196 187	197 489
Losses	18 187	15 806	15 910
Purch	214 598	211 992	213 399
Dx Wheeling	164	164	164
% Losses	8.47%	7.45%	7.45%
Losses Reduction		**2 381**	**2 276**

Principle and process of chosen option – Vol Approach

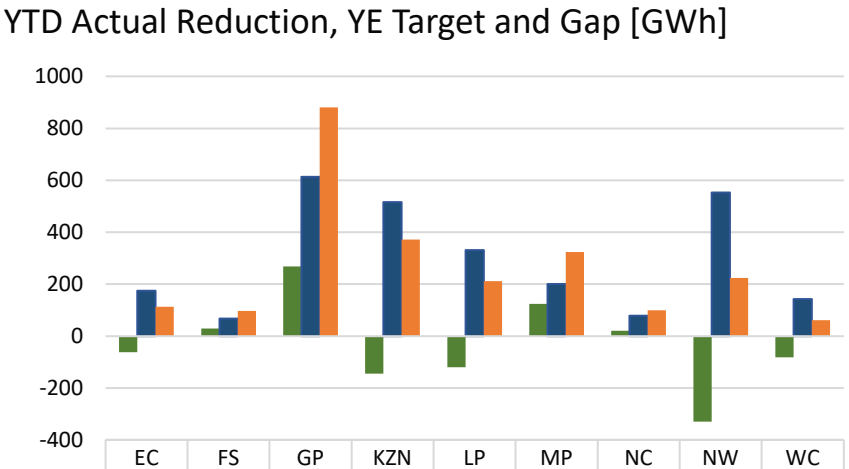
- Volume approach
- No OU is exempted
- Dx target is 7.45%



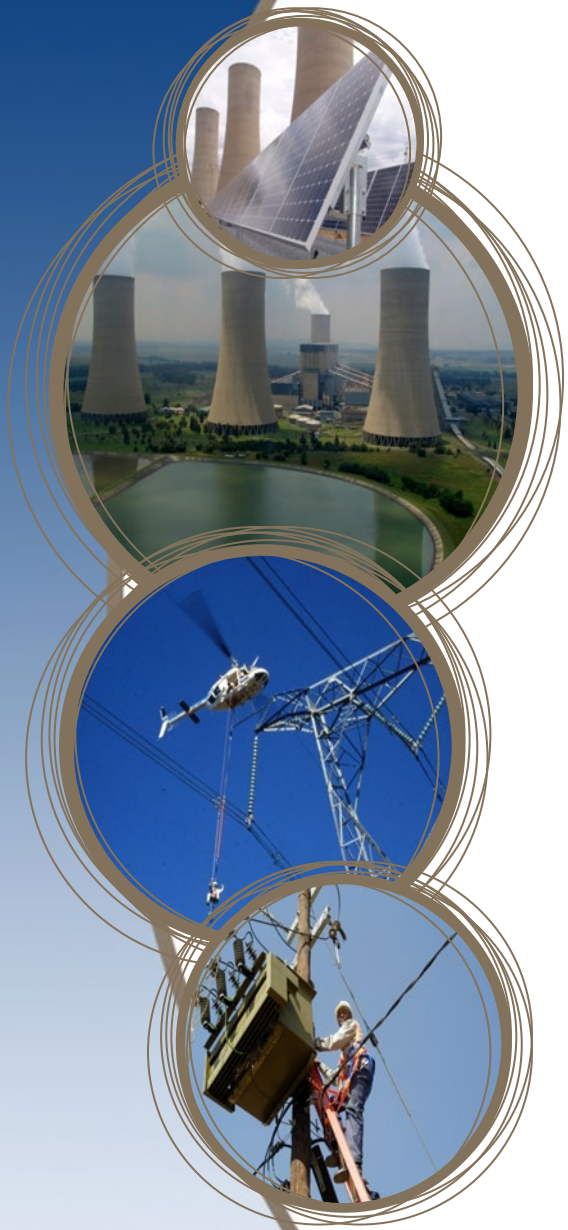
1. Calculate the GWh losses for 7.45%

$$L = \frac{\%L \times S}{(1-\%L)} \qquad \%L = \frac{L}{L+S}$$

2. Evaluate the % contribution for each OU to 2019/20 YE results
3. Apportion the total Dx (from1)
   a) According to the above split
   b) According to the gap to target



	EC	FS	GP	KZN	LP	MP	NC	NW	WC
Actual Reduction	-62	29	268	-144	-120	124	20	-330	-81
Gap to YE	175	68	613	516	331	200	79	554	143
YE Target	113	97	881	372	211	324	99	223	61



Technical Losses

Technical Loses Management Strategies

Power Factor Correction

- A low Power Factor contributes towards high distribution losses.
- Power Factor Correction device has to be installed
- LPUs with low power factor than contractor has to be penalized.

Replacement of failed and old equipment

- Replacement with higher power rating can greatly reduce losses.
- Load analysis predicting likely load on the cable, conductor or transformer is necessary to determine which will be the most efficient one.
- A predictive maintenance program can be used to decide when replacing a piece of equipment might be the most feasible

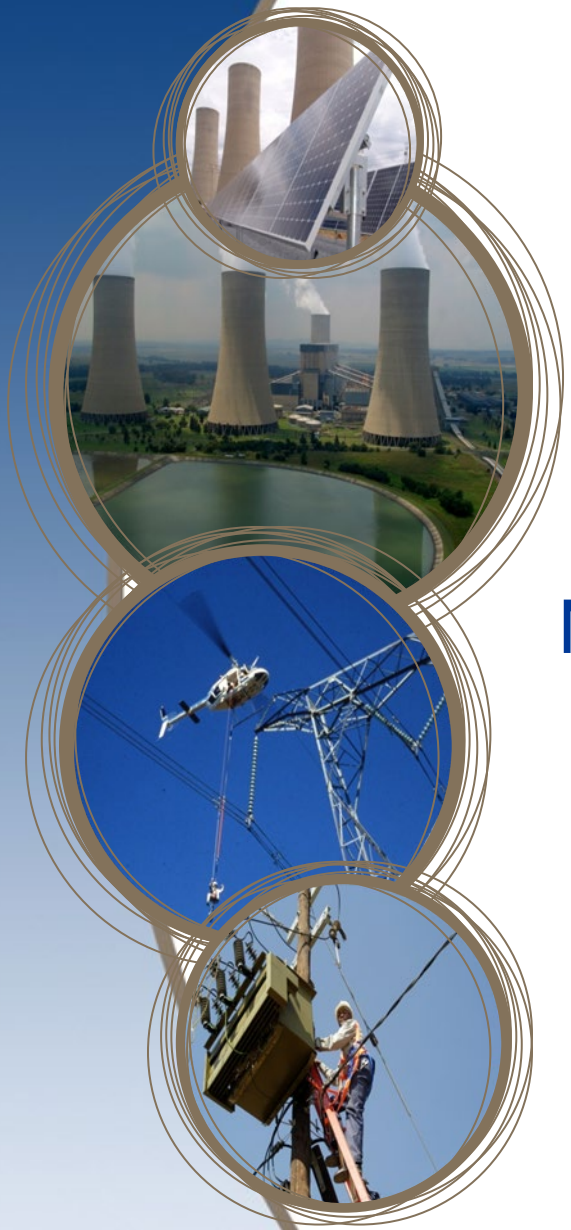
Voltage Balancing

- Voltage Regulators Installation - carefully re-adjusting voltage levels in a network it may be possible to reduce the current flow in parts of the network, decreasing the total resistive loss in the system.
- By installing or adjusting capacitor banks, the percentage of reactive load on the system can be decreased, reducing losses of real power

Phase Balancing

- Balancing the current delivered through each phase line can reduce the total losses in the line

- Most of the have mentioned strategies are funding dependent – Feasibility studies has to be done.
- New designs to factor the technical losses.
- Installation of Statistics Meters



Non-Technical Losses

% Non-Technical Losses Breakdown

	% Technical Losses	% Non-Technical Losses (70%)		
		% LPU Losses	% SPU Losses	% PPU Losses
DX	30%	1.53%	28.45%	70.02%
ECOU*	30%	-	43.32%	56.68%
FSOU	30%	27.59%	23.54%	48.87%
GOU**	30%	30.8%	29.56%	39.63%
KZNOU	30%	1.87%	11.98%	86.16%
LOU***	30%	-	14.64%	85.36%
MPOU	30%	24.89%	18.62%	56.49%
NWOU	30%	5.91%	33.46%	60.64%
NCOU****	30%	72.58%	14.23%	13.19%
WCOU*****	30%	-	26.2%	73.8%

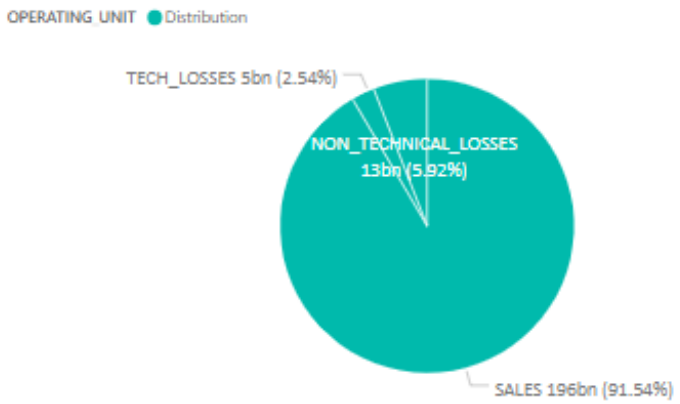
Technical losses is assumed as 30% of total losses. To be substituted with actuals on receipt
*ECOU % SPU losses inconclusive due to lack of representative sample of predominantly SPU fdrs
**GOU % PPU losses inconclusive owing to primary plant failure in areas with high loss PPU fdrs
***Limpopo losses lower than sum of components
****NC % PPU losses inconclusive due to lack of representative sample of predominantly PPU fdrs
*****WC losses significantly lower than sum of components

Dx Total Losses Breakdown

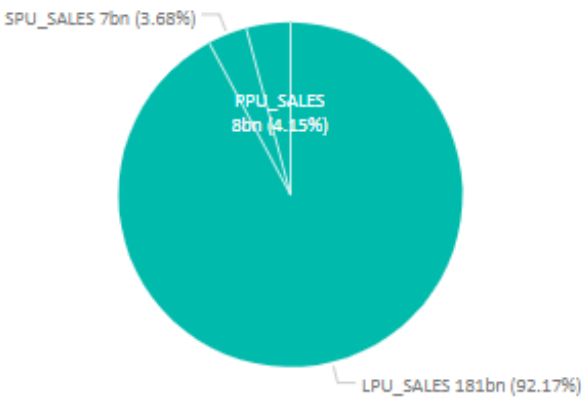
OPERATING_UNIT

Distribution

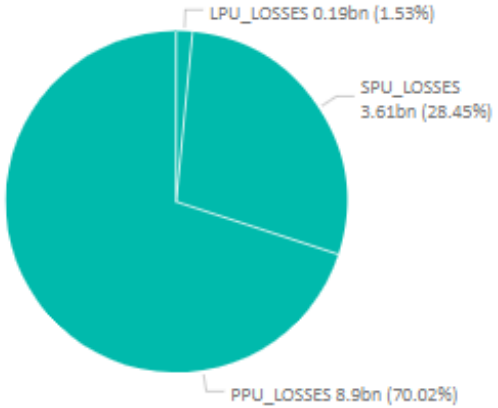
SALES, TECH_LOSSES and NON_TECHNICAL_LOSSES by OPERATING_UNIT



LPU_SALES, SPU_SALES and PPU_SALES by OPERATING_UNIT



LPU_LOSSES, SPU_LOSSES and PPU_LOSSES by OPERATING_UNIT



Non-Technical Losses - LPU strategy

- Resolution of risks at individual premise level
  - Interval MOTS
  - Interval no consumption
  - Terminated SP's advancing
  - SP no consumption
  - SP without meters
- Identification and resolution of new risks
  - Metered vs billed
  - Recorders not billed
- Recovery of unbilled energy (revenue)
- Conversion of all manual metering into interval metering for all LPUs, where possible (i.e. no comms/technology issues)
- Weekly/Monthly progress reports

Non Interval LPUs

Interval/Non Interval Summary	
SA_STATUS_FLG	20

Row Labels	Count of PREM_ID	Sum of INTERVAL	Sum of NONINTERVAL
EASTERN CAPE	1 588	1 477	111
FREE STATE	1 182	1 147	35
GAUTENG	3 743	3 719	24
KWAZULU NATAL	2 378	2 323	55
LIMPOPO	2 498	2 470	28
MPUMALANGA	2 464	2 420	44
NORTH WEST	1 315	1 297	18
NORTHERN CAPE	1 723	1 623	100
WESTERN CAPE	4 946	4 679	267
Grand Total	**21 837**	**21 155**	**682**

Feeder Losses reduction strategy (SPU & PPU)

- Identify and quantify total number of feeders required to achieve total losses reduction targets
- Prioritise high loss feeders (taking into consideration logistical specifics) for the following losses reduction interventions:
  - Audits and fixes of metering installations (tampers, faulty meters and unregistered customers)
  - Resolution of SPU risks linked to prioritised feeders (Terminated SP advancing, SP without meters, SP no consumption etc)
  - Resolution of PPU risks linked to prioritised feeders (No Consumption, SP's without meters, unallocated etc)
  - Refurbishment of metering installations (meters, protective enclosures, locks etc) where required
  - Normalisation of customers/consumers with unauthorized supplies e.g. illegal connections, grid tied Small Scale Embedded Generation
  - Review of linked accounts for tampers detected
  - Recovery of lost revenue
- Weekly/Monthly progress reports

Total Losses Targets cascaded to Feeder Level

OU	GWh Real Loss Reduction Target	GWh Loss Reduction Target (Incl. Data Correction)	No. of MV Feeders Mapped/Balanced
Eastern Cape	185	222	321
Free State	75	90	355
Gauteng	624	749	1 249
KwaZulu Natal	464	557	853
Limpopo	469	563	489
Mpumalanga	330	396	490
North West	483	580	544
Northern Cape	214	257	183
Western Cape	164	197	808
Dx	3 048	3 611	5 292

Dx needs to achieve a 3048 GWh (as at end Dec 2019) real loss reduction in order to meet the losses % target of 7.45%.

This target is incremented by 20% (3611GWh per year, 301GWh per month) to accommodate for the data issues at the feeder level

This target needs to be achieved from the 5292 feeders currently balanced at Dx Level.

SPU Feeder Loss Reduction

Operating Unit	No. of SPU Feeders to work on	Total No. of Customers on SPU Feeders	% LPU Customers on Feeders	% SPU Customers on Feeders	% PPU Customers on Feeders	12MMA Annual NTL Reduction on Feeders (GWh)	No. of SPU Exceptions on Feeders	% SPU Exceptions (Scorecard)
Eastern Cape	11	1 390	2%	82%	15%	9	284	6%
Free State	99	7 688	3%	95%	2%	44	2 832	42%
Gauteng	85	23 836	1%	79%	20%	130	6 851	25%
Kwa-Zulu Natal	37	6 705	1%	83%	16%	12	680	7%
Limpopo	43	5 095	4%	89%	7%	36	2 547	17%
Mpumalanga	31	2 622	3%	79%	18%	12	658	11%
North West	55	4 801	2%	88%	10%	44	1 320	24%
Northern Cape	16	1 345	4%	92%	4%	5	113	12%
Western Cape	33	4 711	4%	81%	16%	11	637	10%
Dx	410	58 193	2%	84%	14%	303	15 922	19%

Feeders where 60% or more of the customers and 60% or more of the sales are of type SPU are classified as being predominantly SPU feeders (410)

Assuming that the non-technical losses on the selected feeders will either be halved or reduced to 5% the potential losses reduction is estimated as 303 GWh

In order to achieve this reduction in losses, 58 193 audits will have to be performed

In working through the selected feeders it is anticipated that 15 922 exceptions (i.e. 19% of the total SPU exceptions will be dealt with). *Note: SPU Exceptions: SP – Zero Consumption, Advanced On Terminated and SP Without Meters*

SPU Exceptions

Operating Unit	SP_NO_CONS	ADV_ON_TERMINATED	SP_WITHOUT_METERS	SP_WITHOUT_METERS - PENDING_START	UNBILLED_SA	EST_SP_NO_READS	DIAL_ERROR	IN_SERVICE_AND_DISCON_SP	ABOLISHED_AND_DISCON_SP	ABOLISHED_AND_CONN_SP
Eastern Cape	270	-	14	-	5	1 347	1	431	33	2
Free State	2 732	89	11	-	23	8 355	4	3 452	564	6
Gauteng	6 264	543	44	39	267	15 644	18	10 623	3 085	80
Kwa-Zulu Natal	649	25	6	3	24	3 671	2	822	108	1
Limpopo	2 540	7	-	-	22	4 094	8	3 763	1 057	11
Mpumalanga	643	12	3	-	11	1 399	1	1 610	484	20
North West	1 249	68	3	6	15	6 488	-	1 594	627	8
Northern Cape	102	10	1	-	5	1 502	-	562	76	2
Western Cape	606	28	3	-	10	4 558	-	737	156	6
Dx	15 055	782	85	48	382	47 058	34	23 594	6 190	136

The breakdown of SPU exceptions on the selected SPU feeders (410) is shown in table above

PPU Feeder Loss Reduction

Operating Unit	No. of PPU Feeders to work on	Total No. of Customers on PPU Feeders	% LPU Customers on Feeders	% SPU Customers on Feeders	% PPU Customers on Feeders	Required 12MMA Annual NTL Reduction on Feeders (GWh)	Actual 12MMA Annual NTL Reduction on Feeders (GWh)	No. of PPU Exceptions on Feeders	% PPU Exceptions
Eastern Cape	55	226 568	0.15%	1.86%	97.98%	213	213	69 007	26%
Free State	13	29 623	0.07%	1.77%	98.14%	46	48	3 114	11%
Gauteng	68	132 970	0.07%	2.03%	97.63%	619	626	66 452	20%
Kwa-Zulu Natal	85	369 064	0.05%	1.08%	98.86%	545	548	175 417	41%
Limpopo	122	658 688	0.07%	1.35%	98.55%	527	527	131 620	50%
Mpumalanga	53	267 014	0.08%	1.35%	98.51%	384	385	49 430	39%
North West	290	468 994	0.12%	2.45%	97.40%	536	506	126 975	90%
Northern Cape	61	69 208	0.61%	5.96%	93.34%	252	53	7 664	63%
Western Cape	144	196 940	0.44%	4.75%	94.75%	186	187	16 298	65%
Dx	891	2 419 069	0.13%	2.02%	97.80%	3 308	3 093	645 977	40%

Losses reduction of 3308GWh needs to be achieved from PPU Feeders (difference between reduction required at Total Losses level (3611GWh) and SPU feeder losses reduction (303 GWh)

Feeders are ranked from highest to lowest loss volumes and a sufficient number of feeders (891) are chosen such that the required loss reduction is achieved (3093GWh - non-technical losses assumed to be either halved or reduced to 5%
Note: NWOU and NCOU loss reduction does not add up to the required reduction

In order to achieve this reduction in losses, 2 419 069 audits will have to be performed. In working through the selected feeders it is anticipated that 645 977 exceptions (i.e. 40% of the total PPU exceptions will be dealt with). *Note: PPU Exceptions: SP Zero Consumption, SP Without Meters and Unallocated*

PPU Exceptions

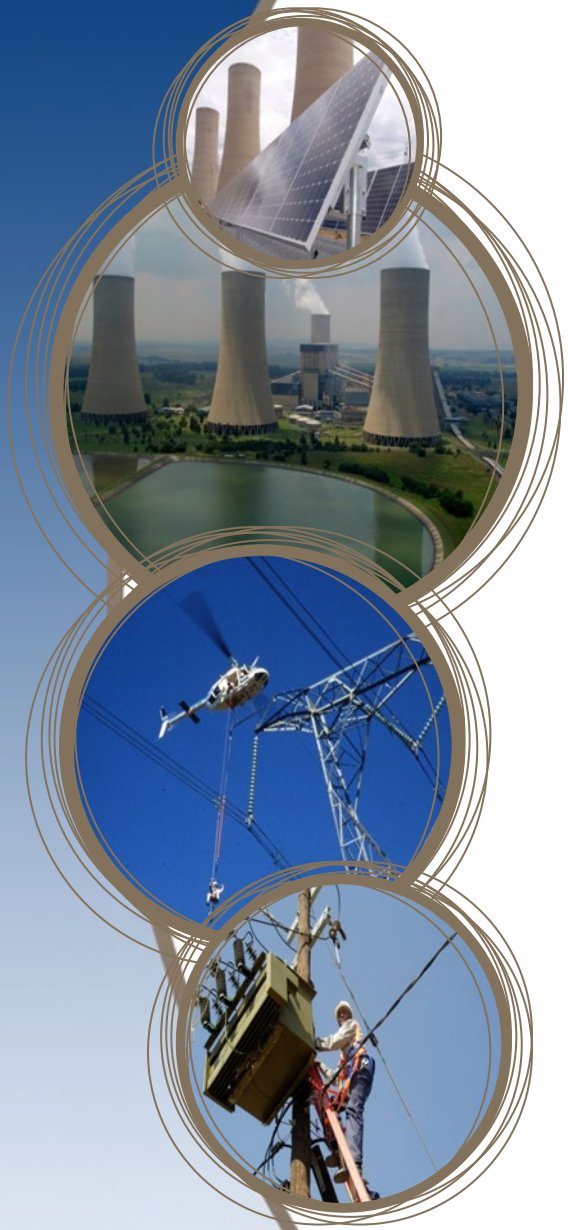
Operating Unit	NO_CONSUMPTION	SP_WITHOUT_METERS	UNALLOCATED
Eastern Cape	63 582	5 306	119
Free State	2 871	231	12
Gauteng	61 710	4 624	118
Kwa-Zulu Natal	156 521	18 654	242
Limpopo	125 622	3 746	2 252
Mpumalanga	49 249	89	92
North West	122 943	1 586	2 446
Northern Cape	7 584	21	59
Western Cape	15 580	651	67
Dx	605 662	34 908	5 407

The breakdown of PPU exceptions on the selected PPU feeders (891) is shown in table above

Feeder Loss Reduction (Measurement)

Operating Unit	No. of feeders (Complete)	No. of feeders (In Progress)	12MMA NTL Base (kWh)	12MMA NTL Current (kWh)	12MMA NTL Reduction (kWh)	Extrapolated NTL Reduction (kWh) YTD
Eastern Cape	9	2	13 418 227.08	6 979 589.67	6 438 637.41	57 947 736.69
Free State	0	16	4 342 618.98	4 629 060.59	-286 441.61	-2 577 974.49
Gauteng	2	5	3 131 510.42	1 259 869.45	1 871 640.97	16 844 768.73
KwaZulu Natal	0	8	3 688 400.09	5 955 257.76	-2 266 857.67	-20 401 719.03
Limpopo	1	6	8 642 778.66	9 308 054.82	-665 276.16	-5 987 485.44
Mpumalanga	4	16	26 410 145.68	21 045 798.00	5 364 347.68	48 279 129.12
North West	6	29	13 305 296.17	13 770 597.02	-465 300.85	-4 187 707.65
Northern Cape	0	7	1 350 058.91	1 186 843.25	163 215.66	1 468 940.94
Western Cape	0	9	3 854 940.33	3 197 582.17	657 358.16	5 916 223.44
Dx	22	98	78 143 976.32	67 332 652.73	10 811 323.59	97 301 912.31

Year-to-date audits completed (22) and those in progress (98). On those 120 feeders, we have achieved a 12MMA non-technical loss reduction of 10.81 GWh on a monthly basis which works out to a potential 97.3 GWh on a yearly basis



Prepayment

LOSSES MANAGEMENT STRATEGY – NON TECHNICAL LOSSES

Operating Unit	% Technical Losses	% Non-Technical Losses (70%)		
		% LPU Losses	% SPU Losses	% PPU Losses
Distribution Total Energy Losses	30%	1.53%	28.45%	70.02%

- Non-technical losses are caused by actions external to the power system and consist primarily of electricity theft, non-payment by customers, and errors in accounting and record-keeping.
- The above table is indicating that Prepaid Customers are the highest contributors of non- technical losses.
- Increasing number of customers supplied at lower voltages (mainly due to electrification), while sales to the HV customers reduced significantly
- Harsh economic conditions leading to potential high levels of electricity theft such as:
- Illegal connections
- Meter tampering and bypass
- Faulty Meters
- Ghost Vending and Rogue Meters.

PPU Initiatives that are being rolled out and developed.

- **Hashtag** Zero – where a low buyer or zero buyer's fault is not attended to within 72 hours.
- Blown transformers are attended to if the community allows Eskom to do audits and issue tamper fines to those that they have bypassed or tampered with the meters out of Hashtag Zero and Low Buying Customers to all the OUs.
- Load Reduction on high loss feeders

The above Strategies are supposed to be fully implemented by 01 April 2020 in all OUs.

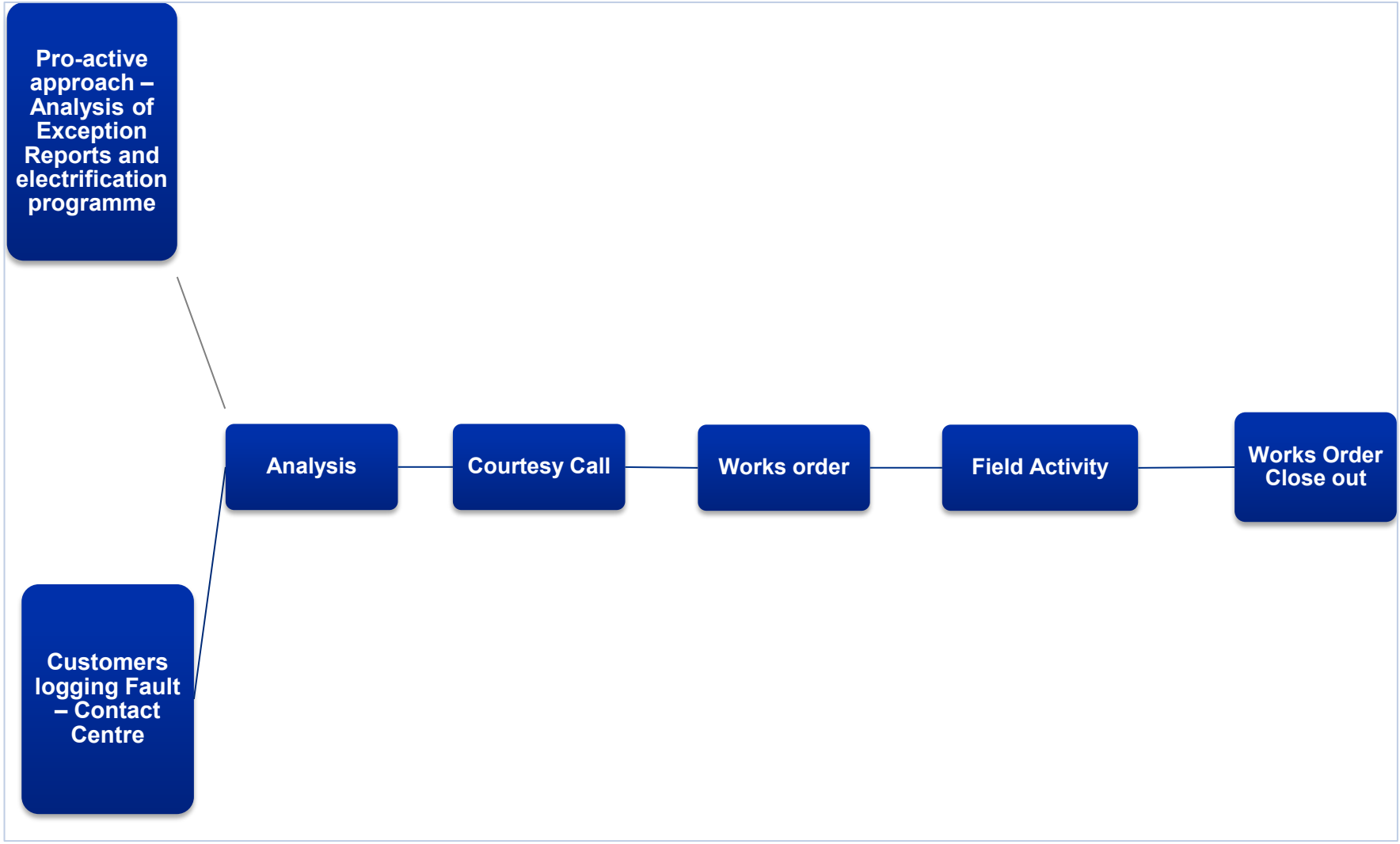
The new strategies that we are busy crafting are:

- Establishment of **back office** with capability to monitor the buying and consumption patterns of each individual Meter/Customer.
- Identify Zero Buyers, schedule them for auditing and monitored after they are normalised.
- The proactive approach of monitoring the newly connected electrification and recently normalised customers' electricity purchases. This will ensure that whatever we are bringing on board does not further exacerbate the problem. For those that are found not to have been buying electricity, audits will be scheduled and action such as disconnection will be taken. Eskom IT will be approached to write a script to interface with CC&B to monitor these customers.
- The Free Basic Electricity Campaign is to be intensified for indigent people to be aware of free token electricity and encouraged to collect them. The is being developed.

PPU Initiatives

- Normalisation of illegal connections. These customers are legally connected to the Eskom network through a project using DMRE funding where the project is part of the electrification programme.
- Ghost vending is still a challenge – tip-offs are sent to Eskom Security to investigate. The security strategy is highly confidential.
- Rogue meters are identified when feeder audits are performed and are normalised.
- KRN projects is waiting for the online vending infrastructure. The strategy has been rewritten .

Back Office Operational Model





Eskom	Action Items Template Energy Protection Operating Steering Committee	Template Identifier	240-119421705	Rev	1
		Effective Date	November 2019		
		Review Date	October 2022		
		Distribution			

ACTION ITEMS FROM PREVIOUS ENERGY PROTECTION *STEERING COMMITTEE* 28 February 2020

	Addressed		Due/Actions in progress		Overdue/Not yet started

No.	Business Area	Action Item	Responsible Person	Due Date For Response	Response	Status
1.	**Revenue Recovery performance**	All issues identified to be submitted to the Head Office team for inclusion in the escalation report as part of the consolidated approach to the resolution of risks.	Doug Bashford	20 September 2019	Doug will send a detail report	**Open**
2.	**MTS purchases feedback**	GOU raised the point of signing off the handover rules with Tx early again- this was also raised in previous meetings. The governance between Dx and Tx needs to be resolved.	Allan/Comfort	23 August 2019	Still opened need clarity from Tx will be attended on the 6 March 2020.	**Open**
3.	**MATS**	OUs need to account physical numbers on what they have in stock which is older than 1 year to take them back to stores.(Some of the OUs they don't have meters)e.g. NWOU .Meladi	Portia, OUs and M&O Managers	31 January 2020	Consolidation must be done by the M & O managers.	**Open**

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		must take up with Rudzani Tshikota. OUs was put up a strategic plan in place.				
4.	**MATS**	How many of those meters were installed but no admin (audit system) are in the bakkies, CC & B and TSU and also lost meters. It was also suggested that within two weeks' time the OUs must give HO feedback on the above actions items.	Portia,OUs and M & O Managers	6 March 2020		**Open**
5.	**Energy Losses**	**PPU Exception Report**- NCOU and MPOU were requested to clean up the PPU without meters as it might be the problem of the system and they are having low numbers.	NCOU and MPOU	21 February 2020	MOU they are busy tracking and doing cleaning up.	**Open**
6.	**Energy Losses**	OUs were also requested to ask Maretha Willemse to help with audits PPU without meters.	OUs	21 February 2020	Still open	**Open**
7.	**Revenue Recovery**	Head Office to organize a weekly stop losses	HO	21 February 2020		**Open**

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Eskom	Action Items Template Energy Protection Operating Steering Committee	Template Identifier	240-119421705	Rev	1
		Effective Date	November 2019		
		Review Date	October 2022		
		Distribution			

		workshop to discuss all matters pertaining to stop losses and reporting. Portia Papu request all OUs to adapt principle of audit each other. Stop losses must be a standing agenda item.	All OUs	21 February 2020		Open
8.	**Verification of Purchases**	OUs were requested to send their mandate by the 3 March 2020. HO will be meeting with Tx on the 5 March 2020**.**	HO & OUs	28 February 2020		Open
9.	**Verification of Purchases**	Meladi raises a concern of MV 90 and asked who can help in Tx when they are unable to dial into Tx meters and also fix the meters. Meladi will send a list to Allan of those MV90.	HO	28 February 2020		Open
10.	**OUs Feedback**	All OUs were requested to send the names of customers with accruals to HO so that they will be	All OUs	28 February 2020		Open

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Eskom	**Action Items Template** **Energy Protection Operating Steering Committee**	**Template Identifier**	**240-119421705**	**Rev**	**1**
		Effective Date	**November 2019**		
		Review Date	**October 2022**		
		Distribution			

		able to help to trace them.				
11.	**OUs Feedback**	Blessing was requested to go and do thorough investigations on SGC bulk upload on zero buyers. He need to take a sample and test, he must also state in detail the queries of the zero buyers.	Blessing Mbatha	28 February 2020		**Open**
12.	**OUs Feedback**	Kgomotso Jam Jam was requested to put numbers and notes on his presentation.	Kgomotso Jam Jam	28 February 2020		**Open**
13.	**Total Energy Losses Strategy and Target**	Thokozile Luwaca to organize a section with LOU, HO, WCOU and MOU. LOU to share lesson learn when there were billing Matimba Power Station.	Thokozile Luwaca	28 February 2020		**Open**

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Eskom	Meeting Minutes Template	Template Identifier	240-54076329	Rev	7
		Effective Date	November 2019		
		Next review date	October 2022		
		Distribution			

Meeting Name: Energy Protection Operating Steering Committee			
Date:	**Time:**	**Venue:**	**Meeting No.:**
28 February 2020	09h00 – 15h00	Teleconference	02/2020

Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
1.	**Opening:** **1.1** Welcome The chairperson, Portia Papu welcomed all members present. **1.2** Apologies and quorum Apologies were noted from the following members: 1. Motlhabane Ramashi 2. Molefi Rantsonyane 3. Kavitha Pillay 4. Thandazile Mazibuko 5. Musa Mabila	**None**	**None**	**None**

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	6. Thandazile Mazibuko **7.** Rudzani Tshikota 8. Pravind Orrie 9. Lucas Mazibuko **Representatives were the following:** 1. FSOU – Bibi Bedir 2. NWOU – Meladi Botabota & Abram Tumane 3. WCOU – No Representative 4. KZNOU – Nozipho Mpanza & Ronald Chonco 5. LOU – Nozipho Masakona & Lloyd Mokgotho 6. ECOU – No Representative 7. MPOU – Blessing Mbatha, Vusi Cindi & Reneilwe Oliphant 8. GPOU – Kgomotso Jam Jam, Daphne Mokoena & Walter Lemeko 9. NCOU – No Representative			

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
2.	**Safety and Emergency Evacuation Procedure** • Portia tell the OUs that EFF members are matching to HO to present their petition. The main entrance was closed due to the match. They had to arrive early to use another entrance. • Bibi shares with members about an incident that happen to a contractor in January 2020. He was coming out of rural road from a farm; he miscalculates the distance of the oncoming car that was coming from the right and hit the car on the side. When the contractor exchanges the details with the other party he found out that the lady was Eskom employee from Pretoria and she was on leave. But fortunately there were no fatalities but severe injuries. Bibi mentioned that the problem in those rural roads is visibility as there is long grass. • Daphne also shares about head on collusion happen in their OU when one of the technicians was attending a fault when this happen .The third party was driving on			

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	the wrong side of the road. She told members that only passengers on the third party car were critical. • Nozipho Masakona shares that on their OU what is happening is an increase of MVA, there are continuous engaging with the employees to be cautious on the road. • Blessing asked members to be cautious when doing audits as one of the customers was very aggressive an assault one of the employees. • Meladi shares LTI incident where one of the employees broke his upper bone from the hip to the knee when he was climbing off the bakkie . Employees need not to misjudge the distance when the climb offs their bakkies. • Doug shares with members about an incident happen in KZN MVA fatalities where 6 people were killed. Eskom employee was coming from a meeting when he collided with another vehicle.			

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
3.	**Declaration of interest** No conflicts of interests were disclosed and declared.	**None**	**None**	**None**
4.	**Verification of minutes of previous meeting/s** Minutes from the previous meeting dated 28 February 2020 were accepted.	**None**	**None**	**None**
5.	**Action items from previous minutes**	**See action items doc**		
5.1	**Meeting No. 02/2020** Action items were discussed; Closed and some were deferred to the next meeting. (See attached action items document)	**None**	**None**	**None**
6.	**Matters for approval** Refer to previous agenda	**None**	**None**	**None**

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date

7.	**Energy Protection & Revenue Recovery Presentation**
	Portia shares the presentation with members. The presentation is on SharePoint.
	
	Allan and Dileep share the presentation with members on total losses, feeder balancing and Revenue Recovery.
	
	<u>KPA 1: Total Losses</u>
	
	• **Distribution Total Losses:**
	  • **Highlights**
	  • ECOU, WCOU, NCOU and FSOU met their monthly reduction target.
	• **Lowlights**
	  • Overall Distribution performance is unfavorable.
	  • None of the OUs met their YTD target (Losses Reduction)
		Action items:		

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	KPA 2: Stopped Losses • Total stopped losses volumes amount to 137.96GWh **KPA 3: Revenue Recovery** **LPU & SPU billed** • Total revenue recovered that has been billed amounts to R219.54m. • Total traction recoveries billed YTD amount to R16.79m (This figure is not included in the total revenue recovered) **LPU &SPU paid** • Total revenue recovered that has been paid amounts to R123.17m **PPU Tamper fines** • Total PPU tamper fines paid amount to R26.94m. *Note: KPA 2 & 3 values are reported as YTD			

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
8.	**Verification of Purchases by Allan Maseko** • Members were requested to send correct figures of sign off. • List of all the OUs that have made adjustment from Transmission need to be made. • Allan will engage with every OU to verify their purchases and if they don't agree it will be escalated to Portia Papu. • All OUs agree that they don't have issues with sign offs on purchases.	**Action item:** OUs were requested to send their mandate by the 3 March 2020. HO will be meeting with Tx on the 5 March 2020. Meladi raises a concern of MV 90 and asked who can help in Tx when they are unable to dial into Tx meters and also fix the meters. Meladi will send a list to Allan of those MV90.	HO & OUs HO	5 March 2020 5 March 2020
9.	**Risk resolutions Reports** Portia inform members that Risk resolution report is withdrew from CC & B systems.			

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
10.	**OUs Feedback (The presentations are on SharePoint)** • FSOU presentation by Bibi Bider. • NWOU presentation by Meladi Botabota • KZNOU presentation by Nozipho Mpanza • LOU presentation by Nozipho Masakona • MOU presentation by Blessing Mbatha • GOU presentation by Kgomotso Jam Jam	**Comment by Allan about Accruals** He stated that there are in a process of changing the system that they are currently using in Eskom in accruals. Where Finance will determined the amount to be accrued. **Action items:** All OUs were requested to send the names of customers with accruals to HO so that they will be able to help to trace them. **Action items:** Blessing was requested to go and do thorough investigations on SGC bulk upload on zero buyers. He need to take a	All OUs Blessing	Next Meeting Next meeting

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
		sample and test, he must also state in detail the queries of the zero buyers. Kgomotso Jam Jam was requested to put numbers and notes on his presentation.	Mbatha Kgomotso Jam Jam	Next meeting
11.	**Total Energy Losses Strategy and Target 2020/2021** **Presentation by Portia, Allan and Dileep. Full presentation on SharePoint** **Energy Losses** • Over the past five years (2015 -2019) Distribution	**Action items:** Thokozile Luwaca to organize a section with LOU, HO, WCOU and MOU. LOU to share lesson learn when there were billing Matimba Power Station.	Thokozile Luwaca	9 March 2020

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	Energy Losses grew from just below 6,78 % to 8.46%. The growth in distribution energy losses can be explained by: • Increasing number of customers supplied at lower voltages (mainly due to electrification), while sales to the HV customers reduced significantly • Harsh economic conditions leading to potential high levels of electricity theft such as illegal connections and meter tampering • Ghost Vending and • Rogue Meters. • The Trend line is indicating that Energy Losses at Distribution are increase – an unconventional strategies have to be implemented to reduce the energy Losses **Total Losses**			

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	• Technical Losses are an inherent consequence of the operation of any electrical network and arise as power flows through equipment such as cables, overhead lines and transformers and other substation equipment that we use to transfer electricity – they can not be eliminated. • Recent studies are indicating that Eskom Distribution Losses split between technical and non-technical losses of the 8.46 is 2.73 Technical Losses :5.73 Non technical Losses: • and the ratio 30:70 (30 being technical and non-technical being 70%). • Further details of the segmentation of the losses. • **More focus should be on Non-Technical Losses**			

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	Purchases Verification at MTSs • Dialing Tx Meters (Short Term) • Meter Installation (Med Term) • Meter Installation (Long Term) **OU's Purchases and Losses sign-off** • Enabling accountability to the OU's **Sales Verification** • Metered vs Billed Data • OU collaboration led to the exception to drop to 104 **Losses by Consumption**			

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	• Evaluate Losses using interval metering **Weekly Reports – Purchases and Losses** • Monitoring Purchases weekly • Weekly Purchases sign-off by OUs **Three Initiative** • Bottom-up Approach-Consolidate Dx above target • % Approach -Inconsistency in volume reduction • Volume Approach -All OU's share the required reduction **The one that is adopted is the Volume Approach** • Volume approach • No OU is exempted			

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date

	• Dx target is 7.45%
	
	Customers that are on the MATS report for more than three years are not addressed.
	
	Dx Total Losses Breakdown
	• Resolution of risks at individual premise level
	  • Interval MOTS
	  • Interval no consumption
	  • Terminated SP's advancing
	  • SP no consumption			

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	• SP without meters • Identification and resolution of new risks • Metered vs billed • Recorders not billed • Recovery of unbilled energy (revenue) • Conversion of all manual metering into interval metering for all LPUs, where possible (i.e. no comms/technology issues) • Weekly/Monthly progress reports **Feeder Losses reduction strategy (SPU & PPU** • Identify and quantify total number of feeders required to			

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date

	achieve total losses reduction targets
	• Prioritise high loss feeders (taking into consideration logistical specifics) for the following losses reduction interventions:
	  • Audits and fixes of metering installations (tampers, faulty meters and unregistered customers)
	  • Resolution of SPU risks linked to prioritised feeders (Terminated SP advancing, SP without meters, SP no consumption etc)
	  • Resolution of PPU risks linked to prioritised feeders (No Consumption, SP's without meters, unallocated etc)
	  • Refurbishment of metering installations (meters,			

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	protective enclosures, locks etc) where required • Normalisation of customers/consumers with unauthorized supplies e.g. illegal connections, grid tied Small Scale Embedded Generation • Review of linked accounts for tampers detected • Recovery of lost revenue • Weekly/Monthly progress reports			

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
12.	**Closure** The meeting was adjourned at 15h00 by Portia Papu The date for the next meeting will be on the 26 March 2020 Teleconference.			

Signed as a correct record: _____ _____

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Chairman **Date**

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Meeting Name: Energy Protection Operating Steering Committee Meeting minutes

Attendance Register

Name	Responsibility in the PMO	Initials	Mark attendance or non-attendance using Present (P), Apologies (A), Absent (X)											
			30/07	23/08	20/09	25/10	05/12	24/01	28/02					
Portia Papu	Chairperson	PP	-	-	-	-	P	P	P					
Des Govender	General Manager	DG	-	-	-	-	P	X	X					
Ntshafa Mononyane	Secretariat	NM	P	P	P	P	A	P	P					
Musa Mabila	Senior Manager	MM	P	X	P	A	A	P	A					
Blessing Mbatha	Middle Manager	BM	-	-	P	P	P	P	P					
Molefi Rantsonyane	Senior Manager	MR	P	P	X	A	A	A	P					
Pravind Orrie	Senior Manager	PO	A	P	X	X	X	A	A					
Doug Bashford	Manager Process	DB	-	P	A	P	X	A	P					
Allan Maseko	Middle Manager	AM	P	P	P	P	P	P	P					
Bolden Ramokgopa	Senior Advisor	BR	-	P	P	P	P	P	P					
Thokozile Luwaca	Senior Advisor	TL	-	P	P	X	P	P	P					

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Thandazile Mazibuko	Senior Manager	TM	P	X	A	P	P	A	A					
Bibi Bedir	Senior Manager	BB	P	P	P	A	P	A	P					
Nozipho Mpanza	Senior Manager	NM	P	P	A	A	P	P	P					
Deon Conradie	Senior Manager	DC	P	X	X	X	A	X	X					
Stefanie Visser	Senior Consultant	SV	P	X	X	X	A	X	X					
Lucas Mazibuko	Senior Manager	LM	P	A	A	A	P	A	A					
Ben Lentswana	Middle Manager	BL	P	A	X	P	P	P	X					
Nozipho Masakona	Senior Manager	NM	P	X	X	P	P	A	P					
Rudzani Tshikota	Senior Manager	RT	P	A	X	X	X	P	A					
Jabu Gumbi	Middle Manager	JG	P	P	X	P	X	P	P					
Bongani Mandla	Middle Manager	BM	P	X	P	P	A	P	X					
Daphne Mokwena	Senior Manager	DM	P	X	X	P	P	P	P					
Ronald Chonco	Senior Manager	RC	P	X	P	A	A	X	P					
Motlhabane Ramashi	Senior Manager	MR	P	A	X	X	P	A	A					
Dileep John	Middle Manager	DJ	P	P	P	P	P	P	P					
Modise Mashishi	Officer	MM	P	P	P	P	P	P	P					
Kavitha Pillay	Manager Revenue	KP	P	P	P	P	P	A	A					
Andre de Villiers	Senior Advisor	ADV	P	P	A	P	P	X	X					
David Mnqwazana	Middle Manager	DM	P	X	X	P	A	P	A					

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Eskom	Meeting Minutes Template	Template Identifier	240-54076329	Rev	7
		Effective Date	November 2019		
		Next review date	October 2022		
		Distribution			

Meeting Name: Energy Protection Operating Steering Committee			
Date:	**Time:**	**Venue:**	**Meeting No.:**
22 May 2020	09h00 – 14h00	Ms Teams	03/2020

Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
1.	**Opening:** **1.1** Welcome The chairperson, Portia Papu welcomed all members present. **1.2** Apologies and quorum Apologies were noted from the following members: 1. Motlhabane Ramashi 2. Molefi Rantsonyane 3. Lucas Mazibuko 4. Thandazile Mazibuko 5. Musa Mabila	**None**	**None**	**None**

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	6. Bibi Bedir **7.** Rudzani Tshikota 8. Pravind Orrie 9. Motshabi Mokgatlha **Representatives were the following:** 1. FSOU – DJ Cloete & David Mnqwazana 2. NWOU – Meladi Botabota 3. WCOU – Bongani Mandla, Lodine Redelinghuys 4. KZNOU – Nozipho Mpanza 5. LOU – Nozipho Masakona & Lloyd Mokgotho, Stephen Masemola 6. ECOU – Aron Rondganger & Mukesh Chutri 7. MPOU – Blessing Mbatha 8. GPOU – Kgomotso Jam Jam, 9. NCOU – Mogomotsi Mogalanyane			

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
2.	**Safety and Emergency Evacuation Procedure** • Meladi Botabota shared an NW incident of a employee who had an twisted ankle when he was getting off his bakkie. .			
3.	**Declaration of interest** No conflicts of interests were disclosed and declared.	**None**	**None**	**None**
4.	**Verification of minutes of previous meeting/s** Minutes from the previous meeting dated 28 February 2020 were accepted.	**None**	**None**	**None**
5.	**Action items from previous minutes**	**See action items doc**		
5.1	**Meeting No. 03/2020**	**None**	**None**	**None**

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	Action items were discussed; Closed and some were deferred to the next meeting. (See attached action items document)			
6.	**Matters for approval** Refer to previous agenda	**None**	**None**	**None**

7.	**Total Energy Losses Management Strategies and Target 2020/21: Portia Papu shares the presentation with members**
	
	• Energy Losses are linked to Turnaround Strategy – Dx has to perform
	• OUs were asked to provide the following:
	  • **Execution plan for Energy losses Programme by 28 May 2020**
	  • Both technical and non-technical initiatives
		Action items:
		
		Request for all OUs to do consolidation of illegal connection and send them to HO.
			All OUs	Next Meeting

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	• Representative on Technical Losses Steerco – Done • OU Back Office representative names were forwarded • OUs to sign of purchase by the 5 working day • MATS – Our "tills" are not managed (the impact will be the increase in losses due to illegal connections) • Total Energy Losses has to be treated as a project **Allan Maseko shares the presentation with members : the following topics were shared** **Target Setting - Options, Principles and Process** • Bottom-up Approach • % Approach • Volume Approach KPI Total OU Losses (GWh)	Action items: The following OUs GOU,MOU and NCOU were requested to share their lesson learned on GWh losses reduction.(Slide 8)	GOU,MOU and NCOU	Next Meeting

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	Principles ▪ Dx target is 7.90% ▪ Volume approach ▪ No OU is exempted ▪ Reward Efforts **Process** ▪ Work out the required losses (GWh) reduction to result 7.9% ▪ Split the volume per OU ▪ Incorporate the gains/losses of the past year **Historical Losses Performance & Implementation** 1. Calculate the GWh losses for 7.90%, given Sales 188 285GWh 2. Resultant is 16 150 GWh 3. Apportion the required reduction in two steps			

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	a) Apportion with the increase experienced in 2019/20 b) Split the additional requirement **Dileep John and Modise Mashishi shares the presentation with members : the following topics were shared** • Calculations • Average Feeder Losses Reduction • MV Feeders Balanced • Average Feeder Losses % (12MMA) • SPU and PPU Feeder Loss Reduction (12MMA) • SPU Feeder Loss Reduction based on OU Proposal • SPU Loss Reduction Shortfall(GWh) • PPU Feeder Loss Reduction • PPU Feeder Loss Reduction based on OU Proposal • PPU Feeder Loss Reduction	Comment: PPU loss Reduction shortfall there was a concern of shortage of resources. However, there was suggestion of using AC resources, each OU has to involve the GM. Portia Papu also suggested inviting AC Management as integration approach. **Action item:** The revision of targets as a result of the COVID-19 impact will not be specific to Energy Losses but will apply to all KPI's. When and if a decision is made to revise targets that would also apply to Energy Losses as well.	Portia Papu	

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	• PPU Loss Reduction Shortfall (GWh)	**Action Items:** With the COVID restrictions how are the OUs going to meet their targets. Portia Papu will take the matter with her principals concerning the provision.	Portia Papu	Next Meeting
8.	**Kavitha Pillay and Dileep John shares the presentation with members : Revenue Recovery** • LPU Target Determination • Revenue Recovery Raised (Billed) • PPU Tamper Fine Targets • PPU Zero Buyers	**Comments:** Suggestion of checking zero buyers according to KZN and GOU they check the new buyers after three months, six months and nine months. The new		

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	• PPU Zero Buyers Targets	customers should not fall into the category of being zero buyers. Other suggestion is to share on the monthly basis on reduction of good practice on zero buying and strategies that are working for other OUs and be documented .Share the trends. **Action items:** DJ Cloete asked for historic average Data of PPU. Kavitha Pillay will send the data.	Kavitha Pillay	Next Meeting

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
9.	**Brain Mokgele shares the presentation with members: PPU Revenue Management Back-Office Operational Model** • Data of the Zero Buyers is available. (IT Demand submission made for analytic tool that will flag the Zero Buyers) • Works order process and electrification programme buying pattern have been developed. • A standard telephone script has been developed – may be updated based on inputs • The work will be done at OU level and consolidated at head office. level **PPU Back-Office Revenue Management: Requirements** • Resource Assignment • PPU - No Consumption Process Guide • Awareness & Communication			

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	• Launch the PPU Revenue Management back-office **PPU Energy Loss Management Interventions** • Load reduction on feeders with High Losses (Started in GOU) • Replacement of Magnetic Meters (Data is available OUs should initiate a project) • Awareness campaign for Free Basic Electricity (FBE) to increase the sales and to reduce the Zero Buyers. • Normalisation of illegal connections with assistance of electrification grant • Collaboration with Eskom Group Security (Combat illegal vending / Ghost CDUs - Forensic investigations)			

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	• Vending Efficiencies (Commission rate reduction & Admin control measures) • Rollout Revenue Management Back-office (Monitoring of customer buying pattern, giving customers a courtesy call to validate suspicious observation, create field works order, fix and raise tamper fees) • Rollout of Key Revision Number (Mandatory to ensure vending token ID is updated from revision 1 to 2 and accepted by meters by November 2024			
10.	**Closure** The meeting was adjourned at 15h00 by Portia Papu The date for the next meeting will be on the 26 June 2020 Ms Teams			

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Signed as a correct record: _____ _____

Chairperson **Date**

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Meeting Name: Energy Protection Operating Steering Committee Meeting minutes			
Attendance Register			
Name	**Responsibility in the PMO**	**Initials**	**Mark attendance or non-attendance using Present (P), Apologies (A), Absent (X)**

Disclosure classification: Controlled

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			22/05											
Portia Papu	Chairperson	PP	P											
Ntshafa Mononyane	Secretariat	NM	P											
Musa Mabila	Senior Manager	MM	A											
Blessing Mbatha	Middle Manager	BM	P											
Reneilwe Oliphant	Middle Manager	RO	A											
Molefi Rantsonyane	Senior Manager	MR	A											
Doug Bashford	Manager Process	DB	A											
Allan Maseko	Middle Manager	AM	P											
Brian Mokgele	Middle Manager	BM	P											
Bolden Ramokgopa	Senior Advisor	BR	P											
Thokozile Luwaca	Senior Advisor	TL	P											
Thandazile Mazibuko	Senior Manager	TM	A											
Bibi Bedir	Senior Manager	BB	A											
Nozipho Mpanza	Senior Manager	NM	P											
Lucas Mazibuko	Senior Manager	LM	A											
Ben Lentswana	Middle Manager	BL	A											
Nozipho Masakona	Senior Manager	NM	P											
Rudzani Tshikota	Senior Manager	RT	A											
Bongani Mandla	Middle Manager	BM	P											
Daphne Mokwena	Senior Manager	DM	A											
Motlhabane Ramashi	Senior Manager	MR	A											

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Dileep John	Middle Manager	DJ	P												
Modise Mashishi	Officer	MM	P												
Kavitha Pillay	Manager Revenue	KP	P												
Andre de Villiers	Senior Advisor	ADV	A												
David Mnqwazana	Middle Manager	DM	P												

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Eskom	Action Items Template Energy Protection Operating Steering Committee	Template Identifier	240-119421705	Rev	1
		Effective Date	November 2019		
		Review Date	October 2022		
		Distribution			

ACTION ITEMS FROM PREVIOUS ENERGY PROTECTION *STEERING COMMITTEE* 22 May 2020

	Addressed		Due/Actions in progress		Overdue/Not yet started

No.	Business Area	Action Item	Responsible Person	Due Date For Response	Response	Status
1.	**MATS**	OUs need to account physical numbers on what they have in stock which is older than 1 year to take them back to stores.(Some of the OUs they don't have meters)e.g. NWOU .Meladi must take up with Rudzani Tshikota. OUs must put up a strategic plan in place.	Portia, OUs and M&O Managers	31 January 2020	The M & O managers must do consolidation. FSOU feedback: The ELP Improvement Initiative Plan has been compiled and there is a section focusing on MATS management and it is driven by the Zone Manager, then reported to the FSOU EPOSC	**Open**
2.	**MATS**	How many meters installed but no administration, the one that are in the bakkies, CC & B, TSU and lost meters to be audited? Suggestion that within two weeks' time the OUs must give HO feedback on the above actions items.	Portia,OUs and M & O Managers	6 March 2020	Portia will write an email to the O&M managers. FSOU feedback: This information was submitted a while back. It is actively monitored by the OU as outlined above.	**Open**

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3.	**Verification of Purchases**	Meladi raises a concern of MV 90 and asked who can help in Tx when they are unable to dial into Tx meters and also fix the meters. Meladi will send a list to Allan of those MV90.	HO	28 February 2020	Stay open until they reach agreement with Tx .	**Open**
4.	**OUs Feedback**	Request to all OUs to send the names of customers with accruals to HO so that they will be able to help them to trace them. List of customers that Finance accrued at the end of the quarter/ year.	Tshepo and Allan	28 February 2020	FSOU recommendation: The Billing Department in Westville will be in a better position to give us an accurate consolidated picture and the suggestion is that OU's can then be tasked to provide feedback on it. Then the task is specific.	**Open**
5.	**Total Energy Losses Strategy and Target**	Thokozile Luwaca to organize a section with LOU, HO, WCOU and MOU. LOU to share lesson learn when there were billing Matimba Power Station.	Thokozile Luwaca	28 February 2020	Limpopo OU shared the process they followed and lessons learnt from the Matimba Station Transformer Billing with Mpumalanga OU, Northern Cape OU and Western Cape OU on the 9th of June 2020.Lethekwane shared the documents that other OUs can use a guide	**Closed**

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Eskom	Action Items Template Energy Protection Operating Steering Committee	Template Identifier	240-119421705	Rev	1
		Effective Date	November 2019		
		Review Date	October 2022		
		Distribution			

					or reference to their station transformer billing such ESA and the service level agreement (SLA) between Generation and transmission.	
6.	**Total Energy Losses Management Strategies and Target 2020/21**	Request for all OUs to do consolidation of illegal connection and send them to HO.	All OUs	22 May 2020	FSOU Feedback: PPU audits just started. Busy with consolidation of the report for the month of June. The EP teams were grounded due to Lockdown restrictions and were re-activated after L3 was pronounced. The start was slow due to COVID-19 PPE readiness.	**Open**
7.	**Total Energy Losses Management Strategies and Target 2020/21**	The following OUs GOU,MOU and NCOU were requested to share their lesson learned on GWh losses reduction.(Slide 8)	GOU,MOU and NCOU	22 May 2020		**Open**
8.	**Total Energy Losses Management Strategies and Target 2020/21**	With the COVID restrictions how are the OUs going to meet their targets. Portia Papu will take the matter with her	Portia Papu	22 May 2020	Electricity services are regarded as essential service, work is being performed.	**Closed**

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		principals concerning the provision.			FSOU Query: In FSOU EP Teams were grounded during Lockdown L5 & L4. It looks like not all OU's applied the instruction consistently.	
9.	**Total Energy Losses Management Strategies and Target 2020/21**	The revision of targets as a result of the COVID-19 impact will not be specific to Energy Losses but will apply to all KPI's. When and if a decision is made to revise targets that would also apply to Energy Losses as well.	Dileep John	22 May 2020		**Open**
10.	**Revenue Recovery**	DJ Cloete request for historic average Data of PPU. Kavitha Pillay will send the data.	Kavitha Pillay	22 May 2020	Done	**Closed**

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Eskom	**Agenda Template** Energy Protection Operational Steering Committee	**Template Identifier**	**240-55245426**	**Rev**	**9**
		Effective Date	**November 2019**		
		Next Review Date	**October 2022**		
		Distribution			

Date: 22 May 2020

Meeting No.: 03/2020

Time: 09h00 – 13h00

Venue: Teams

No.	Subject	Sponsor / Presenter
1.	**Opening:** 2.1 Welcome 2.2 Apologies and quorum	Chairperson
2.	**Safety and Emergency Evacuation Procedure**	Chairperson
3.	**Declaration of Interest**	All
4.	**Verification of minutes of previous meeting/s**	Chairperson
4.1	Minutes of Meeting No. 02/2020 held on 28 February 2020	
5.	**Action items from previous minutes**	Chairperson
6.	Dx Losses Strategy Approved by Dx Board	Portia Papu & All
7.	April Performance	All
10.	20/21 Targets	All
11.	General	All
12.	**Closure** Date of next meeting 22 May 2020	Chairperson

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Eskom	Meeting Minutes Template	Template Identifier	240-54076329	Rev	7
		Effective Date	November 2019		
		Next review date	October 2022		
		Distribution			

Meeting Name: Energy Protection Operating Steering Committee			
Date:	**Time:**	**Venue:**	**Meeting No.:**
24 July 2020	09h00 – 16h00	Ms Teams	04/2020

Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
1.	**Opening:** **1.1** Welcome The chairperson, Portia Papu welcomed all members present. **1.2** Apologies and quorum Apologies were noted from the following members: 1. Motlhabane Ramashi 2. Molefi Rantsonyane 3. Lucas Mazibuko 4. Thandazile Mazibuko 5. Musa Mabila	**None**	**None**	**None**

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	6. Bibi Bedir **7.** Rudzani Tshikota 8. Motshabi Mokgatlha **Representatives were the following:** 1. FSOU – DJ Cloete & David Mnqwazana 2. NWOU – Meladi Botabota 3. WCOU – Bongani Mandla, Lodine Redelinghuys 4. KZNOU – Nozipho Mpanza 5. LOU – Kholo Moropyane,Hosea Phalane, Tendani Moloto & Stephen Masemola 6. ECOU – Aron Rondganger, Mukesh Chutri & Unati Figlan 7. MPOU – Blessing Mbatha & Reneilwe Oliphant 8. GPOU – Kgomotso Jam Jam & Walter Lemeko 9. NCOU – Mogomotsi Mogalanyane 10. Finance- Qaleka Mangcipu, Valisha Naidoo, Annamarie Murray& Busi Megale.	**Action item:** Ntshafa Mononyane to add the following people on the attendance list; Abram Tumane, Promise Quluba, Mbulelo Yedwa, Aron Rondganger, Mukesh Chutri, Gugulethu Dumakude, Vera Wessie, Silesh Mansingh and Lodine Redelinghuys**.**	**Ntshafa Mononyane**	**Immediately**

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	11. HO-Dileep John, Allan Maseko, Kavitha Pillay, Neshaan Rooplal, Modise Mashishi, Bolden Ramokgopa & Esther Somo			
2.	**Safety and Emergency Evacuation Procedure**	**None**		
3.	**Declaration of interest** No conflicts of interests were disclosed and declared.	**None**	**None**	**None**
4.	**Verification of minutes of previous meeting/s** Minutes from the previous meeting dated 28 February 2020 were accepted.	**None**	**None**	**None**
5.	**Action items from previous minutes**	**See action items doc**		
5.1	**Meeting No. 04/2020**	**None**	**None**	**None**

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	Action items were discussed; Closed and some were deferred to the next meeting. (See attached action items document)			
6.	**Matters for approval** Refer to previous agenda	**None**	**None**	**None**
7.	**Annamarie Murray shares the presentation with members: Eskom Load Reduction and Energy Losses Campaign** **Comments by Qaleka Mangcipu about the Campaign** • The purpose of the campaign is to close the gap between customers by educating them about illegal connections. • The campaign consists of two elements dealing with issues of external customers paying their bills and dangers of illegal connections.	**Action item:** Annamarie Murray request inputs from members on vandalism, meter tempering and ghost vending e.g. Facts sheet, question and answers Annamarie asked members to send her video clips and photographs of incidents that are happening in their OUs. Examples of these cases of people who	All OUs All OUs	25 August 2020 25 August 2020

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	• Second issues is the internal campaign talking about Eskom my life. Eskom employees play a role to help customers to connect illegal. • Customers will be educated on load reduction • Education on illegal consumer activities to address illegal connections and energy losses. The impact of illegal connections, ghost vending and vandalism of meters • Safety • Customers servicing their debts • Campaign will take place from mid-August 2020 until next year 31 March 2021. Illegal Connections and Safety • Illegal connections are life threatening and overload the power supply system,	have been arrested because of different incidents. Information	Information	

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	• Eskom's supply network is designed for a specific demand and illegal connections cause overloading and equipment failure • It can take hours or days to repair damaged equipment and this leaves both non-paying and paying customers without power for longer periods of time • Illegal connections, meter tampering, bypassing, illegal prepaid vouchers and a culture of non-payment • In addition, vandalism, damage and theft of equipment and infrastructure also negatively affect Eskom – and all put the community and particularly children at risk			
8.	**Neshaan Roopal shares the presentation with members of the Dashboard**	**Information**	**Information**	**Information**

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	• Neshaan Roopal has create a dashboard for Energy losses when the dashboard is completed it will be published for all members to access. • HO to do their monthly reporting will use the dashboard.			
9.	**Losses Performance** **Portia Papu shares the presentation with members on Energy Losses & Revenue Recovery Performance Overview summary click here** **Allan Maseko shares the presentation with members on Energy Losses (7.90% Target)**	**Comment by Allan Maseko** He is happy about the reduction in NC. Allan suggest if the OU can share with		

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	Lowlights • North West has digressed compared to previous month • Overall Distribution performance is unfavourable. **Highlights** • Northern Cape is the only OU which met their monthly reduction target for two months in succession **Dileep John shares the presentation with members on Revenue Recovery, Feeder Balancing and Purchases and Sales.**	other OUs lesson learn on what they have done to achieve the reduction.		

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
10.	**Allan Maseko shares the presentation with members on Production Bonus**	**Action item** Allan Maseko was requested to rectify the NW and NC targets to show a true reflection on the report.	Allan Maseko	25 August 2020
11.	**OU Discussion Implementation presentation are on SharePoint click here** **GP presentation by Kgomotso Jam Jam**	**Comments** Kavitha requested that the information presented by the OUs at the various committees should be aligned to the submissions made to Head Office.		

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
		Action items: Proposal of load reduction work shop for all OUs the purpose of the workshop will be how much GWh they are going to save on load reduction. Walter Lemeko must organize section to workshop load reduction. ***HV Stats & Cross border Meter Project*** Kgomotso was asked to send the spreadsheet of Stats meter to Bolden Ramokgopa after the meeting. **Comment about Meters refurbishment in GPOU**	Walter Lemeko Kgomotso JamJam	25 August 2020 Immediately after meeting

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
		Kgomotso Jam Jam was requested to first check if there is a national contract in place for meters. If there is none they have to for the other, two option which is LPO or bulk to buy meters. Portia mentioned that there is 1 million adjudication funds available. Mangcipu	Kgomotso Jam Jam	25 August 2020
	NW presentation by Meladi Botabota	**Action Items** Portia will make follow up with Qaleka Mangcipu in connection with OPEX	Portia Papu	25 August 2020

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
		funds/budget that is available if the OUs can use the funds to buy meters. Meladi Botabota was requested to verify with Back office initiative the numbers and give Portia feedback.	Meladi Botabota	25 August 2020
	MP presentation by Blessing Mbatha **Comment on Magnetic Meter Replacement Project** Portia Papu comment about the numbers that are on the presentation are not corresponding to the one on the scorecard.	**Action Item** Bolden Ramokgopa will send the spreadsheet to all OUs to update their numbers on Magnetic meter replacement project	Bolden Ramokgopa	Immediately after meeting

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
	Bolden Ramokgopa said he will send the spreadsheet to all OUs to update their numbers.			
	KZN presentation by Nozipho Mpanza **FS presentation by DJ Cloete** **EC presentation by Aron Rondganger** **LP presentation by Stephen Masemola**	**Action items:** As discussed at the EPOSC today, the deadline for information has been extended to 12pm on Monday, 27 July 2020 to submit information (actual and target) for meter refurbishments, audits and fixes on SPU and PPU feeders with supporting information in order for Head Office to perform the validation of the information. Portia request the OUs for Sign offs of purchases, the following OUs need to	All OUs EC,GP,FS,MP, LP and WC	27 August 2020

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Item	Subject & salient points	Decisions & Action items	Responsibility	Target date
		send Bolden Ramokgopa their sign offs EC, GP, FS, MP, LP and WC.		25 August 2020
12.	**Closure** The meeting was adjourned at 16h00 by Portia Papu The date for the next meeting will be on the 25 August 2020 Ms Teams			

Signed as a correct record: _____ _____

Chairperson **Date**

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Meeting Name: Energy Protection Operating Steering Committee Meeting minutes			
Attendance Register			
Name	**Responsibility in the PMO**	**Initials**	**Mark attendance or non-attendance using Present (P), Apologies (A), Absent (X)**

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			22/05	24/07										
Portia Papu	Chairperson	PP	P	P										
Ntshafa Mononyane	Secretariat	NM	P	P										
Neshaan Rooplal	Middle Manager	NR	A	P										
Blessing Mbatha	Middle Manager	BM	P	P										
Reneilwe Oliphant	Middle Manager	RO	A	P										
Ben Lentswana	Middle Manager	BL	A	A										
Doug Bashford	Manager Process	DB	A	P										
Allan Maseko	Middle Manager	AM	P	P										
Brian Mokgele	Middle Manager	BM	P	A										
Bolden Ramokgopa	Senior Advisor	BR	P	P										
Thokozile Luwaca	Senior Advisor	TL	P	P										
Molefi Rantsonyane	Senior Manager	MR	A	A										
Musa Mabila	Senior Manager	MM	A	A										
Thandazile Mazibuko	Senior Manager	TM	A	A										
Bibi Bedir	Senior Manager	BB	A	A										
Nozipho Mpanza	Senior Manager	NM	P	P										
Lucas Mazibuko	Senior Manager	LM	A	A										
Nozipho Masakona	Senior Manager	NM	P	A										
Lloyd Mokgotho	Senior Manager	LM	P	A										
Rudzani Tshikota	Senior Manager	RT	A	A										
Daphne Mokwena	Senior Manager	DM	A	A										

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Motlhabane Ramashi	Senior Manager	MR	A	A											
Unati Figlan	Senior Manager	UF	-	P											
Kolodi Makola	Senior Manager	KM	-	P											
Gugulethu Dumakude	Senior Manager	GD	-	-											
Mbulelo Yedwa	Senior Manager	MY	-	-											
Dileep John	Middle Manager	DJ	P	P											
Bongani Mandla	Middle Manager	BM	P	P											
Modise Mashishi	Officer	MM	P	P											
Esther Somo	Officer	ES	-	P											
Kavitha Pillay	Manager Revenue	KP	P	P											
David Mnqwazana	Middle Manager	DM	P	P											
Aron Rondganger	Middle Manager	AR	-	P											
Lodine Redelinghuys	Middle Manager	LR	-	P											
Mukesh Chutri	Manager Revenue	MC	-	P											

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Inathi Mpapa

From: Sebata Zondo <ZondoSMP@eskom.co.za>
Sent: 27 August 2020 03:17 PM
To: Ntidiseng Makgamatha; Bryan Katane; Ezekiel Baruti; Busisiwe Cindi; Gaafelelwe Sebelegi; Phemelo Olifant; Zanele Sithole; Abram Tumane; Thelma Mgolombane; Matjeka Matjeka; Meladi Botabota
Cc: Betty Malotana
Subject: FW: Eskom Load Reduction Campaign 17 July 2020 FINAL (002).pptx
Attachments: Eskom Load Reduction Campaign 17 July 2020 FINAL (002).pptx

Good day,

Herewith Load Reduction Campaign. Pilot project was conducted in KZN & Gauteng.

The OU was requested to kick-start the campaign.

CAD will establish NWOU Project Committee to support the campaign.

Other information will be communicated in due course to the OU.

Regards

Sebata Zondo
Stakeholder Management
Corporate Affairs Department
Tel: 011 800 8654
Cell No: 082 901 1312
Email: sebata.zondo@eskom.co.za

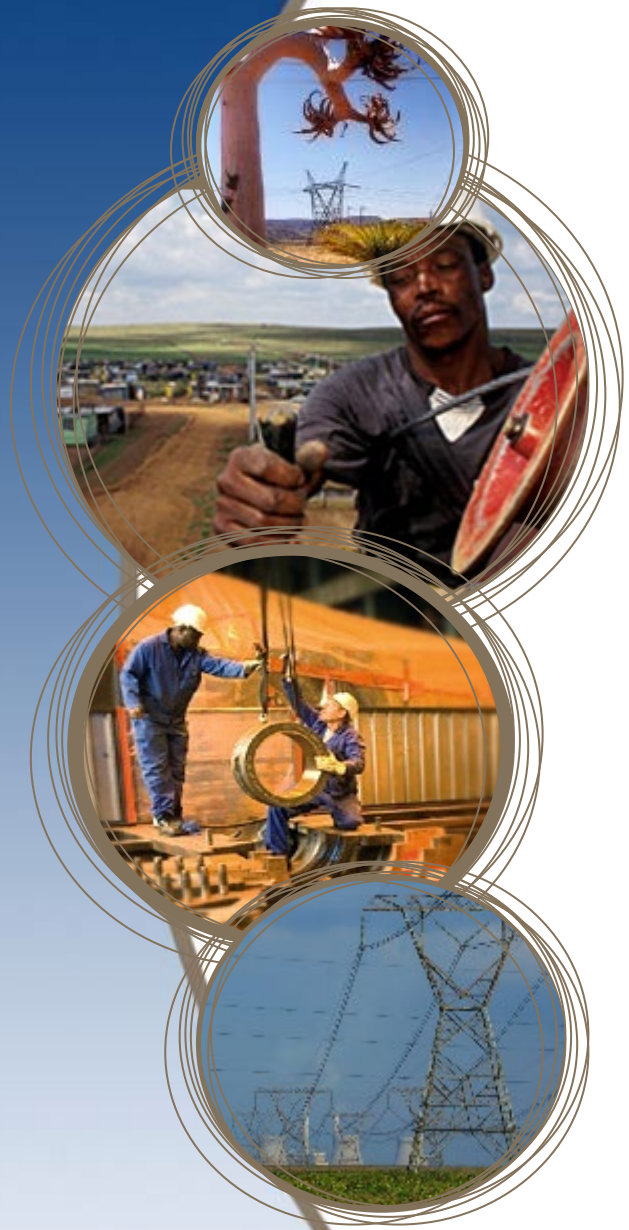
From: Ruth Mzaidume <MzaiduR@eskom.co.za>
Sent: Thursday, 27 August 2020 12:20
To: Joyce Zingoni <ZingonJ@eskom.co.za>; Evodia Ntloko <NtlokoME@eskom.co.za>; Itumeleng Biloane <BiloanI@eskom.co.za>; Trish Da Silva <DSilvaT@eskom.co.za>; Reneiloe Semenya <SemenyRe@eskom.co.za>; Richard Shiba <ShibaR@eskom.co.za>; Zama Mpondwana <MpondwD@eskom.co.za>; Sebata Zondo <ZondoSMP@eskom.co.za>
Subject: Eskom Load Reduction Campaign 17 July 2020 FINAL (002).pptx

Good afternoon Colleagues

Please find the presentation for the above mentioned.

Kind Regards

Ruth



Eskom Load Reduction and Energy Losses Campaign

24 July 2020

Background

Impact of COVID-19 on the campaign

- This has seen three million people lose their incomes, and almost half of all households report going hungry in the past three months *
- Coupled with this South Africa is experiencing its harshest winter in the last 10 years
  - And now we decide to ‘get tough’ – although there would never be a good time / this is long overdue

We now need a harder hitting, information heavy, factual campaign with a strong call to action towards driving compliance

Proposed Campaign Platform

A pro-active education programme, detailing what 'Load Reduction' is and why it is necessary with the key objective being to get people to use electricity legally, safely and responsibly

- While Load reduction is primarily about safeguarding against equipment failure, safety is always Eskom's No1 priority
  - The intent is therefore to hold together the campaign with the concept 'Be Safe' and 'Be Legal'
    - Logic: You are safe if you are legal / you are not safe if you are not legal / you will be Load Reduced







- Start with all staff – share the launch of the Load Reduction campaign and the importance of ensuring all our customers (and fellow colleagues) are compliant, and that that power used is paid for (Safe and Legal)
- Educate the public with a focus on key messages around load reduction, illegal connections, and safety

Proposed Messaging

Load Reduction and Safety

- When consumers use more electricity than the equipment can handle, overloading occurs
  This causes damage to equipment. Sometimes equipment may catch on fire or explode
  To avoid this, Eskom monitors the network and implements local Load Reduction
  This protects equipment and ensures safety of people in the area
- Overloading causes damage to equipment such as transformers and substations, which must then be fixed so which costs money and takes time. So, customers will have to experience long power outages
- Power automatically cuts off to paying and non-paying consumers
- Load Reduction is not the same as Loadshedding. Loadshedding is when n Eskom does not have sufficient Generation capacity (supply) to meet demand and is implemented, as a last resort, to protect the country from a National black-out. Load Reduction is when customer demand is higher than the local equipment can withstand, due to illegal overloading and as a last resort Load reduction is implemented to protect equipment as well as people

Proposed Messaging

Illegal Connections and Safety

- Illegal connections are life threatening and overload the power supply system, necessitating Load Reduction in order to safeguard equipment such as transformers and substations
- Eskom's supply network is designed for a specific demand and illegal connections cause overloading and equipment failure
- It can take hours or days to repair damaged equipment – and this leaves both non-paying and paying customers without power for longer periods of time
- Load Reduction is the result of electricity theft comes in the form of: Illegal connections, meter tampering, bypassing, illegal prepaid vouchers and a culture of non-payment
- In addition, vandalism, damage and theft of equipment and infrastructure also negatively affect Eskom – and all put the community and particularly children at risk

Proposed Messaging

Social Mobilisation

- Load Reduction is inconvenient as is usually implemented during peak times but may be implemented outside of peak periods, when there is an unplanned increase in demand
  - Mornings between 05:00 to 09:00am, Evenings between 17:00 to 20:00pm
- Report illegal connections, vandalism, equipment theft and illegal vendors anonymously to the SAPS, Municipality or Eskom on 32211, 08600 37566 or 0800 11 2722
- Refrain from bypassing meters and connecting to the network illegally, to ensure your safety
- Co-operate with Eskom and local authorities when maintenance is underway in your area
- Encourage your friends and family to pay for power used, to Be Safe and to Be Legal

Proposed media Launch

Announcement programme – 27 July (2 weeks) – depending on various approvals

Media release: (Load reduction)

Angle: Localised measures to contain national impact on the grid. This must be supported by credible information / facts

Spokesperson: Head of Distribution or national spokesman - Sikonathi (requires availability)

Prior to release: Get the conversation going – national and local/community media

Interviews: Proactively engagement with key national/provincial broadcast media (Radio and TV) through interview slots to discuss the concept of load reduction. These may include call in's and interactive engagement through twitter feeds

Social media programme commences to create context prior and support discussions – link social to the conversations happening during the interviews and engagement with content. Analyse comments and respond with content

Key online/print media engagement and interviews coordinated

Media release distributed

Analysis of coverage, conversations and social media comments to formulate responses.

Ongoing management of further information requests from media

Supporting collateral: fact sheets, Q&A, digital access to information

Recommended PR Communication Tools

LAUNCH RELEASE
Engaging with key media to launch and talk about the load reduction vs load shedding with the intention of

ESKOM CONNECT
Content development for Eskom Connect for customers

FACT SHEETS
Educational fact sheets highlighting various forms of energy theft and the more serious side of the social impact

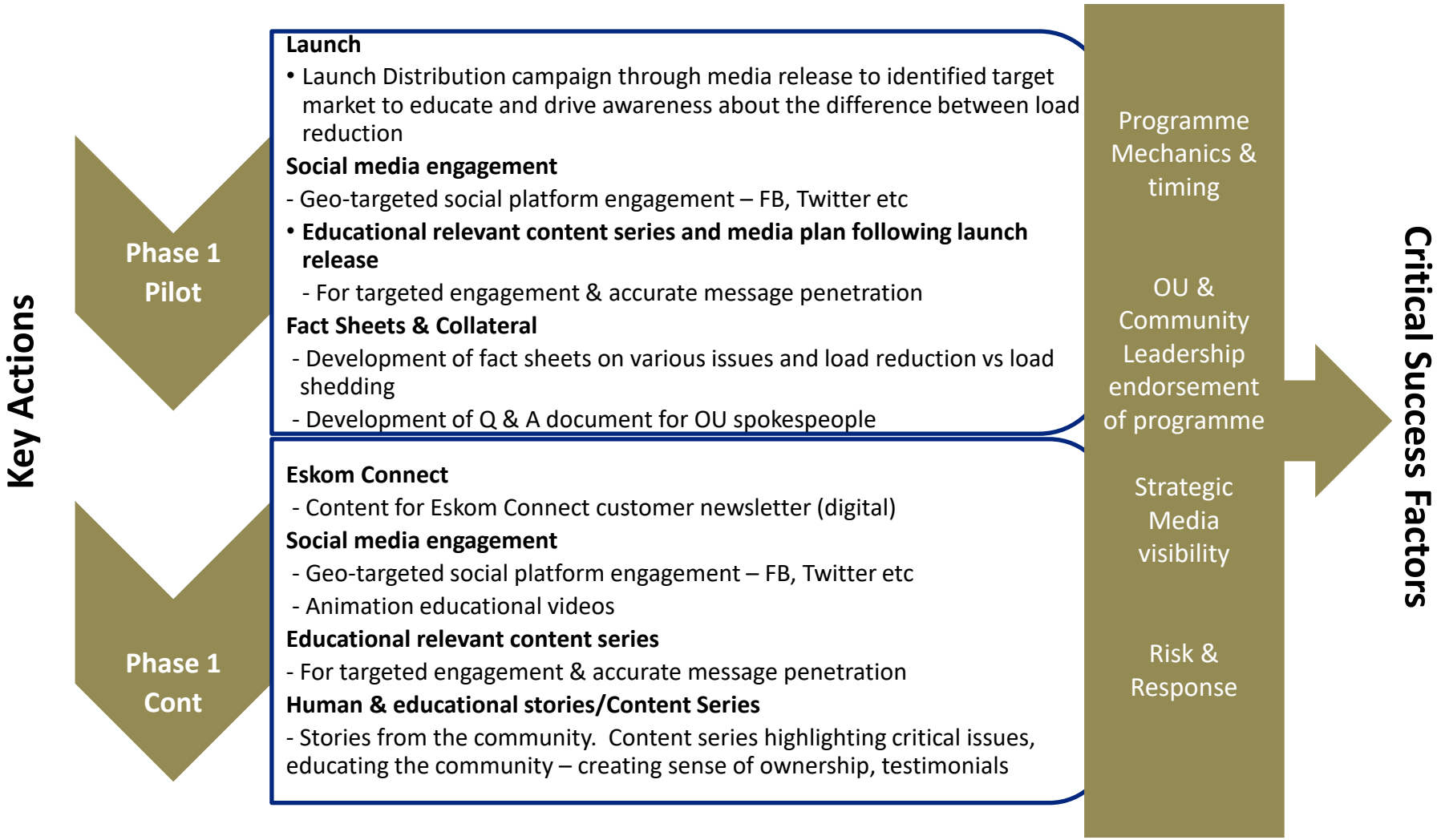
TOOLKIT
Toolkit and collateral developed will assist in amplifying all platforms of the campaign.

MEDIA RELATIONS
Media interviews, testimonials and human stories about Eskom's energy theft and the impact on individuals and communities

SOCIAL MEDIA
Content developed and video to tell the story and share the message of "Be Legal, Be Safe"

Note: All content will be shared with the OU's to share in their provinces through their platforms

Recommended PR Communication Plan



Media Recommendations – Top line

87% our target audience can be effectively reached through radio

Radio also allows us to talk to the target audience in their own language

With radio we can geo target, therefore we can specifically target the pilot areas i.e. **Soweto, Diepsloot and Thornville** with minimum wastage

Radio will be the drive medium to get the message across to our target audience

For radio we will flight a combination of radio ads and interviews. Interviews will help us in communicating the issues around load reduction in more detail, whilst generic ads will act as reminders

With 103.5 million mobile connections in South Africa in January 2020, mobile will also play a huge role in speaking to our target audience, therefore SMS (please call me ads) will be utilized to support the radio campaign

Paid media

Media campaign breakdown of costs

COMMUNITY RADIO

Station	Region	Languages	Listenership	Description	Month of Flighting	Number of Spots	Number of Weeks	Rate	Added Value	Total Cost to Client	Jul	Aug	Sep
Cosmo FM	Gauteng	English, Zulu & Sotho	4 000		Jul & Aug-20	47	2	R 49 021,33	R 15 028,00	R 33 993,33			
Jozi FM	Gauteng	Zulu,Sotho & English	641 000		Jul & Aug-20	47	2	R 158 133,33	R 50 000,00	R 108 133,34			
Umgungundlovu FM	KZN	Zulu	62 000		Jul & Aug-20	47	2	R 78 146,66	R 24 716,00	R 53 430,67			
Imbokodo FM	KZN	Zulu & English	49 000		Sep-20	16	1	R 32 573,33	R 8 860,00	R 23 713,33			
Maputaland CR	KZN	Zulu & English	93 000		Sep-20	16	1	R 20 000,00	R 6 440,00	R 13 560,00			
Ngubeko	KZN	Zulu	64 000		Sep-20	16	1	R 26 046,67	R 7 833,33	R 18 213,34			
Radio Khwezi	KZN	Zulu, English & German	68 000		Sep-20	16	1	R 20 584,00	R 6 144,00	R 14 440,00			
Motheo	Free State	Sotho & English	46 000		Sep-20	16	1	R 13 952,00	R 4 360,00	R 9 592,00			
Radio Qwa Qwa	Free State	Sotho & English	36 000		Sep-20	16	1	R 14 336,00	R 4 480,00	R 9 856,00			
Radio Mosupatsela	Free State	Sotho & English	47 000		Sep-20	16	1	R 11 477,33	R 2 381,33	R 9 096,00			
The Rock FM	Free State	Sotho & English	87 000		Sep-20	16	1	R 13 282,67	R 3 470,67	R 9 812,00			

COMMUNITY RADIO INTERVIEWS

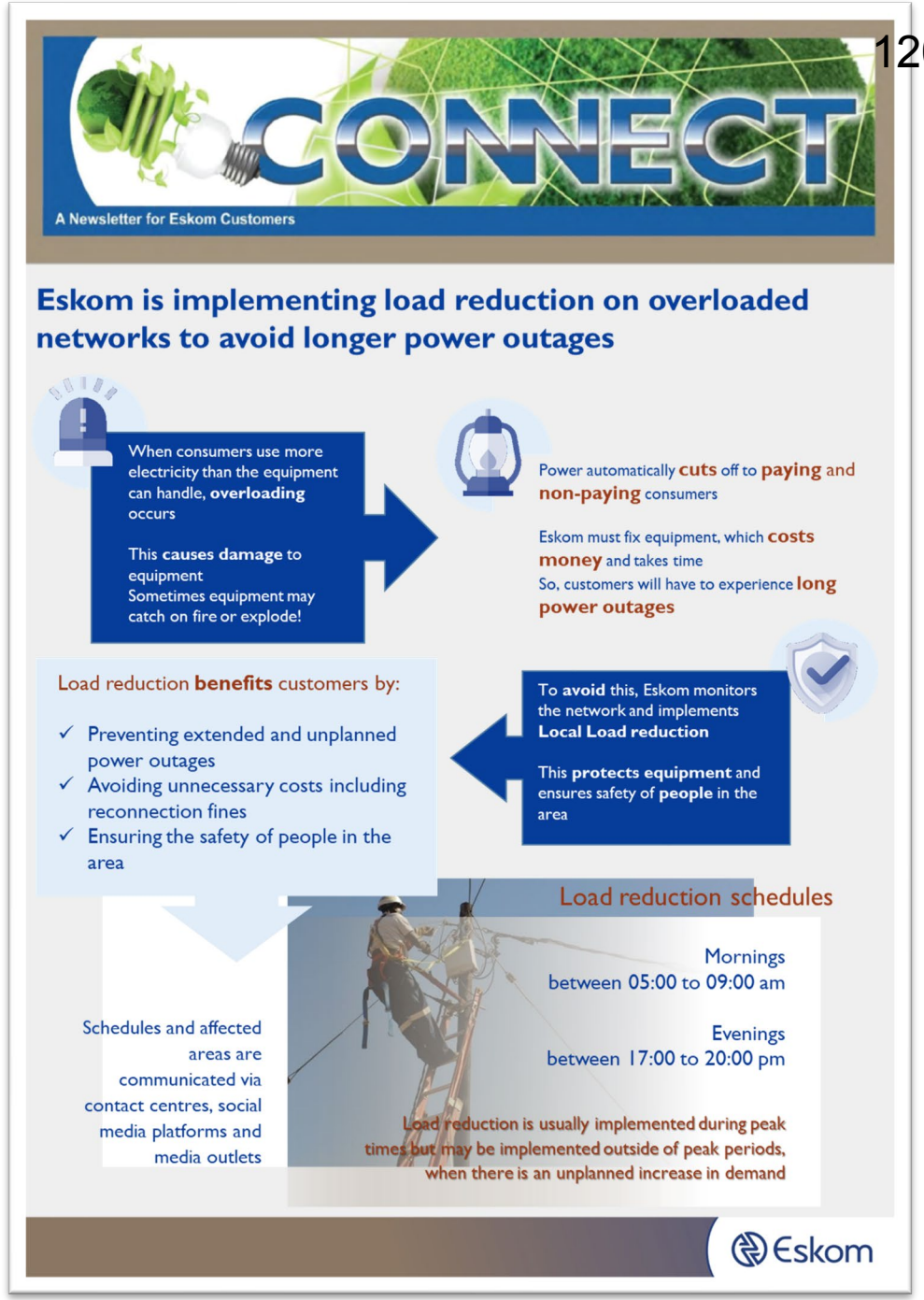
Station	Region	Languages	Listenership	Description	Month of Flighting	Number of Spots	Number of weeks	Rate	Added Value	Total Cost to Client	Jul	Aug	Sep
Cosmo FM	Gauteng	English, Zulu & Sotho	4 000		Jul & Aug-20	2	3	R 6 900,00	R -	R 6 900,00			
Jozi FM	Gauteng	Zulu,Sotho & English	641 000		Jul & Aug-20	2	3	R 17 680,00	R -	R 17 680,00			
Umgungundlovu FM	KZN	Zulu	62 000		Jul & Aug-20	2	3	R 7 300,00	R -	R 7 300,00			
Imbokodo FM	KZN	Zulu & English	49 000		Sep-20	1	1	R 7 000,00	R -	R 7 000,00			
Maputaland CR	KZN	Zulu & English	93 000		Sep-20	1	1	R 7 300,00	R -	R 7 300,00			
Ngubeko	KZN	Zulu	64 000		Sep-20	1	1	R 6 900,00	R -	R 6 900,00			
Radio Khwezi	KZN	Zulu, English & German	68 000		Sep-20	1	1	R 6 880,00	R -	R 6 880,00			
Motheo	Free State	Sotho & English	46 000		Sep-20	1	1	R 5 890,00	R -	R 5 890,00			
Radio Qwa Qwa	Free State	Sotho & English	36 000		Sep-20	1	1	R 6 200,00	R -	R 6 200,00			
Radio Mosupatsela	Free State	Sotho & English	47 000		Sep-20	1	1	R 5 050,00	R -	R 5 050,00			
The Rock FM	Free State	Sotho & English	87 000		Sep-20	1	1	R 6 500,00	R -	R 6 500,00			

Media campaign breakdown of costs

- Total cost currently of R2million
- We will consider print media
- We will also explore radio ads and interviews on large national stations to increase reach of launch

Radio interviews – change to large national stations in first 2 weeks such as Ukhozi FM, Umhlobo Wenene, Lesedi FM and 702

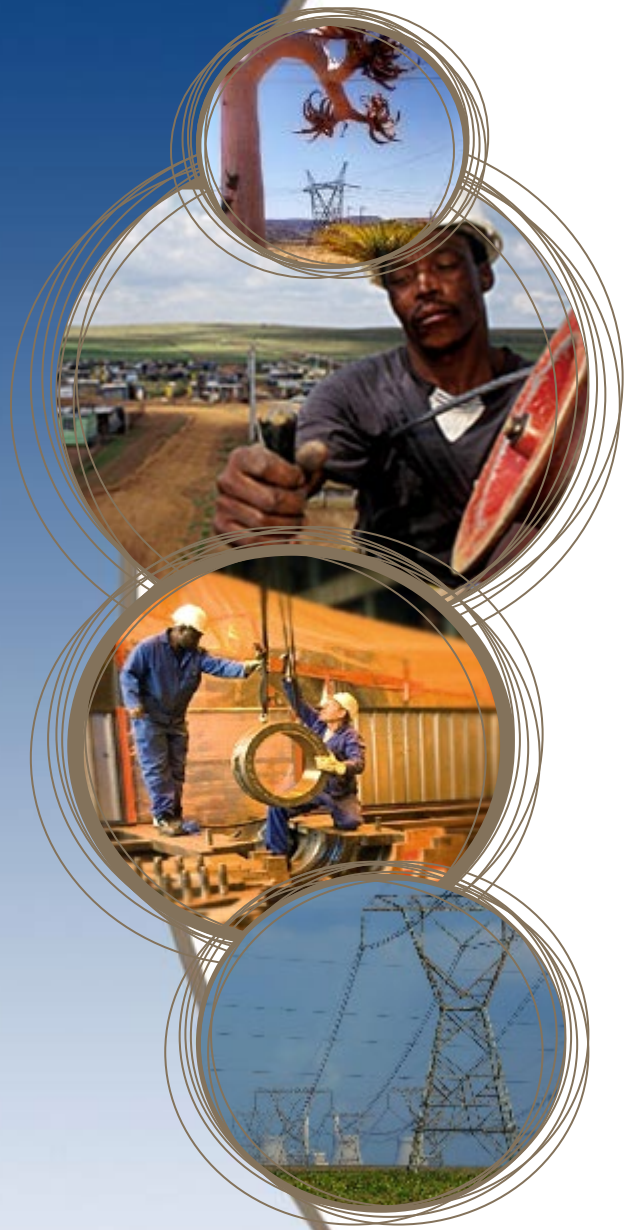

Tackling energy and revenue losses with urgency
Eskom
Eskom News
Keeping employees connected
Issue 6
July 2020
In this issue
Tackling energy and revenue losses with urgency. Page 2 - 3
Current challenges faced by Eskom. Page 4
What are non-technical energy losses? Page 5
Illegal connections are life threatening and put strain on the power supply system. Page 6
Non-technical losses. Page 7
Eskom implements load reduction on overloaded networks. Page 8
The difference between Load Reduction and Load Shedding? Page 9
How does Eskom select the areas that will experience load reduction? Page 10
Revenue loss for 2018/19 Page 11
Our 3-point debt reduction plan needs your support. Page 12
Safety is always our first priority! Page 13
What can customers do? Page 13
This special edition of the Eskom News focuses on major issues being dealt with in the Distribution Division


CONNECT
A Newsletter for Eskom Customers
Eskom is implementing load reduction on overloaded networks to avoid longer power outages
When consumers use more electricity than the equipment can handle, overloading occurs
This causes damage to equipment
Sometimes equipment may catch on fire or explode!
Power automatically cuts off to paying and non-paying consumers
Eskom must fix equipment, which costs money and takes time
So, customers will have to experience long power outages
To avoid this, Eskom monitors the network and implements Local Load reduction
This protects equipment and ensures safety of people in the area
Load reduction benefits customers by:
✓ Preventing extended and unplanned power outages
✓ Avoiding unnecessary costs including reconnection fines
✓ Ensuring the safety of people in the area
Load reduction schedules
Mornings between 05:00 to 09:00 am
Evenings between 17:00 to 20:00 pm
Schedules and affected areas are communicated via contact centres, social media platforms and media outlets
Load reduction is usually implemented during peak times but may be implemented outside of peak periods, when there is an unplanned increase in demand
Eskom

Monthly themes will be used to inform the roll out of the campaign both internally and externally

July	Aug	Sept	Oct	Nov	Dec
Load reduction Load reduction vs load shedding	Load reduction Load reduction vs load shedding	Illegal connections, the dangers, consequences and prosecution	Municipal debt – what Eskom does about it, progress with municipal payments	Ghost vending, buying of legal vouchers and IBT – how to buy smartly	Meter tampering – consequences and fines

Jan	Feb	Mar	Apr	May	Jun
Infrastructure theft, prosecution, what people are stealing & replacement costs	Ghost vending, buying of legal vouchers and IBT – how to buy smartly	Non-payment – why pay, non-payment stats, report on payment levels across customer base	Load reduction Load reduction vs load shedding	Safety aspects and community co-operation	Municipal debt – what Eskom does about it, progress with municipal payments



Thank You

Inathi Mpapa

From: Meladi Botabota <BotaboMR@eskom.co.za>
Sent: 22 September 2020 09:25 AM
To: Abram Tumane; Bryan Katane; Betty Malotana; Ntidiseng Makgamatha; Buti Mofulatsi; Neo Mothibi
Cc: Sebata Zondo
Subject: RE: Load Reduction Campaign
Attachments: Load Reduction with Block J (NWOU).xlsx

Good day colleagues

Please note that the load reduction process indicate that all the feeders in the OU with concentrated PPU at 50 % NTL should schedule on a block so that control can start with the implantation

This process/blocks has to be done by network optimisation and we don't have that department in the OU

Matlosana is serviced by GOU net ops and so far they have blocked the network into block F and further analysis was suggested that Neo Kwaeng have to provide networks which had transformers blowing for the past 3 years to support the block criteria- see attached document

Rustenburg is serviced by LOU and there is nothing done so far and after a lot of request send to them , I then escalated the matter to my manager and their manager and they are handling it

The process further more explain that Net opt will have to work with Energy Trading on a monthly basis to calculate the GWh gain from the implementation

So from my opinion until Network opt handle the schedule blocks for control there is little to be done in terms of implementation but the campaign can still go on to keep our customers informed

Regards
Meladi

From: Abram Tumane <TumaneA@eskom.co.za>
Sent: Thursday, 17 September 2020 15:12
To: Bryan Katane <KataneBG@eskom.co.za>; Betty Malotana <MalotaMR@eskom.co.za>; Meladi Botabota <BotaboMR@eskom.co.za>; Ntidiseng Makgamatha <MakgamND@eskom.co.za>; Buti Mofulatsi <MofulaMB@eskom.co.za>; Neo Mothibi <MothibNR@eskom.co.za>
Cc: Sebata Zondo <ZondoSMP@eskom.co.za>
Subject: RE: Load Reduction Campaign

I thought we only had to provide what we believe is the source of the high losses. They would then package a taylormade product for us.

From: Bryan Katane
Sent: 17 September 2020 02:35 PM
To: Abram Tumane; Betty Malotana; Meladi Botabota; Ntidiseng Makgamatha; Buti Mofulatsi; Neo Mothibi
Cc: Sebata Zondo
Subject: RE: Load Reduction Campaign

Maybe we just need to give Mel some feedback on this campaign and deliberations made from the first meeting over and above the submission made already by Mr Tumane just to enable not only her but other strategic stakeholders to get a clear understanding on the approach going forward. Mrs Botabota, as per your request to record the meeting, kindly listen in if you haven't. (Your feedback/comment is crucial)

Phemelo & Tebogo also needs to be part and parcel of this as sectors. (Abram, Meladi please take the campaign to them to hear their views)
Buti you were part of the first meeting, you can also update Mel.
Mme Ntidiseng, please advise on other role players.

Our follow up meeting will then decide on a collective approach for the OU before we kick start the campaign.

Regards

From: Abram Tumane
Sent: Thursday, 17 September 2020 13:04
To: Betty Malotana; Meladi Botabota; Bryan Katane
Cc: Sebata Zondo
Subject: RE: Load Reduction Campaign

The non-technical losses attributed to the PPU environment in the NWOU is about 60% of total non-technical losses. Empirical evidence indicates that the main driver or cause of these losses is ghost electricity barring two or so feeders in the Brits area where there are illegal connections.

Premised on the above, our message should revolve around ghost electricity and its impact on our network. Customers are likely to overload the network given that they buy electricity at about 25% of the actual cost. Eskom is expected to repair and replace damaged equipment as a result of overloading and the cost thereof is not borne by customers but by Eskom in its entirety. This is the reason why Eskom has resolved not to assist any customer who calls for help but is not buying electricity from Eskom.

Furthermore, overloading is not only a result of cheap electricity as above but also a result of bypassing or bridging. Therefore the tool that Eskom will use henceforth in dealing with those stealing and buying ghost electricity will be Load Reduction and refusal to help customers involved in this/these act/s.

COMMENTS????

From: Betty Malotana
Sent: 17 September 2020 12:44 PM
To: Meladi Botabota; Abram Tumane; Bryan Katane
Cc: Sebata Zondo
Subject: Load Reduction Campaign

Good day

Kindly assist with content for North West.

We need to populate our own content for this campaign and your help is needed.

Please send me something to work on at your earliest convenience.

Kind regards

Betty Malotana
Eskom Holdings SOC Limited
North West Operating Unit
Distribution Division
Communication & Stakeholder Management
14-16 Kgwebo Street
Mabe Park, Rustenburg, 0299
Mobile: +27 82 643 2224
Pax: 8169 1379
Tel: 014 565 1379
Fax: +27 86 667 0709
E-mail MalotaMR@eskom.co.za
Eskom Holdings SOC Limited Reg No 2002/015527/06



"Failure is simply the opportunity to begin again, this time more intelligently." Henry Ford



Revision Control		
Rev	**Date**	**Reasons**
Rev 1.0	23-Dec-19	Created using criteria of shedding at substation TRFR level. Only customers whose feeder losses are 40% and above are selected for inclusion into the loss reduction schedule.
Rev 2.0	09-Jan-20	Include Ekurhuleni and Tshwane stations as well. Ekurhuleni breaker operating guide to be developed by FSOU Net Ops and to be implemented by Bloemfontein control. Blocks named A to I, where H and I are Ekurhuleni blocks.
Rev 3.0	13-Jan-20	Issues picked up by control have been noted and effected. Kagiso - Michal 1, 2 and 3 updated in Block D. Previously Michal 1 feeder appeared thrice instead of stating 1, 2 and 3. Jetta TRFR 3 can only be opened on 88 kV level as there is an isolator on the 11 kV side. This was updated in new Revision. From Block Diepkloof extension feeders excluded from Diepkloof Main sub as these constitute a larger bulk of paying customers than non-paying customers. From Block F the Erasmus - Aviva feeder excluded as this supplied the Munic and Munics are not included in the loss reduction schedules. Lochvaal Rural in Block D TRFR 1 isolator cannot be opened via supervisory therefore the TRFR was replaced with the feeders. All blocks and cover pages will reflect the latest revison and the cover pages will also reflect the latest revision date. The rev number and revision date on each sheet is linked to cover page A.
Rev 4.0	29-Jan-20	Tahiti excluded fontein, Lidequesdrift and Repeater Woodlands feeders from Block D as these are bulk paying customers. Glen Harpy feeder excluded from block A as there is a T-off to City Power. Meadow - Marie Louise feeder from Block A excluded as there is an IPP on that feeder.
Rev 5.0	23-Feb-20	Excluded Boys, Zico, Mostyn, Bloubos and city Mall feeders from Cosmo city in Block B. Tahiti excluded from block D as it is supplying Emfuleni Munic
Rev 5.0	10-Mar-20	Removal of Golfview from block F and Ironside Shedding 3 Feeders only and Hammanskraal scenario change
Rev 6.0	30-Apr-20	Removed Mooilande all Feeders from Block A Removed Cosmocity Rhamadin, Seetha, Zico and Bloubos from Block B Removed from Ironside Debonair Park,De Deur,Walkerville from Block C Removed Laezonia and Lochvaal Rural from Block D Added Golfview_Orange Farmer Feeder In block In Block F Removed Henley Rural from Block F Removed Dilopye, Erasmus, Hotel , Witport all feeders and Pelly Lushof and Naphan Feeder. At Makapanstad Removed Kgomo and College Feeders **These are stations and feeders that have dropped below the 50% mark and those that are supplying a mix of Industrial, Commercial and SPU Small Holding Farms (Plots). Changes Requested by K Jamjam**
Rev 6.1.	28-May-20	Please note that we don't trust the stats feeder at Molebatsi feeder it has dropped by almost 40% from 2018 to 2020. Can we include this station to the Load Reduction schedule Khutsong (Hostel 1&2, Molebatsi & Skoonplaas). Requesed by K Jam Jam. Changes done by NL
Rev 6.1.	08-Jun-20	Removed Meadow TRF 3(to Fix the operating Scenario) to exclude Marie louise in Block A . Done by Thembakazi Lamani
Rev 7.0	15-Jun-20	Removed feeders on which lowered trip settings were applied. The feeders were removed from Moroka, Mofolo and Zola according to the spreadsehhet received from Settings dept. on 15 Jun 2020. The loads were adjusted accordingly and no reshuffling of any other loads was done, therefore blocks in which there were no exclusions remain unchanged. The blocks that are affected by this exclusion is Block B, C and D.
Rev.7.1	23-Jun-20	Schedule updated to the winter load. Block B, C and D moved from feeder switching due to settings back to the old trfr settings. Done by Nwabisa Letsoha (Reverted to 7.0 after two days)
Rev.7.2	13-Jul-20	Removal of Krog 2/2 Feeder at Mapetla_ Block E to Exclude Protea South Mall(Paying Customer) Authorised by K JamJam. Done by Thembakazi Lamani
Rev. 8.0	10-Aug-20	Addition of block J for NWOU feeders with losses above 50%. Done by Yaaseen

Load Reduction Breaker Operating Guide

Last Revised 10/08/2020

Rev 8.0

BLOCK A



CONTROL CENTRES
Bloem Control _(051 404 2114)
Eskom Control_ (011 871 3020)

Network Optimisation Contacts
Magic Sibuyi (0825005457) Yaaseen Akhalwaya(0725607513) Thembakazi Lamani (072 270 9750) Zainoolabadien Karim (083 252 4920)

LOG	
DATE	
TIME	

Rev 8.0						
Block	**Sub Block**		**Switching Sequence**			
			Station	**Operating Sequence**	**Breaker to Open**	**kV**
A			Ivory Park	1	TRFR 1	22
				2	TRFR 2	
				3	TRFR 3	
			Glen	1	TRFR 2	11
				2	TRFR 3	
				3	TRFR 4	
				4	All FDRs fed from TRFR 1 **except** for Harpy FDR	
			Meadow	1	Ensure Bussection Breaker is open	11
				2	TRFR 2	
				3	MDLW 4/674	
				4	MDLW3/1392	
				5	Ngwaneso	
				6	MDLW3/1474	

Load Reduction Breaker Operating Guide

Affected Station(s)	Eskom Sub Load [MW]	City Power Sub Load [MW]	Eskom Load [MW]	City Power Load [MW]	Total Load [MW]	Time Off	Time On
Ivory Park	40	0	40	0	40		
Glen TRFR 2, TRFR 3, TRFR 4 and all FDRs fed from TRFR 1 **except** for the Harpy feeder	30.1	0.0	30.12	0	30.12		
Meadow **except** Marie Louise Feeder	30.24	0	30.24	0	30.24		
BLOCK A TOTAL [MW]	**100.36**	**0**	**100.36**	**0**	**100.36**		

Supervisory Available [Y/N]	Shed Load [MW]

Load Reduction Breaker Operating Guide

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BLOCK B



CONTROL CENTRES
Bloem Control _(051 404 2114)
Eskom Control_ (011 871 3020)

Network Optimisation Contacts
Magic Sibuyi (0825005457) Yaaseen Akhalwaya(0725607513) Thembakazi Lamani (072 270 9750) Zainoolabadien Karim (083 252 4920)

LOG	
DATE	
TIME	

Rev 8.0	Load Reduction Breaker Operating Guide															
Block	Sub Block		Switching Sequence				Affected Station(s)	Eskom Sub Load [MW]	City Power Sub Load [MW]	Eskom Load [MW]	City Power Load [MW]	Total Load [MW]	Time Off	Time On	Supervisory Available [Y/N]	Shed Load [MW]
			Station	Operating Sequence	Breaker to Open	kV										
B		B1	Mofolo Main	1	MDW1	11	Mofolo Main **Excluding**	14	0	14	0	14				
				2	MDW2		MOFN1/306									
				3	MDW3		MOFN4/2097									
				4	MDW4		MOFN4/941									
				5	MDLW2/3070		MOFN1/204									
				6	MOFN3/866		MDLE1/804									
				7	MOFN3/2274		MDLW2/3247									
				8	MOFN1/T3		MOFN2/483									
				9	ORLWN1/T3		Orlando West North 1									
				10	ORLWS1/T3		Orlando West North 2									
							Orlando West North 3									
							MOFN2/SALVATION									
							MDLE2/337									
							MDLE2/41									
							Meadowlands East 1									
							Meadowlands East 2									
							Meadowlands East 4									
							Meadowlands East 3									
							Orlando West South 1									
							Orlando West South 2									
							Orlando West South 3									
			Pulsar	1	TRFR 1	22	Pulsar	**16.4**	**0.0**	16.38	0	16.38				
				2	TRFR 2	11										
		B2	Sentra	1	TRFR 2	22	Sentra	12.09	0	12.09	0	12.09				
			Cosmo City	1	Fly	11	Cosmo City (Excluding Boys, Zico, Mostyn Bloubos, Ramadhin, Seetha and Cty Mall feeders)	8	0	8	0	8				
				2	Moni											
				3	Ant											
				4	Bee											
							BLOCK B TOTAL [MW]	**50.47**	**0**	**50.47**	**0**	**50.47**				

Load Reduction Breaker Operating Guide

Last Revised 10/08/2020

Rev 8.0

BLOCK C



CONTROL CENTRES
Bloem Control _(051 404 2114)
Eskom Control_ (011 871 3020)

Network Optimisation Contacts
Magic Sibuyi (0825005457) Yaaseen Akhalwaya(0725607513) Thembakazi Lamani (072 270 9750) Zainoolabadien Karim (083 252 4920)

LOG	
DATE	
TIME	

Rev 8.0	Load Reduction Breaker Operating Guide																
Block	Sub Block		Switching Sequence				Affected Station(s)	Eskom Sub Load [MW]	City Power Sub Load [MW]	Eskom Load [MW]	City Power Load [MW]	Total Load [MW]	Time Off	Time On	Supervisory Available [Y/N]	Shed Load [MW]
			Station	Operating Sequence	Breaker to Open	kV										
C					Ensure ALL 11 kV Bus couplers AND Bus section breakers are open											
			ZOLA	1	TRFR 2	11	Zola Main excluding the following feeders: NAL1/3702 NAL1/2055 ZOLA1/1703 EMD2/684 EMD2/706 ZOLA2/804 ZOLA2/6087	36.2		36.2	0	36.2				
				2	TRFR 3											
				3	TRFR 5											
				4	ZOLA1 SHOPRITE											
				5	NALEDI 1											
				6	NALEDI 2											
				7	NALEDI 3											
				8	ZOLA1 SHOPRITE											
				9	MOL1/6019											
				10	ZON2/T3											
				11	ZONDI1/6020											
				12	DOBS2/2992											
				13	DOBSONVILLE 1											
				14	DOBSONVILLE 2											
				15	DOBSONVILLE 3											
				16	DOBSONVILLE 4											
				17	DOBS4/12515											
			Sebokeng	1	TRFR 1	88	Sebokeng	32.8	0.0	32.76	0	32.76				
				2	TRFR 2											
				3	TRFR 3											
			Ironside	1	Estate 1 (Orange Farm CNC)	11	Ironside_ Estate 1	3	0	3	0	3				
							BLOCK C TOTAL [MW]	71.96	0	71.96	0	71.96				

Load Reduction Breaker Operating Guide

Last Revised 10/08/2020

Rev 8.0

BLOCK D



CONTROL CENTRES
Bloem Control _(051 404 2114)
Eskom Control_ (011 871 3020)

Network Optimisation Contacts
Magic Sibuyi (0825005457) Yaaseen Akhalwaya(0725607513) Thembakazi Lamani (072 270 9750) Zainoolabadien Karim (083 252 4920)

LOG	
DATE	
TIME	

Rev 8.0	Load Reduction Breaker Operating Guide														
Block	Sub Block		Switching Sequence				Affected Station(s)	Eskom Sub Load [MW]	City Power Sub Load [MW]	Eskom Load [MW]	City Power Load [MW]	Total Load [MW]	Time Off	Time On	Supervisory Available [Y/N]	Shed Load [MW]
			Station	Operating Sequence	Breaker to Open	kV										
D		D1	Moroka Main		Ensure ALL 11 kV Bus couplers AND Bus section breakers are open	11	Moroka Main excluding: PIMVILLE2 PIMVILLE3 PIMVILLE4 PIMVILLE5 PIMVILLE6/PIM1/LIFATENG PIMVILLE7/PIM1/NANCEFIELD PIM5/3938 PIM5/5883A	43.7	0	43.7	0	43.7				
				1	TRFR 1											
				2	TRFR 3											
					DHLAMINI 1											
					DHL2/1613(T3)											
					DHLAMINI 3											
					DHLAMINI 2											
					PIM4/2621/T3											
					PIM4/11484											
					PIMVILLE 1											
					MAPONYA2											
			Bekkersdal	1	TRFR 1	11	Bekkersdal	6.3	0.0	6.3	0	6.3				
				2	TRFR 2											
			Kagiso	1	Cheesa1	11	Kagiso	2.5	0.0	2.5		2.5				
				2	Cheesa2											
				3	Cheesa3											
				4	Michal 1											
				5	Michal 2											
				6	Michal 3											
		D2	Khutsong	1	Skoonplass	11	Khutsong (Excluding Dam and Woud Feederds)	5.3	0	5.3	0	5.3				
				2	Hostel 1											
				3	Hostel 2											
				4	Molebatsi											
		D3	Jetta	1	TRFR 1	22	Jetta	14.8	0.0	14.8	0	14.8				
				2	TRFR 2											
				3	TRFR 3	88										
				4	TRFR 4	11										
							BLOCK D TOTAL [MW]	72.56	0	72.56	0	72.56				

Load Reduction Breaker Operating Guide

Last Revised 10/08/2020

Rev 8.0

BLOCK E



CONTROL CENTRES
Bloem Control _(051 404 2114)
Eskom Control_ (011 871 3020)

Network Optimisation Contacts
Magic Sibuyi (0825005457) Yaaseen Akhalwaya(0725607513) Thembakazi Lamani (072 270 9750) Zainoolabadien Karim (083 252 4920)

LOG	
DATE	
TIME	

Rev 8.0	Load Reduction Breaker Operating Guide															
Block	Sub Block		Switching Sequence				Affected Station(s)	Eskom Sub Load [MW]	City Power Sub Load [MW]	Eskom Load [MW]	City Power Load [MW]	Total Load [MW]	Time Off	Time On	Supervisory Available [Y/N]	Shed Load [MW]
			Station	Operating Sequence	Breaker to Open	kV										
E		E1	Mapetla Main	1	Ensure Bussection Breaker A is open	11	Mapetla Main **Except** Krog2/2 Feeder	**88.2**	**0**	88.2	0	88.2				
				2	Ensure Bussection Breaker B is open											
				3	Ensure East Buscoupler is open											
				4	Ensure West Buscoupler is open											
				5	TRFR 1											
				6	TRF 3											
				7	Krog1/155											
				8	Krog3/3466											
				9	MTLA5/3353											
				10	MTLA3/1A											
				11	Protea 1											
				12	Protea 2											
				13	Protea 3											
				14	PRNT2/1420											
				15	PRNT1/444											
			Ruggraat	1	TRFR 1	11	Ruggraat	**59.2**	**0**	59.2	0	59.2				
				2	TRFR 2											
				3	TRFR 3											
		E2	Boipatong	1	TRFR 1	11	Boipatong	**35.5**	**0.0**	35.5	0	35.5				
				2	TRFR 2											
				3	TRFR 3											
			Astra	1	TRFR 1	22	Astra	**6.0**	**0.0**	6.0	0	6.0				
				1	TRFR 2											
							BLOCK E TOTAL [MW]	**188.9012**	**0**	**188.9012**	**0**	**188.9012**				

Load Reduction Breaker Operating Guide

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Rev 8.0

BLOCK F



CONTROL CENTRES
Bloem Control _(051 404 2114)
Eskom Control_ (011 871 3020)

Network Optimisation Contacts
Magic Sibuyi (0825005457) Yaaseen Akhalwaya(0725607513) Thembakazi Lamani (072 270 9750) Zainoolabadien Karim (083 252 4920)

LOG	
DATE	
TIME	

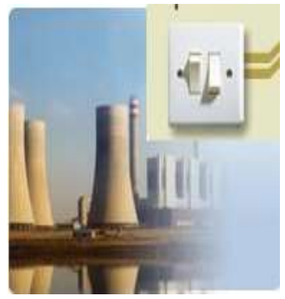
Rev 8.0	Load Reduction Breaker Operating Guide														
Block	Sub Block		Switching Sequence				Affected Station(s)	Eskom Sub Load [MW]	City Power Sub Load [MW]	Eskom Load [MW]	City Power Load [MW]	Total Load [MW]	Time Off	Time On	Supervisory Available [Y/N]	Shed Load [MW]
			Station	Operating Sequence	Breaker to Open	kV										
F		F1	Diepkloof Main	1	TRFR 1	11	Diepkloof Main TRFR 1, TRFR 3, TRFR 4 and all FDRs fed from TRFR 2 **except** for the Diepkloof Ext feeders	49.92	0	49.92	0	49.92				
				2	TRFR 3											
				3	TRFR 4											
				4	All FDRs fed from TRFR 2 **except** for the feeders to Diepkloof Ext											
			Golfview	1	Orange Farmer	11	Orange Farmer Feeder	3	0	3	0	3				
		F2	Kadett	1	TRFR 1	22	Kadett	36.0	0.0	36.0	0	36.0				
				2	TRFR 2											
			Thabiso	1	TRFR 2	11	Thabiso	5.1	0.0	5.1	0	5.1				
				2	TRFR 3											
							BLOCK F TOTAL [MW]	**94.02**	**0**	**94.02**	**0**	**94.02**				

Load Reduction Breaker Operating Guide

Last Revised 10/08/2020

Rev 8.0

BLOCK G



CONTROL CENTRES
Bloem Control _(051 404 2114)
Eskom Control_ (011 871 3020)

Network Optimisation Contacts
Magic Sibuyi (0825005457) Yaaseen Akhalwaya(0725607513) Thembakazi Lamani (072 270 9750) Zainoolabadien Karim (083 252 4920)

LOG	
DATE	
TIME	

Rev 8.0	Load Reduction Breaker Operating Guide															
Block	Sub Block	Switching Sequence				Affected Station(s)	Eskom Sub Load [MW]	City Power Sub Load [MW]	Eskom Load [MW]	City Power Load [MW]	Total Load [MW]	Time Off	Time On	Supervisory Available [Y/N]	Shed Load [MW]
		Station	Operating Sequence	Breaker to Open	MW										
G		Rethabiseng	1	TRFR 1	12	Ekangal A, B, C, D, E and F.	12								
			2	TRFR 2											
		Kudube	1	ALL Retic feeders except Water Treatment Works 1 & 2	4.02	Kudube Unit 1, 2, 5, 6, 7, 8, 11 and D	4.02								
		Mathibestad	1	TRFR 1	6.6		6.6								
			2	TRFR 2											
		Makapanstad	1	Swartdam Feeder	1.5		1.5								
		Stinkwater	1	TRFR 1	6.9	Soshanguve, Soshanguve PP East, T Ext, V and W	6.9								
			2	TRFR 2											
		Unit S	1	TRFR 1	1.26	Mabopane Unit B, D and S	1.26								
		Vuka SWS	1	Bushveld / Mahlwareng	5.64		5.64								
		Circle	1	TRFR 1	8.19	Kopanong, Winterveld, Mabopane A, B, C, D, M, S, U and X	8.19								
		Nonyane	1	TRFR 1	8.19	Jakkalas, Klipgat, Kromkuil, Mabopane, Makanyaneng, Masoga, Mmakaunyana,	8.19								
			2	TRFR 2											
		Winterveld	1	TRFR 1	9.45	Mabopane Unit A, B, CV, E, N, Soshanguve BB, NN, NNME 1 and Winterveld	9.45								
			2	TRFR 2											
		Midway	1	TRFR 1	6.3	Ga Rankuwa Industrial, Garankuwa Rural, Garankuwa Unit 10, 15, 17, 21, 23, 24, 3, 5, 7, 8, 9 and Garankuwa View	6.3								
			2	TRFR 2											
		Mabopane B	1	TRFR 1	7.36	Kopanong, Mabopane A, B, C, D, E, M, N, S, U, X, Soshanguve South and Winterveld	7.36								
		Block G Total [MW]			**77.41**		**0**				**77.41**				

Losses Reduction Breaker Operating Guide

Last Revised 10/08/2020

Rev 8.0

BLOCK H



CONTROL CENTRES
Bloem Control _(051 404 2114)
Eskom Control_ (011 871 3020)

Network Optimisation Contacts
Magic Sibuyi (0825005457) Yaaseen Akhalwaya(0725607513) Thembakazi Lamani (072 270 9750) Zainoolabadien Karim (083 252 4920)

LOG	
DATE	
TIME	

Rev 8.0

Losses Reduction Breaker Operating Guide

Block	Switching Sequence				Affected Station(s)	Eskom Sub Load [MW]	City Power Sub Load [MW]	Eskom Load [MW]	City Power Load [MW]	Total Load [MW]	Time Off	Time On	Supervisory Available [Y/N]	Shed Load [MW]
	Station	Operating Sequence	Breaker to Open	kV										
	TWALA 11 KV	1	Katlehong-Twala 33kV	33	Twala	24	0	24		24				
H	SALI 11 KV	1	Katlehong-Sali 1 33kV		Sali	18	0	18	0	18				
	VOSLOORUS 11 KV	1	TRFR 2	88	Vosloorus	19	0	19	0	19				
		2	TRFR 3	88										
		3	TRFR 5	11										
	LIKOLE 11 KV	1	Katlehong-Likole 33kV	11	Likole	15.6	0.0	15.6	0	15.6				
	SPRUITVIEW 11 KV	1	Katlehong-Spruitview 33kV	33	Spruitview	12.0	0.0	12.0		12.0				
	SAM SEKOATI SS 11 KV	1	Vosloorus-Sam Sekoati 1	11	Dispatch operator	4.0	0.0	4.0		4.0				
		2	Vosloorus-Sam Sekoati 2		Sam Sekoati									
		3	Vosloorus-Sam Sekoati 3		Dispatch operator									
		4	Sam Sekoati-Natalspruit Hospital SWS		Dispatch operator									
	KATLEHONG 11 KV	1	Katlehong trfr2 11kV	11	Katlehong	23.0	0.0	23.0	0	23.0				
		2	Natalspruit Trfr 1 11kV Brk (Katlehong)	11	Dispatch operator								N	
					BLOCK E TOTAL [MW]	115.6	0	115.6	0	115.6				



Losses Reduction Breaker Operating Guide

Last Revised 10/08/2020

Rev 8.0

BLOCK I



CONTROL CENTRES
Bloem Control _(051 404 2114)
Eskom Control_ (011 871 3020)

Network Optimisation Contacts
Magic Sibuyi (0825005457) Yaaseen Akhalwaya(0725607513) Thembakazi Lamani (072 270 9750) Zainoolabadien Karim (083 252 4920)

LOG	
DATE	
TIME	

Rev 8.0

Losses Reduction Breaker Operating Guide

Block	Switching Sequence				Affected Station(s)	Eskom Sub Load [MW]	City Power Sub Load [MW]	Eskom Load [MW]	City Power Load [MW]	Total Load [MW]	Time Off	Time On	Supervisory Available [Y/N]	Shed Load [MW]
	Station	Operating Sequence	Breaker to Open	kV										
	NICHOLAS 11 KV	1	Nicholas-Kunene 1 11kV	11	NICHOLAS	9	0	9		9				
I			Nichola-Kunene 2 11kV											
	VEZI 11 KV	1	Trfr 1	11	VEZI	15	0	15	0	15				
		2	Trfr 2											
	ETWATWA 11 KV	1	Trfr 1	11	ETWATWA	26.4		26.4	0	26.4				
		2	Trfr 2											
		3	Trfr 3											
	DUBE SS 11 KV	1	Godlo-Watville 11kV	11	DUBE SS 11 KV	4.0		4.0		4.0				
	GODLO SS 11 KV	2			GODLO Str 11 KV	2.0		2.0		2.0				
	MATHIBEDI SS 11 KV	3			MATHIBEDI SS 11 KV									
	ROETS SS 11 KV	4	Vosloorus South-Roets 1	11	ROETS SS 11 KV	9.0		9.0		9.0				
			Vosloorus South-Roets 2											
	MOAGI SS 11 KV	1	Nguni-Moagi 1	11	MOAGI SS 11 KV	4.2		4.2		4.2				
		2	Nguni-Moagi 2											
	BLOCKLAND SUPPLY	4	Blockland-Shangu 11kV	11	Dispatch operator	1.5		1.5		1.5				
	DUDUZA	1	Trfr 1	11	DUDUZA	27.0		27.0		27.0				
		2	Trfr 2	11										
		3	Trfr 3	11										
	ERASMUS SS 11KV	1	Erasmas-Jim Vinning 1	11	ERASMUS SS 11KV	6.0		6.0	0	6.0				
		2	Erasmas-Jim Vinning 2	11										
		3	Erasmas-Jim Vinning 3	11									N	
					BLOCK E TOTAL [MW]	104.1	0	104.1	0	104.1				



Losses Reduction Breaker Operating Guide

Last Revised 10/08/2020

Rev 8.0

BLOCK J



CONTROL CENTRES
Bloem Control _(051 404 2114)
Eskom Control_ (011 871 3020)

Network Optimisation Contacts
Magic Sibuyi (0825005457) Yaaseen Akhalwaya(0725607513) Thembakazi Lamani (072 270 9750) Zainoolabadien Karim (083 252 4920)

LOG	
DATE	
TIME	

Rev 8.0

Losses Reduction Breaker Operating Guide

Block	Switching Sequence				Affected Station(s)	Eskom Sub Load [MW]	City Power Sub Load [MW]	Eskom Load [MW]	City Power Load [MW]	Total Load [MW]	Time Off	Time On	Supervisory Available [Y/N]	Shed Load [MW]
	Station	Operating Sequence	Breaker to Open	kV										
	Central Business District	1	Unit2 - MS2- 1	11		1.2		1.2		1.2				
J										0				
	Charles Shaft	1	Khuma Ext 9	11		2.4		2.4		2.4				
	Dinorutshe	1	Ikakgeleng	22		0.9		0.9		0.9				
	Gopani Mine		Ensure 22 kV bus section isolator is **OPEN**					0		0				
		1	TRFR 2	22		5.5		5.49		5.49				
		2	Gopani	22		2.1		2.13		2.13				
		3	Motswedi	22		2.9		2.89		2.89				
	Havelock	1	HHK4	11		4.2		4.19		4.19				
	Itsoseng Rural	1	Springbokpan Silos	11		3.1		3.1		3.1				
		2	Verdwaal	11		1.6		1.55		1.55				
	Kanana	1	Khotso	11		2.2		2.24		2.24				
		2	Lerato	11		2.4		2.39		2.39				
		3	Kagiso	11		0.2		0.24		0.24				
	Khuma	1	Mhlanga	11		2.0		2.04		2.04				
		2	Leeuw	11		0.8		0.79		0.79				
		3	Hoztell	11		1.0		0.99		0.99				
		4	Borak	11		1.6		1.61		1.61				
		5	Parks	11		1.6		1.62		1.62				
		6	Utlwan	11		1.4		1.44		1.44				
		7	Mokgeti	11		0.9		0.88		0.88				
	Klipfontein Rural	1	Boitumelong	11		1.3		1.34		1.34				
		2	Coverdale	11		3.3		3.3		3.3				
	Leopard Park	1	Golf Course	11		0.6		0.6		0.6				
		2	Signal Hill	11		0.6		0.6		0.6				
	Lerato	1	Unit 1 Ext 1	11		0.6		0.6		0.6				
	Lothlakane	1	Mathe Village	11		3.5		3.46		3.46				
	Mafikeng Main Blockhouse	1	Signal Hill 1	11		7.5		7.49		7.49				
	Mgopela	1	Choseng	22		4.3		4.26		4.26				
	Makuone SWS	1	High Base	11		1.2		1.16		1.16				
		2	Old Taxi	11		2.1		2.09		2.09				
	Manya	1	Parke	11		1.5		1.48		1.48				
		2	Spoore	11				0		0				
	Mimosa Rural	1	Magaretha	11		0.5		0.46		0.46				
	Mimosa SWS	1	Grootdoorn	11		0.3		0.3		0.3				
	Mmabatho Main	1	YB garage	11		0.8		0.75		0.75				
		2	Teachers R/Centre	11		1.3		1.32		1.32				
	Montshiwa	1	Magogwe Koikoi	11		2.7		2.72		2.72				
		2	Magogwe Tar	11		3.6		3.62		3.62				
		3	Magogwe Centre	11		2.6		2.6		2.6				
		4	Thlabologo	11		1.9		1.9		1.9				
	Norlim	1	Dikhuting	22		3.9		3.85		3.85				
	Rooigrond Rural	1	Greefslaagte	11		1.0		1		1				
	Springbokpan	1	TRFR 2	88		3.0		3		3				
	Straatsdrift Rural	1	TRFR 2	22		6.6		6.6		6.6				
		2	Pella	22		3.0		3		3				
	Thlabologang	1	Mogatwe	11		2.1		2.1		2.1				
	Unit 13	1	Airport Road	11		1.2		1.2		1.2				
		2	Unit 13 South	11		0.8		0.75		0.75				
		3	Unit 15 North	11		0.7		0.67		0.67				

	4	Unit 14 North	11		0.9		0.85		0.85				
Vryburg	1	Huhudi	11		3.0		3		3				
Vryburg Road	1	TRFR 1 RMU 1 Brkr	11		4.7		4.67		4.67				
	2						0		0				
												N	
				BLOCK J TOTAL [MW]	**108.83**	**0**	**108.83**	**0**	**108.83**				

Inathi Mpapa

From: Neo Mothibi <MothibNR@eskom.co.za>
Sent: 30 September 2020 01:56 PM
To: Tshepo Nkwanyana; Meladi Botabota; Abram Tumane
Subject: NWOU Load Reduction
Attachments: NWOU Load Reduction.xlsx

Good Afternoon Colleagues,

Please find attached the feeders highlighted in yellow for Load reduction.

Some feeders have low NTL % but the number of PPU customers not buying is high. Please feel free to contact me for further discussion.

Neo Remofilwe Mothibi
Energy Balancing Analyst
Energy Trading
Customer Services
Mabe Park 1 Kgwebo Street Rustenburg
Tel +27 14 565 1102
Cell +27 82 814 3275
Mothibnr@eskom.co.za

OPS_UNIT	CNC_SECTOR	CNC	Substation
North West Operating Unit	Vryburg Sector	Delareyville CNC	DELAREYVILLE MUN 88/22/11kV Substation
North West Operating Unit	Vryburg Sector	Taung CNC	MAGOPELA 132/22kV Substation
North West Operating Unit	Vryburg Sector	Stella CNC	EDWARDSDAM 88/22kV Substation
North West Operating Unit	Vryburg Sector	Taung CNC	MAGOPELA 132/22kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	SHAFT 15 88/22kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	GOPANI MINE 88/22kV Substation
North West Operating Unit	Vryburg Sector	Morokweng CNC	VESEL 132/22kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	LEEUFONTEIN RR 88/22kV Substation
North West Operating Unit	Rustenburg Sector	Matooster CNC	SUN CITY 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Vaalkop CNC	ONTGIN 88/22/11kVSubstation
North West Operating Unit	Rustenburg Sector	Vaalkop CNC	VEEKRAAL RURAL 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Rustenburg CNC	KANA 22kV Switching Station
North West Operating Unit	Vryburg Sector	Taung CNC	NORLIM 66/22kV Substation
North West Operating Unit	Vryburg Sector	Delareyville CNC	DELAREYVILLE MUN 88/22/11kV Substation
North West Operating Unit	Vryburg Sector	Taung CNC	NORLIM 66/22kV Substation
North West Operating Unit	Vryburg Sector	Taung CNC	NORLIM 66/22kV Substation
North West Operating Unit	Rustenburg Sector	Mogwase CNC	MANYANE 88/11kV Substation
North West Operating Unit	Vryburg Sector	Morokweng CNC	HEUNINGVLEI 132/22kV Substation
North West Operating Unit	Mmabatho Sector	Koster CNC	KGETLENG RIVER 88/22/11kV Substation
North West Operating Unit	Vryburg Sector	Vryburg CNC	HAVELOCK 66/22kV Substation
North West Operating Unit	Rustenburg Sector	Vaalkop CNC	VEEKRAAL RURAL 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Matooster CNC	RUIGHOEK 88/22kV Substation
North West Operating Unit	Vryburg Sector	Taung CNC	MAGOPELA 132/22kV Substation
North West Operating Unit	Vryburg Sector	Vryburg CNC	LYKSO 66/22kV Substation
North West Operating Unit	Rustenburg Sector	Brits CNC	GELUK RURAL 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Rustenburg CNC	KANA 22kV Switching Station
North West Operating Unit	Rustenburg Sector	Mogwase CNC	MOGWASE INDUSTRIAL 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	MODDERSPRUIT 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Mogwase CNC	MORULENG 88/11kV Substation
North West Operating Unit	Vryburg Sector	Vryburg CNC	LYKSO 66/22kV Substation
North West Operating Unit	Rustenburg Sector	Matooster CNC	SUN CITY 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Matooster CNC	RUIGHOEK 88/22kV Substation
North West Operating Unit	Vryburg Sector	Taung CNC	PUDIMOE 22/11kV Substation

North West Operating Unit	Rustenburg Sector	Mogwase CNC	MANYANE 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	SPRINGBOKPAN 88/22/3.3kV Substation
North West Operating Unit	Rustenburg Sector	Matooster CNC	SUN CITY 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	ZEERUST CHROME 88/22/11kV Substation
North West Operating Unit	Vryburg Sector	Stella CNC	FERNDALE 88/22kV Substation
North West Operating Unit	Rustenburg Sector	Mogwase CNC	MORULENG 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	KLIPFONTEIN RR 88/22/11kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	SPRINGBOKPAN 88/22/3.3kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	SCHWEIZER RENEKE MUN 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Matooster CNC	SUN CITY 88/11kV Substation
North West Operating Unit	Vryburg Sector	Stella CNC	MAREETSANE 88/22kV Substation
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	MODDERSPRUIT 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	ROAN 132/22/6.6kV Substation
North West Operating Unit	Vryburg Sector	Stella CNC	FERNDALE 88/22kV Substation
North West Operating Unit	Mmabatho Sector	Molopo CNC	VRYBURG ROAD 33/22/11kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	MAFIKENG MAIN 88/33/11kV Substation
North West Operating Unit	Vryburg Sector	Vryburg CNC	HAVELOCK 66/22kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	ZEERUST MUN 88/22/11kV Substation
North West Operating Unit	Rustenburg Sector	Matooster CNC	RUIGHOEK 88/22kV Substation
North West Operating Unit	Rustenburg Sector	Matooster CNC	RUIGHOEK 88/22kV Substation
North West Operating Unit	Mmabatho Sector	Molopo CNC	MONTSHIWA 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	PHOKENG 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	DONALDSVALE TRACTION 88kV Substation
North West Operating Unit	Mmabatho Sector	Molopo CNC	LOTLHAKANE 88kV Substation
North West Operating Unit	Vryburg Sector	Vryburg CNC	VRYBURG 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	DONALDSVALE TRACTION 88kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	LERATO 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	OTTOSDAL MUN 88/22/11kV Substation
North West Operating Unit	Vryburg Sector	Taung CNC	NORLIM 66/22kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	MAFIKENG MAIN 88/33/11kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	BOIKHUTSO 132/11kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	STRAATSDRIFT RR 88/22kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	GOPANI MINE 88/22kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	UNIT 13 88/11kV Substation

North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	SCHWEIZER RENEKE MUN 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	GOPANI MINE 88/22kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	UNIT 13 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Hennops CNC	UCAR MINERALS 88/11/6.6kV Substation
North West Operating Unit	Vryburg Sector	Delareyville CNC	SANNIESHOF MUN 88/22/11kV Substation
North West Operating Unit	Vryburg Sector	Morokweng CNC	HEUNINGVLEI 132/22kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	LEOPARD PARK 33/11kV Substation
North West Operating Unit	Rustenburg Sector	Hennops CNC	UCAR MINERALS 88/11/6.6kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	BAFOKENG 7 88/33kV Substation
North West Operating Unit	Mmabatho Sector	Molopo CNC	MONTSHIWA 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Rustenburg CNC	RUSTENBURG PLATS 88/6.6kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	LEEUDORINGSTAD MUN 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	LEEUFONTEIN RR 88/22kV Substation
North West Operating Unit	Mmabatho Sector	Molopo CNC	VRYBURG ROAD 33/22/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	MANYA 11kV Switching Station
North West Operating Unit	Klerksdorp Sector	Hermes CNC	KHUMA 88/11kV Substation
North West Operating Unit	Vryburg Sector	Delareyville CNC	DELAREYVILLE MUN 88/22/11kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	KLIPFONTEIN RR 88/22/11kV Substation
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	MODDERSPRUIT 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	SHAFT 15 88/22kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	BAFOKENG 7 88/33kV Substation
North West Operating Unit	Mmabatho Sector	Molopo CNC	ARMY CAMP 33/11kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	ITSOSENG RR 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	MODDERSPRUIT 88/11kV Substation
North West Operating Unit	Vryburg Sector	Morokweng CNC	HEUNINGVLEI 132/22kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	TSWELELANG 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	TLHABOLOGANG 132/11kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	MAFIKENG MAIN 88/33/11kV Substation
North West Operating Unit	Rustenburg Sector	Vaalkop CNC	TWINRIVERS 88/22kV Substation
North West Operating Unit	Vryburg Sector	Delareyville CNC	SANNIESHOF MUN 88/22/11kV Substation
North West Operating Unit	Mmabatho Sector	Molopo CNC	VRYBURG ROAD 33/22/11kV Substation
North West Operating Unit	Vryburg Sector	Stella CNC	MAREETSANE 88/22kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	SHAFT 15 88/22kV Substation
North West Operating Unit	Mmabatho Sector	Molopo CNC	MONTSHIWA 88/11kV Substation

North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	KANANA 132/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	MANYA 11kV Switching Station
North West Operating Unit	Vryburg Sector	Stella CNC	MAREETSANE 88/22kV Substation
North West Operating Unit	Vryburg Sector	Morokweng CNC	VESEL 132/22kV Substation
North West Operating Unit	Vryburg Sector	Vryburg CNC	HAVELOCK 66/22kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	KANANA 132/11kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	HIBERNIA RR 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	KANANA 132/11kV Substation
North West Operating Unit	Mmabatho Sector	Molopo CNC	ARMY CAMP 33/11kV Substation
North West Operating Unit	Mmabatho Sector	Molopo CNC	DISANENG 33/11kV Substation
North West Operating Unit	Mmabatho Sector	Koster CNC	SWARTRUGGENS 88/22/11kV Substation
North West Operating Unit	Rustenburg Sector	Matooster CNC	RUIGHOEK 88/22kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	TLHABOLOGANG 132/11kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	SCHWEIZER RENEKE MUN 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	ITSOSENG RR 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	ITSOSENG RR 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	MARICO MINERALS 88/22/6.6kV Substation
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	WONDERKOP 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	PHOKENG 88/11kV Substation
North West Operating Unit	Vryburg Sector	Delareyville CNC	DELAREYVILLE MUN 88/22/11kV Substation
North West Operating Unit	Vryburg Sector	Stella CNC	FERNDALE 88/22kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	MAKUONE 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	ITSOSENG RR 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Molopo CNC	VRYBURG ROAD 33/22/11kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	MIMOSA RR 88/22kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	MOLIMA 11kV Switching Station
North West Operating Unit	Vryburg Sector	Taung CNC	NORLIM 66/22kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	STRAATSDRIFT RR 88/22kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	MANYA 11kV Switching Station
North West Operating Unit	Vryburg Sector	Delareyville CNC	SANNIESHOF MUN 88/22/11kV Substation
North West Operating Unit	Vryburg Sector	Taung CNC	PUDIMOE 22/11kV Substation
North West Operating Unit	Vryburg Sector	Vryburg CNC	BOPHIRIMA 132/22kV Substation
North West Operating Unit	Klerksdorp Sector	Hermes CNC	KHUMA 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Matooster CNC	SUNRISE 88kV Substation

North West Operating Unit	Klerksdorp Sector	Hermes CNC	KHUMA 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Molopo CNC	MONTSHIWA 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Koster CNC	KGETLENG RIVER 88/22/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	MANYA 11kV Switching Station
North West Operating Unit	Vryburg Sector	Taung CNC	NORLIM 66/22kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	SHYLOCK 88/11kV Substation
North West Operating Unit	Vryburg Sector	Stella CNC	MAREETSANE 88/22kV Substation
North West Operating Unit	Klerksdorp Sector	Hermes CNC	KHUMA 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	UNIT 13 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	BAFOKENG 7 88/33kV Substation
North West Operating Unit	Mmabatho Sector	Molopo CNC	RAMATLABAMA 33/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	KANANA 132/11kV Substation
North West Operating Unit	Klerksdorp Sector	Hermes CNC	KHUMA 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Matooster CNC	RHINO RURAL 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Hermes CNC	CHARLES SHAFT 88/11/6.6kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	LERATO 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Koster CNC	KGETLENG RIVER 88/22/11kV Substation
North West Operating Unit	Rustenburg Sector	Vaalkop CNC	TWINRIVERS 88/22kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	KANANA 132/11kV Substation
North West Operating Unit	Mmabatho Sector	Molopo CNC	VRYBURG ROAD 33/22/11kV Substation
North West Operating Unit	Vryburg Sector	Taung CNC	TAUNG 22/11kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	GOPANI MINE 88/22kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	PHOKENG 88/11kV Substation
North West Operating Unit	Vryburg Sector	Delareyville CNC	DELAREYVILLE MUN 88/22/11kV Substation
North West Operating Unit	Klerksdorp Sector	Hermes CNC	KHUMA 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	MOLIMA 11kV Switching Station
North West Operating Unit	Rustenburg Sector	Mogwase CNC	MOGWASE INDUSTRIAL 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	DINORUTSHE 22/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	MAKUONE 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	ROOIGROND RR 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	TSWELELANG 11kV Switching Station
North West Operating Unit	Vryburg Sector	Vryburg CNC	VRYBURG 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	ROOIGROND RR 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	WONDERKOP 88/11kV Substation

North West Operating Unit	Mmabatho Sector	Mmabatho CNC	MMABATHO MAIN 88/33/11kV Substation
North West Operating Unit	Rustenburg Sector	Brits CNC	LEFCO 88/33/11kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	ZEERUST MUN 88/22/11kV Substation
North West Operating Unit	Mmabatho Sector	Molopo CNC	LOTLHAKANE 88kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	ZEERUST WATERWORKS 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Koster CNC	SYFERBULT RURAL 132/11kV Substation
North West Operating Unit	Rustenburg Sector	Mogwase CNC	MANYANE 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	WOLMARANSSTAD MUN 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	MAKUONE 11kV Switching Station
North West Operating Unit	Klerksdorp Sector	Hermes CNC	KHUMA 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Brits CNC	BRITS RURAL 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Matooster CNC	RHINO RURAL 88/11kV Substation
North West Operating Unit	Vryburg Sector	Delareyville CNC	SANNIESHOF MUN 88/22/11kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	MOTSATSI 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	UNIT 13 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	LEEUDORINGSTAD MUN 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	STRAATSDRIFT RR 88/22kV Substation
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	THARISA 88kV Substation
North West Operating Unit	Klerksdorp Sector	Hermes CNC	KHUMA 88/11kV Substation
North West Operating Unit	Vryburg Sector	Delareyville CNC	DELAREYVILLE MUN 88/22/11kV Substation
North West Operating Unit	Vryburg Sector	Stella CNC	EDWARDSDAM 88/22kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	LERATO 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Mogwase CNC	MOGWASE UNIT 4/5 11kV Switching Station
North West Operating Unit	Rustenburg Sector	Brits CNC	GELUK RURAL 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Mogwase CNC	MOGWASE INDUSTRIAL 88/11kV Substation
North West Operating Unit	Vryburg Sector	Vryburg CNC	HAVELOCK 66/22kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	TSWELELANG 11kV Switching Station
North West Operating Unit	Rustenburg Sector	Brits CNC	GELUK RURAL 88/11kV Substation
North West Operating Unit	Vryburg Sector	Stella CNC	EDWARDSDAM 88/22kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	MIMOSA RR 88/22kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	UNIT 13 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	LERATO 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Koster CNC	SWARTRUGGENS 88/22/11kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	DONALDSVALE TRACTION 88kV Substation

North West Operating Unit	Vryburg Sector	Morokweng CNC	VESEL 132/22kV Substation
North West Operating Unit	Rustenburg Sector	Hennops CNC	UCAR MINERALS 88/11/6.6kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	LEEUDORINGSTAD MUN 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Koster CNC	KGETLENG RIVER 88/22/11kV Substation
North West Operating Unit	Vryburg Sector	Vryburg CNC	KAALPUT 88/22kV Substation
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	MARIKANA 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	UNIT 13 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	DONALDSVALE TRACTION 88kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	CENTRAL BUSSINESS DISTRICT 11kV Switching Station
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	DONALDSVALE TRACTION 88kV Substation
North West Operating Unit	Vryburg Sector	Taung CNC	REIVILO 66/11kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	CENTRAL BUSSINESS DISTRICT 11kV Switching Station
North West Operating Unit	Rustenburg Sector	Brits CNC	BRITS RURAL 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	MOTSATSI 11kV Switching Station
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	ELANDSDRIFT 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	IMPERIAL RESERVE 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	MOTSATSI 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	MOTSATSI 11kV Switching Station
North West Operating Unit	Rustenburg Sector	Mogwase CNC	DORP 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	UNIT 13 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	MAKOKSKRAAL RR 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	DONALDSVALE TRACTION 88kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	MAKUONE 11kV Switching Station
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	MODDERSPRUIT 88/11kV Substation
North West Operating Unit	Vryburg Sector	Taung CNC	PUDIMOE 22/11kV Substation
North West Operating Unit	Mmabatho Sector	Koster CNC	SYFERBULT RURAL 132/11kV Substation
North West Operating Unit	Vryburg Sector	Stella CNC	EDWARDSDAM 88/22kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	MAGONARE PARK 11kV Switching Station
North West Operating Unit	Rustenburg Sector	Brits CNC	BRITS RURAL 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	MAGONARE PARK 11kV Switching Station
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	FREEDOM PARK 88/22kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	COLIGNY RR 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	FREEDOM PARK 88/22kV Substation
North West Operating Unit	Rustenburg Sector	Vaalkop CNC	TWINRIVERS 88/22kV Substation

North West Operating Unit	Rustenburg Sector	Mogwase CNC	MORULENG 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Koster CNC	KGETLENG RIVER 88/22/11kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	MOTSATSI 11kV Switching Station
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	KANANA 132/11kV Substation
North West Operating Unit	Rustenburg Sector	Brits CNC	BRITS RURAL 88/11kV Substation
North West Operating Unit	Vryburg Sector	Taung CNC	TAUNG 22/11kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	SHYLOCK 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	ROOIGROND RR 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Vaalkop CNC	ONTGIN 88/22/11kVSubstation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	SHYLOCK 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Vaalkop CNC	VEEKRAAL RURAL 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Vaalkop CNC	VEEKRAAL RURAL 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	IMPERIAL RESERVE 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Zeerust CNC	MARICO FLUORSPAR 88/22kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	MOLIMA 11kV Switching Station
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	ROAN 132/22/6.6kV Substation
North West Operating Unit	Mmabatho Sector	Koster CNC	KGETLENG RIVER 88/22/11kV Substation
North West Operating Unit	Rustenburg Sector	Mogwase CNC	MOGWASE UNIT 4/5 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	COLIGNY RR 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	KANANA 132/11kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	MIMOSA 22kV Switching Station
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	MIMOSA 22kV Switching Station
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	THARISA 88kV Substation
North West Operating Unit	Rustenburg Sector	Vaalkop CNC	TWINRIVERS 88/22kV Substation
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	WONDERKOP 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Matooster CNC	RHINO RURAL 88/11kV Substation
North West Operating Unit	Vryburg Sector	Taung CNC	MAGOPELA 132/22kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	KIRSTENBOSCH 11kV Switching Station
North West Operating Unit	Vryburg Sector	Taung CNC	PUDIMOE 22/11kV Substation
North West Operating Unit	Rustenburg Sector	Matooster CNC	RHINO RURAL 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Hermes CNC	CHARLES SHAFT 88/11/6.6kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	BRAKSPRUIT RR 132/22kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	COLIGNY RR 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	LEEUFONTEIN RR 88/22kV Substation

North West Operating Unit	Mmabatho Sector	Zeerust CNC	ZEERUST MUN 88/22/11kV Substation
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	LOOPSPRUIT RURAL 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Koster CNC	OLIFANTSNEK RURAL 132/11kV Substation
North West Operating Unit	Rustenburg Sector	Mogwase CNC	MOGWASE INDUSTRIAL 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Mogwase CNC	MOGWASE UNIT 4/5 11kV Switching Station
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	PHOKENG 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	HARTEBEESFONTEIN MUN 22/11kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	CHURCHILL AVENUE 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Zeerust CNC	GOPANI MINE 88/22kV Substation
North West Operating Unit	Mmabatho Sector	Koster CNC	SYFERBULT RURAL 132/11kV Substation
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	THARISA 88kV Substation
North West Operating Unit	Vryburg Sector	Taung CNC	TAUNG 22/11kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	BOIKHUTSO 132/11kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	WHITES LICHTENBURG 88/11/3.3kV Substation
North West Operating Unit	Rustenburg Sector	Brits CNC	LEFCO 88/33/11kV Substation
North West Operating Unit	Rustenburg Sector	Hennops CNC	BAKWENA 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	LEOPARD PARK 33/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	OTTOSDAL MUN 88/22/11kV Substation
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	ELANDSDRIFT 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	COLIGNY RR 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	MAGONARE PARK 11kV Switching Station
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	BRAKSPRUIT RR 132/22kV Substation
North West Operating Unit	Rustenburg Sector	Mogwase CNC	MOGWASE INDUSTRIAL 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	OTTOSDAL MUN 88/22/11kV Substation
North West Operating Unit	Mmabatho Sector	Koster CNC	OLIFANTSNEK RURAL 132/11kV Substation
North West Operating Unit	Rustenburg Sector	Mogwase CNC	MANYANE 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	SKIETPAN RR 88/22kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	UNIVER VIEW 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	HIBERNIA RR 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	LEOPARD PARK 33/11kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	DONALDSVALE TRACTION 88kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	ROOIGROND RR 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	MARIKANA 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	MIMOSA RR 88/22kV Substation

North West Operating Unit	Mmabatho Sector	Mmabatho CNC	RIVER CRESENT 11kV Switching Station
North West Operating Unit	Rustenburg Sector	Mogwase CNC	MOGWASE INDUSTRIAL 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	ITSOSENG RR 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	CHURCHILL AVENUE 11kV Switching Station
North West Operating Unit	Rustenburg Sector	Brits CNC	GELUK RURAL 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	BRITSKOP RR 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	SCHOONSPRUIT RR 22/11kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	LEEUDORINGSTAD MUN 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	LEEUFONTEIN RR 88/22kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	WHITES LICHTENBURG 88/11/3.3kV Substation
North West Operating Unit	Rustenburg Sector	Mogwase CNC	DORP 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	MAGONARE PARK 11kV Switching Station
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	OTTOSDAL MUN 88/22/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	SCHOONSPRUIT RR 22/11kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	SLURRY RR 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	SLURRY RR 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	SLURRY RR 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	DONALDSVALE TRACTION 88kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	SKIETPAN RR 88/22kV Substation
North West Operating Unit	Mmabatho Sector	Koster CNC	SWARTRUGGENS 88/22/11kV Substation
North West Operating Unit	Mmabatho Sector	Koster CNC	SYFERBULT RURAL 132/11kV Substation
North West Operating Unit	Rustenburg Sector	Hennops CNC	BAKWENA 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	BRITSKOP RR 88/11kV Substation
North West Operating Unit	Vryburg Sector	Vryburg CNC	LYKSO 66/22kV Substation
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	LOOPSPRUIT RURAL 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	OTTOSDAL MUN 88/22/11kV Substation
North West Operating Unit	Vryburg Sector	Delareyville CNC	KATBOS RURAL 22/11kV Substation
North West Operating Unit	Rustenburg Sector	Matooster CNC	RUIGHOEK 88/22kV Substation
North West Operating Unit	Rustenburg Sector	Mogwase CNC	BODERELO 11kV Switching Station
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	BRAKSPRUIT RR 132/22kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	MAKOKSKRAAL RR 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Hennops CNC	LELOKO 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Matooster CNC	SUNRISE 88kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	SKIETPAN RR 88/22kV Substation

North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	HARTEBEESFONTEIN MUN 22/11kV Substation
North West Operating Unit	Vryburg Sector	Vryburg CNC	KAALPUT 88/22kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	KLIPFONTEIN 22kV Switching Station
North West Operating Unit	Vryburg Sector	Taung CNC	MAGOPELA 132/22kV Substation
North West Operating Unit	Vryburg Sector	Taung CNC	TAUNG 22/11kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	STRAATSDRIFT RR 88/22kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	MOEDWIL 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Vaalkop CNC	ONTGIN 88/22/11kVSubstation
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	BRITSKOP RR 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	DROOGEKRAAL RR 22/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	ROAN 132/22/6.6kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	KLIPFONTEIN 22kV Switching Station
North West Operating Unit	Vryburg Sector	Delareyville CNC	DELAREYVILLE MUN 88/22/11kV Substation
North West Operating Unit	Vryburg Sector	Vryburg CNC	BOPHIRIMA 132/22kV Substation
North West Operating Unit	Rustenburg Sector	Hennops CNC	SKEERPOORT RURAL 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	MOOINOOI 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Vaalkop CNC	VEEKRAAL RURAL 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	BRITSKOP RR 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	FRANS LOURENS 11kV Switching Station
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	FRANS LOURENS 11kV Switching Station
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	BRAKSPRUIT RR 132/22kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	DROOGEKRAAL RR 22/11kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	MIMOSA 22kV Switching Station
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	WOLMARANSSTAD MUN 88/11kV Substation
North West Operating Unit	Vryburg Sector	Morokweng CNC	VESEL 132/22kV Substation
North West Operating Unit	Vryburg Sector	Stella CNC	EDWARDSDAM 88/22kV Substation
North West Operating Unit	Vryburg Sector	Vryburg CNC	BOPHIRIMA 132/22kV Substation
North West Operating Unit	Vryburg Sector	Vryburg CNC	HAVELOCK 66/22kV Substation
North West Operating Unit	Vryburg Sector	Vryburg CNC	KAALPUT 88/22kV Substation
North West Operating Unit	Mmabatho Sector	Molopo CNC	RAMATLABAMA 33/11kV Substation
North West Operating Unit	Rustenburg Sector	Brits CNC	LEFCO 88/33/11kV Substation
North West Operating Unit	Rustenburg Sector	Hennops CNC	SKEERPOORT RURAL 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Mogwase CNC	MOGWASE INDUSTRIAL 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	MOOINOOI 88/11kV Substation

North West Operating Unit	Klerksdorp Sector	Hermes CNC	BUFFELS EAST 132/6.6kV Substation
North West Operating Unit	Klerksdorp Sector	Hermes CNC	BUFFELS EAST 132/6.6kV Substation
North West Operating Unit	Klerksdorp Sector	Hermes CNC	BUFFELS MILL 88/6.6kV Substation
North West Operating Unit	Klerksdorp Sector	Hermes CNC	BUFFELS PIONEER 88/6.6kV Substation
North West Operating Unit	Klerksdorp Sector	Hermes CNC	GOLDEN BROWN BRICKS 88/2.2kV Substation
North West Operating Unit	Klerksdorp Sector	Hermes CNC	MACHAVIE TR 88kV Traction Substation
North West Operating Unit	Klerksdorp Sector	Hermes CNC	MARGARET SHAFT 88/6.6kV Substation
North West Operating Unit	Klerksdorp Sector	Hermes CNC	MARGARET SHAFT 88/6.6kV Substation
North West Operating Unit	Klerksdorp Sector	Hermes CNC	ORKNEY MUN 88/6.6kV Substation
North West Operating Unit	Klerksdorp Sector	Hermes CNC	STILFONTEIN TOWN 88/6.6/3.3kV Substation
North West Operating Unit	Klerksdorp Sector	Hermes CNC	STRATHVAAL PUMPS 88/3.3kV Substation
North West Operating Unit	Klerksdorp Sector	Hermes CNC	VAAL REEFS TWO 88/6.6kV Substation
North West Operating Unit	Klerksdorp Sector	Hermes CNC	WESTERN REEFS ONE 88/6.6kV Substation
North West Operating Unit	Klerksdorp Sector	Hermes CNC	WESTERN REEFS TWO 88/6.6/3.3kV Substation
North West Operating Unit	Klerksdorp Sector	Hermes CNC	WESTERN REEFS TWO 88/6.6/3.3kV Substation
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	BRITSKOP RR 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	CRESCENT TR 88kV Traction Substation
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	ENSELSPRUIT TR 88kV Traction Substation
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	FRANS LOURENS 11kV Switching Station
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	IKAGENG 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	KLIPDRIFT TR 88kV Traction Substation
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	LOOPSPRUIT RURAL 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	LOOPSPRUIT RURAL 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	LOOPSPRUIT RURAL 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	LOSBERG TR 88kV Traction Substation
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	NASKOP 44/11/6.6kV Substation
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	POTCHEFSTROOM DS 132/88kV Substation
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	POTCHEFSTROOM MUN 88/66/11kV Substation
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	POTCHEFSTROOM MUN 88/66/11kV Substation
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	POTCHEFSTROOM TR 88kV Traction Substation
North West Operating Unit	Klerksdorp Sector	Potchefstroom CNC	TARENTAAL TR 88kV Traction Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	JOUBERTON 132/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	KLERKSDORP MUN 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	KLERKSDORP NORTH 132/11kV Substation

North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	KLERKSDORP WEST 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	OTTOSDAL MUN 88/22/11kV Substation
North West Operating Unit	Klerksdorp Sector	Uraniaville CNC	OTTOSDAL MUN 88/22/11kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	ATAR TR 132kV Traction Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	DRIE RUITERS TR 132kV Traction Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	EERSTELING TR 132kV Traction Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	KLIPFONTEIN 22kV Switching Station
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	KLIPFONTEIN RR 88/22/11kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	KLIPFONTEIN RR 88/22/11kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	KLIPFONTEIN RR 88/22/11kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	LEEUBOS TR 132kV Traction Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	LEEUDORINGSTAD MUN 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	LEEUDORINGSTAD TR 132kV Traction Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	MAKWASSIE TR 132kV Traction Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	MIMOSA RR 88/22kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	SCHWEIZER RENEKE MUN 88/11kV Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	STRYDERS TR 132kV Traction Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	SWARTGROND TR 132kV Traction Substation
North West Operating Unit	Klerksdorp Sector	Wolmaranstad CNC	WOLMARANSSTAD MUN 88/11kV Substation
North West Operating Unit	Vryburg Sector	Delareyville CNC	DELAREYVILLE MUN 88/22/11kV Substation
North West Operating Unit	Vryburg Sector	Delareyville CNC	DELAREYVILLE MUN 88/22/11kV Substation
North West Operating Unit	Vryburg Sector	Delareyville CNC	KATBOS RURAL 22/11kV Substation
North West Operating Unit	Vryburg Sector	Delareyville CNC	SANNIESHOF MUN 88/22/11kV Substation
North West Operating Unit	Vryburg Sector	Morokweng CNC	VESEL 132/22kV Substation
North West Operating Unit	Vryburg Sector	Stella CNC	EDWARDSDAM 88/22kV Substation
North West Operating Unit	Vryburg Sector	Stella CNC	EDWARDSDAM 88/22kV Substation
North West Operating Unit	Vryburg Sector	Stella CNC	EDWARDSDAM 88/22kV Substation
North West Operating Unit	Vryburg Sector	Stella CNC	FERNDALE 88/22kV Substation
North West Operating Unit	Vryburg Sector	Stella CNC	MAREETSANE 88/22kV Substation
North West Operating Unit	Vryburg Sector	Stella CNC	STELLA MUNIC 22/11kV Substation
North West Operating Unit	Vryburg Sector	Taung CNC	MAGOPELA 132/22kV Substation
North West Operating Unit	Vryburg Sector	Taung CNC	REIVILO 66/11kV Substation
North West Operating Unit	Vryburg Sector	Vryburg CNC	BOPHIRIMA 132/22kV Substation
North West Operating Unit	Vryburg Sector	Vryburg CNC	LYKSO 66/22kV Substation

North West Operating Unit	Vryburg Sector	Vryburg CNC	VRYBURG 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Koster CNC	KGETLENG RIVER 88/22/11kV Substation
North West Operating Unit	Mmabatho Sector	Koster CNC	OLIFANTSNEK RURAL 132/11kV Substation
North West Operating Unit	Mmabatho Sector	Koster CNC	SWARTRUGGENS 88/22/11kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	BOIKHUTSO 132/11kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	COLIGNY TR 132kV Traction Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	DUDFIELD 88/6.6kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	GARIEP TR 132kV Traction Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	HALFPAD TR 132kV Traction Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	HENWILL CHICKENS BULK 88kV Switching Station
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	LICHTENBURG MUN 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	LICHTENBURG TR 88kV Traction Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	LOVEDALE 88/3.3kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	MAKOKSKRAAL TR 132kV Traction Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	RATSEGAI TR 132kV Traction Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	SEPHAKU 132/11kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	SLURRY PPC 88/6.6/3.3kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	SLURRY PPC 88/6.6/3.3kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	SPRINGBOKPAN 88/22/3.3kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	TATODI TR 132kV Traction Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	VENTERSDORP MUN 88/11kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	VENTERSDORP TR 132kV Traction Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	WHITES LICHTENBURG 88/11/3.3kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	WHITES NORTH 88/6.6/3.3kV Substation
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	WHITES NORTH 88/6.6/3.3kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	CENTRAL BUSSINESS DISTRICT 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	CENTRAL BUSSINESS DISTRICT 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	CHURCHILL AVENUE 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	JAMES WATT CRESCENT 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	JAMES WATT CRESCENT 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	KIRSTENBOSCH 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	LEOPARD PARK 33/11kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	MMABATHO MAIN 88/33/11kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	MMABATHO MAIN 88/33/11kV Substation

North West Operating Unit	Mmabatho Sector	Mmabatho CNC	MMABATHO MAIN 88/33/11kV Substation
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	MOLIMA 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	RECREATION 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	SECOND STREET 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	SECOND STREET 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	UNIVER VIEW 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	UNIVER VIEW 11kV Switching Station
North West Operating Unit	Mmabatho Sector	Zeerust CNC	MARICO MINERALS 88/22/6.6kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	OTTOSHOOP HOLDINGS 88/6.6kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	ZEERUST CHROME 88/22/11kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	ZEERUST MUN 88/22/11kV Substation
North West Operating Unit	Mmabatho Sector	Zeerust CNC	ZEERUST WATERWORKS 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Brits CNC	BRITS INDUSTRIES 88kV Substation
North West Operating Unit	Rustenburg Sector	Brits CNC	BRITS MUNIC 88kV Substation
North West Operating Unit	Rustenburg Sector	Brits CNC	BRITS RURAL 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Brits CNC	BRITS RURAL 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Brits CNC	BRITS RURAL 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Brits CNC	LEFCO 88/33/11kV Substation
North West Operating Unit	Rustenburg Sector	Brits CNC	PENDORING 88kV Traction Substation
North West Operating Unit	Rustenburg Sector	Hennops CNC	BAKWENA 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Hennops CNC	BAKWENA 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Hennops CNC	DE KROON 132/33kV Substation
North West Operating Unit	Rustenburg Sector	Hennops CNC	ELAND 132/11kV Substation
North West Operating Unit	Rustenburg Sector	Hennops CNC	HARTEBEESPOORTDAM 88/33kV Substation
North West Operating Unit	Rustenburg Sector	Hennops CNC	LELOKO 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Hennops CNC	LOMOND 275/88/11kV MTS Substation
North West Operating Unit	Rustenburg Sector	Hennops CNC	SAFARI RURAL 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Hennops CNC	SKEERPOORT RURAL 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Hennops CNC	UCAR MINERALS 88/11/6.6kV Substation
North West Operating Unit	Rustenburg Sector	Matooster CNC	BOSCHKOPPIE 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Matooster CNC	PAUL 88kV Traction Substation
North West Operating Unit	Rustenburg Sector	Matooster CNC	RUIGHOEK 88/22kV Substation
North West Operating Unit	Rustenburg Sector	Matooster CNC	SA CHROME 88/33kV Substation
North West Operating Unit	Rustenburg Sector	Matooster CNC	STYLDRIFT 132/33/11kV Substation

North West Operating Unit	Rustenburg Sector	Matooster CNC	STYLDRIFT 132/33/11kV Substation
North West Operating Unit	Rustenburg Sector	Matooster CNC	SUNRISE 88kV Substation
North West Operating Unit	Rustenburg Sector	Mogwase CNC	MOGWASE INDUSTRIAL 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Mogwase CNC	MOGWASE INDUSTRIAL 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	BIGHORN 275/88kV MTS Substation
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	EXCARBO 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	KAREE PLATS 88/33kV Substation
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	MIDDELKRAAL 88/11/6.6kV Substation
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	MOOINOOI 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	THARISA 88kV Substation
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	WONDERKOP 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Rustenburg CNC	ACP 88/6.6kV Substation
North West Operating Unit	Rustenburg Sector	Rustenburg CNC	AQUARIUS 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Rustenburg CNC	KAYTOO 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Rustenburg CNC	MATTE SMELTERS 88/6.6kV Substation
North West Operating Unit	Rustenburg Sector	Rustenburg CNC	PAARDEKRAAL 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Rustenburg CNC	RUSTENBURG CONCENTRATOR 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Rustenburg CNC	RUSTENBURG FURNACE 88/6.6kV Substation
North West Operating Unit	Rustenburg Sector	Rustenburg CNC	RUSTENBURG INCLINE 88/6.6kV Substation
North West Operating Unit	Rustenburg Sector	Rustenburg CNC	RUSTENBURG PLATS 88/6.6kV Substation
North West Operating Unit	Rustenburg Sector	Rustenburg CNC	RUSTENBURG PLATS 88/6.6kV Substation
North West Operating Unit	Rustenburg Sector	Rustenburg CNC	RUSTENBURG SHAFT 88/6.6kV Substation
North West Operating Unit	Rustenburg Sector	Rustenburg CNC	TURF SHAFT 88/6.6kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	WILDEPLATS 88/33kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	ARARAT 275/88kV MTS Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	BAFOKENG 7 88/33kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	DONALDSVALE TRACTION 88kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	IMPALA PLATS 88/6.6kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	MILLENIUM 88/33/6.6kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	MILLENIUM 88/33/6.6kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	MINPRO 88/33/6.6kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	MOEDWIL 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	MOEDWIL 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	PHOKENG 88/11kV Substation

North West Operating Unit	Rustenburg Sector	Tlhabane CNC	RUSTENBURG INDUSTRIES 88/33kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	RUSTENBURG SMELTER 88/33kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	SHAFT 16 88/33kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	SHYLOCK 88/11kV Substation
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	UG 2 88/6.6kV Substation
North West Operating Unit	Rustenburg Sector	Vaalkop CNC	LETHLABILE 88kV Substation

Stats_Meter	NTL_%_12MMA	Cust_lpu	Cust_spu	Cust_street
Meter_DELAREYVILLE MUNIC / MADIBOGO 1 22kV Feeder	32.4	6	63	1
Meter_MAGOPELA / MODIMONG 1 22kV Feeder MV Overhea	34.62	1	25	0
Meter_EDWARDSDAM / KADEBIS 1 22kV Feeder MV Overhe	28.07	1	134	3
Meter_MAGOPELA / CHOSENG 1 22kV Feeder MV Overhead	57.57	1	45	3
Meter_SHAFT 15-TLASENG 22kV Overhead Line	67.85	0	30	0
Meter_GOPANI MINE / DINOKANA 1 22kV Feeder MV Over	61.25	1	39	1
Meter_VESEL / MOROKWENG 1 22kV Feeder MV Overhead	31.73	2	61	0
Meter_LEEUFONTEIN RURAL / TROTSVILLE 1 22kV Feeder	11.05	0	14	1
Meter_SUN CITY-MATOOSTER 11kV Overhead Line	48.14	2	39	0
Meter_ONTGIN/HARTEBEESFONTEIN 22kV Overhead Line	58.2	2	24	0
Meter_VEEKRAAL/RIETGAT 11kV Overhead Line	33.58	0	21	0
Meter_KANA-MERITING 22kV Overhead Line	48.86	0	9	0
Meter_NORLIM / Norlim - Taung 1 22kV Feeder MV Ove	26.15	0	46	4
Meter_DELAREYVILLE MUNIC / ROOIWAL 1 22kV Feeder M	42.86	0	50	4
Meter_NORLIM / Takapori 1 22kV Feeder MV Overhead	34.2	1	27	1
Meter_NORLIM / Dinokeng 1 22kV Feeder MV Overhead	2.16	0	10	1
Meter_MANYANE-SAULSPOORT 11kV Overhead Line	62.19	0	28	0
Meter_HEUNINGVLEI / LOOPENG 1 22kV Feeder MV Overh	28.17	0	45	0
Meter_KGETLENG RIVER-REAGILE 11kV Overhead Line	74.05	0	28	3
Meter_HAVELOCK / GANYESA 1 22kV Feeder MV Overhead	36.76	2	59	1
Meter_VEEKRAAL/JERUSALEM 11kV Overhead Line	32.51	0	39	0
Meter_RUIGHOEK-SEDIBELO 22kV Overhead Line	56.77	2	42	1
Meter_MAGOPELA / LOKALENG 1 22kV Feeder MV Overhea	35.25	7	78	3
Meter_LYKSO / DITHAKONG 1 22kV Feeder MV Overhead	-5.66	0	43	0
Meter_GELUK RURAL/BETHANIE 11kV Overhead Line	51.81	3	55	0
Meter_KANA-BOSPOORT 22kV Overhead Line	-78.17	4	26	8
Meter_Mogwase Industry Sub - Bagatla 11kV Feeder	74.28	0	10	0
Meter_MODDERSPRUIT-11kV Bapong Feeder	53.01	3	38	0
Meter_MORULENG-MANAMAKGOTHENG 11kV Overhead Line	66.98	0	19	0
Meter_LYKSO / CASSEL 1 22kV Feeder MV Overhead Lin	27.09	0	71	0
Meter_SUN CITY-CHANENG 11kV Overhead Line	2.19	0	92	0
Meter_RUIGHOEK-NTUANE 22kV Overhead Line	60.77	3	17	0
Meter_PUDIMOE / DRYHARTS 1 11kV Feeder MV Overhead	25.35	2	31	1

Meter_MANYANE-SANDFONTEIN 11kV Overhead Line	72.12	0	4	0
Meter_SPRINGBOKPAN / MATILE DUIKERBOS 1 22kV Feede	61.42	0	13	2
Meter_SUN CITY-Madikwe 22kV Overhead Line	-114.87	5	59	1
Meter_ZEERUST CHROME / NIETVERDIEND 1 22kV Feeder	26.32	5	83	2
Meter_FERNDALE SUB - SETLAGOLE Feeder MV Overhead	13.16	3	24	1
Meter_MORULENG-SEGAKWANENG 11kV Overhead Line	12.16	4	53	0
Meter_KLIPFONTEIN RURAL / COVERDALE 1 11kV Feeder	58.65	0	13	1
Meter_SPRINGBOKPAN / BODIBE TOWN 1 22KV Feeder MV	71.95	0	15	0
Meter_SCHWEIZER RENEKE MUNIC / IPELEGENG 1 11kV Fe	40.22	0	19	1
Meter_SUN CITY-Heyterkrand 22kV Overhead Line	30.4	2	35	0
Meter_MAREETSANE / GANNALAAGTE 1 22kV Feeder MV Ov	44.99	0	25	0
Meter_MODDERSPRUIT-WATERKLOOF 11kV Feeder Overhead	71.14	2	69	0
Meter_ROAN SWITCHING STATION / TEGANI TOWNSHIP 1 2	23.08	2	26	0
Meter_FERNDALE SUB - RATLOU Feeder MV Overhead Lin	36.33	1	36	0
Meter_VRYBURG ROAD / VRYHOF SILO 1 22kV Feeder MV	46.47	2	17	0
Meter_MAFIKENG MAIN BLOCKHOUSE / SIGNAL HILL 1 11k	63.7	0	17	0
Meter_HAVELOCK / GUGU 1 22kV Feeder MV Overhead Li	20.45	4	46	0
Meter_ZEERUST MUNIC / ENZELSBERG 1 22kV Feeder MV	46.43	0	140	1
Meter_RUIGHOEK-RUST MINERALS 22kV Overhead Line	64.3	0	9	0
Meter_RUIGHOEK-MANAMELA 22kV Overhead Line	63.9	2	18	0
Meter_MONTSHIWA STAD / MAGOGWE TAR 1 11kV Feeder M	59.4	0	39	1
Meter_PHOKENG - CIVIC 11kV Overhead Line	38.88	3	18	0
Meter_Donaldsvale Sub - Bester 11kv MV Overhead Li	45.76	9	30	0
Meter_LOTHLAKANE / CHIEF JOSEPH 1 11kV Feeder MV O	-14.32	0	26	3
Meter_VRYBURG / HUHUDI 1 11kV Feeder MV Overhead L	51.16	0	39	1
Meter_Donaldsvale Sub - Bonru 11kv MV Overhead Lin	35.27	2	22	0
Meter_LERATO / NTSWELETSOKU 1 11kV Feeder MV Overh	28.65	0	14	0
Meter_OTTOSDAL / LETSOPA 1 11kV Feeder MV Overhead	24.35	1	7	1
Meter_NORLIM / Dikhuting 1 22kV Feeder MV Overhead	42.98	0	16	2
Meter_MAFIKENG MAIN BLOCKHOUSE / MAJEMANTSHO 1 11k	49.56	2	19	0
Meter_BOIKHUTSO / TOWNSHIP 1 11kV Feeder MV Overhe	-40.62	0	18	2
Meter_STRAATSDRIFT RURAL / PELLA 1 22kV Feeder MV	64.9	3	49	1
Meter_GOPANI MINE / MOTSWEDI 1 22kV Feeder MV Over	57.15	4	40	1
Meter_UNIT 13 / SEWERAGE WORKS 1 11kV Feeder MV Ov	-21.01	0	18	1

Meter_SCHWEIZER RENEKE MUNIC / MAREESIN 1 11kV Fee	39.64	1	14	2
Meter_Gopani Mine - Gopane	58.68	0	17	0
Meter_UNIT 13 / EXT39 1 11kV Feeder MV Overhead Li	-7.05	1	5	0
Meter_UCAR MINERALS/STEPHANUS 11kV Overhead Line	72.16	1	7	0
Meter_SANNIESHOF MUNIC / GELUKSPAN 1 22kV Feeder M	46.03	2	120	3
Meter_HEUNINGVLEI / HEUNINGVLEI 1 22kV Feeder MV O	34.76	0	30	0
Meter_LEOPARD PARK / SIGNAL HILL 1 11kV Feeder MV	63.72	0	18	0
Meter_UCAR MINERALS / OSKRAAL 11kV Overhead Line	77.45	0	10	0
Meter_Bafokeng / Ga-Luka 1 11kV Feeder Overhead Li	59.96	1	15	0
Meter_MONTSHIWA STAD / MAGOGWE CENTRE 1 11kV Feede	53.69	0	30	0
Meter_RUSTENBURG-BOKAMOSO 11kV Overhead Line	67.91	5	28	0
Meter_LEEUDORINGSTAD MUNIC / KOEDOESDRAAI 1 11kV F	7.81	0	47	3
Meter_LEEUFONTEIN RURAL / GREYLINGSDRIFT 1 22kV Fe	23.71	6	110	2
Meter_VRYBURG ROAD / MOCOSENG 1 11kV Feeder MV Ove	55.06	0	10	1
Meter_MANYA / SPOOR 1 11kV Feeder MV Overhead Line	53.92	0	4	0
Meter_KHUMA / MALKOETSPRUIT 1 11kV Feeder MV Overh	14.27	1	20	2
Meter_DELAREYVILLE MUNIC / BARBERSPAN 1 22kV Feede	37.01	0	27	2
Meter_KLIPFONTEIN RURAL / BOITUMELONG 1 11kV Feede	72.48	1	17	3
Meter_MODDERSPRUIT-TORNADO 11kV Feeder Overhead Li	-102.78	2	5	0
Meter_SHAFT15-FREEDOM PARK 22kV Overhead Line	57.12	0	3	0
Meter_BAFOKENG 7 / THORISHO 1 11kV Feeder Overhead	31.05	1	6	0
Meter_ARMY CAMP / TSETSE 1 11KV Feeder MV Overhead	41.64	5	22	0
Meter_ITSOSENG RURAL / SPRINGBOKPAN SILOS 1 11kV F	64.37	1	12	0
Meter_MODDERSPRUIT- 11kV Makolokwe FDR	23.33	1	20	0
Meter_HEUNINGVLEI / BONA BONA 1 22kV Feeder MV Ove	35.31	0	27	0
Meter_TSWELELANG / TSWELELANG 2 11kV Feeder MV Ove	9.77	2	9	1
Meter_Tlhabologang - Molefe 11 KV	-211.57	0	0	1
Meter_MAFIKENG MAIN / MOSIANE PARK 1 11kV Feeder M	-10.1	0	12	1
Meter_TWINRIVERS/EERSTELING 22kV Overhead Line	51.97	1	66	0
Meter_SANNIESHOF MUNIC / OTTOSDAL 1 22kV Feeder MV	31.05	0	53	2
Meter_VRYBURG ROAD - SETLOPO 1 11kV Feeder MV Over	74.51	0	25	1
Meter_MAREETSANE / BATHO BATHO 1 22kV Feeder MV Ov	45.35	1	29	0
Meter_SHAFT 15-KOPANO 22kV Feeder Overhead Line	37.92	0	2	0
Meter_MONTSHIWA STAD / MAGOGWE KOI KOI 1 11kV Feed	60.53	1	19	0

Meter_KANANA / LERATO 1 11kV Feeder MV Overhead Li	55.43	0	2	1
Meter_MANYA / RESERVOIRS 1 11kV Feeder MV Overhead	45.4	0	4	0
Meter_MAREETSANE / UPLANDS 1 22kV Feeder MV Overhe	35.41	1	59	5
Meter_VESEL / TOSCA 1 22kV Feeder MV Overhead Line	26.91	22	114	0
Meter_HAVELOCK / MIDDELPAN 1 22kV Feeder MV Overhe	14.3	16	175	0
Meter_KANANA / VAAL MASERU 1 11kV Feeder MV Overhe	49.3	0	6	0
Meter_HIBERNIA / RENOSTER 1 11kV Feeder MV Overhea	46.63	0	88	0
Meter_KANANA / KHOTSO 1 11kV Feeder MV Overhead Li	59.42	0	1	0
Meter_ARMY CAMP / RAMATLABAMA 1 11KV Feeder MV Ove	49.78	0	19	1
Meter_DISANENG / DISANENG 1 11kV Feeder MV Overhea	35.2	1	22	1
Meter_SWARTRUGGENS-LINDLEYS 11kV Overhead Line	37.9	4	79	0
Meter_RUIGHOEK-HORISON CHROME 22kV Overhead Line	19.03	4	3	0
Meter_Tlhabologang - Mogatwe 11KV	52.94	0	8	1
Meter_SCHWEIZER RENEKE MUNIC / GORDON 1 11kV Feede	37.95	0	3	1
Meter_ITSOSENG RURAL / VERDWAAL 1 11kV Feeder MV O	56.5	0	3	0
Meter_ITSOSENG RURAL / THUSONG 1 11kV Feeder MV Ov	46.64	2	36	2
Meter_MARICO MINERALS / PETRUSDAM 1 22kV Feeder MV	43.69	0	78	2
Meter_WONDERKOP-QUARRIES 11kV Overhead Line	80.66	1	12	0
Meter_PHOKENG / KGALE 11kV Feeder MV Overhead Line	73.44	2	18	0
Meter_DELAREYVILLE MUNIC / ATAMELANG 1 11kV Feeder	28.71	0	26	2
Meter_FERNDALE SUB - KRAAIPAN Feeder MV Overhead L	10.39	0	26	1
Meter_MAKUONE / OLD TAXI 1 11kV Feeder MV Overhead	59.92	0	18	0
Meter_ITSOSENG RURAL / ITSOSENG TOWN 1 11kV Feeder	39.63	4	67	0
Meter_VRYBURG ROAD / DIBATE 1 11kV Feeder MV Overh	61.55	0	13	2
Meter_MIMOSA RURAL / AMALIA 1 22kV Feeder MV Overh	-12.61	2	98	2
Meter_MOLIMA / TECHNICAL COLLEGE - MS 1 11kV FEEDE	15.05	3	70	1
Meter_NORLIM / Vaaltuin 1 22kV Feeder MV Overhead	16.55	1	16	1
Meter_STRAATSDRIFT RURAL / PACHSDRAAI 1 22kV Feede	72.29	0	16	1
Meter_MANYA / PARKE 1 11kV Feeder MV Overhead Line	62.48	0	5	0
Meter_SANNIESHOF MUNIC / LEEUPAN 1 11kV Feeder MV	29.21	3	95	1
Meter_PUDIMOE / MAGOPELA 1 11kV Feeder MV Overhead	-28.82	1	16	0
Meter_BOPHIRIMA / WATERLOO 1 22kV Feeder MV Overhe	14.31	0	67	2
Meter_KHUMA / UTLWAN 1 11kV Feeder MV Overhead Lin	57.97	0	7	0
Meter_SUNRISE-ROBEGA 11kV Overhead Line	78.22	1	21	0

Meter_KHUMA / PARKS 1 11kV Feeder MV Overhead Line	59.7	0	8	0
Meter_MONTSHIWA STAD / TLHABOLOGO 1 11kV Feeder MV	58.18	0	9	0
Meter_KGETLENG RIVER-EAGLES PRIDE 22kV Feeder Over	25.54	2	0	0
Meter_MANYA / MASEKENG 1 11kV Feeder MV Overhead L	55.29	0	7	1
Meter_NORLIM / Pampierstad 1 22kV Feeder MV Overhe	1.38	3	155	0
Meter_SHYLOCK-BOSCHOEK 11kV Overhead Line	-5.33	3	81	0
Meter_MAREETSANE / MOOIFONTEIN 1 22kV Feeder MV Ov	27.89	4	30	0
Meter_KHUMA / MHLANGA 1 11kV Feeder MV Overhead Li	67.4	0	8	0
Meter_UNIT 13 - UNIT 15 NORTH 1 11kV Feeder MV Ove	62.07	0	7	0
Meter_BAFOKENG 7 / KENAKO 1 11kV Feeder Overhead L	68.17	0	15	0
Meter_RAMATLABAMA / MIGA 1 11kV Feeder MV Overhead	50.58	0	12	0
Meter_KANANA / BATHABILE 1 11kV Feeder MV Overhead	44.45	0	0	0
Meter_KHUMA / BORAK 1 11kV Feeder MV Overhead Line	60.07	1	6	1
Meter_RHINO-KROKODILDRIFT 11kV Overhead Line	55.81	0	44	1
Meter_CHARLES SHAFT / KHUMA EXT9 1 11kV Feeder MV	69.13	0	8	0
Meter_LERATO / UNIT ONE 1 11kV Feeder MV Overhead	45.66	0	19	0
Meter_KGETLENG RIVER-METZ 11kV Overhead Line	-4.78	3	172	2
Meter_TWINRIVERS/TAMBOTIE 22kV Overhead Line	20.87	7	48	0
Meter_KANANA / HIGH BASE 1 11kV Feeder MV Overhead	47.02	1	5	1
Meter_VRYBURG ROAD - LETSAPA 1 11kV MV Overhead Li	35.52	2	10	0
Meter_TAUNG / Irrigation West Fdr	-133.07	1	20	0
Meter_Gopani Mine - Khunotswana	63.38	0	14	1
Meter_PHOKENG / BAKERY 11kV Feeder MV Overhead Lin	60.84	5	57	1
Meter_DELAREYVILLE MUNIC / HARTSRIVIER 1 22kV Feed	-3.5	5	113	1
Meter_KHUMA / MOKGETI 1 11kV Feeder MV Overhead Li	58.12	0	5	0
Meter_MOLIMA / MOLEMA - MS1 - 16 11kV FEEDER MV U	29.23	2	58	2
Meter_MOGWASE IND-SEWERAGE PLANT 11kV Overhead Lin	61.02	1	0	0
Meter_DINORUTSHE / IKAKGELENG 1 22kV Feeder MV Ove	72.93	0	2	0
Meter_MAKUONE / VAAL REEFS 1 11kV Feeder MV Underg	46.32	0	2	0
Meter_ROOIGROND / GRASFONTEIN BAKERVILLE 1 11kV Fe	41.63	0	14	0
Meter_TSWELELANG / TSWELELANG 3 11kV Feeder MV Ove	2.82	0	6	0
Meter_VRYBURG / ITHUMELENG 1 11kV Feeder MV Overhe	25.78	0	3	0
Meter_ROOIGROND / FISCHHOEK 1 11kV Feeder MV Overh	-15.55	5	97	0
Meter_WONDERKOP-MARIKANA 11kV Overhead Line	75.18	2	44	0

Meter_MMABATHO MAIN - YB GARAGE 1 11kV Feeder MV O	57.55	1	2	0
Meter_LEFKO/CASHAN 11kV Overhead Line	44.78	3	66	0
Meter_ZEERUST MUNIC / MARICO 1 22kV Feeder MV Over	28.65	2	223	0
Meter_LOTHLAKANE / MATHE VILLAGE 1 11kV Feeder MV	81.64	1	6	1
Meter_ZEERUST WATERWORKS / OTTOSHOOP 1 11kV Feeder	25.99	0	39	0
Meter_SYFERBULT-BOONS 11kV Overhead Line	51.56	2	56	0
Meter_MANYANE-DORP 11kV Overhead Line	47.98	12	24	0
Meter_WOLMARANSSTAD MUNIC / WOLMARANSSTAD RURAL 1	22.91	0	19	1
Meter_MAKUONE / HIGH BASE 1 11kV Feeder MV Undergr	64.85	0	6	0
Meter_KHUMA / HOZTELL 1 11kV Feeder MV Overhead Li	59.72	0	2	0
Meter_BRITS RURAL/SONOP 11kV Overhead Line	70.22	4	31	0
Meter_RHINO-VLAKTE 11kV Overhead Line	40.13	0	49	0
Meter_SANNIESHOF MUNIC / MAKOEISPAN 1 11kV Feeder	32.18	1	111	2
Meter_MOTSATSI SWS / Unit10 - MS11	32.37	0	22	0
Meter_UNIT 13 - UNIT 13 NORTH 1 11kV Feeder MV Ove	44.32	0	6	0
Meter_LEEUDORINGSTAD MUNIC / KGAKALA 1 11kV Feeder	-52.95	0	0	1
Meter_STRAATSDRIFT RURAL / MADIKWE TOWNS 1 22kV Fe	83.21	7	38	0
Meter_THARISA / MAMALEKA 1 11kV Feeder MV Overhead	34.93	3	43	0
Meter_KHUMA / LEEUW 1 11kV Feeder MV Overhead Line	63.03	0	4	0
Meter_DELAREYVILLE MUNIC / BOSCHRAND 1 22kV Feeder	24.34	1	118	0
Meter_EDWARDSDAM / VERGELEE 1 22kV Feeder MV Overh	19.75	4	94	0
Meter_LERATO / UNIT TWO 1 11kV Feeder MV Overhead	39.43	4	24	1
Meter_UNIT 4_5 / KEFILWE 11kV Feeder MV Overhead L	78.93	0	4	0
Meter_GELUK RURAL/KAREE 11kV Overhead Line	46.6	6	63	0
Meter_CASH BUILD-BAR LOUNGE 11kV Overhead Line	-174.95	1	2	0
Meter_HAVELOCK / COETZERSDAM 1 22kV Feeder MV Over	26.99	8	90	0
Meter_TSWELELANG / TSWELELANG 1 11kV Feeder MV Ove	37.34	0	1	1
Meter_GELUK RURAL/GRANITE 11kV Overhead Line	30.22	1	89	0
Meter_EDWARDSDAM / WILDEBEES 1 22kV Feeder MV Over	22.1	2	103	0
Meter_MIMOSA RURAL / GLAUDINA 1 22kV Feeder MV Ove	37.39	4	90	1
Meter_UNIT 13 / AIRPORT ROAD 1 11kV Feeder MV Over	68.45	1	5	0
Meter_LERATO / UNIT ONE EXTENSION 1 11kV Feeder MV	70.7	0	2	0
Meter_SWARTRUGGENS-KLIPBANK 11kV Overhead Line	-26.14	1	149	2
Meter_DONALDSVALE / KINGS 1 11kV Feeder MV Overhea	73.22	3	25	0

Meter_VESEL / BRAY 1 22kV Feeder MV Overhead Line	-4.32	20	117	1
Meter_UCAR MINERALS / LANGSTRAAT 11kV Overhead Lin	30.74	0	141	0
Meter_LEEUDORINGSTAD MUNIC / WITPOORT 1 11kV Feede	24.53	1	56	1
Meter_KGETLENG RIVER-TAFELKOP 22kV Overhead Line	38.89	10	133	0
Meter_KAALPUT / GENOA 1 22kV Feeder MV Overhead Li	4.86	1	43	0
Meter_MARIKANA-TLHAPA 11kV Overhead Line	37.63	2	11	1
Meter_UNIT 13 - UNIT 13 SOUTH 1 11kV Feeder MV Ove	63.8	0	1	0
Meter_Donaldsvale Sub - Phokeng 11kv MV Overhead L	66.11	2	65	0
Meter_CENTRAL BUSSINESS DISTRICT / Unit2 MS2-1 11K	52.08	2	34	0
Meter_Donaldsvale Sub - Gardens 11kv MV Overhead	66.94	3	1	0
Meter_REIVILO / REIVILO NORTH FARMERS 1 11kV Feede	22.96	0	40	1
Meter_CENTRAL BUSSINESS DISTRICT / SEKAME RD FLATS	-35.07	5	18	0
Meter_BRITS-DE KROON 11kV Overhead Line	41.62	1	116	0
Meter_MOTSATSI SWS / Unit8 - MS12	51.9	0	25	1
Meter_ELANDSDRIFT-UTOPIA 11kV Overhead Line	25.59	3	145	0
Meter_IMPERIAL RESERVE / IMPERIAL RESERVE-MS5 1 11	-438.19	1	3	0
Meter_MOTSATSI SWS / Unit8 - MS1	56.41	0	23	0
Meter_MOTSATSI SWS / Unit10 - MS1	66.7	0	15	0
Meter_DORP-TSHEPE 11kV Overhead Line	-1014.12	2	3	0
Meter_UNIT 13 - UNIT 14 NORTH 1 11kV Feeder MV Ove	58.99	0	3	0
Meter_MAKOKSKRAAL RURAL / OMEGA 1 11kV Feeder MV O	30.61	5	80	0
Meter_Donaldsvale Sub - Sportveld 11kv MV Overhead	84.31	2	8	0
Meter_MAKUONE / POLICE STATION 1 11kV Feeder MV Ov	23.92	1	7	0
Meter_MODDERSPRUIT-BUFFELS CHROME 11kV Overhead Li	35.22	9	94	0
Meter_PUDIMOE / PUDIMOE TOWNSHIP 1 11kV Feeder MV	-13.85	0	11	0
Meter_AROLA-DWARSFONTEIN 11kV Overhead Line	45.86	3	61	0
Meter_EDWARDSDAM / MORCA 1 22kV Feeder MV Overhead	47.04	6	87	0
Meter_MAGONARE PARK / MAGONARE-MS3-4 1 11kV Feeder	13.63	1	20	0
Meter_BRITS RURAL/BOKFONTEIN 11kV Overhead Line	-682.82	11	141	0
Meter_MAGONARE PARK / MAGONARE-MS6-1 1 11kV Feeder	52.02	1	64	0
Meter_FREEDOM PARK / WILDEBEES 1 22kV Feeder MV Un	-5.3	0	0	0
Meter_COLIGNY RURAL / PUTFONTEIN 1 11kV Feeder MV	27.57	4	56	0
Meter_FREEDOM PARK / KGOLOLESEGO 1 22kV Feeder MV	75.35	0	2	0
Meter_TWINRIVERS/TWEELING 22kV Overhead Line	5.9	11	62	0

Meter_MORULENG-SHOPPING COMPLEX 11kV Overhead Line	2.03	1	10	0
Meter_KGETLENG RIVER-GOEDEHOOP 22kV Overhead Line	-5.72	6	32	0
Meter_MOTSATSI SWS / Unit7 - MS7-3	24.51	1	7	0
Meter_KANANA / KAGISO 1 11kV Feeder MV Overhead Li	56.42	0	0	0
Meter_BRITS RURAL/UITVAL 11kV Overhead Line	51.66	3	224	0
Meter_TAUNG / Irrigation South Fdr	-87.6	0	15	0
Meter_SHYLOCK-MOEDWIL 11kV Overhead Line	14.92	1	111	0
Meter_ROOIGROND / SABC ROOIGROND 1 11kV Feeder MV	24.72	2	44	0
Meter_ONTGIN/KATNAEL 11kV Overhead Line	43.56	7	129	0
Meter_SHYLOCK-DOORNLAAGTE 11kV Overhead Line	51.7	0	160	0
Meter_VEEKRAAL/DIKHOLOLO 11kV Overhead Line	63.33	4	83	0
Meter_VEEKRAAL/BLAAUWBANK 11kV Overhead Line	31.32	4	124	0
Meter_IMPERIAL RESERVE / IMPERIAL RESERVE-MS1 1 11	12.28	3	4	0
Meter_MARICO FLUORSPAR / BOKKRAAL 1 22kV Feeder MV	26.16	1	159	0
Meter_MOLIMA / TRAFFIC - MS 111kV FEEDER MV UNDERG	43.13	2	2	0
Meter_ROAN SWITCHING STATION / SCHOEMANSFONTEIN 1	42.16	0	70	0
Meter_KGETLENG RIVER-SKILPAD 22kV Overhead Line	40.08	4	91	0
Meter_UNIT 4 & 5 / LUCKY 7 11kV Feeder MV Overhead	83.93	0	0	0
Meter_COLIGNY RURAL / BOSPOORT 1 11kV Feeder MV Ov	13.21	5	140	0
Meter_KANANA / MAKUONE 1 11kV Feeder MV Overhead L	26.55	1	3	0
Meter_MIMOSA / AANDSTER 1 22kV Feeder MV Overhead	1.02	2	65	0
Meter_MIMOSA / KOOSFONTEIN 1 22kV Feeder MV Overhe	3.88	5	61	0
Meter_THARISA / SERAMER 1 11kV Feeder MV Overhead	-141.26	11	113	0
Meter_TWINRIVERS/CORONA 22kV Overhead Line	21.46	6	41	0
Meter_WONDERKOP-TURF 11kV Overhead Line	78.99	1	2	0
Meter_RHINO-SUNDOWN 11kV Overhead Line	42.92	2	51	0
Meter_MIDPLOTS /Magogong	12.14	8	129	0
Meter_KIRSTENBOSCH / KIRSTENBOSCH-MS19-7 1 11kV Fe	59.58	0	87	0
Meter_PUDIMOE / MATLAPANENG 1 11kV Feeder MV Overh	-36.95	1	11	0
Meter_RHINO-BULHOEK 11kV Overhead Line	27.58	1	61	0
Meter_CHARLES SHAFT / KENTRON 1 11kV Feeder MV Ove	18.6	7	104	0
Meter_BRAKSPRUIT RURAL / SCHOONSPRUIT 1 22kV Feede	23.88	2	27	1
Meter_COLIGNY RURAL / ROOIPOORT 1 11kV Feeder MV O	39.76	2	34	0
Meter_LEEUFONTEIN RURAL / MIETJIESDOORN 1 22kV Fee	19.4	1	65	0

Meter_ZEERUST MUNIC / LUCERN 1 11kV Feeder MV Over	26.78	2	103	0
Meter_LOOPSPRUIT RURAL / ELANDSHEUWEL 1 11kV Feede	26.23	3	113	0
Meter_OLIFANTSNEK-ALMORO 11kV Overhead Line	47.85	1	146	0
Meter_MOGWASE IND-GRICO DOLLS 11kV Overhead Line	-13.83	1	0	0
Meter_UNIT 4 & 5 / MODISE 11kV Overhead Line	84.38	0	0	0
Meter_PHOKENG / MOSHATE 11kV Feeder MV Overhead Li	36.03	1	0	0
Meter_HARTEBEESFONTEIN MUNIC / SABC HARTEBEESFONTE	29.11	2	64	0
Meter_CHURCHILL SWS / CARNEY STR MS Feeder	18.33	0	69	0
Meter_Gopani Mine - Radikhudu	22.4	2	2	0
Meter_AROLA-VLAKFONTEIN 11kV Overhead Line	49.67	5	34	0
Meter_THARISA / RAMOSERE 1 11kV Feeder MV Overhead	26.45	6	57	0
Meter_TAUNG / Taung Township fdr	-85.23	6	50	1
Meter_BOIKHUTSO / OPPASLAAGTE 1 11kV Feeder MV Ove	33.23	1	70	0
Meter_WHITES LICHTENBURG / ELAND 1 11kV Feeder MV	-3.9	7	105	0
Meter_LEFKO/AMANZI 11kV Overhead Line	-114.76	1	68	0
Meter_BAKWENA/BUSHVELD 11kV Overhead Line	58.03	4	34	0
Meter_LEOPARD PARK / EAST GOLF COURSE-MS8 1 11kV F	-14.74	0	56	0
Meter_OTTOSDAL / BOSBULT 1 11kV Feeder MV Overhead	29.83	2	96	0
Meter_ELANDSDRIFT-RONDALIA 11kV Overhead Line	21.41	2	96	0
Meter_COLIGNY RURAL / TWEEBUFFELS 1 11kV Feeder MV	36.7	1	60	0
Meter_MAGONARE PARK / MAGONARE-MS6-6 1 11kV Feeder	-39.84	0	2	0
Meter_BRAKSPRUIT RURAL / AFRIKANER 1 22kV Feeder M	20.37	1	25	0
Meter_CASH BUILD-RUSTENBURG 11kV Overhead Line	25.3	1	0	0
Meter_OTTOSDAL / BAMBOESSPRUIT 1 22kV Feeder MV Ov	32.52	3	46	0
Meter_OLIFANTSNEK-MAANHAAR 11kV Overhead Line	34.24	6	296	0
Meter_MANYANE-UNIT 4 & 5 11kV Overhead Line	85.01	0	0	0
Meter_SKIETPAN RURAL / DROOGEKRAAL 1 22kV Feeder M	15.84	4	47	0
Meter_UNIVER VIEW / BEIRUT-MS5-4 1 11kV FEEDER MV	68.3	0	9	0
Meter_HIBERNIA / MAKOEISPAN RURAL 1 11kV Feeder MV	35.72	5	87	0
Meter_LEOPARD PARK / GOLF COURSE-MS9 1 11kV Feeder	59.5	1	10	0
Meter_Donaldsvale Sub - Fire Brigade 11kv MV Overh	78.46	1	16	0
Meter_ROOIGROND / GREEFSLAAGTE 1 11kV Feeder MV Ov	51.84	1	26	0
Meter_MARIKANA-VAN ZYL 11kV Overhead Line	-5.52	1	0	0
Meter_MIMOSA RURAL / MARGARETHA 1 22kV Feeder MV O	57.99	0	46	0

Meter_RIVER CRESENT / RENOU MOTORS-MS 1 11kV Feede	14.34	5	72	0
Meter_MOGWASE-TRAINING CENTRE 11kV Overhead Line	59.55	6	0	0
Meter_ITSOSENG RURAL / BLAAUWBANK 1 11kV Feeder MV	18.59	4	45	0
Meter_CHURCHILL SWS / WILLIAM DICK Feeder	25.85	5	98	0
Meter_GELUK RURAL/LOSPERFONTEIN 11kV Overhead Line	30.43	1	32	0
Meter_BRITSKOP RURAL / BRITSKOP REPEATER 1 11kV Fe	7.01	4	42	0
Meter_SCHOONSPRUIT RURAL / WITKLIP 1 11kV Feeder M	24.55	2	57	0
Meter_LEEUDORINGSTAD MUNIC / UITKYK 1 11kV Feeder	40.39	2	71	0
Meter_LEEUFONTEIN RURAL / STRYDPOORT 1 22kV Feeder	27.58	3	68	0
Meter_WHITES LICHTENBURG / MANANA 1 11kV Feeder MV	28.98	3	167	0
Meter_DORP-TLOU 11kV Overhead Line	87.59	0	0	0
Meter_MAGONARE PARK / BNDC FLATS RMU 1 11kV Feeder	47.9	3	5	0
Meter_OTTOSDAL / SKIETPAN 1 22kV Feeder MV Overhea	22.68	5	64	0
Meter_SCHOONSPRUIT RURAL / ALWYN 1 11kV Feeder MV	28.6	2	71	0
Meter_SLURRY RURAL / KLIPPAN 1 11kV Feeder MV Over	-5.19	4	18	0
Meter_SLURRY RURAL / LANRIC 1 11kV Feeder MV Overh	34.74	3	50	0
Meter_SLURRY RURAL / JAGERSFONTEIN 1 11kV Feeder M	30.68	1	79	0
Meter_Donaldsvale Sub - Industrial 11kv MV Overhea	78.48	1	2	0
Meter_SKIETPAN RURAL / HARRISBURG 1 22kV Feeder MV	33.74	1	50	0
Meter_SWARTRUGGENS-BESTERHOEK 11kV Overhead Line	66.91	1	84	0
Meter_AROLA-RIETFONTEIN 11kV Overhead Line	51.33	14	39	0
Meter_BAKWENA/BOSBOK 11kV Overhead Line	3.86	6	133	0
Meter_BRITSKOP RURAL / MOOIRIVIER 1 11kV Feeder MV	31.04	5	154	0
Meter_LYKSO / LAURIKA 1 22kV Feeder MV Overhead Li	-30.53	1	46	0
Meter_LOOPSPRUIT RURAL / MOOIRIVIER 1 11kV Feeder	16.01	3	105	0
Meter_OTTOSDAL / WALTERS 1 22kV Feeder MV Overhead	-53.54	3	65	0
Meter_KATBOS / KINKELSPRUIT 1 11kV Feeder MV Overh	-2.84	2	58	0
Meter_RUIGHOEK-MINES 22kV Overhead Line	-16.29	1	2	0
Meter_BODERELO / AGRI LIME 11kV Feeder MV Overhead	59.83	17	3	0
Meter_BRAKSPRUIT RURAL / PROTEA 1 22kV Feeder MV O	23.4	1	73	0
Meter_MAKOKSKRAAL RURAL / RATSEGAI 1 11kV Feeder M	23.71	1	38	0
Meter_LELOKO/LEOPARD 11KV Overhead Line	22.44	7	48	0
Meter_SUNRISE-BULTFONTEIN 11kV Overhead Line	22.48	3	24	0
Meter_SKIETPAN RURAL / SYFERGAT 1 22kV Feeder MV O	27.87	1	57	0

Meter_HARTEBEESFONTEIN MUNIC / RENOSTERHOEK 1 11kV	-563.32	1	10	0
Meter_KAALPUT / CORSICA 1 22kV Feeder MV Overhead	28.13	5	110	0
Meter_KLIPFONTEIN / BRITTEN 1 22kV Feeder MV Overh	25.35	2	42	0
Meter_MIDPLOTS / TAUNG CONSUMER 1 11kV Feeder MV O	16.5	3	121	0
Meter_TAUNG / Taung Village	-55.02	2	1	0
Meter_STRAATSDRIFT RURAL / DORINGKRAAL 1 22kV Feed	36.15	1	209	0
Meter_MOEDWIL / WOODSTOCK 11kV Feeder MV Overhead	48.54	1	46	0
Meter_ONTGIN/LIEFLING 11kV Overhead Line	20.56	8	90	0
Meter_BRITSKOP RURAL / KROMDRAAI 1 11kV Feeder MV	-15.97	3	76	0
Meter_DROOGEKRAAL / WERDA 1 11kV Feeder MV Overhea	19.09	5	27	0
Meter_ROAN SWITCHING STATION / HARTEBEESFONTEIN 1	11.21	2	32	0
Meter_KLIPFONTEIN / MOOIPLAAS 1 22kV Feeder MV Ove	20.82	3	48	0
Meter_DELAREYVILLE MUNIC / MIGDOL RURAL 1 22kV Fee	48.51	2	39	0
Meter_BOPHIRIMA / MOROKANE 1 22kV Feeder MV Overhe	24.3	0	57	0
Meter_SKEERPOORT/LYNKLOOF 11kV Overhead Line	21.03	5	158	0
Meter_MOOINOOI-MINERALS 11kV Overhead Line	51.51	0	7	0
Meter_VEEKRAAL/KLIPKOP 11kV Overhead Line	22.28	5	113	0
Meter_BRITSKOP RURAL / SCANDINAVIA 1 11kV Feeder M	29.3	7	107	0
Meter_FRANS LOURENS / POTCH 1 11kV Feeder MV Overh	19.55	3	80	0
Meter_FRANS LOURENS / BOSKOP 1 11kV Feeder MV Over	4.57	8	74	0
Meter_BRAKSPRUIT RURAL / BEATRIX 1 22kV Feeder MV	28.99	3	93	0
Meter_DROOGEKRAAL / BOSPOORT 1 11kV Feeder MV Over	8.77	1	80	0
Meter_MIMOSA SWS / GROOTDOORNS 1 22kV Feeder MV Ov	67.26	0	28	0
Meter_WOLMARANSSTAD MUNIC / MAKWASSIE 1 11kV Feede	-0.78	2	13	0
Meter_VESEL / VOSTERSHOOP 1 22kV Feeder MV Overhea	13.08	0	103	0
Meter_EDWARDSDAM / CLAREMONT 1 22kV Feeder MV Over	17.13	10	148	0
Meter_BOPHIRIMA / DWAALVLAKTE 1 22kV Feeder MV Ove	7.33	5	61	0
Meter_HAVELOCK / HOUTKRAAL 1 22kV Feeder MV Overhe	26.26	1	88	0
Meter_KAALPUT / STELLA 1 22kV Feeder MV Overhead L	34.41	1	51	0
Meter_RAMATLABAMA / AGRI CHICKS 1 11kV Feeder MV O	-21.25	5	0	0
Meter_LEFKO/MAROELA 11kV Overhead Line	-173.14	12	102	0
Meter_SKEERPOORT/KOSMOS 11kV Overhead Line	12.15	3	58	0
Meter_Mogwase Industry Sub - Army 3 11kV Feeder	-2207.33	2	2	0
Meter_MOOIRIVIER RR / KATDOORNBOSCH 1 11kV Feeder	11.51	7	69	0

Meter_BUFFELS EAST / CHEMWES (PTY) LTD MP5 6.6kV B	-10	1	0	0
Meter_BUFFELS EAST / BUFFELSFONTEIN GMC LTD - MP2	35.92	1	0	0
Meter_BUFFELS MILL / BUFFELSFONTEIN GMC LTD - MP1	-9.66	1	0	0
Meter_BUFFELS PIONEER / BUFFELSFONTEIN GMC LTD MP2	-56.03	1	0	0
Meter_GOLDEN BROWN BRICKS / GOLDEN BROWN BRICK AND	-13.64	1	0	0
Meter_MACHAVIE TRACTION / SATS KIMBERLEY - MP1 88k	-8.37	1	0	0
Meter_MARGARET SHAFT / ORANJE MYNBOU EN VERVOER MP	-9.63	1	0	0
Meter_MARGARET SHAFT / ORANJE MYNBOU _VERVOER 1 6.	33.47	2	0	0
Meter_ORKNEY MUNIC / ORKNEY TOWN COUNCIL MP1 6.6kV	-10	1	0	0
Meter_STILFONTEIN TOWN / LANZA 1 6.6kV Feeder MV O	-5.85	1	8	0
Meter_STRATHVAAL PUMPS / MIDVAAL WATER COMPANY - M	-51.44	1	0	0
Meter_VAAL REEFS TWO / ANGLOGOLD LIMITED - MP3 6.6	-10	1	0	0
Meter_WESTERN REEFS ONE / CHINA AFRICAN PRECIOUS M	-10	1	0	0
Meter_WESTERN REEFS TWO / CHINA AFRICAN PRECIOUS M	-6.16	1	0	0
Meter_WESTERN REEFS TWO / ANGLOGOLD LIMITED - MP2	-10	1	0	0
Meter_BRITSKOP RURAL / CHUBBY CHICKS 1 11kV Feeder	16.44	7	141	0
Meter_CRESCENT TRACTION / SATS KIMBERLEY - MP1 88k	-8.05	1	0	0
Meter_ENSELSPRUIT TRACTION / SATS KIMBERLEY - MP1	-11.94	1	0	0
Meter_FRANS LOURENS / MUISKRAAL 1 11kV Feeder MV O	-5.95	3	38	0
Meter_IKAGENG / TLOKWE LOCAL MUN MP2 11kV Bulk Loa	-9.45	1	0	0
Meter_KLIPDRIFT TRACTION / SATS KIMBERLEY SECTION	-23.74	1	0	0
Meter_LOOPSPRUIT RURAL / WELGEBOOM 1 11kV Feeder M	16.46	6	113	0
Meter_LOOPSPRUIT RURAL / VAAL 1 11kV Feeder MV Ove	30.12	3	45	0
Meter_LOOPSPRUIT RURAL / KLIPDRIFT 1 11kV Feeder M	-8.8	6	110	0
Meter_LOSBERG TRACTION / SATS KIMBERLEY - MP1 88kV	-7.76	2	0	0
Meter_NASKOP / NASCHEM PTY LTD - MP1 6.6kV Bulk Lo	-25	1	0	0
Meter_POTCHEFSTROOM DS / TLOKWE LOCAL MUN TLOKWE 1	-9.42	1	0	0
Meter_POTCHEFSTROOM MUNIC / TLOKWE LOCAL MUN MP4 1	-10.16	1	0	0
Meter_POTCHEFSTROOM MUNIC / TLOKWE LOCAL MUN MP12	-9.4	1	0	0
Meter_POTCHEFSTROOM TRACTION / TRANSNET FREIGHT RA	-37.06	1	0	0
Meter_TARENTAAL TRACTION / SATS KIMBERLEY - MP1 88	-9.57	1	0	0
Meter_JOUBERTON / KLERKSDORP CITY COUNCIL MP1 11kV	-10	1	0	0
Meter_KLERKSDORP MUNIC / KLERKSDORP CITY COUNCIL M	-10	1	0	0
Meter_KLERKSDORP NORTH / KLERKSDORP CITY COUNCIL M	-8.84	1	0	0

Meter_KLERKSDORP WEST / KLERKSDORP CITY COUNCIL MP	-10	1	0	0
Meter_OTTOSDAL / OTTOSDAL VILLAGE COUNCIL MP1 11kV	-10	1	0	0
Meter_OTTOSDAL / GESTOPTEFONTEIN 1 22kV Feeder MV	14.59	4	34	0
Meter_ATAR TRACTION / SATS KIMBERLEY - MP1 132kV B	-14.09	1	0	0
Meter_DRIE RUITERS TRACTION / SATS KIMBERLEY - MP1	-2.99	1	0	0
Meter_EERSTELING TRACTION / SATS KIMBERLEY - MP1 1	-10.61	1	0	0
Meter_KLIPFONTEIN / DIGGERS 1 22kV Feeder MV Overh	4.37	12	44	0
Meter_STATS KLIPFONTEIN RU - Bloemhof Munic fdr	-10	1	0	0
Meter_KLIPFONTEIN RURAL / KINGSWOOD 1 22kV Feeder	33	0	44	0
Meter_KLIPFONTEIN RURAL / KALKPOORT 1 (CR Section)	-0.5	19	33	0
Meter_LEEUBOS / SATS KIMBERLEY - MP1 132kV Bulk Lo	-8.62	1	0	0
Meter_LEEUDORINGSTAD MUNIC / LEEUDOORINGSTAD MUNIC	-10	1	0	0
Meter_LEEUDORINGSTAD TRACTION / SATS KIMBERLEY - M	-11.05	1	0	0
Meter_MAKWASSIE TRACTION / SATS KIMBERLEY - MP1 13	-8.25	1	0	0
Meter_MIMOSA RURAL / DIEWEDRAAI 1 22kV Feeder MV O	49.89	1	27	0
Meter_SCHWEIZER RENEKE MUNIC / SCHWEIZER RENEKE MU	-9.79	1	0	0
Meter_STRYDERS TRACTION / SATS KIMBERLEY - MP1 132	-5.73	1	0	0
Meter_SWARTGROND TRACTION / SATS KIMBERLEY - MP1 1	-11.07	1	0	0
Meter_WOLMARANSSTAD MUNIC / WOLMARANSSTAD MUNICIPA	-16.94	1	0	0
Meter_DELAREYVILLE MUNIC / DELAREYVILLE MUNICIPALI	-10	1	0	0
Meter_DELAREYVILLE MUNIC / RAPULE 1 22kV Feeder MV	25.4	1	50	0
Meter_KATBOS / PALMIET 1 11kV Feeder MV Overhead L	15.31	0	26	0
Meter_SANNIESHOF MUNIC / SANNIESHOF MUNISIPALITEIT	-10	1	0	0
Meter_VESEL / WATERSEND 1 22kV Feeder MV Overhead	6.93	2	62	0
Meter_EDWARDSDAM / PARADYS 1 22kV Feeder MV Overhe	19.47	0	131	0
Meter_EDWARDSDAM / MOLOPO 1 22kV Feeder MV Overhea	30.15	0	35	0
Meter_EDWARDSDAM / DONEGAL 1 22kV Feeder MV Overhe	29.4	0	62	0
Meter_FERNDALE SUB - WOLWEHOEK Feeder MV Overhead	-19.12	1	24	0
Meter_MAREETSANE / WESTEND 1 22kV Feeder MV Overhe	16.48	6	79	0
Meter_STELLA MUNIC / STELLA MUNICIPALITY - MP1 11k	-10	1	0	0
Meter_MAGOPELA / Pudimoe fdr 22kV Feeder MV Overhe	18.93	1	7	0
Meter_REIVILO / REIVILO MUNICIPALITY - MP1 11kV Bu	-9.5	1	0	0
Meter_BOPHIRIMA / NALEDI 1 22kV Feeder MV Overhead	-9.78	1	0	0
Meter_LYKSO / BEGINSELSPAN 1 22kV Feeder MV Overhe	21.23	3	83	0

Meter_VRYBURG / NALEDI LOCAL MUNICIPALITY MP1 11kV	-45.59	1	0	0
Meter_KGETLENG RIVER / MUNIC 11kV Feeder MV Overhe	-10	1	0	0
Meter_OLIFANTSNEK-RAINBOW 11kV Overhead Line	0.98	14	4	0
Meter_SWARTRUGGENS-VLEIDRAAI 22kV Overhead Line	51.09	1	63	0
Meter_BOIKHUTSO / LICHTENBURG TOWN COUNCIL MP3 11k	-10.4	1	0	0
Meter_COLIGNY TRACTION / SATS KIMBERLEY MP1 132kV	-14.01	1	0	0
Meter_DUDFIELD / AFRISAM DUDFIELD 6.6kV MP3 Bulk L	-11.17	1	0	0
Meter_GAtIEP / SATS KIMBERLEY - MP1 132kV Bulk Loa	-17.42	1	0	0
Meter_HALFPAD TRACTION / SATS KIMBERLEY MP1 132kV	-11.83	1	0	0
Meter_HENWILL CHICKENS BULK / DW PARKER CHICKEN FA	-8.41	1	0	0
Meter_LICHTENBURG MUNIC / LICHTENBURG MUNICIPALITY	-24.05	1	0	0
Meter_LICHTENBURG TRACTION / SATS KIMBERLEY MP1 88	-16.36	1	0	0
Meter_LOVEDALE / BLUE CIRCLE CEMENT PTY LTD MP1 3.	-10	1	0	0
Meter_MAKOKSKRAAL TRACTION / SATS KIMBERLEY MP1 13	-11.44	1	0	0
Meter_RATSEGAAI TRACTION / SPOORNET MP1 132kV Bulk	-10.96	1	0	0
Meter_SEPHAKU / SEPHAKU CEMENT (PTY) LTD MP2 11kV	-9.59	1	0	0
Meter_SLURRY PPC / PRETORIA PORTLAND CEMENT (PTY)	-10	1	0	0
Meter_SLURRY PPC / PRETORIA PORTLAND CEMENT (PTY)	-10	1	0	0
Meter_SPRINGBOKPAN / BLUE CIRCLE CEMENT PTY LTD -	-10	1	0	0
Meter_TATODI TRACTION / SATS KIMBERLEY MP1 132kV B	-13.74	1	0	0
Meter_VENTERSDORP / JB MARKS LOCAL MUNIC MP2 11kV	-10	1	0	0
Meter_VENTERSDORP TRACTION / SATS KIMBERLEY - MP1	-20.49	1	0	0
Meter_WHITES LICHTENBURG / LAFARGE CEMENT MP2 3.3k	-10	1	0	0
Meter_WHITES NORTH / BLUE CIRCLE CEMENT PTY LTD MP	-10	1	0	0
Meter_WHITES NORTH / BLUE CIRCLE CEMENT PTY LTD MP	-9.86	1	0	0
Meter_CENTRAL BUSSINESS DISTRICT / Tel Exchange C	21.85	2	0	0
Meter_CENTRAL BUSSINESS DISTRICT / ECS1-SWS 1 11Kv	38.67	3	3	0
Meter_CHURCHILL SWS / SOUTHERN PALACE Feeder	-5.89	1	0	0
Meter_JAMES WATT CRESCENT / BARDEN TYRES MS 1 11kV	20.05	5	16	0
Meter_JAMES WATT CRESCENT / JAMES WATT-MS1 1 11kV	-21.6	4	16	0
Meter_KIRSTENBOSCH / ELIZE -ANN MS 1 11kV Feeder M	-249.82	0	3	0
Meter_LEOPARD PARK / BESSEMER RMU 1 11kV Feeder MV	12.74	7	7	0
Meter_MMABATHO MAIN - TEACHERS R/CENTRE -MS 1 11kV	38.07	3	0	0
Meter_MMABATHO MAIN - MANPOWER 1 11kV Feeder MV Un	-2.84	2	1	0

Meter_ASLAAGTE - MANYANE 1 11kV Feeder MV Overhead	33.09	0	10	0
Meter_MOLIMA / FIRE STATION - MS 1 11kV FEEDER MV	61.37	2	1	0
Meter_RECREATION / COM HOUSE - MS 1 11KV Feeder MV	-36.84	2	7	0
Meter_SECOND STREET / PETROL DEPOT SWS 1 11kV Feed	54.88	1	0	0
Meter_SECOND STREET / BUS DEPOT-MS 1 11kV Feeder M	23.69	1	1	0
Meter_UNIVER VIEW / MOLSUN HOTEL - SWS 1 11kV FEED	-113.41	6	0	0
Meter_UNIVER VIEW / MM WATER TOWER - MS 1 11kV FEE	27.86	3	0	0
Meter_MARICO MINERALS / MARICO CHROME CORP PTY LTD	-6.89	1	0	0
Meter_OTTOSHOOP HOLDINGS / PHELPS DODGE MINING LIM	-10	1	0	0
Meter_ZEERUST CHROME / ZEERUST CHROME MINES LTD -	-20.58	1	0	0
Meter_ZEERUST MUNIC / ZEERUST MUNICIPALITY MP2 11k	-20.99	1	0	0
Meter_ZEERUST WATERWORKS / ZEERUST PUMPS 1 11kV Fe	13.03	3	9	0
Meter_BRITS INDUSTRIES / MP1 88kV Bulk Load Overhe	-9.52	1	0	0
Meter_BRITS MUNIC / LOCAL MUNICIPALITY OF MADIBENG	-9.89	1	0	0
Meter_BRITS/EAGLE QUARIES 11kV Overhead Line	48.1	1	2	0
Meter_BRITS RURAL/ZANDSLOOT 11kV Overhead Line	48.57	1	86	0
Meter_BRITS RURAL/RASHOOP 11kV Overhead Line	49.77	7	156	0
Meter_LEFKO/SIELING 11kV	1.3	7	46	0
Meter_PENDORING TRACTION / SPOORNET 22kV Bulk Load	-39.43	1	0	0
Meter_BAKWENA/LUIPERD 11kV Overhead Line	26.53	5	36	0
Meter_BAKWENA / SILKAATSNEK11kV Overhead Line	16.38	0	5	0
Meter_DE KROON / PORTION 47 33kV Bulk Load Overhea	-10.06	1	0	0
Meter_ELAND 11kV CUSTOMER 1 Supply Overhead Line	-10	1	0	0
Meter_HARTEBEESPOORTDAM / CITY OF TSHWANE METROPOL	-9.73	1	0	0
Meter_LELOKO/CARIBBEAN BEACH 11kV Overhead Line	-16.51	13	14	0
Meter_LOMOND / ATOMIC ENERGY CORP 11kV Bulk Load O	-10.07	1	0	0
Meter_SAFARI RURAL / ATOMIC ENERGY CORP 22kV Bulk	-10.37	1	0	0
Meter_SKEERPOORT/DE RUST 11kV Overhead Line	-1.79	8	49	0
Meter_UCAR MINERALS / VAMETCO MINERALS CORPORATION	-9.46	1	0	0
Meter_BOSCHKOPPIE / BAFOKENG RASIMONE MP4 Bulk Loa	-9.12	1	0	0
Meter_Spoornet Paul Traction 132kV M/P1	-7.69	1	0	0
Meter_RUIGHOEK / MAKGOPE 22kV Feeder MV Overhead L	-16.1	1	0	0
Meter_SA CHROME / FERROCHROME 33kV MP3 Bulk Load O	-30.48	1	0	0
Meter_STYLDRIFT / CUSTOMER 4 11kV Bulk Load Overhe	-46.37	1	0	0

Meter_STILFONTEIN TOWN / STILFONTEIN STADSRAAD - M	-16.26	1	0	0
Meter_SUNRISE-SRBSC 11kV Overhead Line	-12.59	2	0	0
Meter_CASH BUILD-BOSTON 11kV Overhead Line	33.31	1	1	0
Meter_Mogwase Industry Sub - Bop Tyre 11kV Feeder	-75.18	2	1	0
Meter_TURFGROND / SPOORNET 22kV MP1 Bulk Load Over	2.1	1	0	0
Meter_EXCARBO / TC SMELTERS MP 1 33kV Bulk Load Ov	-17.95	1	0	0
Meter_Lonmin Karee Plats M/P 1	-9.35	1	0	0
Meter_LONMIN WESTERN PLATS MIDDELKRAAL M/P 1 6.6kV	-9.74	1	0	0
Meter_SAMANCOR Chromore Mooinooi M/P 1	-15.69	1	0	0
Meter_THARISA / MINERALS MP1 88kV Bulk Load Overhe	-9.81	1	0	0
Meter_Lonmin Western Plats M/P1 1 88kV	-11.24	1	0	0
Meter_ACP / AMPLATS 6.6kV MP3 Bulk Load Overhead L	-86.94	1	0	0
Meter_Kroondal Platinum Aquarius M/P 1	-9.62	1	0	0
Meter_KAYTOO / 11kV MP3 Bulk Load Overhead Line	-9.68	1	0	0
Meter_MATTE SMELTERS MP 2	-12.11	1	0	0
Meter_Amplats Paardekraal M/P 3	-10.8	1	0	0
Meter_Anglo Platinum Rustenburg Concentrator 88kV	12.49	1	0	0
Meter_Amplats Rustenburg Furnace M/P 3	3.56	1	0	0
Meter_Amplats Incline M/P 1	-10	1	0	0
Meter_Chrome Chemicals SA (PTY) LTD Rustenburg Pla	-16.98	1	0	0
Meter_Amplats Rustenburg Plats M/P 2	-10.32	1	0	0
Meter_Amplats Shaft M/P 3	-10.36	1	0	0
Meter_TURF SHAFT / AMPLATS 11kV MP3 Bulk Load Over	-125.53	1	0	0
Meter_WILDEPLATS / IMPALA PLATINUM MP1 AND 2 (clus	-8.13	2	0	0
Meter_Impala Platinum Shaft 15 M/P 1	-10.82	1	0	0
Meter_BAFOKENG 7 / SEWERAGE 33kV Bulk Load Overhea	-5.95	1	0	0
Meter_DONALDSVALE TRACTION / SPOORNET 88kV M/P1 Bu	-17.33	1	0	0
Meter_IMPALA PLATS / IMPALA MP 6 Bulk Load Overhea	-9.57	1	0	0
Meter_MILLENIUM / IMPALA PLATINUM 6.6kV Bulk Load	-10.88	1	0	0
Meter_MILLENIUM / IMPALA PLATINUM (PTY) LTD 6.6 kV	-10	1	0	0
Meter_MINPRO / IMPALA PLATINUM MP5 33kV Bulk Load	-17.35	1	0	0
Meter_MOEDWIL / JUVANTE 11kV Feeder MV Overhead Li	29.59	0	34	0
Meter_MOEDWIL / BLINKWATER 11kV Feeder MV Overhead	62.58	0	23	0
Meter_PHOKENG / STADIUM 1 11kV Bulk Load Overhead	-9.4	1	0	0

Meter_Rustenberg CC City Industries M/P 1	-10	1	0	0
Meter_Rustenberg CC City Smelters M/P 2	-103.81	1	0	0
Meter_Genmin - Impala Platinum Shaft 16 M/P 2 Over	-10.3	1	0	0
Meter_SHYLOCK-UNION 11kV Overhead Line	68.17	0	55	0
Meter_Genmin - Impala Platinum UG 2 M/P 1	-13.07	1	0	0
Meter_LETHLABILE / TOWN 88kV Feeder Bulk Load Over	-57.87	1	0	0

Cust_ppu	Cust_buy_ppu	Cust_not buying_p	% not buying
9871	4570	5301	53.70%
7939	4405	3534	44.51%
7706	4016	3690	47.88%
7681	4206	3475	45.24%
7379	3292	4087	55.39%
6757	2507	4250	62.90%
6595	3375	3220	48.82%
6576	4486	2090	31.78%
6503	1487	5016	77.13%
6096	2756	3340	54.79%
6091	2370	3721	61.09%
5881	2336	3545	60.28%
5308	2959	2349	44.25%
5296	2346	2950	55.70%
5116	2533	2583	50.49%
5057	2808	2249	44.47%
4905	1249	3656	74.54%
4857	2456	2401	49.43%
4731	964	3767	79.62%
4720	2693	2027	42.94%
4636	2326	2310	49.83%
4588	1378	3210	69.97%
4582	2285	2297	50.13%
4566	2691	1875	41.06%
4564	2142	2422	53.07%
4445	1688	2757	62.02%
4420	1650	2770	62.67%
4224	1738	2486	58.85%
4190	1476	2714	64.77%
4136	2397	1739	42.05%
4106	1099	3007	73.23%
4063	1483	2580	63.50%
3993	2291	1702	42.62%

3984	1217	2767	69.45%
3952	1684	2268	57.39%
3939	1240	2699	68.52%
3909	1829	2080	53.21%
3894	2105	1789	45.94%
3880	1243	2637	67.96%
3877	1952	1925	49.65%
3853	1008	2845	73.84%
3814	2091	1723	45.18%
3774	957	2817	74.64%
3764	1843	1921	51.04%
3734	1210	2524	67.60%
3732	2729	1003	26.88%
3723	1890	1833	49.23%
3695	2037	1658	44.87%
3680	1738	1942	52.77%
3621	1989	1632	45.07%
3620	1286	2334	64.48%
3549	1177	2372	66.84%
3516	1600	1916	54.49%
3487	1635	1852	53.11%
3471	1154	2317	66.75%
3457	974	2483	71.83%
3441	1623	1818	52.83%
3426	2671	755	22.04%
3420	817	2603	76.11%
3373	1581	1792	53.13%
3356	2370	986	29.38%
3348	2026	1322	39.49%
3314	1561	1753	52.90%
3290	1767	1523	46.29%
3245	1150	2095	64.56%
3230	1270	1960	60.68%
3200	1652	1548	48.38%

3173	1839	1334	42.04%
3099	1175	1924	62.08%
3016	1691	1325	43.93%
2927	1348	1579	53.95%
2916	1298	1618	55.49%
2910	1492	1418	48.73%
2862	1287	1575	55.03%
2789	1317	1472	52.78%
2756	850	1906	69.16%
2715	1274	1441	53.08%
2709	909	1800	66.45%
2698	1987	711	26.35%
2663	1532	1131	42.47%
2662	1325	1337	50.23%
2621	1003	1618	61.73%
2618	1464	1154	44.08%
2603	1323	1280	49.17%
2574	1274	1300	50.51%
2546	1040	1506	59.15%
2530	1198	1332	52.65%
2521	715	1806	71.64%
2491	1016	1475	59.21%
2470	982	1488	60.24%
2459	1253	1206	49.04%
2450	1242	1208	49.31%
2421	1900	521	21.52%
2403	1406	997	41.49%
2400	960	1440	60.00%
2383	1248	1135	47.63%
2375	1440	935	39.37%
2373	960	1413	59.54%
2347	1078	1269	54.07%
2347	1285	1062	45.25%
2310	1053	1257	54.42%

2287	1132	1155	50.50%
2276	709	1567	68.85%
2274	1248	1026	45.12%
2186	1154	1032	47.21%
2186	1134	1052	48.12%
2170	1169	1001	46.13%
2164	1321	843	38.96%
2159	984	1175	54.42%
2150	918	1232	57.30%
2143	1150	993	46.34%
2139	741	1398	65.36%
2110	726	1384	65.59%
2087	1202	885	42.41%
2066	1357	709	34.32%
2052	900	1152	56.14%
2048	895	1153	56.30%
2032	1062	970	47.74%
1940	421	1519	78.30%
1939	723	1216	62.71%
1933	691	1242	64.25%
1859	990	869	46.75%
1856	862	994	53.56%
1835	819	1016	55.37%
1810	870	940	51.93%
1809	1059	750	41.46%
1787	875	912	51.04%
1780	1016	764	42.92%
1759	477	1282	72.88%
1734	595	1139	65.69%
1729	835	894	51.71%
1712	1004	708	41.36%
1603	1035	568	35.43%
1597	702	895	56.04%
1590	456	1134	71.32%

1570	733	837	53.31%
1564	744	820	52.43%
1554	636	918	59.07%
1540	541	999	64.87%
1500	697	803	53.53%
1477	258	1219	82.53%
1462	565	897	61.35%
1423	675	748	52.57%
1418	753	665	46.90%
1402	638	764	54.49%
1388	648	740	53.31%
1372	887	485	35.35%
1359	659	700	51.51%
1354	724	630	46.53%
1347	782	565	41.95%
1336	602	734	54.94%
1317	424	893	67.81%
1268	559	709	55.91%
1248	573	675	54.09%
1244	722	522	41.96%
1236	711	525	42.48%
1233	515	718	58.23%
1190	398	792	66.55%
1179	883	296	25.11%
1151	458	693	60.21%
1149	568	581	50.57%
1140	460	680	59.65%
1072	375	697	65.02%
1059	518	541	51.09%
1054	627	427	40.51%
1027	767	260	25.32%
995	778	217	21.81%
985	633	352	35.74%
977	341	636	65.10%

956	567	389	40.69%
951	326	625	65.72%
940	554	386	41.06%
935	589	346	37.01%
895	548	347	38.77%
890	289	601	67.53%
887	291	596	67.19%
882	391	491	55.67%
879	403	476	54.15%
874	484	390	44.62%
871	627	244	28.01%
868	195	673	77.53%
866	518	348	40.18%
847	368	479	56.55%
842	409	433	51.43%
814	694	120	14.74%
801	314	487	60.80%
759	236	523	68.91%
752	333	419	55.72%
734	475	259	35.29%
658	424	234	35.56%
650	334	316	48.62%
637	217	420	65.93%
635	298	337	53.07%
605	117	488	80.66%
604	360	244	40.40%
603	456	147	24.38%
581	208	373	64.20%
579	197	382	65.98%
574	280	294	51.22%
545	246	299	54.86%
545	241	304	55.78%
533	246	287	53.85%
525	186	339	64.57%

520	377	143	27.50%
519	184	335	64.55%
496	322	174	35.08%
493	90	403	81.74%
476	363	113	23.74%
467	178	289	61.88%
464	236	228	49.14%
457	136	321	70.24%
456	228	228	50.00%
445	248	197	44.27%
418	214	204	48.80%
376	141	235	62.50%
367	122	245	66.76%
337	177	160	47.48%
335	103	232	69.25%
322	164	158	49.07%
317	165	152	47.95%
299	158	141	47.16%
294	88	206	70.07%
291	153	138	47.42%
284	137	147	51.76%
274	101	173	63.14%
264	129	135	51.14%
258	78	180	69.77%
240	141	99	41.25%
231	32	199	86.15%
230	160	70	30.43%
226	107	119	52.65%
224	62	162	72.32%
219	114	105	47.95%
212	44	168	79.25%
210	90	120	57.14%
205	38	167	81.46%
199	75	124	62.31%

195	56	139	71.28%
194	51	143	73.71%
191	82	109	57.07%
190	137	53	27.89%
187	72	115	61.50%
178	117	61	34.27%
173	37	136	78.61%
171	78	93	54.39%
165	52	113	68.48%
164	23	141	85.98%
162	50	112	69.14%
162	67	95	58.64%
158	75	83	52.53%
144	109	35	24.31%
140	60	80	57.14%
137	90	47	34.31%
134	50	84	62.69%
128	38	90	70.31%
111	49	62	55.86%
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83	68	15	18.07%
78	62	16	20.51%
76	41	35	46.05%
74	12	62	83.78%

73	53	20	27.40%
71	39	32	45.07%
67	16	51	76.12%
62	21	41	66.13%
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58	27	31	53.45%
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55	9	46	83.64%
54	15	39	72.22%
50	27	23	46.00%
49	34	15	30.61%
46	16	30	65.22%
46	27	19	41.30%
46	37	9	19.57%
44	22	22	50.00%
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42	12	30	71.43%
41	24	17	41.46%
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39	18	21	53.85%
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36	23	13	36.11%
35	13	22	62.86%
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33	18	15	45.45%
29	16	13	44.83%
29	13	16	55.17%
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22	12	10	45.45%
20	11	9	45.00%
20	3	17	85.00%
20	7	13	65.00%
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19	5	14	73.68%
18	4	14	77.78%
17	9	8	47.06%
16	0	16	100.00%
16	5	11	68.75%
16	10	6	37.50%
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14	2	12	85.71%
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11	9	2	18.18%
11	5	6	54.55%
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15647	880	0	0	13725
3845	80244	73263	0	112226
8044	8465	21051	0	48229
0	1	0	0	63262
13943	595	1301	0	52264
12306	48932	0	0	66114
0	682	4229	0	26970
421803	0	0	0	41311
40715	-68924	0	0	41896
0	2732	0	0	49508
0	0	0	0	40331
0	6187	11940	0	42134
0	9204	22555	0	58193
7046	976	2602	0	49586
0	30394	2814	0	8737
0	21797	0	0	82769
0	37652	0	0	13689
0	1343	879	0	17613
6240	33826	73341	0	120661
0	-112874	0	0	53877
62075	2380	12258	0	61206
253353	57080	6309	0	133276
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55215	113214.5	0	0	394
410884	17305	1672	0	75666
0	3505	0	0	64748
50939	359	0	0	31070
0	16695	0	0	38805
0	56883	0	0	38388
0	14590	0	0	279198
34603	7710	0	0	93315.5
52932	6471	3313	0	59821

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470377	4634	275709	0	147378.5
142889	10148	679	0	127275
61003	22677	40338	0	25131
127894	41199	0	0	95019
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33799	-34595	0	0	84001
117738	8261	0	0	37929
10618	9579	0	0	27629
73515	0	0	0	18762
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191926	4236	0	0	143326
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118601	5694	0	0	28581
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39897	2062	0	0	69734
119126	7696	0	0	48551
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1797	322	9853	0	10773
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64583	0	0	0	5487
42729	6270	0	0	8496
4667	47364	2658	0	144674
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2363	1592	0	0	38245
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73982	341	0	0	73733
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11659	323	26199	0	37939
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708	3969	6550	0	39136
886749	0	0	0	4108
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334264	351	0	0	7669
364648	4072	0	0	25838
4291	0	0	0	29903
593607	33415	0	0	14824
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6085	0	163	0	16630
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22939	79908	0	0	260033
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6035	0	0	0	19523.99

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75712	156676	0	0	80788
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1975	1401	0	0	20811
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87895	0	0	0	10304
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36952	2500	69267	0	28429
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108427	576	0	0	30767
0	422	679	0	12549
18593	35601	11882	0	119277
48600	5246	1358	0	84767
9474	12818	1590	0	7448
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36799	49543	3667	0	137344
31574	525	0	0	45165
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238944	0	0	0	72550
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94104	21351	7350	0	162246
178015	64228	0	0	59423
11102	14394	46178	0	3353
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21509	163941	3243	0	156512
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68191	0	0	0	25898
493490	21130	0	0	88767
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92753	185037	0	0	162319
12366	71657	0	0	58050
323956	0	1222	0	37868
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250989	144071.5	0	0	17017.5
38664	0	0	0	2469
86080	154183	0	0	94171
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28739	226732.5	0	0	1078
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19104	40533	849	0	98332
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134152	213471	8692	0	94859
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82570	20869	272	0	25278
215365	127143	0	0	258785.5
16012	20884	0	0	20101
82067	-10314	136	0	2039
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218072	8840	0	0	62340
25081	0	0	0	33806
63777	1769	0	0	0
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118226	153	0	0	13209
19774	121398.5	0	0	154766.5
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90439	73069	0	0	173693
2658	0	0	0	6922
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104280	8844	0	0	122065
12336	0	0	0	23606
136424	259	0	0	9154
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142261	101796	0	0	77828
151224	213994	0	0	0
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275779	180628	0	0	366039
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134653	5269	0	0	48101
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125358	177768	0	0	230668
36607	4554	0	0	4288
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231422	50574	0	0	86141.5
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328378	9696	0	0	165162
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3707	34089	0	0	86551
35864	167977	0	0	83729
1767541	38900	0	0	48702
121352	35507	0	0	86244
108158	0	0	0	4201
60649	50857	0	0	92907.5
332658	89471	0	0	118404
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5993	366202	0	0	42105
50204	35966	0	0	60788
228588	112260	0	0	90644
1352	4347	2747	0	48437
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Cust_street_estimate	Nmd_lpu	Nmd_spu	Nmd_street	Cdu_revenue	Kva	Cust_total	Nmd_total	Cust_actual_total
0	900	1790	0	0	14254	9941	2690	16
0	150	464	0	0	7682	7965	614	2
0	150	3927	0	0	13120	7844	4077	46
0	75	922	0	0	10421	7730	997	13
0	0	703	0	0	16550	7409	703	2
0	200	1271	0	0	7072	6798	1471	5
0	300	1632	0	0	11266	6658	1932	19
0	0	398	0	0	14880	6591	398	2
0	1800	913	0	0	8409	6544	2713	2
0	415	946	0	0	9847	6122	1361	5
0	0	596	0	0	6324	6112	596	2
0	0	382	0	0	10898	5890	382	0
0	0	1135	0	0	6408	5358	1135	8
0	0	1369	0	0	9257	5350	1369	11
0	180	664	0	0	5672	5145	844	4
0	0	766	0	0	4563	5068	766	6
0	0	628	0	0	3121	4933	628	7
0	0	883	0	0	5873	4902	883	19
0	0	860	0	0	5616	4762	860	4
0	700	1955	0	0	10451	4782	2655	9
0	0	1485	0	0	8583	4675	1485	13
0	415	1022	0	0	5072	4633	1437	6
0	3030	2970	0	0	15144	4670	6000	22
0	0	1174	0	0	5726	4609	1174	20
0	815	696	0	0	11400	4622	1511	57
0	3100	640	0	0	13330	4483	3740	18
0	0	325	0	0	25288	4430	325	2
0	1370	1039	0	0	7107	4265	2409	4
0	0	392	0	0	6875	4209	392	5
0	0	1964	0	0	8312	4207	1964	17
0	0	2086	0	0	6231	4198	2086	9
0	1225	533.5	0	0	7993	4083	1758.5	4
0	700	978	0	0	6008	4027	1678	6

0	0	125	0	0	5969	3988	125	2
0	0	244	0	0	6218	3967	244	2
0	3300	1481.5	0	0	8339	4004	4781.5	11
0	1915	2686	0	0	9780	3999	4601	13
0	1015	776	0	0	6832	3922	1791	15
0	2400	1370	0	0	8256	3937	3770	14
0	0	241	0	0	8380	3891	241	3
0	0	443	0	0	3114	3868	443	0
0	0	605	0	0	3698	3834	605	3
0	1315	985	0	0	10744	3811	2300	3
0	0	715	0	0	3426	3789	715	4
0	400	2240	0	0	7917	3805	2640	22
0	1315	832	0	0	9648	3760	2147	3
0	200	969	0	0	7760	3760	1169	8
0	815	376	0	0	9983	3714	1191	2
0	0	482	0	0	5497	3697	482	3
0	1300	1644	0	0	8448	3671	2944	9
0	0	5032	0	0	12075	3761	5032	33
0	0	239	0	0	7790	3558	239	0
0	300	444	0	0	7553	3536	744	2
0	0	892	0	0	3989	3527	892	4
0	615	516	0	0	5575	3492	1131	4
0	4030	830	0	0	8458	3496	4860	11
0	0	701	0	0	4467	3470	701	3
0	0	979	0	0	5650	3466	979	9
0	270	657	0	0	3095	3444	927	2
0	0	396	0	0	5210	3387	396	0
0	200	198	0	0	6141	3365	398	2
0	0	310	0	0	3342	3366	310	6
0	1130	644	0	0	13480	3335	1774	4
0	0	473	0	0	7471	3310	473	6
0	900	1410	0	0	7362	3298	2310	6
0	1215	1378	0	0	8153	3275	2593	9
0	0	564	0	0	20358	3219	564	1

0	200	373	0	0	3423	3190	573	4
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0	500	102	0	0	7448	3022	602	1
0	500	355	0	0	8105	2935	855	2
0	400	4311	0	0	10181	3041	4711	35
0	0	743	0	0	5241	2940	743	9
0	0	504	0	0	4413	2880	504	1
0	0	437	0	0	5432	2799	437	1
0	200	346	0	0	2941	2772	546	4
0	0	730	0	0	3050	2745	730	2
0	1505	780	0	0	8964	2742	2285	7
0	0	1644	0	0	4761	2748	1644	20
0	1300	4417	0	0	13480	2781	5717	46
0	0	232	0	0	2857	2673	232	2
0	0	100	0	0	3041	2625	100	0
0	120	642.5	0	0	3914	2641	762.5	4
0	0	1362	0	0	5010	2632	1362	7
0	200	707	0	0	3116	2595	907	8
0	2800	107	0	0	4704	2553	2907	2
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0	1500	175	0	0	2955	2528	1675	2
0	1230	646	0	0	8717	2518	1876	8
0	500	354	0	0	7917	2483	854	1
0	1750	987	0	0	8668	2480	2737	11
0	0	837	0	0	4921	2477	837	8
0	515	257	0	0	2466	2433	772	3
0	0	0	0	0	4800	2404	0	1
0	0	391	0	0	3232	2413	391	2
0	200	3697	0	0	9338	2450	3897	11
0	0	2118	0	0	8890	2430	2118	17
0	0	594	0	0	2366	2399	594	2
0	200	624	0	0	4054	2377	824	1
0	0	100	0	0	3491	2349	100	0
0	315	488.99	0	0	3111	2330	803.99	1

0	0	100	0	0	4666	2290	100	2
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0	2375	3981	0	0	11448	2322	6356	79
0	2200	8902	0	0	16226	2377	11102	67
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0	0	3538	0	0	11153	2252	3538	13
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0	200	683	0	0	3423	2167	883	3
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0	150	271	0	0	4644	1953	421	2
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0	200	362	0	0	3228	1798	562	9
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0	0	141	0	0	2766	1739	141	0
0	550	3947	0	0	8549	1828	4497	26
0	315	455	0	0	3910	1729	770	3
0	0	2635	0	0	6412	1672	2635	10
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0	2400	417	0	0	5688	1612	2817	1

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0	1400	0	0	0	8825	1556	1400	2
0	0	132	0	0	2116	1548	132	1
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0	830	2733	0	0	6357	1561	3563	23
0	1500	789	0	0	4931	1496	2289	4
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0	0	157	0	0	5600	1425	157	1
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0	3521	2568	0	0	8426	1323	6089	27
0	50	291	0	0	3780	1255	341	4
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0	315	0	0	0	2580	1141	315	1
0	0	50	0	0	1473	1074	50	1
0	0	75	0	0	2835	1061	75	1
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0	700	1546	0	0	6614	1023	2246	8

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0	0	125	0	0	1650	876	125	0
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0	0	1719	0	0	4612	917	1719	19
0	315	4421	0	0	7400	980	4736	36
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0	1500	1096	0	0	7139	846	2596	7
0	2190	1725	0	0	4922	805	3915	15
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0	715	2703	0	0	5746	756	3418	40
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0	250	3359	0	0	5551	684	3609	19
0	650	3505	0	0	6768	669	4155	32
0	500	166	0	0	3230	551	666	2
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0	600	596	0	0	5730	553	1196	4

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0	2125	8994	0	0	14639	636	11119	51
0	200	1603	0	0	3489	520	1803	17
0	1500	455	0	0	2707	481	1955	8
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0	515	738	0	0	3020	492	1253	2
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0	200	1509	0	0	2705	284	1709	11
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0	0	200	0	0	3260	207	200	0
0	2580	4146	0	0	6797	272	6726	42

0	3500	204	0	0	1341	206	3704	3
0	2730	1397	0	0	6492	232	4127	15
0	315	166	0	0	1760	199	481	1
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0	1200	10874.5	0	0	14167	414	12074.5	86
0	0	1425	0	0	2450	193	1425	6
0	200	3815	0	0	5585	285	4015	28
0	515	1701	0	0	4825	217	2216	7
0	1215	7888	0	0	9325	301	9103	57
0	0	6163	0	0	9283	324	6163	65
0	1400	4222	0	0	5653	249	5622	31
0	1615	5934	0	0	7767	290	7549	46
0	830	150	0	0	945	165	980	4
0	315	5487	0	0	8948	304	5802	27
0	515	116	0	0	2575	144	631	2
0	0	2750	0	0	4156	207	2750	21
0	1515	4025.5	0	0	8640	229	5540.5	37
0	0	0	0	0	945	128	0	0
0	1915	5502	0	0	11726	256	7417	33
0	1000	100	0	0	1316	114	1100	1
0	250	2223	0	0	3871	176	2473	21
0	1300	3282	0	0	6573	174	4582	33
0	8050	4090	0	0	10052	230	12140	38
0	1550	2236	0	0	5130	152	3786	20
0	2000	75	0	0	1264	106	2075	1
0	815	2344	0	0	3716	153	3159	13
0	3290	5867	0	0	11076	234	9157	66
0	0	2181	0	0	1760	182	2181	18
0	500	950	0	0	1180	105	1450	5
0	200	2117	0	0	2985	155	2317	21
0	1365	3643	0	0	6729	194	5008	46
0	200	1423	0	0	2364	108	1623	7
0	600	1007	0	0	3542	112	1607	9
0	315	2871	0	0	3986	140	3186	19

0	700	3908	0	0	6475	178	4608	14
0	350	4179	0	0	6495	187	4529	53
0	200	5079.5	0	0	7335	214	5279.5	37
0	2000	0	0	0	5660	63	2000	1
0	0	0	0	0	715	61	0	0
0	315	0	0	0	2200	61	315	1
0	465	2867	0	0	3980	124	3332	17
0	0	1723	0	0	1130	127	1723	7
0	1900	66	0	0	621	62	1966	2
0	1230	1273	0	0	2712	94	2503	6
0	2265	2213.5	0	0	5561	117	4478.5	17
0	2880	1597	0	0	4991	107	4477	14
0	200	3121	0	0	4240	120	3321	11
0	1815	5678	0	0	8431	158	7493	35
0	980	2897	0	0	2207	115	3877	31
0	1095	1513.5	0	0	5784	84	2608.5	21
0	0	1692	0	0	1315	100	1692	4
0	290	4273	0	0	6367	141	4563	44
0	650	3324.5	0	0	4727	140	3974.5	30
0	200	2819	0	0	3545	102	3019	11
0	0	125	0	0	945	43	125	0
0	350	1625	0	0	2632	65	1975	14
0	100	0	0	0	1330	40	100	1
0	650	1866	0	0	2729	86	2516	17
0	2265	9464.48	0	0	17439	338	11729.48	83
0	0	0	0	0	897	35	0	0
0	950	1823	0	0	4076	84	2773	12
0	0	226	0	0	1575	42	226	0
0	1065	3310	0	0	5813	121	4375	39
0	200	241	0	0	1315	40	441	3
0	315	482	0	0	1271	46	797	5
0	100	1573	0	0	2729	54	1673	2
0	2500	0	0	0	35025	27	2500	1
0	0	1696	0	0	2414	71	1696	10

0	2000	2188	0	0	2960	102	4188	18
0	1370	0	0	0	4065	31	1370	6
0	915	3006	0	0	5778	72	3921	31
0	1415	3727	0	0	4010	125	5142	27
0	500	358.5	0	0	3963	55	858.5	31
0	800	1546	0	0	3551	66	2346	17
0	365	2180	0	0	3870	79	2545	18
0	730	3308	0	0	5287	93	4038	30
0	700	2864	0	0	3414	90	3564	40
0	2900	7797	0	0	11357	189	10697	51
0	0	0	0	0	315	18	0	0
0	830	132	0	0	1195	25	962	4
0	1265	2162	0	0	4092	85	3427	15
0	200	2789	0	0	3881	89	2989	29
0	1665	816	0	0	1264	38	2481	11
0	1015	1721	0	0	5291	68	2736	13
0	150	3154	0	0	5127	94	3304	15
0	200	41	0	0	2230	17	241	1
0	150	1787	0	0	2942	64	1937	11
0	200	3269	0	0	6123	98	3469	35
0	3030	1530	0	0	6991	65	4560	25
0	1765	5963	0	0	10120	151	7728	45
0	2285	5416	0	0	18746	170	7701	84
0	500	1632	0	0	2780	58	2132	14
0	800	3739	0	0	5516	115	4539	36
0	600	2739	0	0	4011	75	3339	34
0	300	2406	0	0	5162	67	2706	20
0	3000	32	0	0	1000	10	3032	1
0	5140	141	0	0	18140	27	5281	18
0	100	2903	0	0	4035	80	3003	46
0	200	2307	0	0	3223	45	2507	19
0	2415	2345	0	0	4776	61	4760	25
0	900	1257	0	0	3640	33	2157	6
0	100	2335	0	0	3661	63	2435	25

0	400	516	0	0	1000	15	916	3
0	915	4829	0	0	7382	119	5744	37
0	600	2005	0	0	3805	47	2605	13
0	2900	5878	0	0	9546	127	8778	68
0	2150	25	0	0	3365	6	2175	2
0	315	9188	0	0	13377	213	9503	20
0	100	1369	0	0	5157	50	1469	18
0	1380	5225	0	0	8908	101	6605	45
0	455	2546	0	0	3524	81	3001	22
0	2265	1307	0	0	6304	34	3572	16
0	2600	1123	0	0	4380	36	3723	7
0	355	1841	0	0	4835	53	2196	31
0	370	1921	0	0	3082	43	2291	11
0	0	1708	0	0	2272	59	1708	8
0	1050	1630	0	0	8264	165	2680	162
0	0	300	0	0	225	9	300	1
0	1100	5864	0	0	7362	120	6964	53
0	1715	6195	0	0	9060	115	7910	29
0	715	3316	0	0	5504	84	4031	43
0	1665	2633	0	0	5020	83	4298	34
0	575	3239	0	0	5850	97	3814	47
0	100	3053	0	0	1415	82	3153	25
0	0	1066	0	0	1698	29	1066	9
0	3500	650	0	0	4800	16	4150	10
0	0	1260	0	0	4372	104	1260	102
0	2665	6117	0	0	10013	159	8782	45
0	2380	1915	0	0	5920	67	4295	30
0	150	4486	0	0	6277	90	4636	44
0	25	1973	0	0	2612	53	1998	14
0	2050	0	0	0	3900	6	2050	5
0	93565	5984	0	0	12097	115	99549	49
0	1315	740	0	0	3662	62	2055	57
0	415	75	0	0	390	5	490	2
0	1075	2541	0	0	4870	77	3616	32

0	10000	0	0	0	10000	1	10000	1
0	1500	0	0	0	4913	1	1500	1
0	12500	0	0	0	16649	1	12500	1
0	10000	0	0	0	7900	1	10000	1
0	1600	0	0	0	2100	1	1600	1
0	3500	0	0	0	3500	1	3500	1
0	12500	0	0	0	16000	1	12500	1
0	1750	0	0	0	1400	2	1750	2
0	15000	0	0	0	15000	1	15000	1
0	315	300	0	0	600	9	615	4
0	7000	0	0	0	7015	1	7000	1
0	250	0	0	0	14667	1	250	1
0	1000	0	0	0	2500	1	1000	1
0	1550	0	0	0	1550	1	1550	1
0	12700	0	0	0	15333	1	12700	1
0	1600	6213	0	0	8764	148	7813	63
0	5000	0	0	0	5000	1	5000	1
0	4000	0	0	0	4000	1	4000	1
0	560	1676	0	0	2825	41	2236	10
0	20000	0	0	0	20000	1	20000	1
0	4500	0	0	0	4000	1	4500	1
0	970	4325	0	0	6600	119	5295	56
0	300	1785	0	0	2535	48	2085	24
0	1855	4175	0	0	6928	116	6030	50
0	6300	0	0	0	4300	2	6300	2
0	2000	0	0	0	5000	1	2000	1
0	20000	0	0	0	40000	1	20000	1
0	25000	0	0	0	25000	1	25000	1
0	66800	0	0	0	66800	1	66800	1
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0	27490	0	0	0	27490	1	27490	1
0	33200	0	0	0	24900	1	33200	1
0	56000	0	0	0	60000	1	56000	1

0	30000	0	0	0	30000	1	30000	1
0	2500	0	0	0	2500	1	2500	1
0	1950	1689	0	0	3913	38	3639	17
0	2500	0	0	0	100	1	2500	1
0	3500	0	0	0	100	1	3500	1
0	3000	0	0	0	100	1	3000	1
0	4375	2466	0	0	7941	56	6841	24
0	5000	0	0	0	5016	1	5000	1
0	0	1714	0	0	3595	44	1714	16
0	8745	1382	0	0	10041	52	10127	25
0	3500	0	0	0	100	1	3500	1
0	2960	0	0	0	2960	1	2960	1
0	4500	0	0	0	100	1	4500	1
0	4500	0	0	0	100	1	4500	1
0	100	841	0	0	3398	28	941	10
0	7500	0	0	0	6230	1	7500	1
0	6000	0	0	0	100	1	6000	1
0	3500	0	0	0	100	1	3500	1
0	5870	0	0	0	5870	1	5870	1
0	3900	0	0	0	3900	1	3900	1
0	315	3264	0	0	4340	51	3579	21
0	0	857	0	0	1064	26	857	9
0	2000	0	0	0	2000	1	2000	1
0	350	1937	0	0	3258	64	2287	49
0	0	3991	0	0	6174	131	3991	42
0	0	878	0	0	1099	35	878	15
0	0	1842	0	0	2715	62	1842	21
0	315	1050	0	0	2403	25	1365	11
0	2965	2603	0	0	6181	85	5568	28
0	1000	0	0	0	1200	1	1000	1
0	3000	616	0	0	3347	8	3616	1
0	1250	0	0	0	1250	1	1250	1
0	2500	0	0	0	1016	1	2500	1
0	800	2981	0	0	4685	86	3781	38

0	15387	0	0	0	5129	1	15387	1
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0	4555	325	0	0	6910	18	4880	14
0	200	2006.5	0	0	5353	64	2206.5	4
0	4185	0	0	0	4185	1	4185	1
0	2000	0	0	0	2000	1	2000	1
0	25000	0	0	0	102000	1	25000	1
0	2000	0	0	0	2000	1	2000	1
0	2000	0	0	0	2000	1	2000	1
0	2200	0	0	0	315	1	2200	1
0	21100	0	0	0	21100	1	21100	1
0	2000	0	0	0	2000	1	2000	1
0	1650	0	0	0	1650	1	1650	1
0	2000	0	0	0	2000	1	2000	1
0	2000	0	0	0	2000	1	2000	1
0	32000	0	0	0	80000	1	32000	1
0	27500	0	0	0	17500	1	27500	1
0	7000	0	0	0	10500	1	7000	1
0	2000	0	0	0	1200	1	2000	1
0	2000	0	0	0	2000	1	2000	1
0	12000	0	0	0	7500	1	12000	1
0	2000	0	0	0	2000	1	2000	1
0	1000	0	0	0	1000	1	1000	1
0	31500	0	0	0	31500	1	31500	1
0	11000	0	0	0	19850	1	11000	1
0	700	0	0	0	1950	2	700	2
0	1700	225	0	0	2615	6	1925	3
0	4500	0	0	0	5500	1	4500	1
0	1415	516	0	0	2845	21	1931	7
0	1630	707	0	0	1760	20	2337	6
0	0	66	0	0	315	3	66	1
0	5015	475	0	0	8045	14	5490	7
0	6615	0	0	0	1575	3	6615	3
0	1315	16	0	0	3730	3	1331	2

0	0	256	0	0	666	10	256	2
0	1315	100	0	0	4145	3	1415	2
0	1000	300	0	0	1945	9	1300	2
0	500	0	0	0	815	1	500	1
0	315	50	0	0	500	2	365	1
0	1645	0	0	0	2840	6	1645	6
0	1015	0	0	0	2260	3	1015	3
0	1000	0	0	0	450	1	1000	1
0	2500	0	0	0	7500	1	2500	1
0	1000	0	0	0	1000	1	1000	1
0	20000	0	0	0	13950	1	20000	1
0	1300	375	0	0	1400	12	1675	3
0	40000	0	0	0	52000	1	40000	1
0	35000	0	0	0	55000	1	35000	1
0	3500	50	0	0	3550	3	3550	1
0	412	3623	0	0	5040	87	4035	32
0	1730	8065	0	0	10589	163	9795	42
0	3075	2147	0	0	6009	53	5222	25
0	9000	0	0	0	9000	1	9000	1
0	1635	1604.5	0	0	4306	41	3239.5	13
0	0	98	0	0	100	5	98	1
0	16000	0	0	0	202000	1	16000	1
0	27000	0	0	0	2000	1	27000	1
0	40000	0	0	0	40000	1	40000	1
0	7215	339	0	0	7317	27	7554	26
0	11000	0	0	0	11000	1	11000	1
0	12000	0	0	0	12000	1	12000	1
0	4415	700	0	0	8591	57	5115	54
0	14000	0	0	0	14000	1	14000	1
0	52000	0	0	0	160000	1	52000	1
0	8000	0	0	0	8000	1	8000	1
0	1000	0	0	0	4000	1	1000	1
0	120000	0	0	0	120000	1	120000	1
0	18500	0	0	0	52000	1	18500	1

0	16000	0	0	0	16000	1	16000	1
0	3000	0	0	0	3232	2	3000	2
0	500	25	0	0	700	2	525	1
0	1315	16	0	0	630	3	1331	3
0	7000	0	0	0	7000	1	7000	1
0	140000	0	0	0	160000	1	140000	1
0	105000	0	0	0	80000	1	105000	1
0	23000	0	0	0	23800	1	23000	1
0	18000	0	0	0	8700	1	18000	1
0	30000	0	0	0	4000	1	30000	1
0	40500	0	0	0	40500	1	40500	1
0	25000	0	0	0	105000	1	25000	1
0	29810	0	0	0	1000	1	29810	1
0	31020	0	0	0	31020	1	31020	1
0	40000	0	0	0	34250	1	40000	1
0	36000	0	0	0	52950	1	36000	1
0	47000	0	0	0	48670	1	47000	1
0	100000	0	0	0	165620	1	100000	1
0	27000	0	0	0	23620	1	27000	1
0	7000	0	0	0	7000	1	7000	1
0	4000	0	0	0	16000	1	4000	1
0	23600	0	0	0	23600	1	23600	1
0	20000	0	0	0	38000	1	20000	1
0	63820	0	0	0	66875	2	63820	2
0	36000	0	0	0	50	1	36000	1
0	100	0	0	0	15140	1	100	1
0	7500	0	0	0	7500	1	7500	1
0	64550	0	0	0	64550	1	64550	1
0	10000	0	0	0	47910	1	10000	1
0	85740	0	0	0	47910	1	85740	1
0	113000	0	0	0	162370	1	113000	1
0	0	1239	0	0	2123	34	1239	14
0	0	775	0	0	1050	23	775	12
0	2700	0	0	0	80	1	2700	1

0	140000	0	0	0	128364	1	140000	1
0	190000	0	0	0	186240	1	190000	1
0	22000	0	0	0	36000	1	22000	1
0	0	1880	0	0	3380	55	1880	19
0	32530	0	0	0	32530	1	32530	1
0	20000	0	0	0	13200	1	20000	1

Cust_estimate_total	Inside_Range_%	Balanced_Grace_period_Months	Significant_Losses_Range_%	ED_Year_Months	DateVar
54	30	3	100	12	0
24	30	3	100	12	0
92	30	3	100	12	0
36	30	3	100	12	0
28	30	3	100	12	0
36	30	3	100	12	0
44	30	3	100	12	0
13	30	3	100	12	0
39	30	3	100	12	0
21	30	3	100	12	0
19	30	3	100	12	0
9	30	3	100	12	0
42	30	3	100	11	0
43	30	3	100	12	0
25	30	3	100	6	0
5	30	3	100	6	0
21	30	3	100	12	0
26	30	3	100	12	0
27	30	3	100	12	0
53	30	3	100	12	0
26	30	3	100	12	0
39	30	3	100	12	0
66	30	3	100	12	0
23	30	3	100	12	0
1	30	3	100	12	0
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37	30	3	100	12	0
14	30	3	100	12	0
54	30	3	100	12	0
83	30	3	100	12	0
16	30	3	100	12	0
28	30	3	100	12	0

2	30	3	100	12	0
13	30	3	100	12	0
54	30	3	100	12	0
77	30	3	100	12	0
13	30	3	100	12	0
43	30	3	100	12	0
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12	30	3	100	12	0
17	30	3	100	12	0
14	30	3	100	12	0
47	30	3	100	12	0
36	30	3	100	12	0
18	30	3	100	12	0

13	30	3	100	12	0
16	30	3	100	12	0
5	30	3	100	12	0
6	30	3	100	11	0
90	30	3	100	12	0
21	30	3	100	12	0
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56	30	3	100	12	0
38	30	3	100	12	0
24	30	3	100	12	0
29	30	3	100	12	0
2	30	3	100	12	0
19	30	3	100	12	0

1	30	3	100	12	0
4	30	3	100	12	0
54	30	3	100	12	0
57	30	3	100	12	0
124	30	3	100	12	0
5	30	3	100	12	0
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12	30	3	100	12	0
77	30	3	100	12	0
61	30	3	100	12	0
9	30	3	100	6	0
16	30	3	100	12	0
5	30	3	100	12	0
73	30	3	100	12	0
14	30	3	100	12	0
59	30	3	100	12	0
5	30	3	100	12	0
21	30	3	100	12	0

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1	30	3	100	12	0
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63	30	3	100	12	0
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128	30	3	100	12	0
24	30	3	100	10	0

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85	30	3	100	12	0
54	30	3	100	12	0
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44	30	3	100	12	0
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36	30	3	100	12	0
0	30	3	100	11	0
0	30	3	100	11	0

Inathi Mpapa

From: Bryan Katane <KataneBG@eskom.co.za>
Sent: 14 October 2020 02:05 PM
To: Neo Mothibi
Subject: FW: Top 30 NWOU Load Reduction feeders impact analysis.xlsx
Attachments: Top 30 NWOU Load Reduction feeders impact analysis.xlsx

FYI!

From: Abram Tumane
Sent: Wednesday, 14 October 2020 08:27
To: Magic Sibuyi
Cc: Gaafelelwe Sebelegi; Sebata Zondo; Busisiwe Cindi; Ezekiel Baruti; Bryan Katane; Betty Malotana; Meladi Botabota
Subject: FW: Top 30 NWOU Load Reduction feeders impact analysis.xlsx

Hi Magic

The NWOU has identified 30 feeders for Load Reduction purpose. As you are aware part of the OU is managed from your office (in respect of Network Optimisation) while the other half is managed from Limpopo. We have had discussions with Limpopo and they have offered to assist us in scheduling the feeders for shedding.

We request that you also do the same for the feeders under you. Please let's know if you will need anything from us in assisting in this exercise.

Regards

From: Abram Tumane
Sent: 09 October 2020 09:58 AM
To: Alta Theron; Reginald Motaung (MotaunLR@eskom.co.za); Motlhagodi Dikobo; Bart Smit (SmitBS@eskom.co.za); Khuduthamaga Ntshekang; Shanila Banda; Boledi Bokaba; Francois Scholtz
Cc: Sebata Zondo; Gaafelelwe Sebelegi; Ntidiseng Makgamatha; Abie Kettledas; Neo Mothibi; Brian Mokgele; Ezekiel Baruti; Busisiwe Cindi (CindiB@eskom.co.za)
Subject: Top 30 NWOU Load Reduction feeders impact analysis.xlsx

An urgent request colleagues:

NWOU has identified 30 feeders that will be affected by Load Reduction exercise. There are however numerous LPUs and probably some essential and critical loads in these feeders. Under column F, you will see the number of LPUs embedded in these feeders. Please provide the names of these LPUs and nature of business/supply; Include the essential loads if there are any.

We need to have completed the exercise by 10h00 on Monday. Note that the first 10 or so feeders do not have LPUs but may have essential and critical loads.

Regards

OPS_UNIT	CNC_SECTOR	CNC	Stats_Meter
North West Operating Unit	Mmabatho Sector	Koster CNC	Meter_KGETLENG RIVER-REAGILE 11kV Overhead Line
North West Operating Unit	Rustenburg Sector	Mogwase CNC	Meter_MANYANE-SAULSPOORT 11kV Overhead Line
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	Meter_SPRINGBOKPAN / BODIBE TOWN 1 22KV Feeder MV
North West Operating Unit	Rustenburg Sector	Matooster CNC	Meter_SUN CITY-CHANENG 11kV Overhead Line
North West Operating Unit	Rustenburg Sector	Mogwase CNC	Meter_MANYANE-SANDFONTEIN 11kV Overhead Line
North West Operating Unit	Rustenburg Sector	Mogwase CNC	Meter_MORULENG-MANAMAKGOTHENG 11kV Overhead Line
North West Operating Unit	Rustenburg Sector	Mogwase CNC	Meter_Mogwase Industry Sub - Bagatla 11kV Feeder
North West Operating Unit	Rustenburg Sector	Vaalkop CNC	Meter_VEEKRAAL/RIETGAT 11kV Overhead Line
North West Operating Unit	Rustenburg Sector	Rustenburg CNC	Meter_KANA-MERITING 22kV Overhead Line
North West Operating Unit	Mmabatho Sector	Lichtenburg CNC	Meter_SPRINGBOKPAN / MATILE DUIKERBOS 1 22kV Feede
North West Operating Unit	Vryburg Sector	Delareyville CNC	Meter_DELAREYVILLE MUNIC / ROOIWAL 1 22kV Feeder M
North West Operating Unit	Rustenburg Sector	Tlhabane CNC	Meter_SHAFT 15-TLASENG 22kV Overhead Line
North West Operating Unit	Mmabatho Sector	Mmabatho CNC	Meter_MAFIKENG MAIN BLOCKHOUSE / SIGNAL HILL 1 11k
North West Operating Unit	Vryburg Sector	Stella CNC	Meter_MAREETSANE / GANNALAAGTE 1 22kV Feeder MV Ov
North West Operating Unit	Mmabatho Sector	Zeerust CNC	Meter_GOPANI MINE / DINOKANA 1 22kV Feeder MV Over
North West Operating Unit	Vryburg Sector	Taung CNC	Meter_NORLIM / Takapori 1 22kV Feeder MV Overhead
North West Operating Unit	Rustenburg Sector	Matooster CNC	Meter_SUN CITY-MATOOSTER 11kV Overhead Line
North West Operating Unit	Rustenburg Sector	Matooster CNC	Meter_SUN CITY-Heyterkrand 22kV Overhead Line
North West Operating Unit	Rustenburg Sector	Matooster CNC	Meter_RUIGHOEK-SEDIBELO 22kV Overhead Line
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	Meter_MODDERSPRUIT-WATERKLOOF 11kV Feeder Overhead
North West Operating Unit	Rustenburg Sector	Vaalkop CNC	Meter_ONTGIN/HARTEBEESFONTEIN 22kV Overhead Line
North West Operating Unit	Rustenburg Sector	Matooster CNC	Meter_RUIGHOEK-NTUANE 22kV Overhead Line
North West Operating Unit	Rustenburg Sector	Mooinooi CNC	Meter_MODDERSPRUIT-11kV Bapong Feeder
North West Operating Unit	Rustenburg Sector	Brits CNC	Meter_GELUK RURAL/BETHANIE 11kV Overhead Line
North West Operating Unit	Rustenburg Sector	Mogwase CNC	Meter_MORULENG-SEGAKWANENG 11kV Overhead Line
North West Operating Unit	Rustenburg Sector	Rustenburg CNC	Meter_KANA-BOSPOORT 22kV Overhead Line
North West Operating Unit	Rustenburg Sector	Matooster CNC	Meter_SUN CITY-Madikwe 22kV Overhead Line
North West Operating Unit	Mmabatho Sector	Zeerust CNC	Meter_ZEERUST CHROME / NIETVERDIEND 1 22kV Feeder
North West Operating Unit	Vryburg Sector	Delareyville CNC	Meter_DELAREYVILLE MUNIC / MADIBOGO 1 22kV Feeder
North West Operating Unit	Vryburg Sector	Taung CNC	Meter_MAGOPELA / LOKALENG 1 22kV Feeder MV Overhea

NTL_%_12MMA	Cust_lpu	Cust_spu	Cust_street	Cust_ppu	Cust_buy_ppu	% not buying	load reduction
74.05	0	28	3	4731	964	79.62%	1
62.19	0	28	0	4905	1249	74.54%	1
71.95	0	15	0	3853	1008	73.84%	1
2.19	0	92	0	4106	1099	73.23%	1
72.12	0	4	0	3984	1217	69.45%	1
66.98	0	19	0	4190	1476	64.77%	1
74.28	0	10	0	4420	1650	62.67%	1
33.58	0	21	0	6091	2370	61.09%	1
48.86	0	9	0	5881	2336	60.28%	1
61.42	0	13	2	3952	1684	57.39%	1
42.86	0	50	4	5296	2346	55.70%	1
67.85	0	30	0	7379	3292	55.39%	1
63.7	0	17	0	3680	1738	52.77%	1
44.99	0	25	0	3764	1843	51.04%	1
61.25	1	39	1	6757	2507	62.90%	1
34.2	1	27	1	5116	2533	50.49%	1
48.14	2	39	0	6503	1487	77.13%	1
30.4	2	35	0	3774	957	74.64%	1
56.77	2	42	1	4588	1378	69.97%	1
71.14	2	69	0	3734	1210	67.60%	1
58.2	2	24	0	6096	2756	54.79%	1
60.77	3	17	0	4063	1483	63.50%	1
53.01	3	38	0	4224	1738	58.85%	1
51.81	3	55	0	4564	2142	53.07%	1
12.16	4	53	0	3880	1243	67.96%	1
-78.17	4	26	8	4445	1688	62.02%	1
-114.87	5	59	1	3939	1240	68.52%	1
26.32	5	83	2	3909	1829	53.21%	1
32.4	6	63	1	9871	4570	53.70%	1
35.25	7	78	3	4582	2285	50.13%	1

Kwh_lpu_actual	Kwh_spu_actual	Kwh_street_actual	Kwh_lpu_estimate	Kwh_spu_estimate	Kwh_street_estimate	Cust_lpu_actual
0	1343	879	0	17613	0	0
0	21797	0	0	82769	0	0
0	0	0	0	15364	0	0
0	14590	0	0	279198	0	0
0	5334	0	0	2540	0	0
0	16695	0	0	38805	0	0
0	3505	0	0	64748	0	0
0	2732	0	0	49508	0	0
0	0	0	0	40331	0	0
0	0	1222	0	55337	0	0
0	9204	22555	0	58193	0	0
0	1	0	0	63262	0	0
0	7282	0	0	16820	0	0
0	10000	0	0	32451	0	0
13943	595	1301	0	52264	0	1
7046	976	2602	0	49586	0	1
421803	0	0	0	41311	0	2
59239	297	0	0	68792	0	2
62075	2380	12258	0	61206	0	2
33799	-34595	0	0	84001	0	2
40715	-68924	0	0	41896	0	2
34603	7710	0	0	93315.5	0	3
50939	359	0	0	31070	0	3
55215	113214.5	0	0	394	0	3
127894	41199	0	0	95019	0	4
410884	17305	1672	0	75666	0	4
470377	4634	275709	0	147378.5	0	5
142889	10148	679	0	127275	0	5
46695	10841	65061	0	143452	0	6
253353	57080	6309	0	133276	0	7

Cust_spu_actual	Cust_street_actual	Cust_lpu_estimate	Cust_spu_estimate	Cust_street_estimate	Nmd_lpu	Nmd_spu	Nmd_street
1	3	0	27	0	0	860	0
7	0	0	21	0	0	628	0
0	0	0	15	0	0	443	0
9	0	0	83	0	0	2086	0
2	0	0	2	0	0	125	0
5	0	0	14	0	0	392	0
2	0	0	8	0	0	325	0
2	0	0	19	0	0	596	0
0	0	0	9	0	0	382	0
0	2	0	13	0	0	244	0
7	4	0	43	0	0	1369	0
2	0	0	28	0	0	703	0
3	0	0	14	0	0	482	0
4	0	0	21	0	0	715	0
3	1	0	36	0	200	1271	0
2	1	0	25	0	180	664	0
0	0	0	39	0	1800	913	0
1	0	0	34	0	1315	985	0
3	1	0	39	0	415	1022	0
20	0	0	49	0	400	2240	0
3	0	0	21	0	415	946	0
1	0	0	16	0	1225	533.5	0
1	0	0	37	0	1370	1039	0
54	0	0	1	0	815	696	0
10	0	0	43	0	2400	1370	0
6	8	0	20	0	3100	640	0
5	1	0	54	0	3300	1481.5	0
6	2	0	77	0	1915	2686	0
9	1	0	54	0	900	1790	0
12	3	0	66	0	3030	2970	0

Cdu_revenue	Kva	Cust_total	Nmd_total	Cust_actual_total	Cust_estimate_total	Inside_Range_%	Balanced_Grace_period_Months
0	5616	4762	860	4	27	30	3
0	3121	4933	628	7	21	30	3
0	3114	3868	443	0	15	30	3
0	6231	4198	2086	9	83	30	3
0	5969	3988	125	2	2	30	3
0	6875	4209	392	5	14	30	3
0	25288	4430	325	2	8	30	3
0	6324	6112	596	2	19	30	3
0	10898	5890	382	0	9	30	3
0	6218	3967	244	2	13	30	3
0	9257	5350	1369	11	43	30	3
0	16550	7409	703	2	28	30	3
0	5497	3697	482	3	14	30	3
0	3426	3789	715	4	21	30	3
0	7072	6798	1471	5	36	30	3
0	5672	5145	844	4	25	30	3
0	8409	6544	2713	2	39	30	3
0	10744	3811	2300	3	34	30	3
0	5072	4633	1437	6	39	30	3
0	7917	3805	2640	22	49	30	3
0	9847	6122	1361	5	21	30	3
0	7993	4083	1758.5	4	16	30	3
0	7107	4265	2409	4	37	30	3
0	11400	4622	1511	57	1	30	3
0	8256	3937	3770	14	43	30	3
0	13330	4483	3740	18	20	30	3
0	8339	4004	4781.5	11	54	30	3
0	9780	3999	4601	13	77	30	3
0	14254	9941	2690	16	54	30	3
0	15144	4670	6000	22	66	30	3

Significant_Losses_Range_%	ED_Year_Months	DateVar
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0
100	6	0
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0
100	12	0

Eskom	Guideline	Eskom Distribution

Title: **Load Reduction Process**

Document Identifier:	**240-Dx-003T**
Alternative Reference Number:	**N/A**
Area of Applicability:	**Eskom Distribution**
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Compiled by	Functional Responsibility	Supported	Authorized by
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Content

Page

1. Introduction ... 3
   1.1 Background ... 3
2. Supporting Clauses ... 4
   2.1 Scope ... 4
      2.1.1 Purpose ... 4
      2.1.2 Applicability ... 4
      2.1.3 Effective date ... 4
   2.2 Normative/Informative References ... 4
      2.2.1 Normative ... 4
      2.2.2 Informative ... 5
   2.3 Definitions ... 5
      2.3.1 Distribution: ... 5
   2.4 Abbreviations ... 5
   2.5 Roles and Responsibilities ... 5
      2.5.1 Custodians ... 5
      2.5.2 Delegation of Authority ... 6
      2.5.3 Governance Committees ... 6
   2.6 Process for Monitoring ... 6
   2.7 Related/Supporting Documents ... 6
3. Network Feeders Selection Criteria ... 7
   3.1 Feeder Inclusion criteria ... 7
   3.2 Feeder Exclusion criteria ... 7
4. Frequency ... 7
   4.1Timelines ... 7
5. Stakeholder Management/Communication ... 7
6. Controls ... 8
7. Acceptance ... 8
8. Revisions ... 8
9. Development Team ... 9
10. Acknowledgements ... 9

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1. Introduction

This Guideline sets out the process on how to implement the load reduction in areas where networks are overloaded beyond their designed specification.

1.1 Background

Eskom has been experiencing network problems specifically around transformers that are continuously blowing due to network overloading. The network equipment is designed to handle the demand that has been calculated based on forecasted customer base demand for a specific area/feeder. Any demand above the installed capacity will overload the equipment and result in repeated failures that often cause damage to the distributor network infrastructure and property. All networks have overload protection mechanisms built in, but in many instances, the mechanisms are illegally bypassed.

This problem is exacerbated by meter bypasses, illegal connections and vandalism of the electricity infrastructure. As the result, Eskom Distribution come up with the critical and essential proactive measure in the form of load reduction as a response to curb and contain the loss of equipment that could result in prolonged supply interruptions to the consumer or even loss of life.

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2. Supporting Clauses

2.1 Scope

This Guideline is applicable to any Eskom area of supply as approved by NERSA.

2.1.1 Purpose

The purpose of this document is to standardise the process of Load Reduction within Distribution Operating Units

2.1.2 Applicability

This Guideline shall apply to all Eskom Operating Units (OU) in Distribution.

2.1.3 Effective date

This document is effective from December 2021

2.2 Normative/Informative References

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

2.2.1 Normative

[1] ISO 9001 Quality Management Systems

[2] Delegation of authority Standard – Unique Identifier: 240-69195846 (Waiving of Standard Charges).

[3] 240-77224535 Standard For The Estimation Of Large Power User (LPU) Metering Data On Das

[4] 240- Distributor Infrastructure Asset Protection Position Paper

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2.2.2 Informative

2.3 Definitions

2.3.1 Distribution:

Means the regulated business unit through which Eskom constructs, owns, operates and maintains Eskom's Distribution Network.

2.4 Abbreviations

Abbreviation	Explanation
FBM	Feeder Balancing Module
DOOC	Distribution Oversight Operation Committee
OU's	Eskom Operating Units
M&DS	Metering and Data Services
GM	General Manager
CPM	Control Plant Maintenance
O&M	Operations and Maintenance

2.5 Roles and Responsibilities

2.5.1 Custodians

- The custodians of Load Reduction Guideline is Energy Trading Departments.
- Below is the Load Reduction Matrix:

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Load Reduction RACI Matrix					
No	Description	R	A	C	I
1	Identify Feeders for Load Reduction	SM	ET		CS,M&O
2	Download of Sales, stats data and close data gaps		SM (DAS)		ET
3	Provide Feeder Balancing Losses figures (%)		ET		
4	Prepare Load Reduction Schedules	NOS	SM		
5	Communicate Daily Load Reduction notices to stakeholders		CAD		
6	Execute Load Reduction		NOS		
7	Quantify Curtailed and Stop Losses Volumes		ET	SM	M&O, CS
8	Report Curtailed and Stop Losses Volumes		SM		ET,M&O,CS
9	Feeders exclusion due to improved performance		SM	GE Dist	ET
10	Feeders exclusion in the event of National, Provincial or local importance		SM	GM OU	ET

Key	Description
GE	Group Executive
GM	General Manager
SM	Smart Metering
CAD	Communication
NOS	Network Optimisation and support
ET	Energy Trading
CS	Customer Service
M&O	Maintenance and Operations

2.5.2 Delegation of Authority

The Load Reduction should be implemented within the Delegation of Authority

2.5.3 Governance Committees

The Load reduction process was taken and supported and/or approved by the following committees:

- Energy Protection Steering Committee for ratification.
- DOOC committee for approval

2.6 Process for Monitoring

- The OUs should submit the Load Reduction schedules on every third working day of the month

2.7 Related/Supporting Documents

Not applicable.

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3. Network Feeders Selection Criteria

Feeders can be included or excluded from Load Reduction based on the below criteria:

3.1 Feeder Inclusion criteria

- Feeders can be included under the following conditions:
    - Feeder must be balanced in FBM with functioning Stats Meter
    - Worst performing feeders
    - Predominantly PPU/SPU customers
    - Actual non-technical losses volume with a threshold of >= 200 000 kWh
    - Networks or feeders that are consistently tripping due to overload

3.2 Feeder Exclusion criteria

- Feeders can be excluded under the following conditions:
    - When the feeder non-technical losses has reduced to an acceptable level. However it has to be approved by the Cluster's GM.
    - A temporary feeder exclusions can be considered in the event of National, Provincial or local importance. However it has to be approved by the GE Distribution.

4. Frequency

4.1Timelines

- The Load Reduction report should be submitted on the monthly or ad hoc basis.

5. Stakeholder Management/Communication

- The daily Load Reduction notice to stakeholders should be communicated within 24 hours.
- In an event of Load Reduction being suspended, notice is not mandatory.

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6. Controls

- Monitor non-technical losses on MV feeders through feeder balancing.
- Track failed transformers as per Maximo system
- Track number of failed conductors and jumpers due to overloading

7. Acceptance

This document has been seen and accepted by:

Name	Designation
Committee member	Energy Protection Steering Committee
Committee member	DOOC
Portia Papu	Senior Manager Energy Trading

8. Revisions

Date	Rev.	Compiler	Remarks
Mar 2025	0	B Ramokgopa	New Document

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9. Development Team

The following people were involved in the development of this document:

Name	Designation
Portia Papu	Senior Manager Energy Trading
Nozipho Mpanza	Senior Manager Maintenance & Operation
Bolden Ramokgopa	Senior Energy Trading Advisor
Allan Maseko	Middle Manager Energy Trading

10. Acknowledgements

We would like to express our sincere thank you to everyone contributed in the development of this document.

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Eskom	Meeting Minutes Template	Template Identifier	240-54076329	Rev	7
		Effective Date	November 2019		
		Next review date	October 2022		
		[Distribution]			

Meeting Name: Management of Energy Losses and Revenue Recovery NWOU			
Date:	**Time:**	**Venue:**	**Meeting No.:**
26 May 2021	09:00-14:00	Microsoft Teams	

Item	Subject & salient points	Decisions & Action items	Responsibility *[Assign responsibility for actions]*	Target date DD/MM/YYYY
1.	**Opening**	Meladi Botabota welcomed all members and opened the meeting.		
2.	**Safety and Emergency Evacuation Procedure**	All members in attendance are working from a safe environment. Rising COVID numbers, to be cautious when going to public spaces and required gatherings. Suggestion that when a person has COVID, the identity of that person should be disclosed.	**Ntidiseng Makgamatha**	

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Item	Subject & salient points	Decisions & Action items	Responsibility *[Assign responsibility for actions]*	Target date DD/MM/YYYY
3.	**Declaration of interest**	Monthly meeting clashes with weekly municipality meeting. All members declare that they buy electricity and have not tampered with their meters.		
8.	**Previous minutes**	Action items that are older than 2021 to be contacted and closed. If not closed, will be dealt with during next meeting.		

	Energy losses and Revenue Losses
	
	<u>TX purchases and sales</u>
	
	• Purchases and sales April 2021:
	  ○ NET purchases = 1797 GWh
	  ○ OU sales = 1691 GWh
	  ○ Losses = 106 GWh (5.9% / R71,78m)
	• Energy and Revenue losses:
	  ○ Technical losses = 31,83GWh (1.77% / R21,54m)			

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Item	Subject & salient points	Decisions & Action items	Responsibility *[Assign responsibility for actions]*	Target date DD/MM/YYYY
	○ Non-technical = 74,28 GWh (4.13% / R50,25m) • MTS purchases decreased by 2.3% • IPP purchases decreased by 8.9% • Sales purchases increased by 4.81% • Energy loss percentage is 5.9%, 12MMA energy loss is 8.63%, and YTD energy loss is 5.9% • 3 KPIs to be measured on: losses reduction, losses percentage, losses GWh • Purchase cost vs sales revenue: Gross profit = R447m (25%) <u>Load reduction</u> • Eskom has started implementing load reduction in the OU during peak hours. • Media statements issued to notify customers. • OU still needs to determine the benefits of load reduction.			

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Item	Subject & salient points	Decisions & Action items	Responsibility *[Assign responsibility for actions]*	Target date DD/MM/YYYY
	HV Stats installation • OU required to install its own metering excluding TX metering. 39 Direct connects are online. • There are some with issues regarding meter configurations and data transfer, to be investigated by CPM. • Few of them needs project as primary plant not available. • Criteria to follow to determine which feeders will fall under load reduction. Percentage losses as well as GWH losses needs to be considered.			
	Data Clean-up 66 transformers displaying “network not operating”, estimated 1300 customers does not have CNL.	Feedback needed regarding those transformers	**All Sectors**	**04 June 2021**
	PPU Strategy MATS performance:			

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Item	Subject & salient points	Decisions & Action items	Responsibility *[Assign responsibility for actions]*	Target date DD/MM/YYYY
	• Vryburg sector – 99.91% • Klerksdorp sector – 95% <u>Magnetic meters progress status</u> • Rustenburg sector – 2 <u>Audits and fixes</u> • Rustenburg sector – 64 audits, 6 tampers, 6 discon, 4 recon, 4 replaced • Vryburg sector – 1 recon, 1 replaced • Mmabatho sector – 53 audits, 12 tampers, 12 discon, 4 replaced • Klerksdorp sector – 239 audits, 3 tampers, 3 discon, 3 recon, 2 replaced			
	SPU Strategy <u>Audits and fixes</u> • Rustenburg sector – 14 audits • Vryburg sector – 39 audits, 2 tampers			

Disclosure classification: ***(Select the appropriate classification: Confidential, Controlled Disclosure, Public)***

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Item	Subject & salient points	Decisions & Action items	Responsibility *[Assign responsibility for actions]*	Target date DD/MM/YYYY
	• Mmabatho sector – 12 audits			
	Recoveries • Disconnections: 566 • Reconnections: 289 • Recovery: R10.1m			
	Matters arising, general and closure	Each presenter to submit their presentations prior to the meeting. Meladi closed the meeting		

Signed as a correct record: _____ _____

Chairman **Date**

NOTE: *This template may be transferred to an excel format for ease of use, provided that the content hereof is retained unaltered.*

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Eskom	Meeting Minutes Template	Template Identifier	240-54076329	Rev	7
		Effective Date	November 2019		
		Next review date	October 2022		
		[Distribution]			

Meeting Name: Management of Energy Losses and Revenue Recovery NWOU			
Date:	**Time:**	**Venue:**	**Meeting No.:**
23 June 2021	09:00-14:00	Microsoft Teams	

Item	Subject & salient points	Decisions & Action items	Responsibility *[Assign responsibility for actions]*	Target date DD/MM/YYYY
1.	**Opening**	Meladi Botabota welcomed all members and opened the meeting.		
2.	**Safety and Emergency Evacuation Procedure**	All members in attendance are working from a safe environment. Apologies Noted Members to continue observing all safety precautions.		
3.	**Declaration of interest**	Zimasa has another meeting. He will join at 11:00		

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Item	Subject & salient points	Decisions & Action items	Responsibility *[Assign responsibility for actions]*	Target date DD/MM/YYYY
		PK has issues in his area. He'll be in and out of meeting. Snyman asked to be excused at 11:00 as he has another meeting Ntidiseng will be in and out of meeting. They are busy attending to customer calls.		
4.	**Minutes** a. Adopt previous minutes b. Matters arising c. Action items			
5.	**Energy losses and Revenue Losses** <u>TX purchases and sales</u>			

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Item	Subject & salient points	Decisions & Action items	Responsibility *[Assign responsibility for actions]*	Target date DD/MM/YYYY
	202106 NWOU - Energy Losses Perfo • Net Purchases 1929 Gwh • Sales 1706 Gwh • Losses 222.63 Gwh (11.54%) • Total Losses R150.61m • Technical Losses R45.18m • Non-Technical Losses R105.43m HV Stats installation NW MTS Balancing 2021 FY(Linda).xlsx • NWOU has 10 MTS's • Substation balancing to be done			

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Item	Subject & salient points	Decisions & Action items	Responsibility *[Assign responsibility for actions]*	Target date DD/MM/YYYY
	• Out of the 85 Direct feds only 42 are commissioned online • Unbundling between Transmission and Distribution to be implemented by December. Transmission will be billing Distribution. We need to have our own metering. Load Reduction Benefits • Meladi to give feedback on Load Reduction benefits in the next weekly meeting. She is busy analysing the 30 min interval data	Meladi and Snyman to share progress on how far they are with regards to sourcing funds	Meladi and Snyman	30 June 2021
6.	**LPU Feedback** Audits and Fixes • 63 points audited in April and May			

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Item	Subject & salient points	Decisions & Action items	Responsibility *[Assign responsibility for actions]*	Target date DD/MM/YYYY
	• An estimation of 120 audits will be submitted by end of June 2021. • 64 to be recommissioned • 56 to be verified • 5 Stats points in Mafikeng area have been fixed (Leopard Park Substation) • High number of stats points that are on bypass for more than 3 months which is affecting Feeder Balancing KPi's			
7.	**SPU & PPU Feedback** **<u>Mmabatho Sector</u>** <u>SPU</u> • Churchill Avenue / Second Street ✓ 17 SPUs completed ✓ 4 Faulty and replaced • 18 SPU adhoc audits done			

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Item	Subject & salient points	Decisions & Action items	Responsibility *[Assign responsibility for actions]*	Target date DD/MM/YYYY
	• 1 Team in EP PPU • 64 Visits • 53 Audits • 12 Tampered • 12 Disconnections **Vryburg Sector**  SPU • 23 SPU audits completed in June			

Disclosure classification: ***(Select the appropriate classification: Confidential, Controlled Disclosure, Public)***

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Item	Subject & salient points	Decisions & Action items	Responsibility *[Assign responsibility for actions]*	Target date DD/MM/YYYY
	• 120 SPU audits completed YTD • 2 missing points on CC&B • 3 Tampers • 12 Faulty, 2 replaced (Unavailability of meters) Minimal PPU's done in the Vryburg Sector. **Klerksdorp Sector** No authorized personnel from Team. 1 TO handed over to Zanele from Minor Works • Kanana / Vaal Maseru and Kanana / Hoztel ✓ 121 PPU audits done ✓ 3 Tampered ✓ 1 Faulty **Rustenburg Sector**			

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Item	Subject & salient points	Decisions & Action items	Responsibility *[Assign responsibility for actions]*	Target date DD/MM/YYYY
	No representation			
8.	**PPU Feedback** No Representation from Area Managers			
9.	**Data Clean up** • No PPU Audits received from the sectors	Sectors to collect customer info when doing audits. i.e ID number, Telephone number etc. Data is being measured on customer data in their scorecard	Sectors	Ongoing
		Thabang to share Data scorecard as new KPI's have been added	Thabang	30 June 2021
		Thabang to give feedback on the feeders selected for data together with the ELM Priority feeders	Thabang	30 June 2021

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Item	Subject & salient points	Decisions & Action items	Responsibility *[Assign responsibility for actions]*	Target date DD/MM/YYYY
10.	**SPU Strategy** Risk resolutions-ALL RISKS • Teboho Mohapi is on Maternity leave. Rofhiwa is standing in for Teboho. Audits & Fixes (Discon & Recons) • Platinum Sector ✓ 101 Disconnections ✓ 31 Reconnection • Matlosana Sector ✓ 255 Disconnected ✓ 161 Reconnected • Revenue Recovered = R4.3m ✓ Platinum R1.1m ✓ Matlosana R3.2m			

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Item	Subject & salient points	Decisions & Action items	Responsibility *[Assign responsibility for actions]*	Target date DD/MM/YYYY
11.	**LPU & SPU Recoveries and LPU Risk resolution** • R4m still to be concluded for scorecard reporting • Transnet Queries – Dikeledi Mokoena will be taking over all queries • SPU Recoveries – Ansie is no longer with team	Meladi to engage Abram and Tsholo to give direction on who will fulfill Ansie role on SPU Recoveries	Meladi	24 June 2021
12.	**SPU & PPU Conversion** <u>Pending Start SPU</u> • No representative • Brenda took over Zandie's Portfolio. Brenda to be invited to all Weekly and Monthly Meetings			
	Matters arising, general and closure	Poor representation from Customer Services Meladi closed the meeting		

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Signed as a correct record: _____ _____

Chairman **Date**

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Inathi Mpapa

From: Meladi Botabota <BotaboMR@eskom.co.za>
Sent: 06 August 2021 09:46 AM
To: Neo Mothibi; Ishmael Kegontse; Dominic Disipi; Lucky Kgampe; Nico Jiki
Cc: Kolodi Makola; Gaafelelwe Sebelegi; Johan Erasmus; Phemelo Olifant; Teboho Sewisa; Zanele Sithole
Subject: RE: North West Operating Unit_Losses Analysis Report June 2021 Load Reduction.xlsx
Attachments: RE: Load Reduction Breaker Operating Guide Rev 11.2; North West Operating Unit_Losses Analysis Report June 2021 Load Reduction.xlsx

Good day colleagues

May you please advise on the NTL losses as requested for the feeders to be added on LR

Your quick response is high required, I need to send the feeders to the team on Monday

Regards
Meladi Botabota



From: Meladi Botabota
Sent: Friday, 30 July 2021 11:51
To: Abram Tumane <TumaneA@eskom.co.za>; Neo Mothibi <MothibNR@eskom.co.za>; Gaafelelwe Sebelegi <SebeleGD@eskom.co.za>; Kolodi Makola <MakolaK@eskom.co.za>; Johan Erasmus <ErasmuJB@eskom.co.za>; Ishmael Kegontse <KegontI@eskom.co.za>; Dominic Disipi <DisipiDK@eskom.co.za>; Phemelo Olifant <OlifantP@eskom.co.za>; Lucky Kgampe <KgampeL@eskom.co.za>; Charles Kgatwe <KgatweKC@eskom.co.za>; Teboho Sewisa <SewisaTM@eskom.co.za>; Zanele Sithole <SitholZA@eskom.co.za>; Nico Jiki <JikiMN@eskom.co.za>
Subject: North West Operating Unit_Losses Analysis Report June 2021 Load Reduction.xlsx

Good day colleagues

Please find attached top 48 feeders with high NTL losses that are current not on Load reduction and suggested to be added on the load reduction schedule

@EP supervisors please confirm if the NTL are real losses not data based on the site status core by confirming the stats meter configuration with CPM, CNL and audits done on the feeders, and send information by Friday 6th August

Colleagues your swift support and suggestion will be appreciated to have a collaborated decision the feeders

Regards
Meladi

Inathi Mpapa

From: Kolodi Makola <MakolaK@eskom.co.za>
Sent: 04 August 2021 01:35 PM
To: Meladi Botabota; Gaafelelwe Sebelegi
Cc: Ishmael Kegontse; Johan Erasmus
Subject: RE: Load Reduction Breaker Operating Guide Rev 11.2

Good day
So noted, the monitoring should continue.

I've reponded. I'm aligned with adding what you and the sector have confirmed.

Regards,
Kolodi Makola
0837689938

-------- Original message --------
From: Meladi Botabota <BotaboMR@eskom.co.za>
Date: 2021/08/04 13:20 (GMT+02:00)
To: Kolodi Makola <MakolaK@eskom.co.za>, Gaafelelwe Sebelegi <SebeleGD@eskom.co.za>
Cc: Ishmael Kegontse <KegontI@eskom.co.za>, Johan Erasmus <ErasmuJB@eskom.co.za>
Subject: FW: Load Reduction Breaker Operating Guide Rev 11.2

Good day

Please note **Havelock** is removed from the list

May you please respond on the additional feeders suggested so that I can send to her

Regards
Meladi Botabota

From: Nokulindela Mchunu <MchunuPN@eskom.co.za>
Sent: Wednesday, 04 August 2021 10:34
To: Thembakazi Lamani <LamaniT@eskom.co.za>; Nwabisa Letsoha <LetsohI@eskom.co.za>; Yaaseen Akhalwaya <AkhalwY@eskom.co.za>; Thoko Matsika <MatsikTA@eskom.co.za>; Dingilizwe Setlogelo <SetlogDJ@eskom.co.za>; Eddie Ngobeni <NgobenE@eskom.co.za>; Lawrence Mogotsi <MogotsSL@eskom.co.za>; Daniel Mokoena <MokoenDK@eskom.co.za>; Zethu Makhathini <MakhatCZ@eskom.co.za>; Nelisiwe Zimba <ZimbaNC@eskom.co.za>; Mpho Maduna <MadunaIM@eskom.co.za>; Baaitse Tshetlanyane <TshetlB@eskom.co.za>; Jan Molomo <MolomoJT@eskom.co.za>; Palesa Pilane <PilanePM@eskom.co.za>; Johan Van Staden <VStadeMJ@eskom.co.za>; Zainoolabadien Karim <KarimZ@eskom.co.za>; Ntsebo Spambo <SpamboNR@eskom.co.za>
Cc: Thokozani Hlatshwayo <HlatshTh@eskom.co.za>; Magic Sibuyi <SibuyiNM@eskom.co.za>; Xolani Mkala <MkalaX@eskom.co.za>; Mervin Mottian <MottiaDM@eskom.co.za>; Brian Mtshali <MtshalB@eskom.co.za>; Zisanda Jobodwana <JobodwZ@eskom.co.za>; Annali Moolman <MoolmanA@eskom.co.za>; Simon Mayisela <MayiseMS@eskom.co.za>; Gerrit Van Der Merwe <VdmerwGW@eskom.co.za>; Gloria Molise <MoliseG@eskom.co.za>; Steve Sello <SelloMS@eskom.co.za>; Zanele Sithole <SitholZA@eskom.co.za>; Phemelo Olifant <OlifantP@eskom.co.za>; Meladi Botabota <BotaboMR@eskom.co.za>; Celeste Harris <PyonC@eskom.co.za>; Dewald Weyer <WeyerD@eskom.co.za>; Victor Ramagaga <RamagaTV@eskom.co.za>; Ronel Coetzee <CoetzeRD@eskom.co.za>; Boye Motse <MotseDS@eskom.co.za>; Puleng Lemao <LemaoPG@eskom.co.za>; Tumi Mashishi <MashisT@eskom.co.za>; Ntombifuthi Hlophe

<HlopheCN@eskom.co.za>
Subject: RE: Load Reduction Breaker Operating Guide Rev 11.2

Good day,

Done.

Regards

From: Thembakazi Lamani <LamaniT@eskom.co.za>
Sent: Wednesday, 04 August 2021 10:22
To: Nwabisa Letsoha <LetsohI@eskom.co.za>; Yaaseen Akhalwaya <AkhalwY@eskom.co.za>; Thoko Matsika <MatsikTA@eskom.co.za>; Dingilizwe Setlogelo <SetlogDJ@eskom.co.za>; Eddie Ngobeni <NgobenE@eskom.co.za>; Lawrence Mogotsi <MogotsSL@eskom.co.za>; Daniel Mokoena <MokoenDK@eskom.co.za>; Zethu Makhathini <MakhatCZ@eskom.co.za>; Nelisiwe Zimba <ZimbaNC@eskom.co.za>; Mpho Maduna <MadunaIM@eskom.co.za>; Baaitse Tshetlanyane <TshetlB@eskom.co.za>; Jan Molomo <MolomoJT@eskom.co.za>; Palesa Pilane <PilanePM@eskom.co.za>; Johan Van Staden <VStadeMJ@eskom.co.za>; Zainoolabadien Karim <KarimZ@eskom.co.za>; Ntsebo Spambo <SpamboNR@eskom.co.za>
Cc: Thokozani Hlatshwayo <HlatshTh@eskom.co.za>; Magic Sibuyi <SibuyiNM@eskom.co.za>; Nokulindela Mchunu <MchunuPN@eskom.co.za>; Xolani Mkala <MkalaX@eskom.co.za>; Mervin Mottian <MottiaDM@eskom.co.za>; Brian Mtshali <MtshalB@eskom.co.za>; Zisanda Jobodwana <JobodwZ@eskom.co.za>; Annali Moolman <MoolmanA@eskom.co.za>; Simon Mayisela <MayiseMS@eskom.co.za>; Gerrit Van Der Merwe <VdmerwGW@eskom.co.za>; Gloria Molise <MoliseG@eskom.co.za>; Steve Sello <SelloMS@eskom.co.za>; Zanele Sithole <SitholZA@eskom.co.za>; Phemelo Olifant <OlifantP@eskom.co.za>; Meladi Botabota <BotaboMR@eskom.co.za>; Celeste Harris <PyonC@eskom.co.za>; Dewald Weyer <WeyerD@eskom.co.za>; Victor Ramagaga <RamagaTV@eskom.co.za>; Ronel Coetzee <CoetzeRD@eskom.co.za>; Boye Motse <MotseDS@eskom.co.za>; Puleng Lemao <LemaoPG@eskom.co.za>; Tumi Mashishi <MashisT@eskom.co.za>; Ntombifuthi Hlophe <HlopheCN@eskom.co.za>
Subject: Load Reduction Breaker Operating Guide Rev 11.2

Good day

Please find attached the latest Load Reduction Schedule Rev 11.2 to be used immediately

Changes: Havelock sub in Block D because of good Performance.

Kind Regards,

Thembakazi Lamani
Pr Tech Eng
Network Optimisation
Network Security Planning Engineer
Tel: 011 871 3137
Mobile: 072 270 9750
Fax: N/A
Email: lamanit@eskom.co.za
Website: www.eskom.co.za
National Control Complex, cnr of Power Street and Refinery Road, Germiston, JHB



Exclude_Flg	OPS_UNIT	ZONE	CNC_SECTOR	CNC	Meter_Flg	Scenario
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Vaalkop CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mooinooi CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Hennops CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Zeerust CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Hennops CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mogwase CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Molopo CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Zeerust CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Matooster CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mooinooi CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Brits CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Brits CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Koster CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Rustenburg CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Vaalkop CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mogwase CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Matooster CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Lichtenburg CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Lichtenburg CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Delareyville CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Zeerust CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Koster CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Morokweng CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Koster CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Lichtenburg CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Koster CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Vryburg CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Delareyville CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Hennops CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Taung CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Zeerust CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Taung CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mooinooi CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mooinooi CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mooinooi CNC		Sub not Metered -> All Fdrs Metered
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Molopo CNC		Sub not Metered -> All Fdrs Metered

Substation	Meter_Location	Stats_Meter	Meter_Status	Fdr_Location
VEEKRAAL RURAL 88/11kV Substation	299499632	Meter_VEEKRAAL/DIKHOLOLO 11kV Overhead Line	Online	341883539
WONDERKOP 88/11kV Substation	299499612	Meter_WONDERKOP-MARIKANA 11kV Overhead Line	Online	318001992
UCAR MINERALS 88/11/6.6kV Substation	299499651	Meter_UCAR MINERALS / OSKRAAL 11kV Overhead Line	Estimated	342752129
STRAATSDRIFT RR 88/22kV Substation	299499684	Meter_STRAATSDRIFT RURAL / PACHSDRAAI 1 22kV Feede	Online	221797315
UCAR MINERALS 88/11/6.6kV Substation	299499650	Meter_UCAR MINERALS/STEPHANUS 11kV Overhead Line	Online	343558725
PHOKENG 88/11kV Substation	299499520	Meter_PHOKENG / BAKERY 11kV Feeder MV Overhead Lin	Online	317123091
MANYANE 88/11kV Substation	299499806	Meter_MANYANE-DORP 11kV Overhead Line	Online	317157695
VRYBURG ROAD 33/22/11kV Substation	299499620	Meter_VRYBURG ROAD - SETLOPO 1 11kV Feeder MV Over	Online	197670409
GOPANI MINE 88/22kV Substation	299499919	Meter_GOPANI MINE / DINOKANA 1 22kV Feeder MV Over	Online	199812797
RUIGHOEK 88/22kV Substation	299499730	Meter_RUIGHOEK-MANAMELA 22kV Overhead Line	Online	319706113
WONDERKOP 88/11kV Substation	299499611	Meter_WONDERKOP-QUARRIES 11kV Overhead Line	Online	318456037
KLIPFONTEIN RR 88/22/11kV Substation	299499865	Meter_KLIPFONTEIN RURAL / BOITUMELONG 1 11kV Feede	Online	198644131
PHOKENG 88/11kV Substation	299499524	Meter_PHOKENG / KGALE 11kV Feeder MV Overhead Line	Online	319706129
DONALDSVALE TRACTION 88kV Substation	299499564	Meter_Donaldsvale Sub - Bester 11kv MV Overhead Li	Online	318025745
GELUK RURAL 88/11kV Substation	299499924	Meter_GELUK RURAL/KAREE 11kV Overhead Line	Online	341985841
MAFIKENG MAIN 88/33/11kV Substation	299499824	Meter_MAFIKENG MAIN BLOCKHOUSE / MAJEMANTSHO 1 11k	Online	221683530
BRITS RURAL 88/11kV Substation	299499970	Meter_BRITS RURAL/SONOP 11kV Overhead Line	Online	342113893
KGETLENG RIVER 88/22/11kV Substation	299499878	Meter_KGETLENG RIVER-REAGILE 11kV Overhead Line	Online	317646775
PHOKENG 88/11kV Substation	299499519	Meter_PHOKENG - CIVIC 11kV Overhead Line	Online	319727047
DONALDSVALE TRACTION 88kV Substation	299499370	Meter_DONALDSVALE / KINGS 1 11kV Feeder MV Overhea	Online	323789675
RUSTENBURG COMPRESSOR 88/6.6kV Substation	299499724	Meter_RUSTENBURG-PHOTSANENG 11kV Overhead Line	Online	317113829
DONALDSVALE TRACTION 88kV Substation	299499560	Meter_Donaldsvale Sub - Sportveld 11kv MV Overhead	Online	317421071
TWINRIVERS 88/22kV Substation	299499655	Meter_TWINRIVERS/EERSTELING 22kV Overhead Line	Online	341809731
BAFOKENG 7 88/33kV Substation	299499569	Meter_BAFOKENG 7 / KENAKO 1 11kV Feeder Overhead L	Online	317090597
BODERELO 11kV Switching Station	299499510	Meter_BODERELO / AGRI LIME 11kV Feeder MV Overhead	Estimated	317218137
SUNRISE 88kV Substation	299499677	Meter_SUNRISE-ROBEGA 11kV Overhead Line	Online	319957000
SPRINGBOKPAN 88/22/3.3kV Substation	299499695	Meter_SPRINGBOKPAN / MATILE DUIKERBOS 1 22kV Feede	Online	221637330
SPRINGBOKPAN 88/22/3.3kV Substation	299499696	Meter_SPRINGBOKPAN / BODIBE TOWN 1 22KV Feeder MV	Online	221637268
DELAREYVILLE MUN 88/22/11kV Substation	299499948	Meter_DELAREYVILLE MUNIC / MADIBOGO 1 22kV Feeder	Online	221708551
SHAFT 15 88/22kV Substation	299499711	Meter_SHAFT15-FREEDOM PARK 22kV Overhead Line	Online	317144559
ZEERUST MUN 88/22/11kV Substation	299499606	Meter_ZEERUST MUNIC / ENZELSBERG 1 22kV Feeder MV	Online	221746580
KGETLENG RIVER 88/22/11kV Substation	299499876	Meter_KGETLENG RIVER-TAFELKOP 22kV Overhead Line	Online	318375799
KLIPFONTEIN RR 88/22/11kV Substation	299499864	Meter_KLIPFONTEIN RURAL / COVERDALE 1 11kV Feeder	Online	198644133
VESEL 132/22kV Substation	299499626	Meter_VESEL / MOROKWENG 1 22kV Feeder MV Overhead	Online	221808541
OLIFANTSNEK RURAL 132/11kV Substation	299499766	Meter_OLIFANTSNEK-ALMORO 11kV Overhead Line	Online	318587419
WHITES LICHTENBURG 88/11/3.3kV Substation	299499615	Meter_WHITES LICHTENBURG / MANANA 1 11kV Feeder MV	Online	221746026
OLIFANTSNEK RURAL 132/11kV Substation	299499765	Meter_OLIFANTSNEK-MAANHAAR 11kV Overhead Line	Online	317221645
HAVELOCK 66/22kV Substation	299499543	Meter_HAVELOCK / GANYESA 1 22kV Feeder MV Overhead	Online	199535113
DELAREYVILLE MUN 88/22/11kV Substation	299499945	Meter_DELAREYVILLE MUNIC / ROOIWAL 1 22kV Feeder M	Online	200284883
BAKWENA 88/11kV Substation	299499991	Meter_BAKWENA/BUSHVELD 11kV Overhead Line	Online	343686253
MAGOPELA 132/22kV Substation	299499821	Meter_MAGOPELA / LOKALENG 1 22kV Feeder MV Overhea	Online	198644137
STRAATSDRIFT RR 88/22kV Substation	299499685	Meter_STRAATSDRIFT RURAL / MADIKWE TOWNS 1 22kV Fe	Online	198772883
MAGOPELA 132/22kV Substation	299499820	Meter_MAGOPELA / MODIMONG 1 22kV Feeder MV Overhea	Online	221905618
SCHWEIZER RENEKE MUN 88/11kV Substation	299499715	Meter_SCHWEIZER RENEKE MUNIC / MAREESIN 1 11kV Fee	Online	198828317
MODDERSPRUIT 88/11kV Substation	299499785	Meter_MODDERSPRUIT- 11kV Makolokwe FDR	Online	341699393
WONDERKOP 88/11kV Substation	299499610	Meter_WONDERKOP-TURF 11kV Overhead Line	Online	317245213
THARISA 88kV Substation	299499487	Meter_THARISA / MAMALEKA 1 11kV Feeder MV Overhead	Online	323659648
VRYBURG ROAD 33/22/11kV Substation	299499618	Meter_VRYBURG ROAD / MOCOSENG 1 11kV Feeder MV Ove	Online	221683630

Feeder		LR	Month	NTL_kWh_12MMA	NTL_%_12MMA	Cust_lpu	Cust_spu	Cust_stree
VEEKRAAL / DIKHOLOLO 11kV Feeder MV Overhead Line	LPU and SPU need to be audite	No	202105	1,349,750.25	62.51	4	80	0
WONDERKOP / MARIKANA 1 11kV Feeder MV Overhead Line	LR	No	202105	1,247,865.42	77.48	2	45	0
UCAR MINERALS / OSKRAAL 1 11kV Feeder MV Overhead Line	LR	No	202105	1,241,360.83	77.64	0	10	0
STRAATSDRIFT RURAL / PACHSDRAAI 1 22kV Feeder MV Overhead Line	LR	No	202105	1,093,927.58	84.08	1	15	1
UCAR MINERALS / STEPHANUS 1 11kV Feeder MV Overhead Line	LR	No	202105	1,073,833.33	73.49	1	7	0
PHOKENG / BAKERY 1 11kV Feeder MV Overhead Line	LR	No	202105	1,064,123.75	61.48	6	55	1
DORP / CASH BUILD 11kV Feeder MV Overhead Line	LR	No	202105	1,046,714.11	53.1	12	25	0
VRYBURG ROAD / SETLOPO 1 11kV Feeder MV Overhead Line	LR	No	202105	1,018,872.33	77.85	0	25	1
GOPANI MINE / DINOKANA 1 22kV Feeder MV Overhead Line	LR	No	202105	1,005,873.83	64.27	1	42	1
RUIGHOEK / MANAMELA 1 22kV Feeder MV Overhead Line	LR	No	202105	1,005,509.17	67.53	2	20	0
WONDERKOP / QUARRIES 1 11kV Feeder MV Overhead Line	LR	No	202105	998,645.33	80.27	1	13	0
KLIPFONTEIN RURAL / BOITUMELONG 1 11kV Feeder MV Overhead Line	LR	No	202105	969,955.58	74.49	1	18	3
PHOKENG / KGALE 11kV Feeder MV Overhead Line	LR	No	202105	901,455.75	66.35	2	20	0
DONALDSVALE / BESTER 1 11kV Feeder MV Overhead Line	LR	No	202105	869,056.67	47.39	9	31	0
GELUK RURAL / KAREE 11kV Feeder MV Overhead Line	LPU and SPU need to be audite	No	202105	833,536.00	60.12	7	60	0
MAFIKENG MAIN BLOCKHOUSE / MAJEMANTSHO 1 11kV Feeder MV Overhead Line	LR	No	202105	831,006.75	60.53	2	20	0
BRITS RURAL / SONOP 1 11kV Feeder MV Overhead Line	LPU and SPU need to be audite	No	202105	826,562.00	69.78	4	31	0
KGETLENG RIVER / REAGILE 11kV Feeder MV Overhead Line	LR	No	202105	814,785.08	77.15	0	26	3
PHOKENG / CIVIC 11kV Feeder MV Overhead Line	LR	No	202105	800,811.08	64.01	4	17	0
DONALDSVALE / KINGS 1 11kV Feeder MV Overhead Line	LPU and SPU need to be audite	No	202105	797,934.64	80.9	3	27	0
RUSTENBURG / PHOTSANENG 1 11kV Feeder MV Overhead Line	LR	No	202105	777,509.88	75.35	4	28	0
DONALDSVALE / SPORTVELD 11kV Feeder MV Overhead Line	LPU and SPU need to be audite	No	202105	776,322.67	83.65	2	8	0
TWINRIVERS / EERSTELING 1 22kV Feeder MV Overhead Line	LR	No	202105	735,359.25	52.9	3	63	0
BAFOKENG 7 / KENAKO 1 11kV Feeder MV Overhead Line	LR	No	202105	720,682.33	71.79	0	15	0
BODERELO / AGRI LIME 11kV Feeder MV Overhead Line	LPU and SPU need to be audite	No	202105	713,391.33	41.46	18	8	0
SUNRISE / ROBEGA 1 11kV Feeder MV Overhead Line	LR	No	202105	712,250.08	75.16	1	20	0
BODIBE / MATILE DUIKERBOS 1 22kV Feeder MV Overhead Line	LR	No	202105	701,826.67	63.99	0	15	2
BODIBE / BODIBE TOWN 1 22kV Feeder MV Overhead Line	LR	No	202105	689,759.17	74.18	0	15	0
DELAREYVILLE MUNIC / MADIBOGO 1 22kV Feeder MV Overhead Line	LR	No	202105	680,082.58	36.41	6	63	1
SHAFT15 / FREEDOM PARK 22kV Feeder MV Overhead Line	LR	No	202105	667,233.50	63.72	0	3	0
ZEERUST MUNIC / ENZELSBERG 1 22kV Feeder MV Overhead Line	LR	No	202105	658,863.25	51.72	0	137	1
KGETLENG RIVER / TAFELKOP 1 22kV Feeder MV Overhead Line	LPU and SPU need to be audite	No	202105	624,743.17	44.3	11	133	0
KLIPFONTEIN RURAL / COVERDALE 1 11kV Feeder MV Overhead Line	LR	No	202105	624,551.92	64.19	0	12	1
VESEL / MOROKWENG 1 22kV Feeder MV Overhead Line	LR	No	202105	612,257.17	45.23	2	57	0
OLIFANTSNEK / ALMORO 1 11kV Feeder MV Overhead Line	LPU and SPU need to be audite	No	202105	602,429.25	62.4	2	144	0
WHITES LICHTENBURG / MANANA 1 11kV Feeder MV Overhead Line	LPU and SPU need to be audite	No	202105	602,191.08	40.56	3	167	0
OLIFANTSNEK / MAANHAAR 11kV Feeder MV Overhead Line	LPU and SPU need to be audite	No	202105	599,073.75	37.19	9	295	0
HAVELOCK / GANYESA 1 22kV Feeder MV Overhead Line	LR	No	202105	593,953.33	44.67	2	60	1
DELAREYVILLE MUNIC / ROOIWAL 1 22kV Feeder MV Overhead Line	LR	No	202105	578,342.42	51.3	0	48	4
BAKWENA / BUSHVELD 11kV Feeder MV Overhead Line	LPU and SPU need to be audite	No	202105	565,377.67	61.34	4	32	0
MAGOPELA / LOKALENG 1 22kV Feeder MV Overhead Line	LR	No	202105	541,380.25	37.59	7	78	3
STRAATSDRIFT RURAL / MADIKWE 1 22kV Feeder MV Overhead Line	LPU and SPU need to be audite	No	202105	529,739.08	69.98	7	40	0
MAGOPELA / MODIMONG 1 22kV Feeder MV Overhead Line	LR	No	202105	527,063.25	36.35	1	32	0
SCHWEIZER RENEKE MUNIC / MAREESIN 1 11kV Feeder MV Overhead Line	LR	No	202105	512,575.50	54.98	1	14	2
MODDERSPRUIT / MOKOLOKWE 11kV Feeder MV Overhead Line	LPU and SPU need to be audite	No	202105	509,747.50	36.71	1	19	0
WONDERKOP / TURF 1 11kV Feeder MV Overhead Line	LPU and SPU need to be audite	No	202105	507,900.58	72.52	1	2	0
THARISA / MAMALEKA 1 11kV Feeder MV Overhead Line	LPU and SPU need to be audite	No	202105	493,442.50	39.22	3	44	0
VRYBURG ROAD / MOCOSENG 1 11kV Feeder MV Overhead Line	LR	No	202105	486,169.17	58.61	0	10	1

Cust_ppu	Cust_buy_ppu
162	47
1021	304
2787	1268
1794	486
2927	1261
1248	393
1005	285
2391	935
6814	2417
3526	1504
2805	571
2574	1244
1948	717
3459	964
639	305
3799	1699
871	616
4743	863
3470	1115
525	189
1715	394
274	115
2490	1315
1401	580
7	1
1588	389
4373	1733
3881	851
9897	4375
2533	1148
3638	1212
493	88
3878	1899
6911	3519
67	18
19	8
37	19
4738	2689
5317	2174
46	32
4530	2285
894	347
7915	4347
3172	1771
2468	1198
153	100
759	215
2666	1205

Inathi Mpapa

From: Neo Mothibi <MothibNR@eskom.co.za>
Sent: 28 July 2021 03:22 PM
To: Meladi Botabota
Subject: RE: Load reduction feeders
Attachments: North West OU- Month to Month Losses Analysis per Feeder.xlsx; North West Operating Unit_Losses Analysis Report June 2021 Load Reduction.xlsx

Good Day Mam,

Please find attached the monthly trend on the feeders we are currently performing Load reduction on.

Attached is also the list of feeders that I ranked from Highest NTL to Lowest NTL using the June 2021 Report. I have highlighted the feeders that are currently on the Load Reduction List. I'm not sure how many PPU customers you want to look at per feeder and if the feeder shouldn't have any LPU's or PPU's

Please give direction. Thanks

Neo Remofilwe Mothibi
Energy Balancing Analyst
Energy Trading
Customer Services
Mabe Park 1 Kgwebo Street Rustenburg
Tel +27 14 565 1102
Cell +27 82 814 3275
Mothibnr@eskom.co.za

From: Meladi Botabota <BotaboMR@eskom.co.za>
Sent: Wednesday, 28 July 2021 10:31
To: Neo Mothibi <MothibNR@eskom.co.za>
Subject: Load reduction feeders

Good day mam

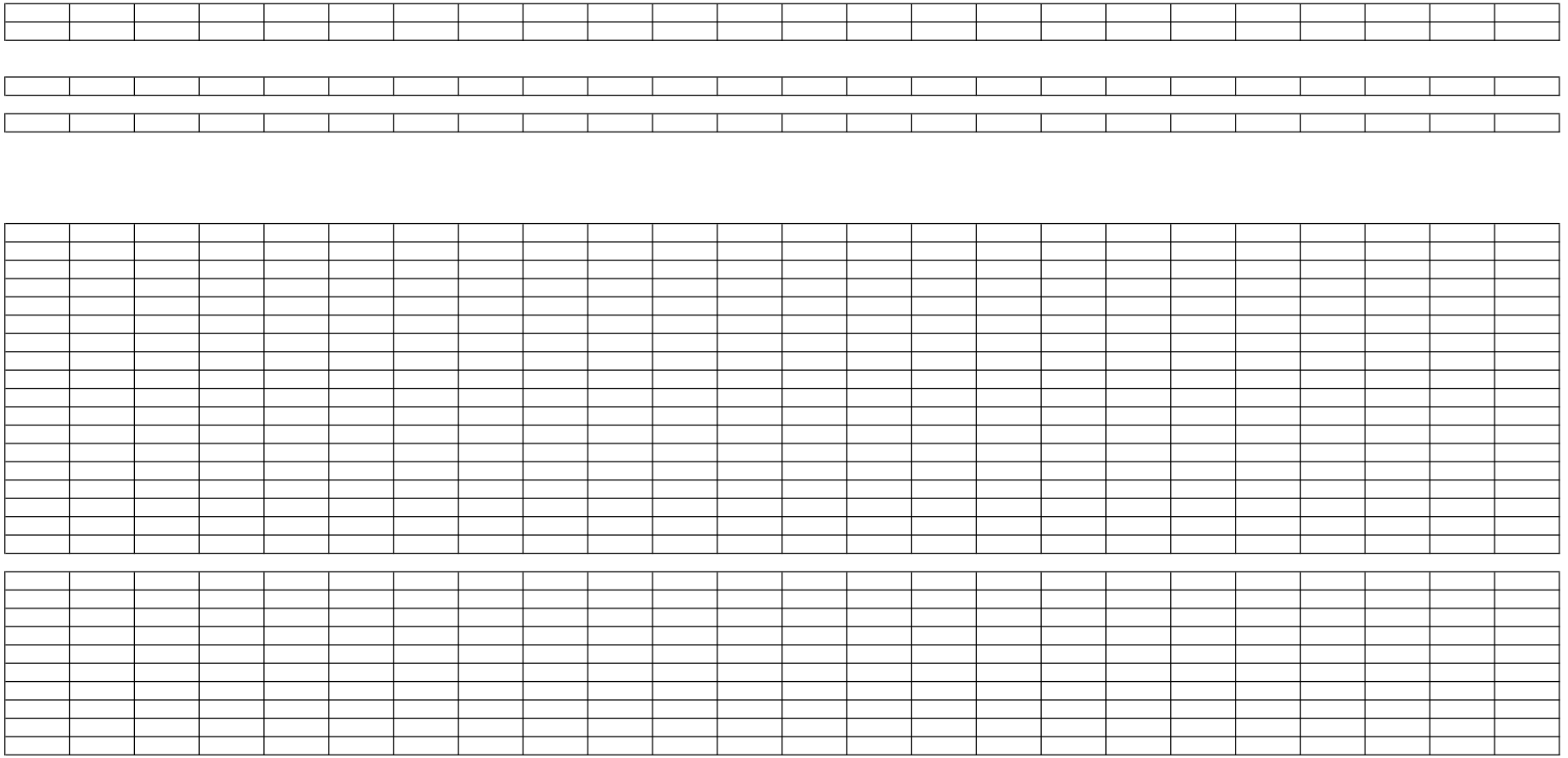
May you please send me the monthly trend of the feeders that are on load reduction since Dec 2020

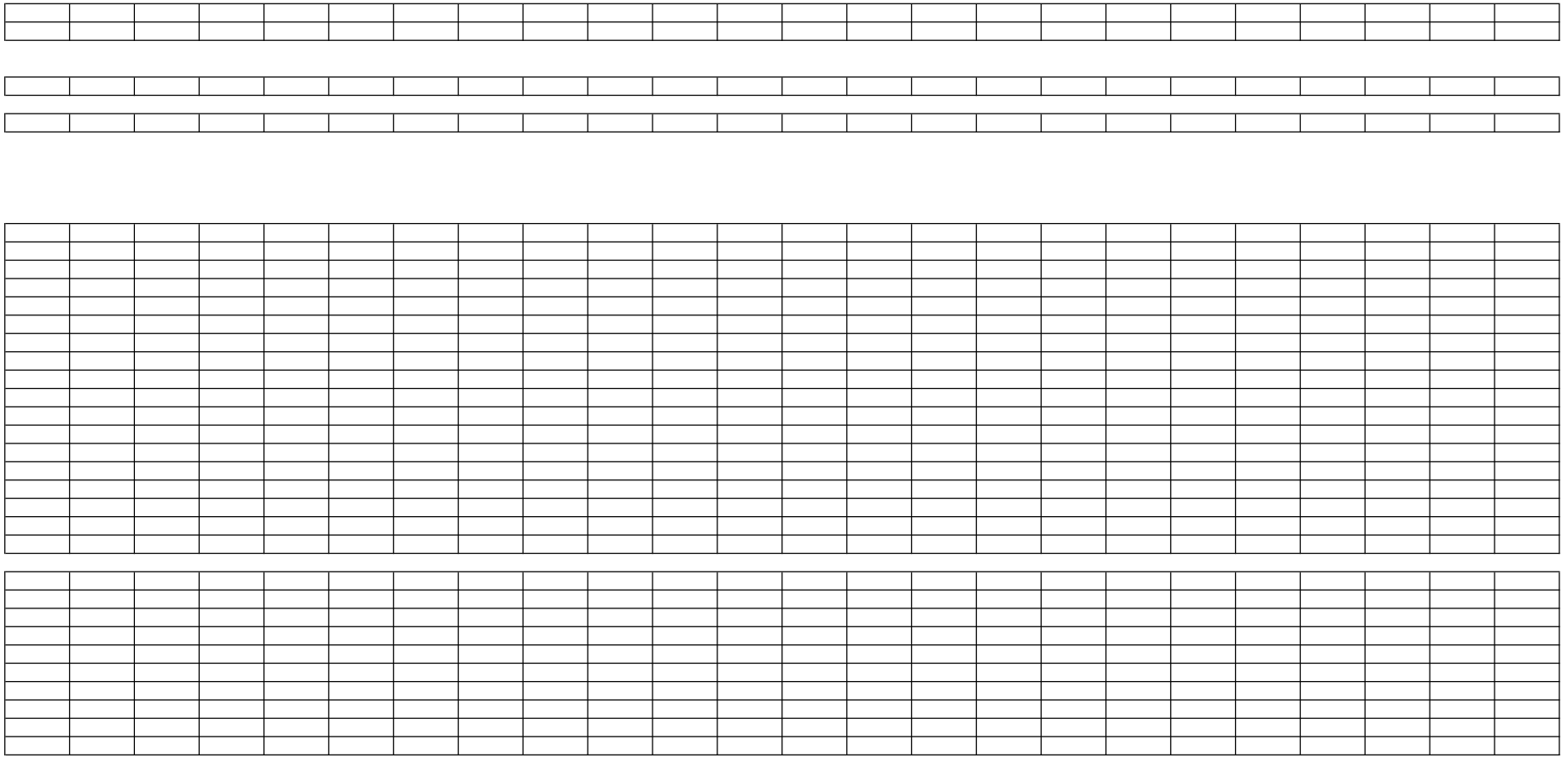
Furthermore please analyze the feeders again that have high NTL and predominant PPU so that we can add to the LR schedule

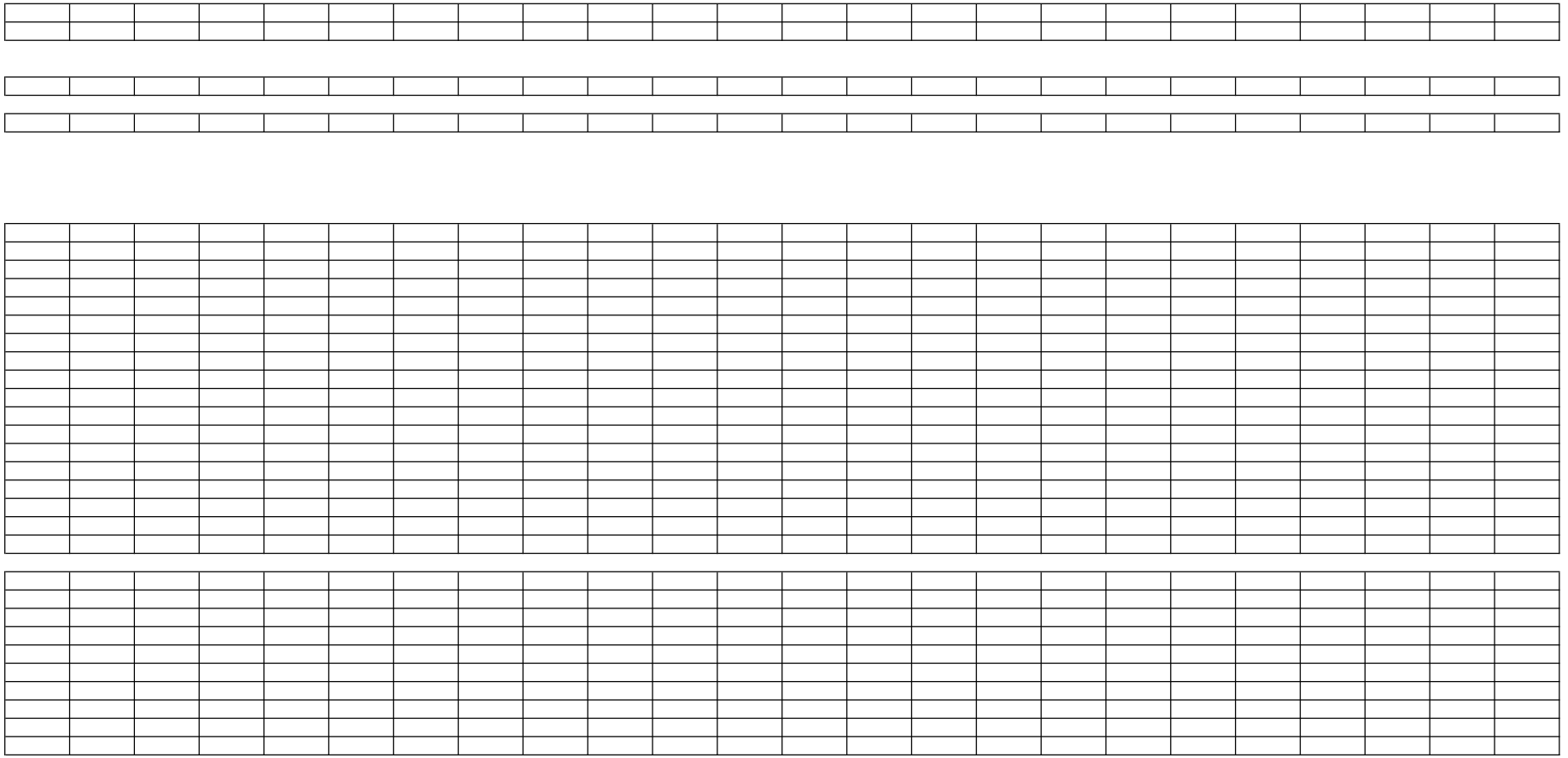
Regards
Meladi

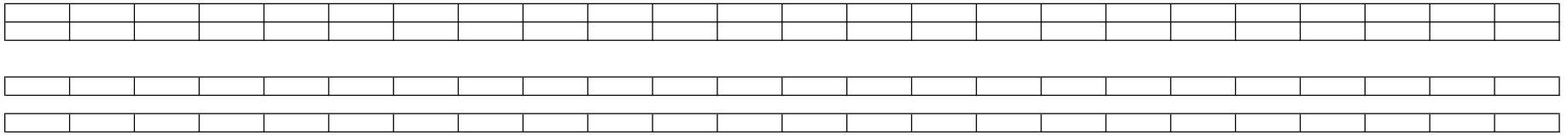


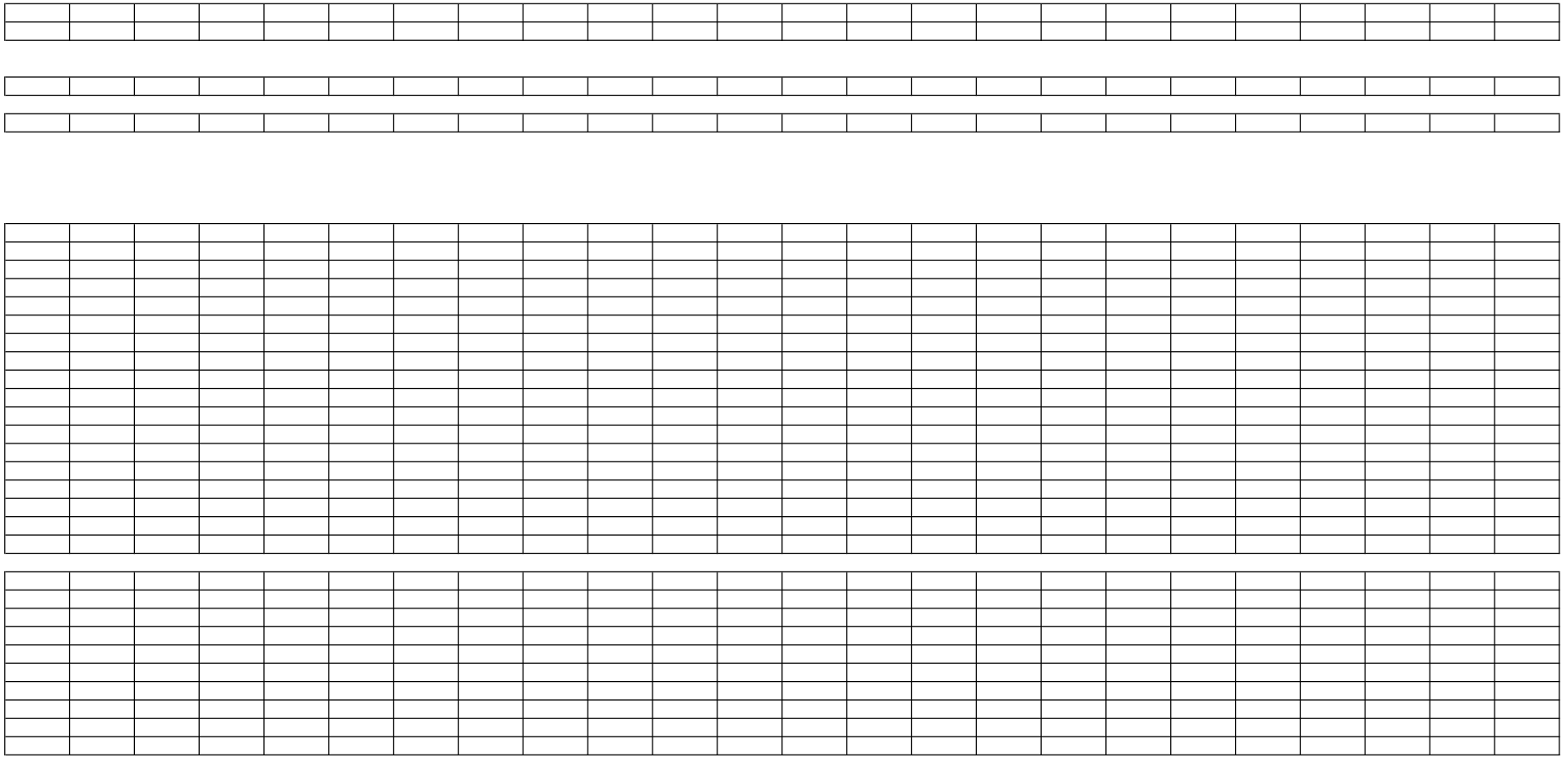
Feeder Description	Dec '20	Jan '21	Feb '21	Mar '21	Apr '21	May '21	June '21
Meter_ONTGIN/HARTEBEESFONTEIN 22kV Overhead Line	60.62	62.02	61.19	59.52	65.1	66.82	76.6
Meter_SUN CITY-CHANENG 11kV Overhead Line	20.89	-15.44	7.27	13.65	58.52	26.98	43.19
Meter_SUN CITY-Heyterkrand 22kV Overhead Line	-267.44	28.12	53.39	32.1			
Meter_SUN CITY-Madikwe 22kV Overhead Line	-119.06	-130.92	-95.56	-72.39	-144.7	-70.98	-41.91
Meter_SUN CITY-MATOOSTER 11kV Overhead Line	45.79	44.38	37.9	46.3	51.66	53.05	59.05
Meter_VEEKRAAL/RIETGAT 11kV Overhead Line	39.71	4.53	11.19	-58.18	44.95	38.83	48.93
Meter_KANA-BOSPOORT 22kV Overhead Line	-74.42	-40.78	-55.56	-81.33	-54.66	-25.79	-98.46
Meter_KANA-MERITING 22kV Overhead Line	62.74	54.31	49.04	53.47	57.5	60.49	61.16
Meter_SHAFT 15-TLASENG 22kV Overhead Line	66.23	64.5	66.45	66.84	68.18	69.72	74.28
Meter_Mogwase Industry Sub - Bagatla 11kV Feeder	78.34	76.39	76.28	77.77	77.81	78.19	79.84
Meter_MANYANE-SANDFONTEIN 11kV Overhead Line	35.78	71.29	72.06	70.7	70.66	72.33	74.96
Meter_MODDERSPRUIT-WATERKLOOF 11kV Feeder Overhead Line	77.45	73.91	66.83	71.05	59.91	77.55	76.41
Meter_MANYANE-SAULSPOORT 11kV Overhead Line	67.19	65.27	63.97	63.43	66.57	65.87	68.59
Meter_MORULENG-MANAMAKGOTHENG 11kV Overhead Line	68.93	67.31	67.74	68.19	68.17	71.11	73.79
Meter_MORULENG-SEGAKWANENG 11kV Overhead Line	53.05	55.32	63.43	69.84	53.95	60.22	75.91
Meter_MODDERSPRUIT-11kV Bapong Feeder	69.04	68.78	67.7	68.19	70.65	71.81	70.95
Meter_RUIGHOEK-SEDIBELO 22kV Overhead Line	38.81	26.92	30.45	20	44.59	32.26	35.7
Meter_RUIGHOEK-NTUANE 22kV Overhead Line	67.83	64.49	67.42	67.14	68.78	68.86	74.08
Meter_GELUK RURAL/BETHANIE 11kV Overhead Line	46.52	47.21	50.54	48.21	55.62	53.02	53.7
Meter_Gopani Mine - Gopane	103.88	54.47	56.93	81.89	55.3	62.71	63.72
Meter_GOPANI MINE / MOTSWEDI 1 22kV Feeder MV Overhead Line	50.47	52.36	47.77	57.75	35.18	54.25	62.13
Meter_HAVELOCK / HOUTKRAAL 1 22kV Feeder MV Overhead Line	27.07	27.6	-368.75	-644.32	28.64	34	29.33
Meter_ITSOSENG RURAL / SPRINGBOKPAN SILOS 1 11kV Feeder MV Overhead Line	73.73	64.91	59.44	70.04	68.67	55.56	73.58
Meter_ITSOSENG RURAL / VERDWAAL 1 11kV Feeder MV Overhead Line	61.96	58.98	58.45	43.38	59.93	45.03	70.37
Meter_CENTRAL BUSSINESS DISTRICT / Unit2 MS2-1 11Kv Feeder MV Underground Cable	51.74	61.27	56.21	36.16	58.73	65.02	61.54
Meter_CHARLES SHAFT / KHUMA EXT9 1 11kV Feeder MV Overhead Line	67.26	66.82	66.78	72.03	72.26	69.55	73.4
Meter_DINORUTSHE / IKAKGELENG 1 22kV Feeder MV Overhead Line	74.39	74.99	69.5	70.96	66.21	76.18	71.24
Meter_KANANA / KHOTSO 1 11kV Feeder MV Overhead Line	64.67	63.76	64.14	65.39	65.04	66.17	70.6
Meter_KANANA / LERATO 1 11kV Feeder MV Overhead Line	60.28	59.26	60.12	60.34	62.21	49.92	48.75
Meter_KANANA / KAGISO 1 11kV Feeder MV Overhead Line	69.28	56.93	72.08	59.68	59.33	11.18	64.53
Meter_KHUMA / BORAK 1 11kV Feeder MV Overhead Line	56.62	58.22	60.33	60.33	61.91	63.92	72.12
Meter_KHUMA / HOZTELL 1 11kV Feeder MV Overhead Line	56.76	57.89	57.13	58.64	59.5	62.51	66.83
Meter_KHUMA / LEEUW 1 11kV Feeder MV Overhead Line	62.31	61.07	65.5	62.88	61.5	65.26	70.77
Meter_KHUMA / MOKGETI 1 11kV Feeder MV Overhead Line	54.21	56.92	53.36	58.92	59.44	40.1	66.2
Meter_KHUMA / PARKS 1 11kV Feeder MV Overhead Line	58.1	57.23	55.26	57.69	58.78	61.85	68.56
Meter_KHUMA / UTLWAN 1 11kV Feeder MV Overhead Line	57.23	53.66	65.13	57.74	57.34	61.68	66.85
Meter_KHUMA / MHLANGA 1 11kV Feeder MV Overhead Line	55.55	63.77	63.96	66.17	65.06	78.37	73.24
Meter_LEOPARD PARK / GOLF COURSE-MS9 1 11kV Feeder MV Underground Cable	54.07	14.05	0.37	-65.01	-92.34	38.96	-14.58
Meter_LEOPARD PARK / SIGNAL HILL 1 11kV Feeder MV Overhead Line	60.42	64.81	57.68				70.56
Meter_LERATO / UNIT ONE EXTENSION 1 11kV Feeder MV Overhead Line	55.03	61.8	57.58				
Meter_LOTHLAKANE / MATHE VILLAGE 1 11kV Feeder MV Overhead Line	81.71	84.15	83.11	79.8	82.07	81.92	83.37
Meter_LEOPARD PARK / SIGNAL HILL 1 11kV Feeder MV Overhead Line	60.42	64.81	57.68				70.56
Meter_MAGOPELA / CHOSENG 1 22kV Feeder MV Overhead Line	37.51	33.82	34.49	26.46	35.11	49.25	14.45
Meter_MAKUONE / HIGH BASE 1 11kV Feeder MV Underground Cable	67.62	69.01	68.06	68.81	68.21	66.82	-109.11
Meter_MAKUONE / OLD TAXI 1 11kV Feeder MV Overhead Line	61.25	60.08	58.96	60.8	61.1	73.37	65.35
Meter_MANYA / PARKE 1 11kV Feeder MV Overhead Line	65.96	64.85	64.03	64.9	65.83	63.93	71.85
Meter_MANYA / SPOOR 1 11kV Feeder MV Overhead Line	57.44	55.86	54.1	55.21	56.42	39.72	63.89
Meter_MIMOSA SWS / GROOTDOORNS 1 22kV Feeder MV Overhead Line	67.73	55.85	50.2	53.03	58.09	38.15	50.59
Meter_MMABATHO MAIN - TEACHERS R/CENTRE -MS 1 11kV Feeder MV Underground Cable	-10.71	-4.58	-7.53	-11.8	-3.51	-11.18	4.59
Meter_MONTSHIWA STAD / MAGOGWE CENTRE 1 11kV Feeder MV Overhead Line	57.2	56.93	53.46	41.97	43.18	49.46	52.56
Meter_MONTSHIWA STAD / MAGOGWE KOI KOI 1 11kV Feeder MV Overhead Line	72.82	44.97	33.87	46.99	39.3	50.26	58.86
Meter_MONTSHIWA STAD / MAGOGWE TAR 1 11kV Feeder MV Overhead Line	62.93	62.02	60.44	47.4	46.75	46.59	57.14
Meter_MONTSHIWA STAD / TLHABOLOGO 1 11kV Feeder MV Overhead Line	54.27	59.17	42.17	46.52	2.3	49.67	85.65
Meter_NORLIM / Dikhuting 1 22kV Feeder MV Overhead Line	44.76	42.75	41.55	41.41	48.04	41.84	45.84
Meter_ROOIGROND / GREEFSLAAGTE 1 11kV Feeder MV Overhead Line	44.68	55.03	100.69	-0.11	53.8	35.1	-97.35
Meter_STRAATSDRIFT RURAL / PELLA 1 22kV Feeder MV Overhead Line	-29.59	-14.81	-30.09	-53.04	-19	-22.34	-27.12
Meter_UNIT 13 / AIRPORT ROAD 1 11kV Feeder MV Overhead Line	37.58	42.21	43.48	43.91	47.45	40.36	81.82
Meter_UNIT 13 - UNIT 13 SOUTH 1 11kV Feeder MV Overhead Line	63.62	64.43	58.85	62.01	64.83	65.39	70.5
Meter_UNIT 13 - UNIT 14 NORTH 1 11kV Feeder MV Overhead Line	63.64	60.71	64.55	70.59	62.63	61.35	66.38
Meter_UNIT 13 - UNIT 15 NORTH 1 11kV Feeder MV Overhead Line	53.93	50.23	51.32	50.84	53.12	54.55	58.02
Meter_VRYBURG / HUHUDI 1 11kV Feeder MV Overhead Line	30.39	24.5	25.53	30.45	33.91	33.87	40.78

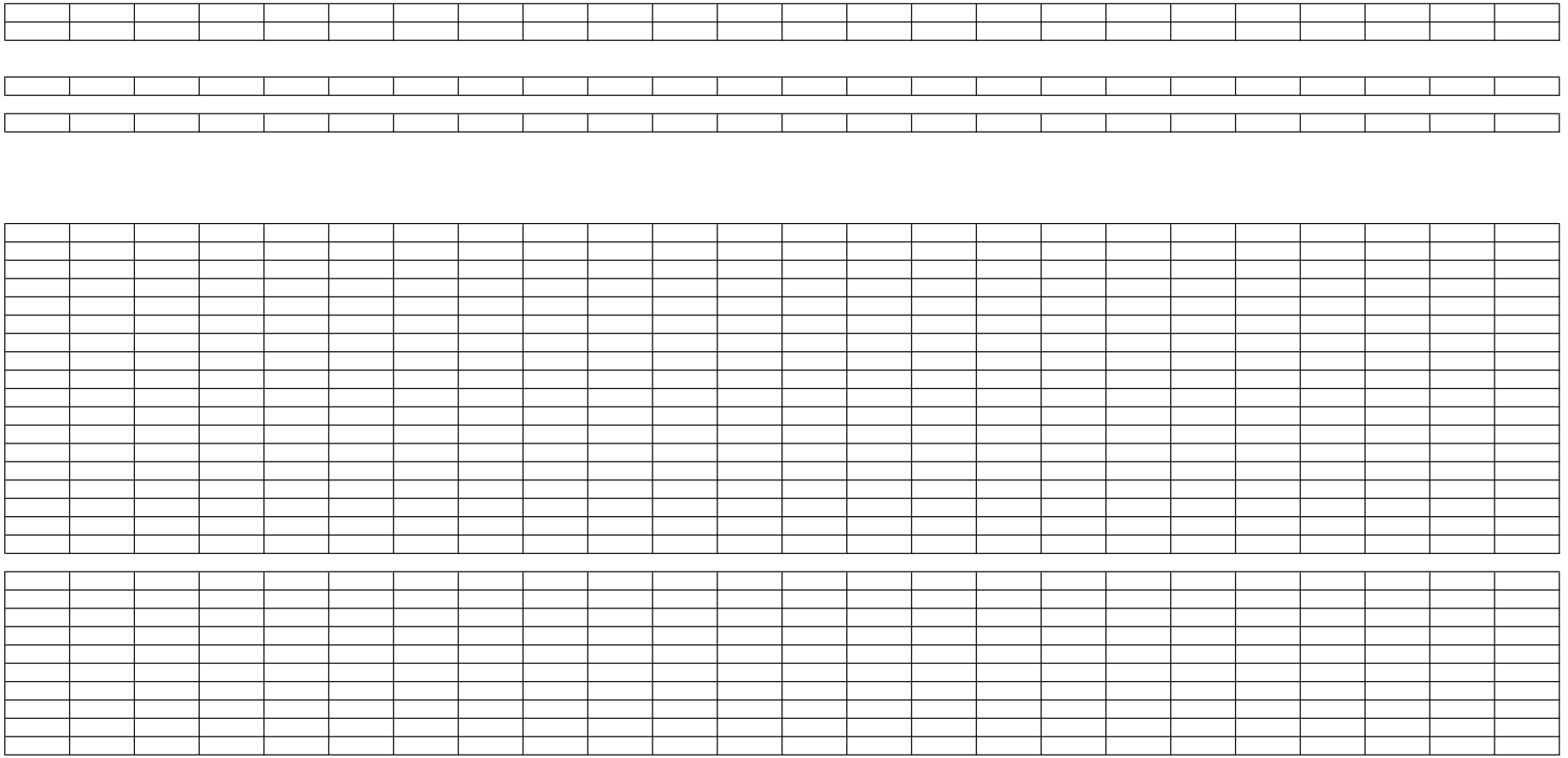


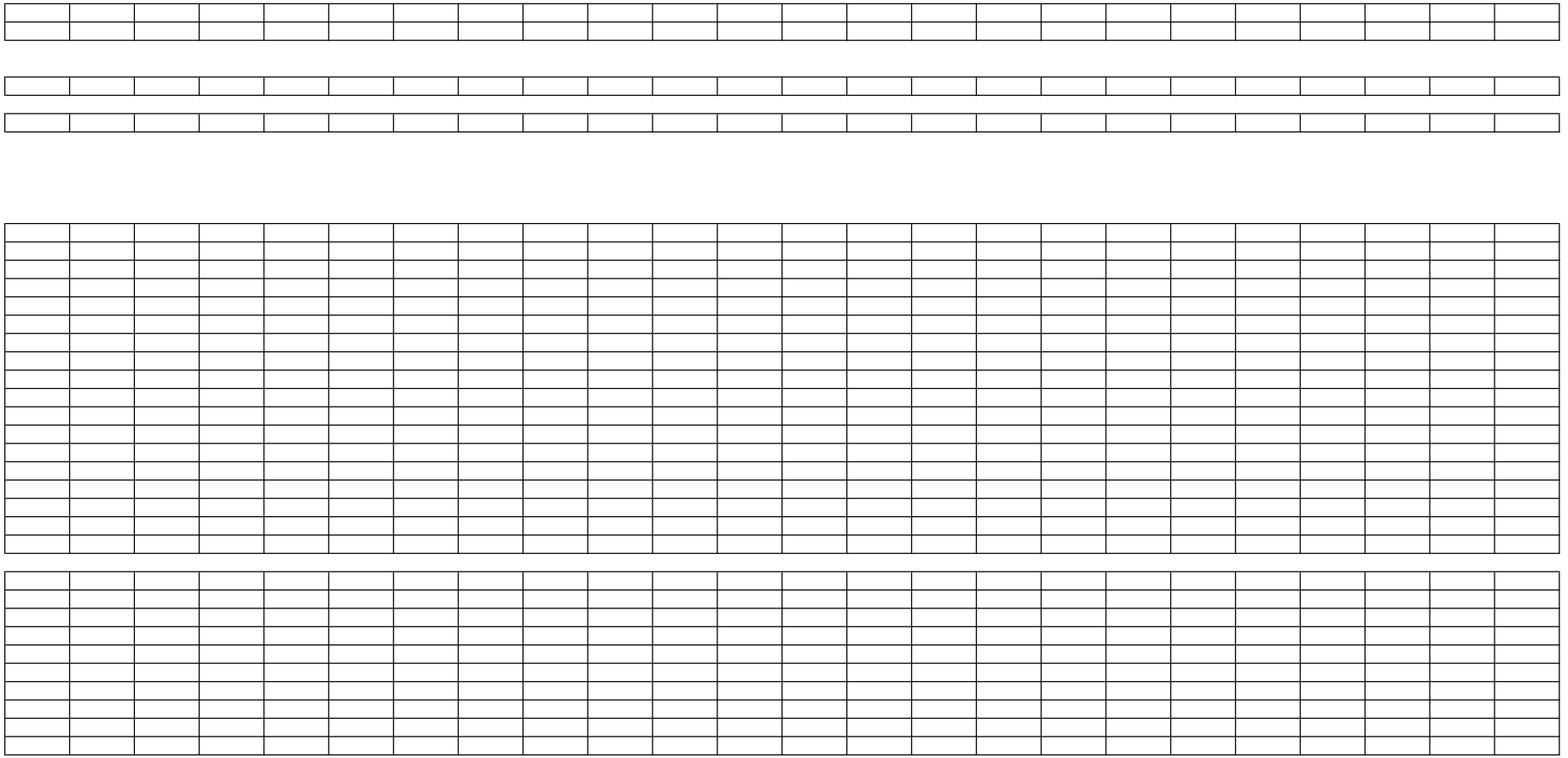


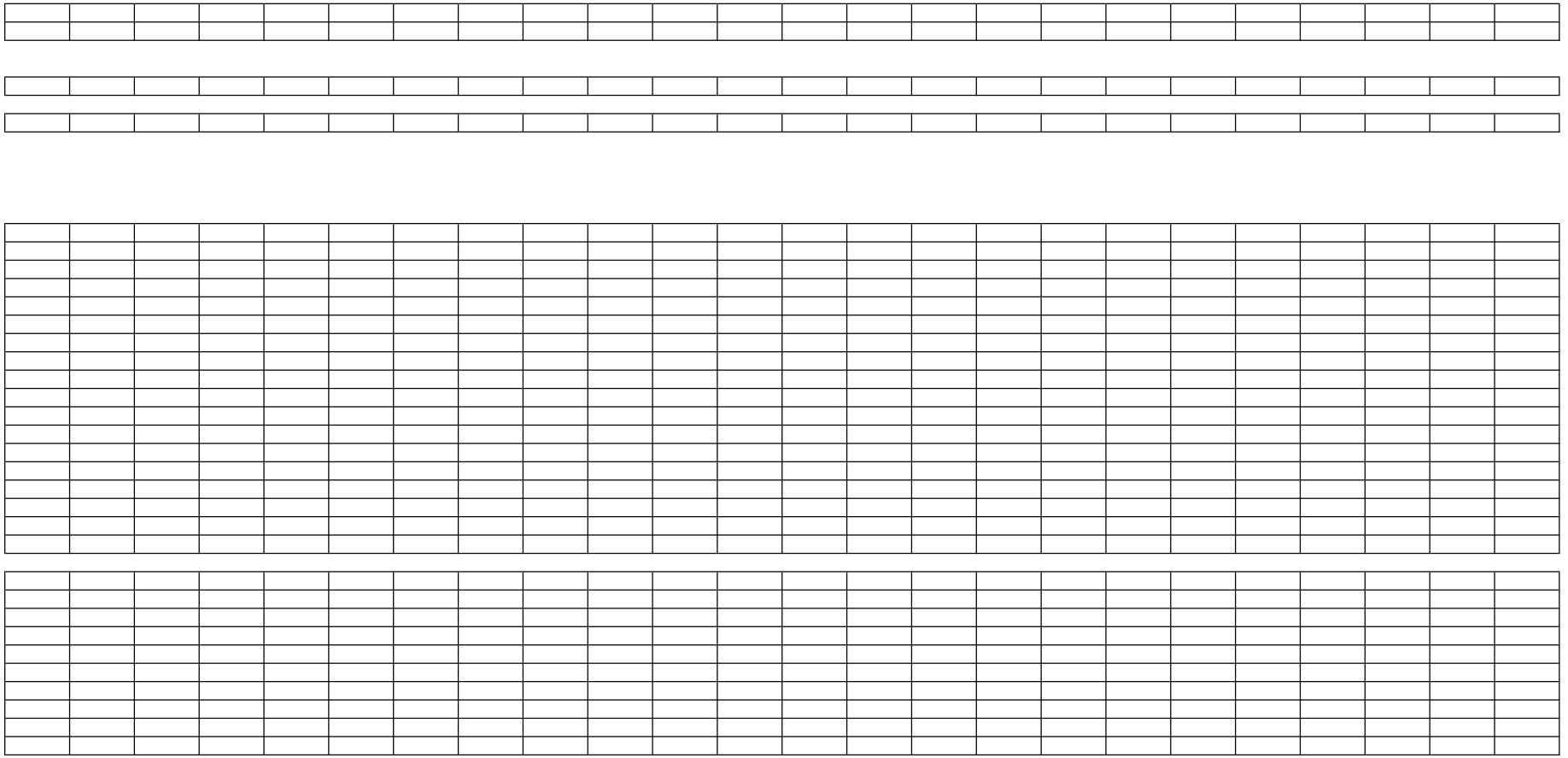


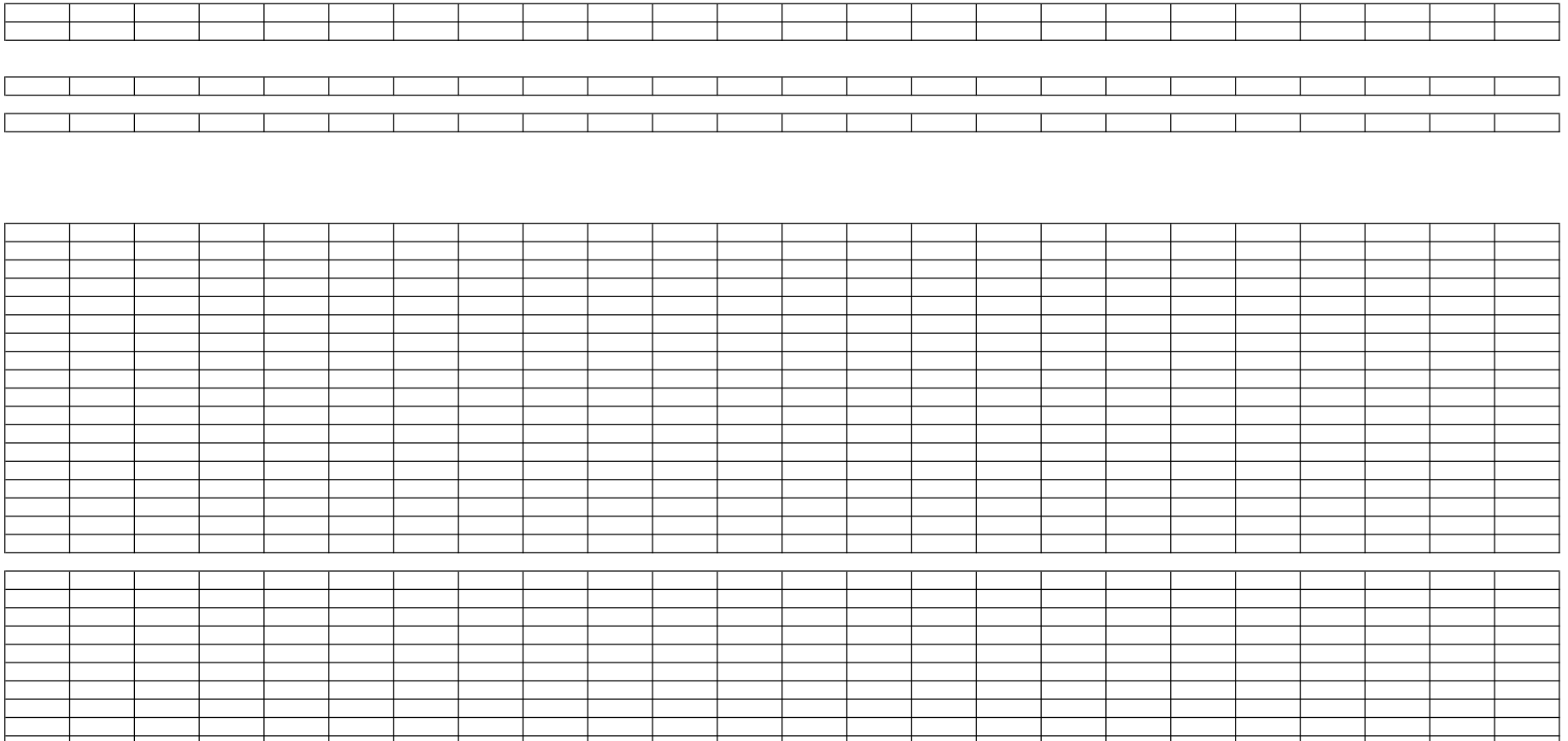


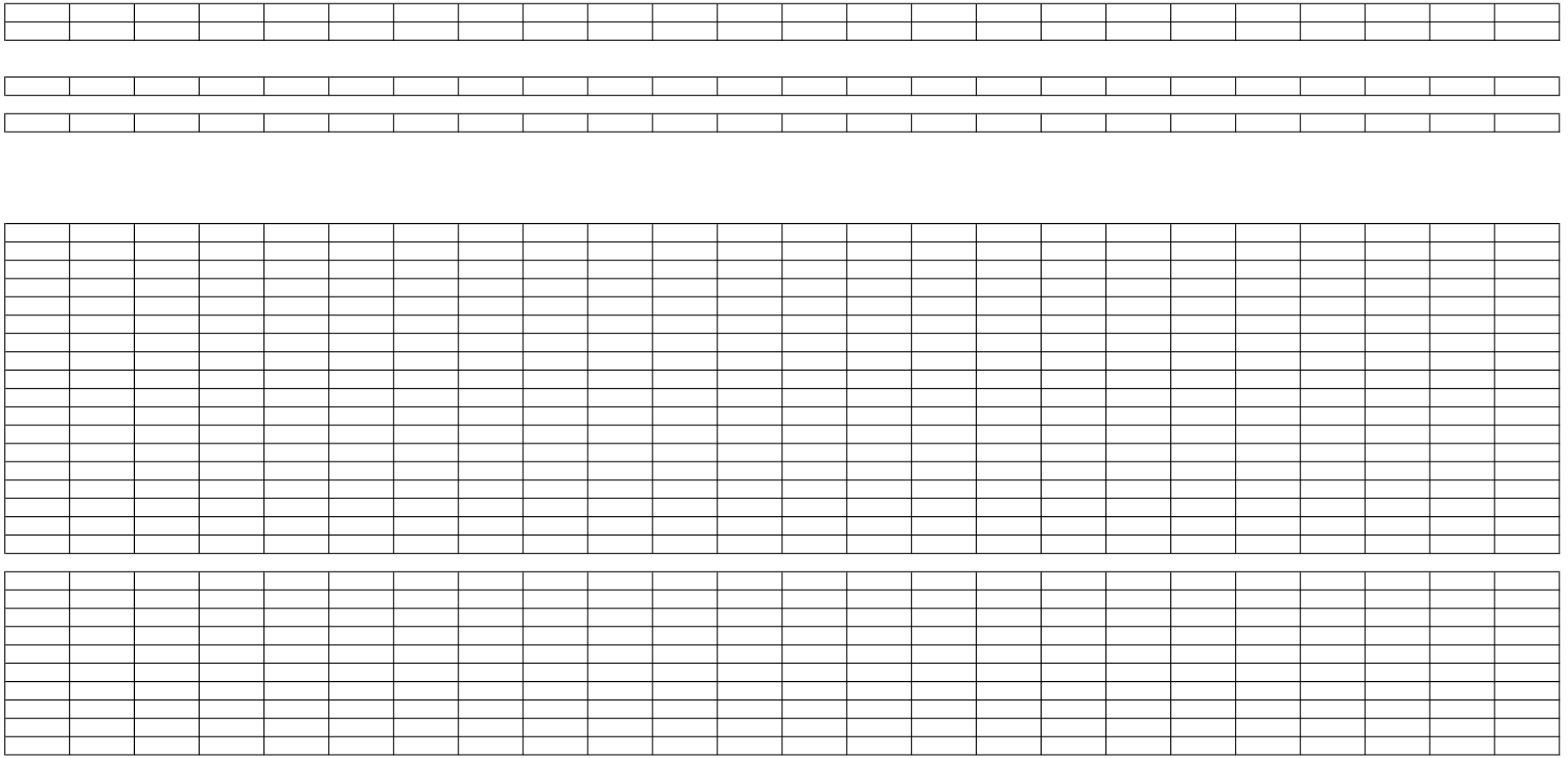


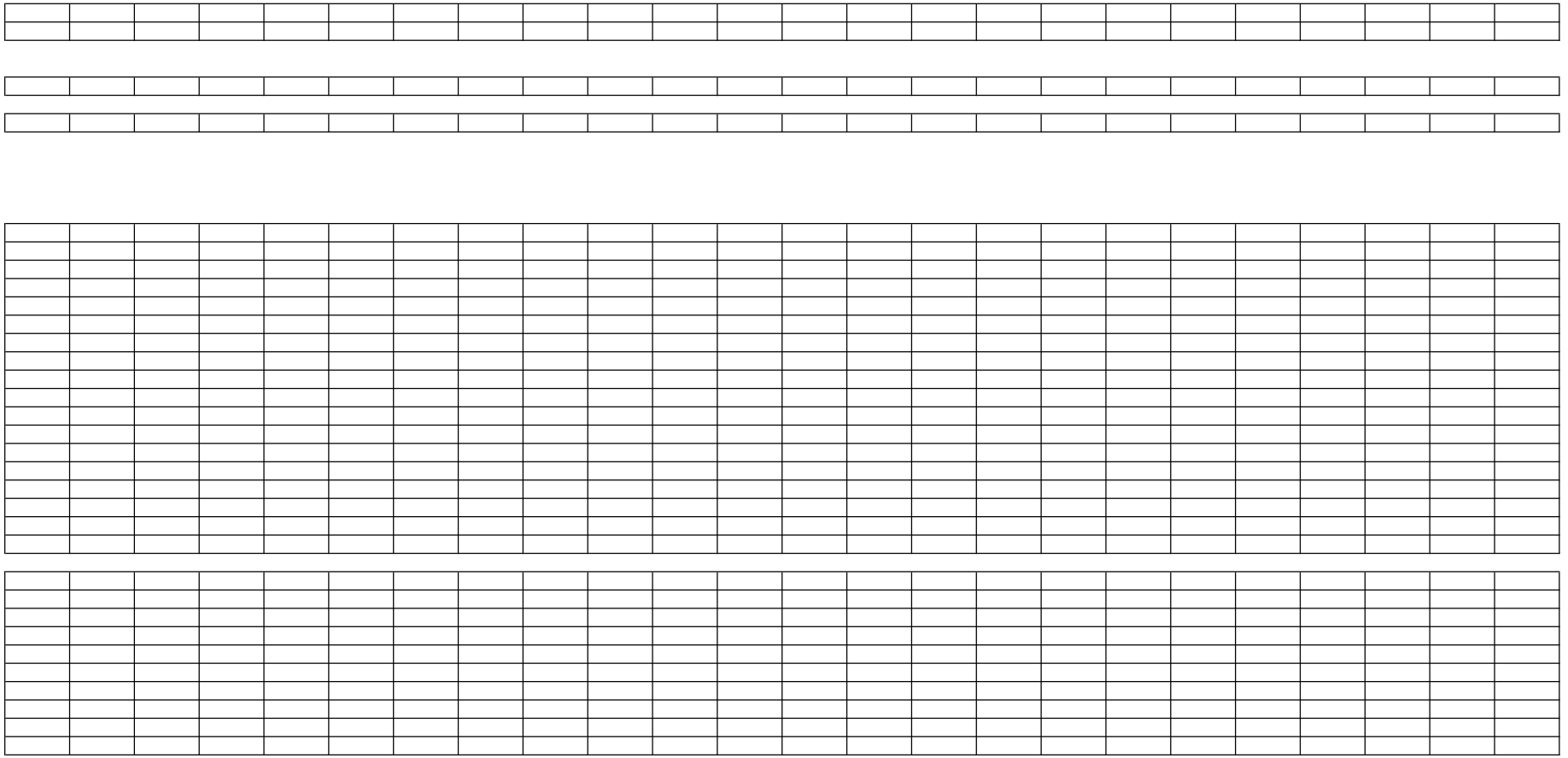


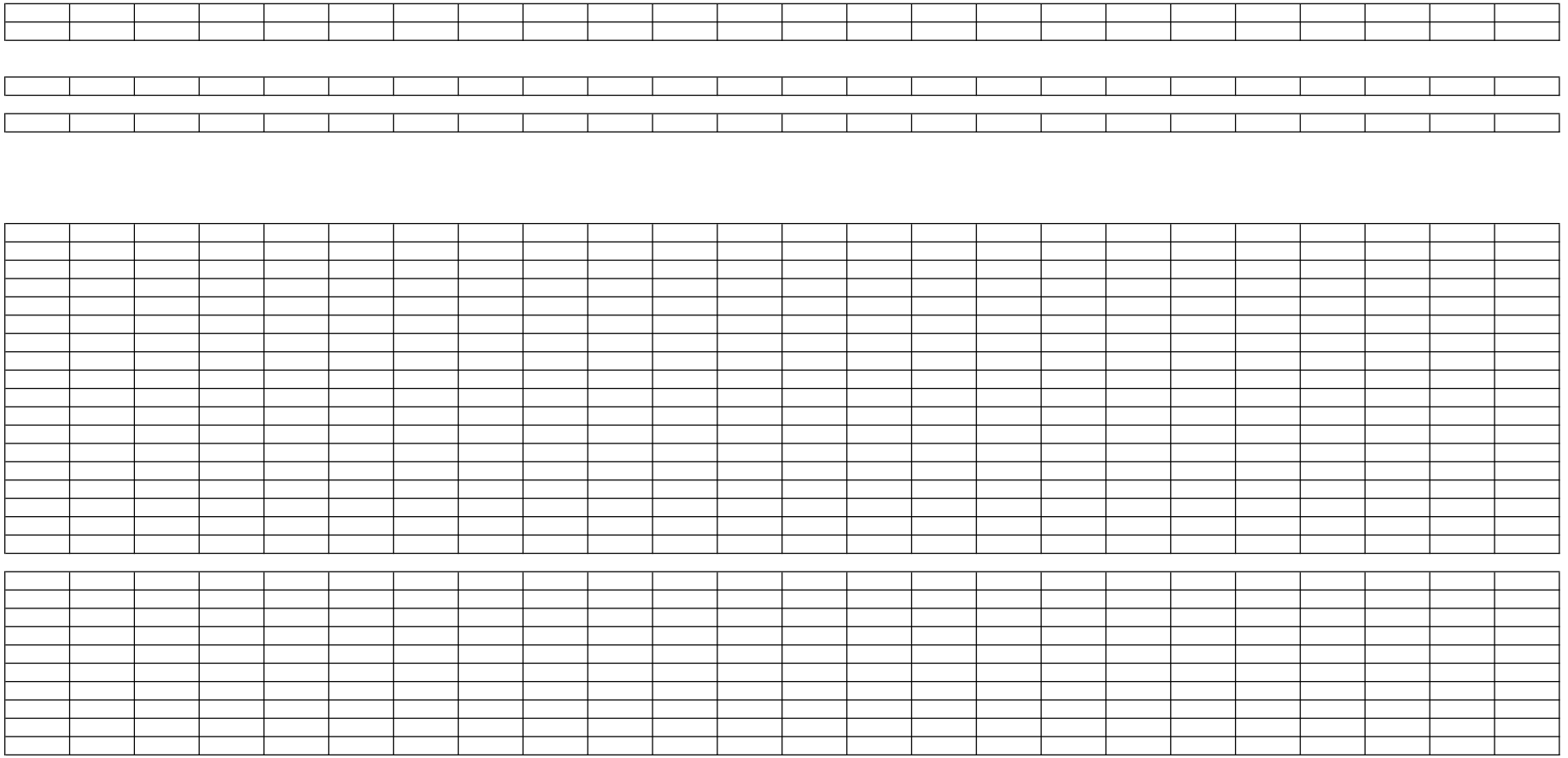


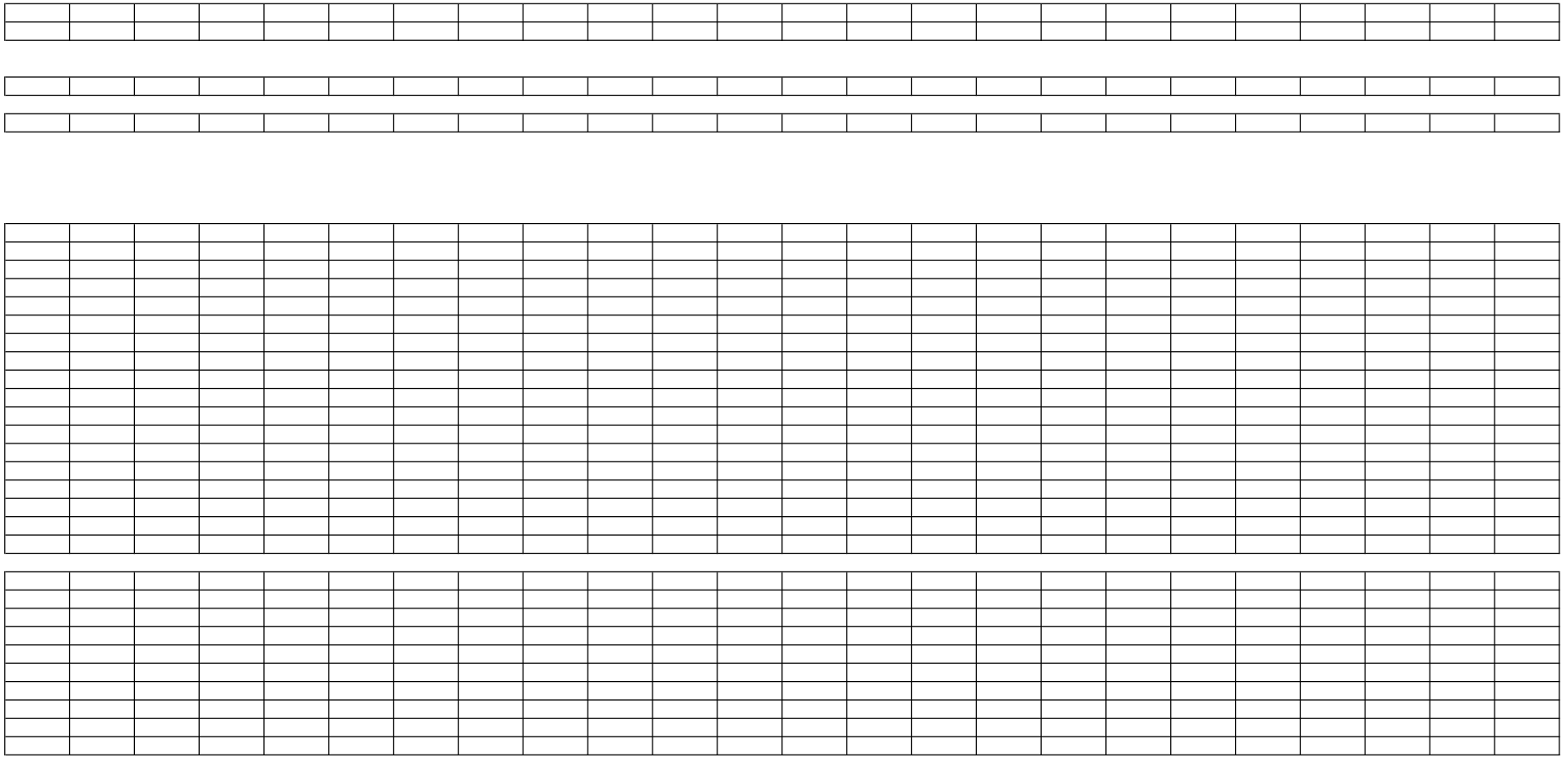


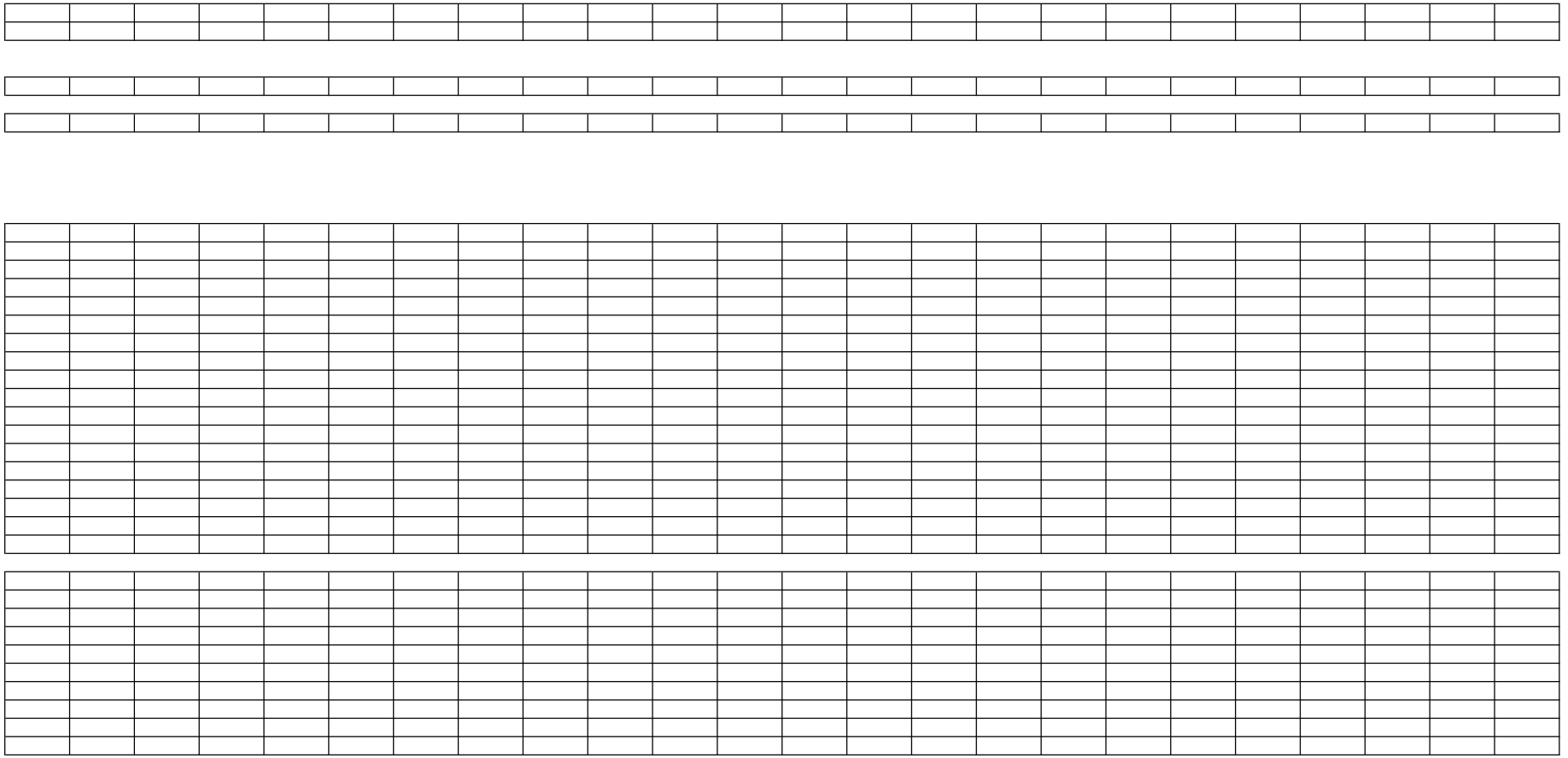


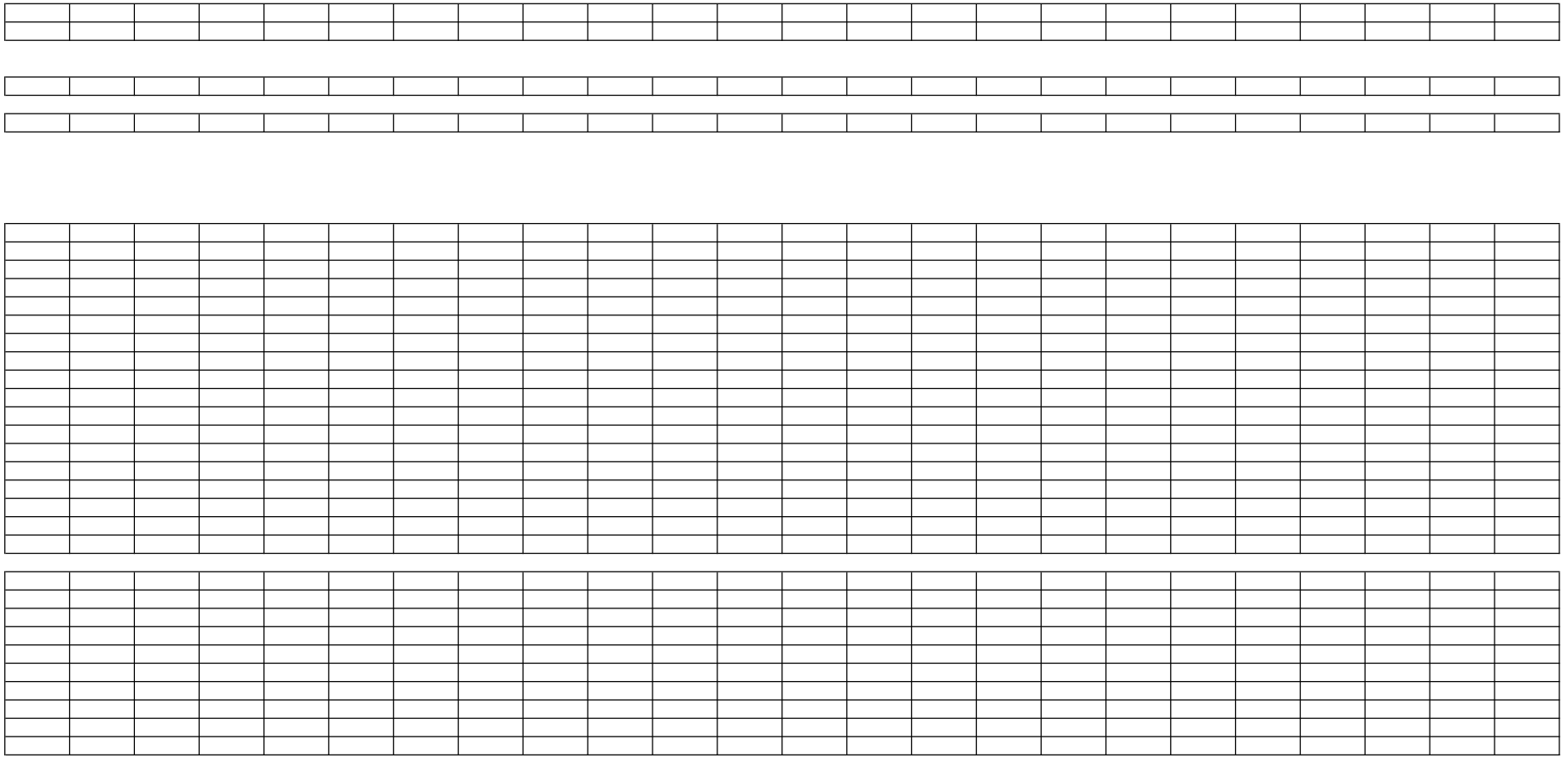


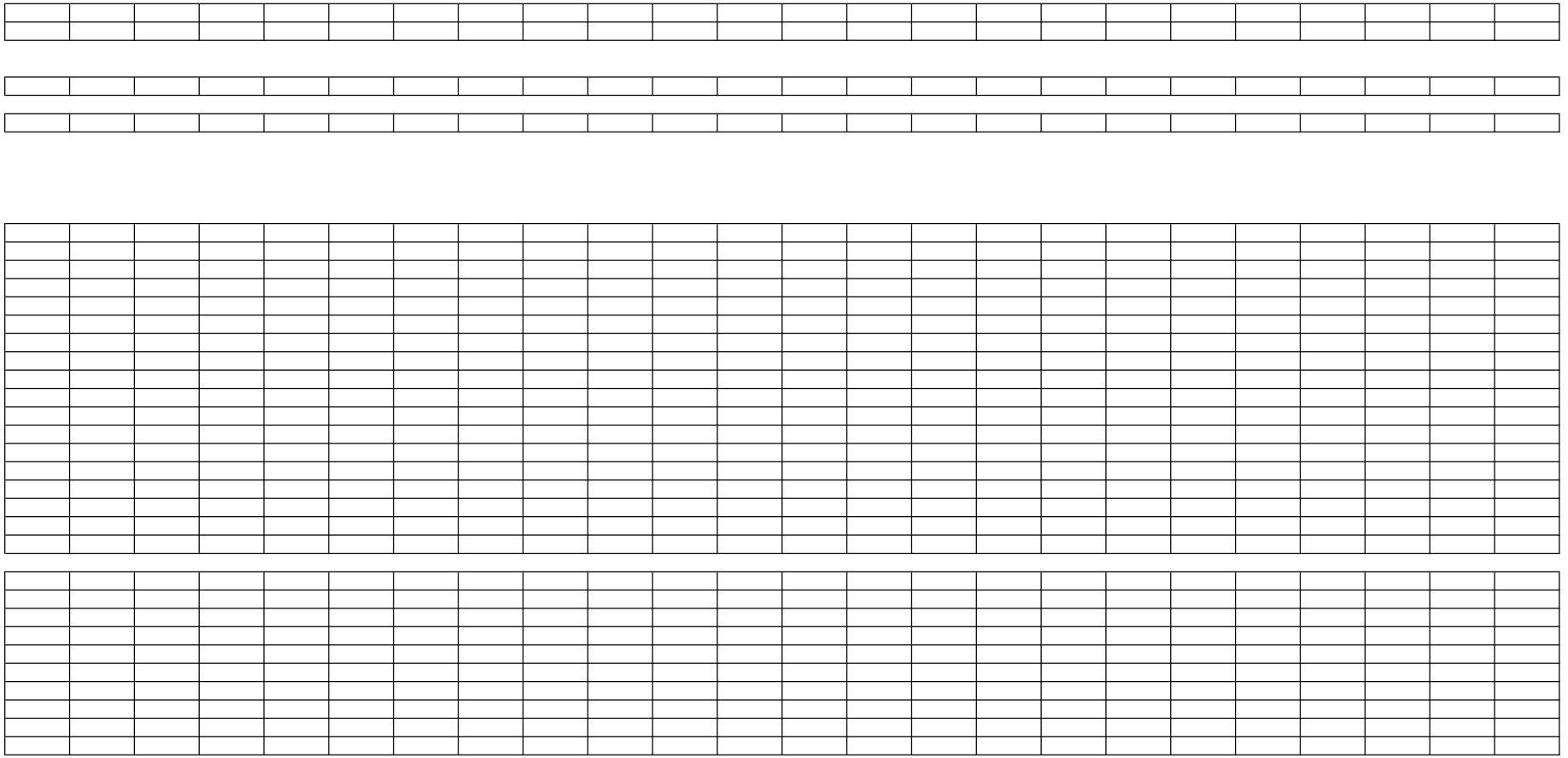


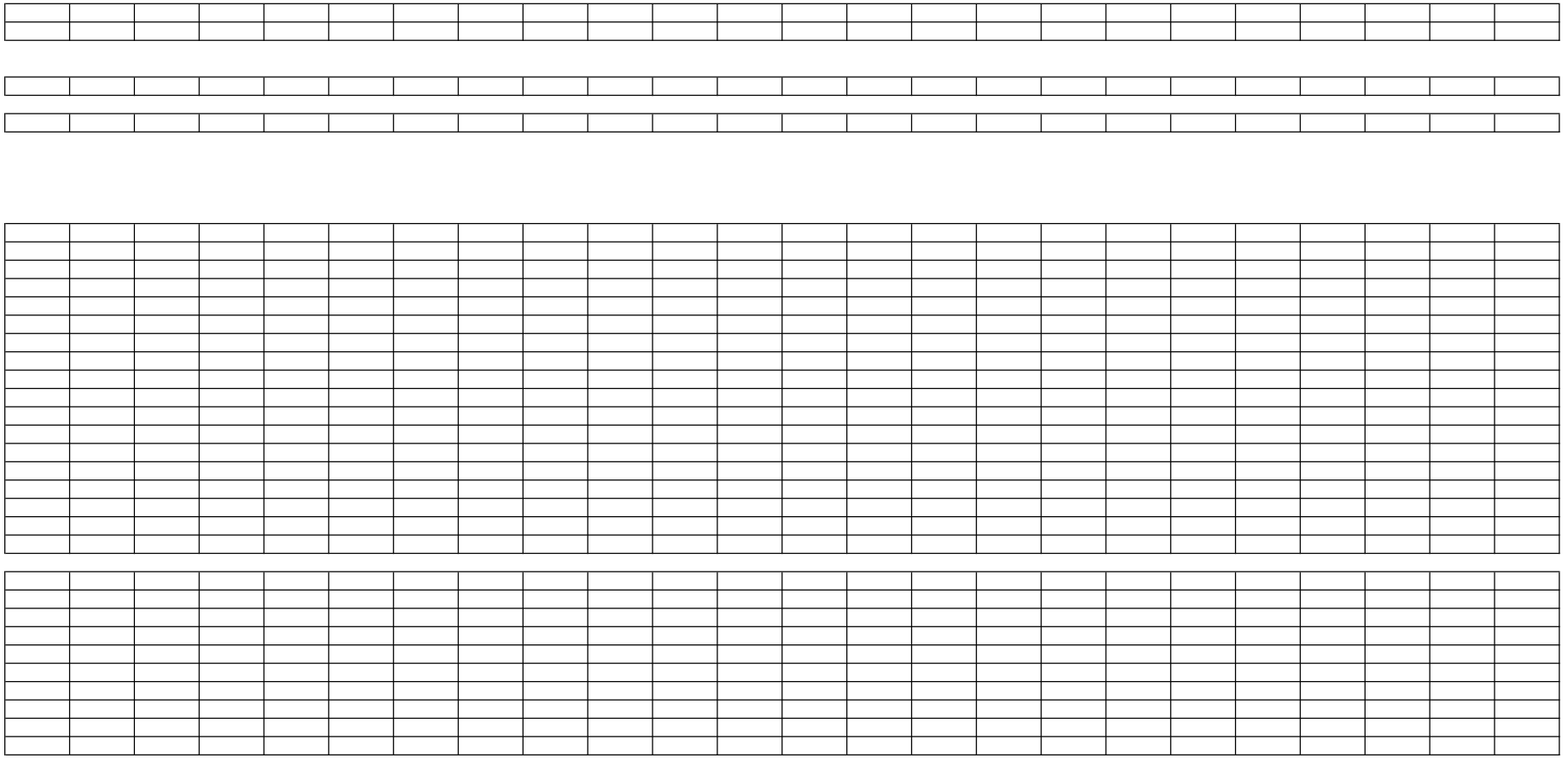


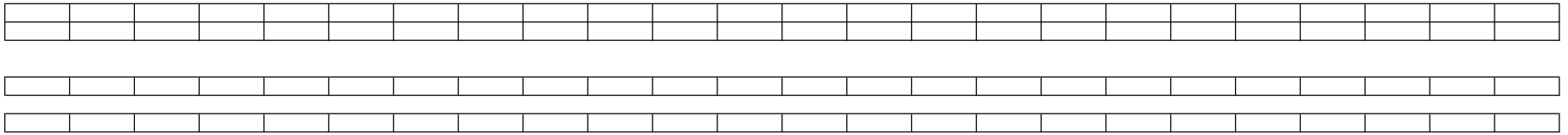


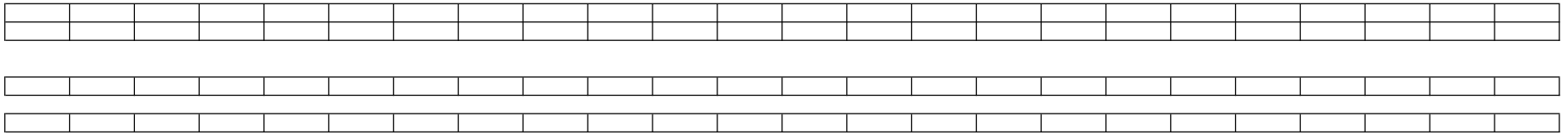


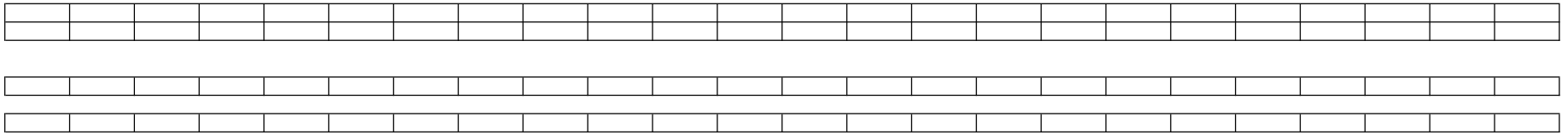


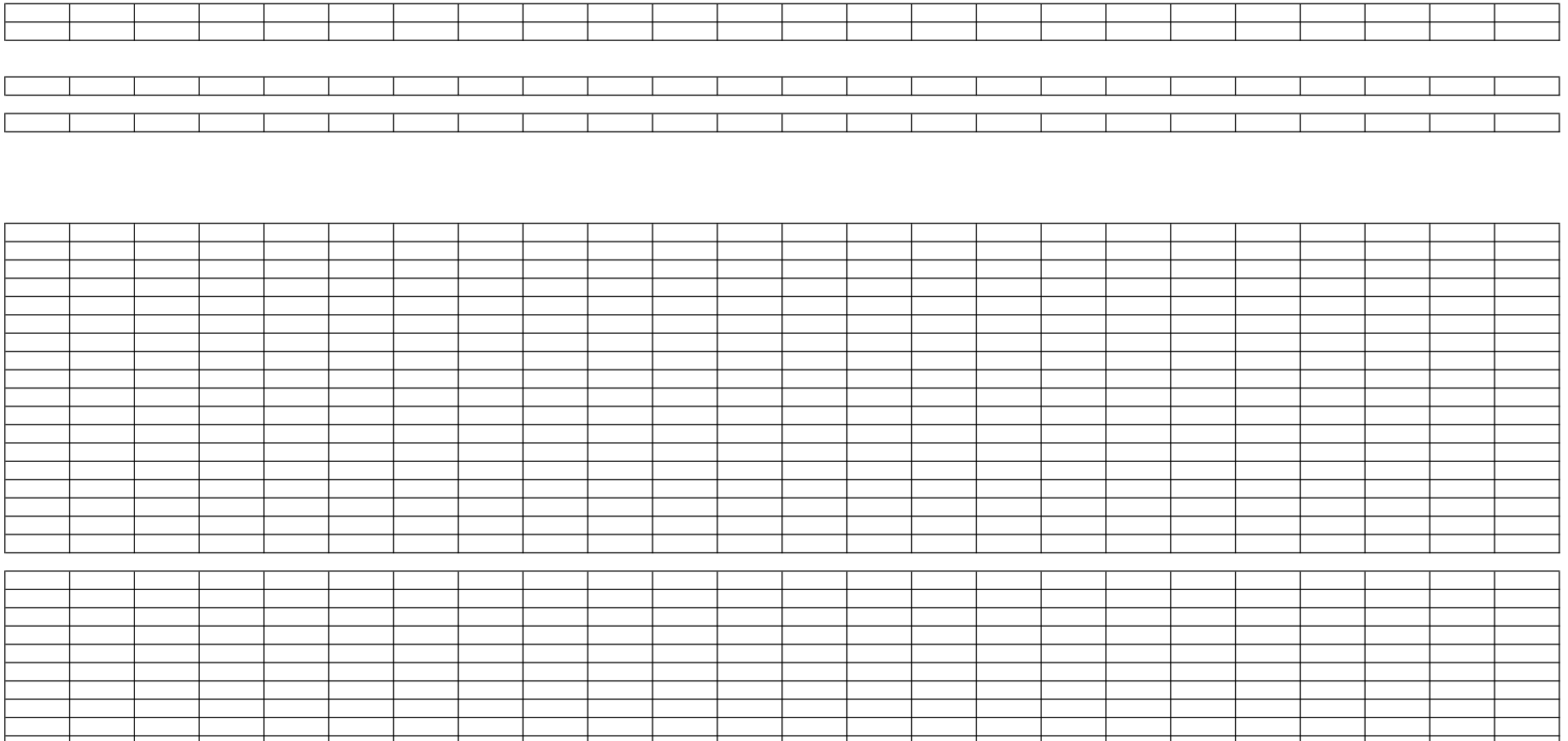


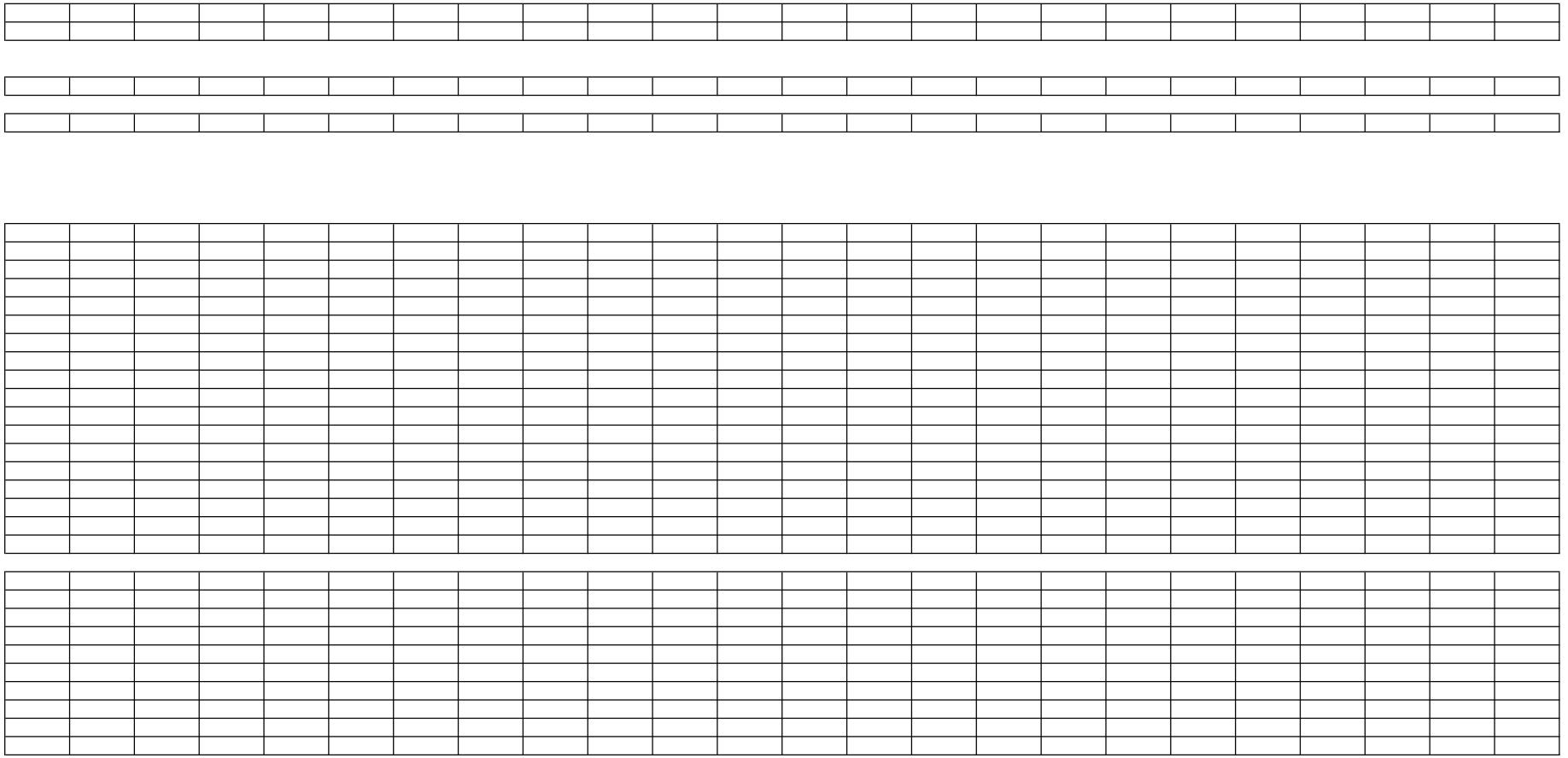


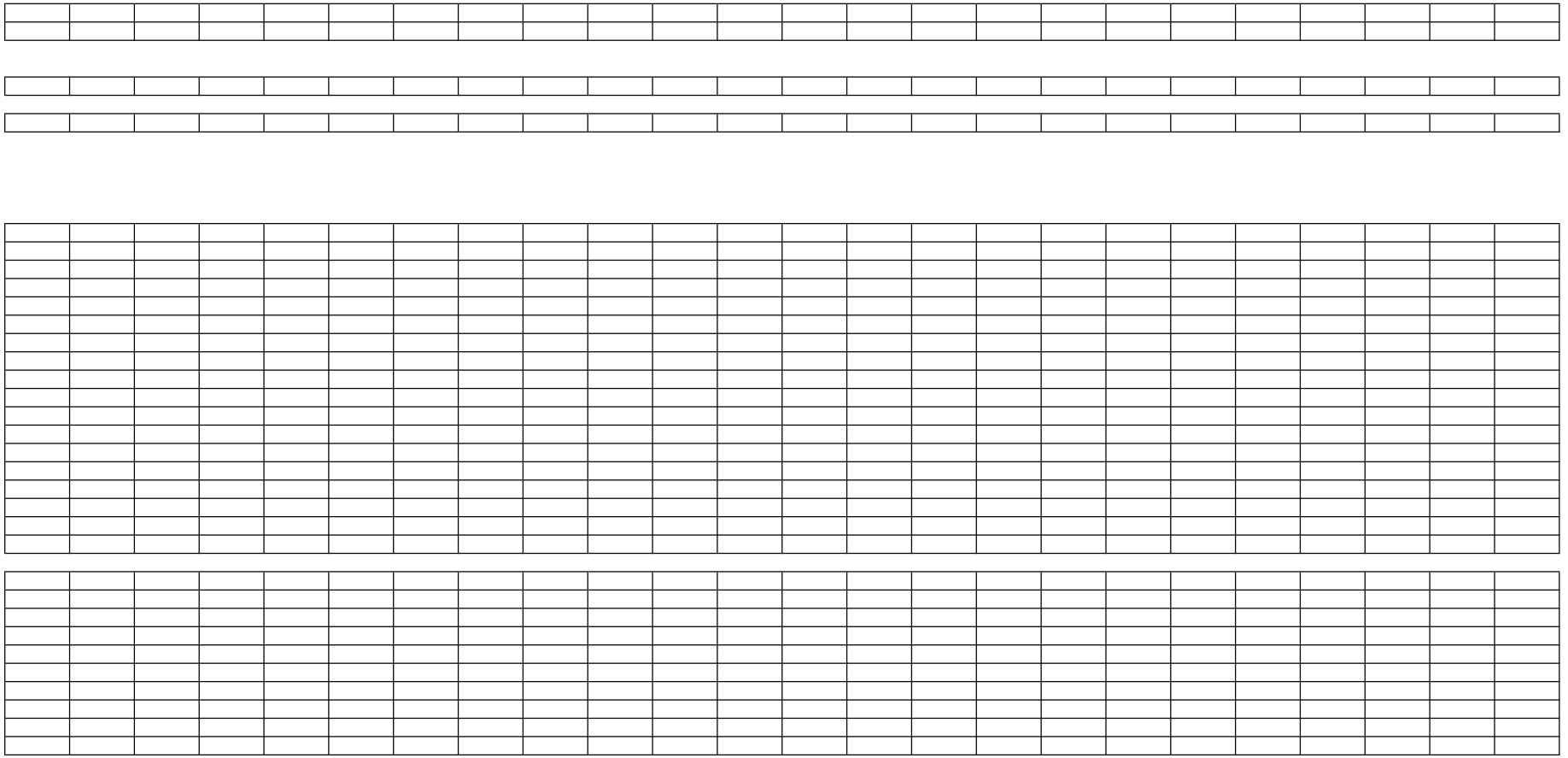












Exclude_Flg	OPS_UNIT	ZONE	CNC_SECTOR	CNC	Meter_Flg	Scenario	Substation	Meter_Location	Stats_Meter	Meter_Status	Fdr_Location	Feeder	Month	NTL_kWh_12MMA	NTL_%_12MMA	Cust_lpu	Cust_spu	Cust_street	Cust_puu	Cust_buy_puu
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mogwase CNC		Sub not Metered -> All Fdrs Metered	MOGWASE INDUSTRIAL 88/11kV Substation	299499575	Meter_Mogwase Industry Sub - Bagatla 11kV Feeder	Online	317143285	MOGWASE INDUSTRIAL / BAKGATLA 11kV Feeder MV Overhead Line	202105	1,716,362.00	77.36	0	10	0	4423	1528
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC		Sub not Metered -> All Fdrs Metered	SHAFT 15 88/22kV Substation	299499713	Meter_SHAFT 15-TLASENG 22kV Overhead Line	Online	318623497	SHAFT 15 / TLASENG 1 22kV Feeder MV Overhead Line	202105	1,648,576.00	68.13	0	30	0	7402	3051
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mooinooi CNC		Sub not Metered -> All Fdrs Metered	MODDERSPRUIT 88/11kV Substation	299499784	Meter_MODDERSPRUIT-11kV Bapong Feeder	Online	341689761	MODDERSPRUIT / BAPONG 1 11kV Feeder MV Overhead Line	202105	1,501,790.20	71.82	2	39	0	4224	1650
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mooinooi CNC		Sub not Metered -> All Fdrs Metered	MODDERSPRUIT 88/11kV Substation	299499780	Meter_MODDERSPRUIT-WATERKLOOF 11kV Feeder Overhead	Online	320525745	MODDERSPRUIT / WATERKLOOF 1 11kV Feeder MV Overhead Line	202105	1,476,007.00	73.23	2	66	0	3753	1085
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Vaalkop CNC		Sub not Metered -> All Fdrs Metered	VEEKRAAL RURAL 88/11kV Substation	299499632	Meter_VEEKRAAL/DIKHOLOLO 11kV Overhead Line	Online	341883539	VEEKRAAL / DIKHOLOLO 11kV Feeder MV Overhead Line	202105	1,349,750.25	62.51	4	80	0	162	47
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mooinooi CNC		Sub not Metered -> All Fdrs Metered	WONDERKOP 88/11kV Substation	299499612	Meter_WONDERKOP-MARIKANA 11kV Overhead Line	Online	318001992	WONDERKOP / MARIKANA 1 11kV Feeder MV Overhead Line	202105	1,247,865.42	77.48	2	45	0	1021	304
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Hennops CNC		Sub not Metered -> All Fdrs Metered	UCAR MINERALS 88/11/6.6kV Substation	299499651	Meter_UCAR MINERALS / OSKRAAL 11kV Overhead Line	Estimated	342752129	UCAR MINERALS / OSKRAAL 1 11kV Feeder MV Overhead Line	202105	1,241,360.83	77.64	0	10	0	2787	1268
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Vaalkop CNC		Sub not Metered -> All Fdrs Metered	ONTGIN 88/22/11kVSubstation	299499763	Meter_ONTGIN/HARTEBEESFONTEIN 22kV Overhead Line	Online	341681153	ONTGIN / HARTEBEESFONTEIN 1 22kV Feeder MV Overhead Line	202105	1,237,980.50	65.22	2	22	0	6096	2660
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Zeerust CNC		Sub not Metered -> All Fdrs Metered	STRAATSDRIFT RR 88/22kV Substation	299499684	Meter_STRAATSDRIFT RURAL / PACHSDRAAI 1 22kV Feede	Online	221797315	STRAATSDRIFT RURAL / PACHSDRAAI 1 22kV Feeder MV Overhead Line	202105	1,091,927.58	84.08	1	15	1	1794	486
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Hennops CNC		Sub not Metered -> All Fdrs Metered	UCAR MINERALS 88/11/6.6kV Substation	299499650	Meter_UCAR MINERALS/STEPHANUS 11kV Overhead Line	Online	343558725	UCAR MINERALS / STEPHANUS 1 11kV Feeder MV Overhead Line	202105	1,073,833.33	73.49	1	7	0	2927	1261
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC		Sub not Metered -> All Fdrs Metered	PHOKENG 88/11kV Substation	299499520	Meter_PHOKENG / BAKERY 11kV Feeder MV Overhead Lin	Online	317123091	PHOKENG / BAKERY 1 11kV Feeder MV Overhead Line	202105	1,064,123.75	61.48	6	55	1	1248	393
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mogwase CNC		Sub not Metered -> All Fdrs Metered	MANYANE 88/11kV Substation	299499806	Meter_MANYANE-DORP 11kV Overhead Line	Online	317157695	DORP / CASH BUILD 1 11kV Feeder MV Overhead Line	202105	1,046,714.00	53.1	12	25	0	1005	285
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Molopo CNC		Sub not Metered -> All Fdrs Metered	VRYBURG ROAD 33/22/11kV Substation	299499620	Meter_VRYBURG ROAD - SETLOPO 1 11kV Feeder MV Over	Online	197670409	VRYBURG ROAD / SETLOPO 1 11kV Feeder MV Overhead Line	202105	1,018,872.33	77.85	0	25	1	2391	935
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Zeerust CNC		Sub not Metered -> All Fdrs Metered	GOPANI MINE 88/22kV Substation	299499919	Meter_GOPANI MINE / DINOKANA 1 22kV Feeder MV Over	Online	198812797	GOPANI MINE / DINOKANA 1 22kV Feeder MV Overhead Line	202105	1,005,873.83	64.27	1	42	1	6814	2417
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Matooster CNC		Sub not Metered -> All Fdrs Metered	RUIGHOEK 88/22kV Substation	299499730	Meter_RUIGHOEK-MANAMELA 22kV Overhead Line	Online	319706113	RUIGHOEK / MANAMELA 1 22kV Feeder MV Overhead Line	202105	1,005,509.17	67.53	2	20	0	3526	1504
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mooinooi CNC		Sub not Metered -> All Fdrs Metered	WONDERKOP 88/11kV Substation	299499611	Meter_WONDERKOP-QUARRIES 11kV Overhead Line	Online	318456037	WONDERKOP / QUARRIES 1 11kV Feeder MV Overhead Line	202105	998,645.33	80.27	1	13	0	2805	571
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC		Sub not Metered -> All Fdrs Metered	KLIPFONTEIN RR 88/22/11kV Substation	299499865	Meter_KLIPFONTEIN RURAL / BOITUMELONG 1 11kV Feede	Online	198644131	KLIPFONTEIN RURAL / BOITUMELONG 1 11kV Feeder MV Overhead Line	202105	969,955.58	74.49	1	18	3	2574	1244
0	North West Operating Unit	Mmabatho Sector	Molopo CNC			Sub not Metered -> All Fdrs Metered	LOTHLAKANE / MAITHE VILLAGE 1 11kV Feeder MV	299499829	Meter_LOTHLAKANE / MAITHE VILLAGE 1 11kV Feeder MV	Online	199128679	LOTHLAKANE / MAITHE VILLAGE 1 11kV Feeder MV Overhead Line	202105	962,950.17	82.32	1	7	1	936	578
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Matooster CNC		Sub not Metered -> All Fdrs Metered	SUN CITY 88/11kV Substation	299499679	Meter_SUN CITY-MATOOSTER 11kV Overhead Line	Online	317437725	SUN CITY / MATOOSTER 1 11kV Feeder MV Overhead Line	202105	953,615.58	50.99	2	37	0	6611	1416
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mogwase CNC		Sub not Metered -> All Fdrs Metered	MORULENG 88/11kV Substation	299499773	Meter_MORULENG-MANAMAKGOTHENG 11kV Overhead Line	Online	317912729	MORULENG / MANAMAKGOTHENG 11kV Feeder MV Overhead Line	202105	949,588.83	70.3	0	19	0	4232	1372
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC		Sub not Metered -> All Fdrs Metered	PHOKENG 88/11kV Substation	299499524	Meter_PHOKENG / KGALE 11kV Feeder MV Overhead Line	Online	319706129	PHOKENG / KGALE 11kV Feeder MV Overhead Line	202105	901,455.75	66.35	2	20	0	1948	717
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC		Sub not Metered -> All Fdrs Metered	DONALDSVALE TRACTION 88kV Substation	299499564	Meter_Donaldsvale Sub - Bester 11kv MV Overhead Li	Online	318025745	DONALDSVALE / BESTER 1 11kV Feeder MV Overhead Line	202105	869,056.67	47.39	9	31	0	3459	964
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Matooster CNC		Sub not Metered -> All Fdrs Metered	RUIGHOEK 88/22kV Substation	299499728	Meter_RUIGHOEK-RITUANE 22kV Overhead Line	Online	317465308	RUIGHOEK / RITUANE 22kV Feeder MV Overhead Line	202105	846,135.42	67.94	3	17	0	4055	1359
0	North West Operating Unit	Platinum Zone	Brits CNC			Sub not Metered -> All Fdrs Metered	GELUK RURAL/KARIEE 11kV Substation	299499924	Meter_GELUK RURAL/KARIEE 1 11kV Feeder MV Overhead	Online	341985841	GELUK RURAL / KARIEE 1 11kV Feeder MV Overhead Line	202105	833,536.00	60.12	7	60	0	639	305
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC		Sub not Metered -> All Fdrs Metered	MAFIKENG MAIN 88/33/11kV Substation	299499824	Meter_MAFIKENG MAIN BLOCKHOUSE / MAJEMANTSHO 1 11k	Online	221683530	MAFIKENG MAIN BLOCKHOUSE / MAJEMANTSHO 1 11kV Feeder MV Overhead Line	202105	831,006.75	60.53	2	20	0	3799	1699
0	North West Operating Unit	Platinum Zone	Brits CNC			Sub not Metered -> All Fdrs Metered	BRITS RURAL 88/11kV Substation	299499970	Meter_BRITS RURAL/SONOP 11kV Overhead Line	Online	342113893	BRITS RURAL / SONOP 1 11kV Feeder MV Overhead Line	202105	826,562.00	69.78	4	31	0	871	616
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mooinooi CNC		Sub not Metered -> All Fdrs Metered	KGETLENG RIVER 88/22/11kV Substation	299499878	Meter_KGETLENG RIVER-REAGILE 11kV Overhead Line	Online	317646775	KGETLENG RIVER / REAGILE 1 11kV Feeder MV Overhead Line	202105	814,785.08	77.15	0	26	3	4743	863
0	North West Operating Unit	Platinum Zone	Tlhabane CNC			Sub not Metered -> All Fdrs Metered	PHOKENG 88/11kV Substation	299499519	Meter_PHOKENG - CIVIC 11kV Overhead Line	Online	319727047	PHOKENG / CIVIC 11kV Feeder MV Overhead Line	202105	800,811.08	64.01	4	17	0	3470	1115
0	North West Operating Unit	Platinum Zone	Tlhabane CNC			Sub not Metered -> All Fdrs Metered	DONALDSVALE TRACTION 88kV Substation	299499570	Meter_DONALDSVALE / KINGS 1 11kV Feeder MV Overhea	Online	319789675	DONALDSVALE / KINGS 1 11kV Feeder MV Overhead Line	202105	797,934.64	80.9	3	27	0	525	189
0	North West Operating Unit	Rustenburg Sector	Rustenburg CNC			Sub not Metered -> All Fdrs Metered	RUSTENBURG COMPRESSOR 88/6.6kV Substation	299499724	Meter_RUSTENBURG-PHOTSANENG 1 11kV Feeder MV Overh	Online	317113829	RUSTENBURG / PHOTSANENG 1 11kV Feeder MV Overhead Line	202105	777,509.88	75.35	4	28	0	1715	394
0	North West Operating Unit	Platinum Zone	Tlhabane CNC			Sub not Metered -> All Fdrs Metered	DONALDSVALE TRACTION 88kV Substation	299499560	Meter_Donaldsvale Sub - Sportveld 11kv MV Overhead	Online	317421071	DONALDSVALE / SPORTVELD 11kV Feeder MV Overhead Line	202105	776,322.67	83.65	2	8	0	274	115
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Rustenburg CNC		Sub not Metered -> All Fdrs Metered	KANA 22kV Switching Station	299499891	Meter_KANA-MERITING 22kV Overhead Line	Online	317243049	KANA / MERITING 22kV Feeder MV Overhead Line	202105	763,030.42	56.21	0	9	0	5888	2220
0	North West Operating Unit	Platinum Zone	Vaalkop CNC			Sub not Metered -> All Fdrs Metered	TWINRIVERS/EERSTELING 22kV Substation	299499653	Meter_TWINRIVERS/EERSTELING 22kV Overhead Line	Online	341807731	TWINRIVERS / EERSTELING 1 22kV Feeder MV Overhead Line	202105	735,359.25	52.9	3	63	0	2490	1315
0	North West Operating Unit	Platinum Zone	Mogwase CNC			Sub not Metered -> All Fdrs Metered	MANYANE 88/11kV Substation	299499805	Meter_MANYANE-SANDFONTEIN 11kV Overhead Line	Online	319238535	MANYANE / SANDFONTEIN 1 11kV Feeder MV Overhead Line	202105	727,642.08	71.43	0	4	0	3984	1139
0	North West Operating Unit	Platinum Zone	Tlhabane CNC			Sub not Metered -> All Fdrs Metered	BAFOKENG 7 88/33kV Substation	299499568	Meter_BAFOKENG 7 KENANO 1 11kV Feeder MV Overhead L	Online	317090597	BAFOKENG 7 / KENANO 1 11kV Feeder MV Overhead Line	202105	720,682.33	71.79	0	15	0	1401	580
0	North West Operating Unit	Platinum Zone	Mogwase CNC			Sub not Metered -> All Fdrs Metered	BODERELO 11kV Switching Station	299499533	Meter_BODERELO / AGRI LIME 11kV Feeder MV Overhead	Estimated	317218137	BODERELO / AGRI LIME 1 11kV Feeder MV Overhead Line	202105	713,391.33	41.46	18	8	0	7	1
0	North West Operating Unit	Platinum Zone	Matooster CNC			Sub not Metered -> All Fdrs Metered	SUNRISE 88kV Substation	299499677	Meter_SUNRISE-ROBEGA 11kV Overhead Line	Online	319957000	SUNRISE / ROBEGA 1 11kV Feeder MV Overhead Line	202105	712,250.08	75.16	1	20	0	1588	389
0	North West Operating Unit	Mmabatho Sector	Lichtenburg CNC			Sub not Metered -> All Fdrs Metered	SPRINGBOKPAN 88/22/3.3kV Substation	299499695	Meter_SPRINGBOKPAN / MATLE DUIKERBOS 1 22kV Feede	Online	221637160	BODIBE / MATLE DUIKERBOS 1 22kV Feeder MV Overhead Line	202105	701,826.67	63.99	0	15	2	4373	1733
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mogwase CNC		Sub not Metered -> All Fdrs Metered	MANYANE 88/11kV Substation	299499804	Meter_MANYANE-SAULSPOORT 11kV Overhead Line	Online	324575157	MANYANE / SAULSPOORT 1 11kV Feeder MV Overhead Line	202105	698,943.50	66.38	0	29	0	4908	1195
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Brits CNC		Sub not Metered -> All Fdrs Metered	GELUK RURAL 88/11kV Substation	299499926	Meter_GELUK RURAL/BETHANIE 11kV Overhead Line	Online	342067195	GELUK RURAL / BETHANIE 1 11kV Feeder MV Overhead Line	202105	694,089.83	52.46	3	54	0	4586	2064
0	North West Operating Unit	Mmabatho Sector	Lichtenburg CNC			Sub not Metered -> All Fdrs Metered	SPRINGBOKPAN 88/22/3.3kV Substation	299499696	Meter_SPRINGBOKPAN / SEDIBE TOWN 1 22kV Feeder MV	Online	221637368	SEDIBE / SEDIBE TOWN 1 22kV Feeder MV Overhead Line	202105	689,759.17	74.18	0	15	0	3881	851
0	North West Operating Unit	Mmabatho Sector	Mmabatho CNC			Sub not Metered -> All Fdrs Metered	LEOPARD PARK 33/11kV Substation	299499481	Meter_LEOPARD PARK / SUN HILL 1 11kV Feeder MV Over	Online	200180745	LEOPARD PARK / SUN HILL 1 11kV Feeder MV Overhead Line	202105	687,792.83	61.23	0	19	0	2881	1287
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Delareyville CNC		Sub not Metered -> All Fdrs Metered	DELAREYVILLE MUN 88/22/11kV Substation	299499948	Meter_DELAREYVILLE MUNIC / MADIBOGO 1 22kV Feeder	Online	221708551	DELAREYVILLE MUNIC / MADIBOGO 1 22kV Feeder MV Overhead Line	202105	680,082.58	36.41	6	63	1	9897	4375
0	North West Operating Unit	Platinum Zone	Tlhabane CNC			Sub not Metered -> All Fdrs Metered	SHAFT 15 88/22kV Substation	299499711	Meter_SHAFT15-FREEDOM PARK 22kV Overhead Line	Online	317144559	SHAFT15 / FREEDOM PARK 1 22kV Feeder MV Overhead Line	202105	667,233.50	61.72	0	3	0	2533	1148
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Zeerust CNC		Sub not Metered -> All Fdrs Metered	ZEERUST MUN 88/22/11kV Substation	299499604	Meter_ZEERUST MUNIC / ENZELSBERG 1 22kV Feeder MV	Online	221746580	ZEERUST MUNIC / ENZELSBERG 1 22kV Feeder MV Overhead Line	202105	658,863.25	51.72	137	1	3638	1212
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Lichtenburg CNC		Sub not Metered -> All Fdrs Metered	ITSOSENG RR 88/11kV Substation	299499899	Meter_ITSOSENG RURAL / SPRINGBOKPAN SILOS 1 11kV F	Online	198436111	ITSOSENG RURAL / SPRINGBOKPAN SILOS 1 11kV Feeder MV Overhead Line	202105	640,882.50	69.58	1	12	0	2475	1127
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Zeerust CNC		Sub not Metered -> All Fdrs Metered	KGETLENG RIVER 88/22/11kV Substation	299499876	Meter_KGETLENG RIVER-TAFELKOP 22kV Overhead Line	Online	318375799	KGETLENG RIVER / TAFELKOP 1 22kV Feeder MV Overhead Line	202105	624,743.17	44.3	11	133	0	493	88
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC		Sub not Metered -> All Fdrs Metered	KLIPFONTEIN RR 88/22/11kV Substation	299499864	Meter_KLIPFONTEIN RURAL / COVERDALE 1 11kV Feeder	Online	198644133	KLIPFONTEIN RURAL / COVERDALE 1 11kV Feeder MV Overhead Line	202105	624,551.92	64.19	0	12	1	3878	1899
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Morokweng CNC		Sub not Metered -> All Fdrs Metered	VESEL 132/22kV Substation	299499626	Meter_VESEL / MOROKWENG 1 22kV Feeder MV Overhead	Online	221808541	VESEL / MOROKWENG 1 22kV Feeder MV Overhead Line	202105	612,257.17	45.23	2	57	0	6911	3519
0	North West Operating Unit	Mmabatho Sector	Mmabatho CNC	Meter Station		Sub not Metered -> All Fdrs Metered	MAFIKENG MAIN 88/33/11kV Substation	299499826	Meter_MAFIKENG MAIN BLOCKHOUSE / SIGNAL HILL 1 11k	Meter Stats missing			202105	605,329.75	59.59	0	0	0	0	0
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Koster CNC		Sub not Metered -> All Fdrs Metered	OLIFANTSNEK 132/11kV Substation	299499766	Meter_OLIFANTSNEK-ALMORO 11kV Overhead Line	Online	318587419	OLIFANTSNEK / ALMORO 1 11kV Feeder MV Overhead Line	202105	602,429.25	62.4	2	144	0	67	18
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Koster CNC		Sub not Metered -> All Fdrs Metered	WHITES LICHTENBURG 88/11/3.3kV Substation	299499615	Meter_WHITES LICHTENBURG / MANANA 1 11kV Feeder MV	Online	221746026	WHITES LICHTENBURG / MANANA 1 11kV Feeder MV Overhead Line	202105	602,191.08	40.56	3	167	0	19	8
0	North West Operating Unit	Vryburg Sector	Vryburg CNC			Sub not Metered -> All Fdrs Metered	MAGOPELA 132/22kV Substation	299499823	Meter_MAGOPELA / MODIMONG 1 22kV Feeder MV Overhead	Online	197635057	MAGOPELA / CHOSENG 1 22kV Feeder MV Overhead Line	202105	600,136.50	41.54	1	37	3	4983	2754
0	North West Operating Unit	Mmabatho Sector	Koster CNC			Sub not Metered -> All Fdrs Metered	OLIFANTSNEK RURAL 132/11kV Substation	299499765	Meter_OLIFANTSNEK-MAANHAAR 11kV Overhead Line	Online	317221645	OLIFANTSNEK / MAANHAAR 1 11kV Feeder MV Overhead Line	202105	599,073.75	37.19	9	295	0	37	19
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Vryburg CNC		Sub not Metered -> All Fdrs Metered	HAVELOCK 66/22kV Substation	299499543	Meter_HAVELOCK / GANYESA 1 22kV Feeder MV Overhead	Online	199535113	HAVELOCK / GANYESA 1 22kV Feeder MV Overhead Line	202105	593,953.33	44.67	2	60	1	4738	2689
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC		Sub not Metered -> All Fdrs Metered	MONTSHIWA 88/11kV Substation	299499772	Meter_MONTSHIWA STAD / MAGOGWE TAR 1 11kV Feeder M	Online	221683517	MONTSHIWA STAD / MAGOGWE TAR 1 11kV Feeder MV Overhead Line	202105	591,941.17	42.31	0	39	1	3405	1504
0	North West Operating Unit	Mmabatho Sector	Zeerust CNC			Sub not Metered -> All Fdrs Metered	GOPANI MINE 88/22kV Substation	299499918	Meter_GOPANI MINE / MOTSWEDI 1 22kV Feeder MV Over	Online	199800045	GOPANI MINE / MOTSWEDI 1 22kV Feeder MV Overhead Line	202105	580,828.25	55.85	5	40	1	5252	1281
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Delareyville CNC		Sub not Metered -> All Fdrs Metered	DELAREYVILLE MUN 88/22/11kV Substation	299499945	Meter_DELAREYVILLE MUNIC / ROODWAL 1 22kV Feeder M	Online	200284883	DELAREYVILLE MUNIC / ROODWAL 1 22kV Feeder MV Overhead Line	202105	578,342.42	51.3	0	48	4	5317	2174
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC		Sub not Metered -> All Fdrs Metered	BAKWENA 88/11kV Substation	299499995	Meter_BAKWENA/BUSHVELD 11kV Overhead Line	Online	343686253	BAKWENA / BUSHVELD 1 11kV Feeder MV Overhead Line	202105	565,377.67	61.34	4	32	0	46	32
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Taung CNC		Sub not Metered -> All Fdrs Metered	MAGOPELA 132/22kV Substation	299499821	Meter_MAGOPELA / LOKALENG 1 22kV Feeder MV Overhea	Online	198644137	MAGOPELA / LOKALENG 1 22kV Feeder MV Overhead Line	202105	541,380.25	37.59	7	78	3	4530	2285
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Zeerust CNC		Sub not Metered -> All Fdrs Metered	STRAATSDRIFT RR 88/22kV Substation	299499685	Meter_STRAATSDRIFT RURAL / MADIKWE TOWNS 1 22kV Fe	Online	198772883	STRAATSDRIFT RURAL / MADIKWE 1 22kV Feeder MV Overhead Line	202105	529,739.08	69.98	7	40	0	894	347
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Taung CNC		Sub not Metered -> All Fdrs Metered	MAGOPELA 132/22kV Substation	299499825	Meter_MAGOPELA / MODIMONG 1 22kV Feeder MV Overhea	Online	221805618	MAGOPELA / MODIMONG 1 22kV Feeder MV Overhead Line	202105	527,063.25	36.35	2	56	0	7915	4347
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC		Sub not Metered -> All Fdrs Metered	SCHWEIZER RENEKE MUN 88/11kV Substation	299499715	Meter_SCHWEIZER RENEKE MUNIC / MARESSIN 1 11kV Fee	Online	198828317	SCHWEIZER RENEKE MUNIC / MARESSIN 1 11kV Feeder MV Overhead Line	202105	512,575.50	54.98	1	14	2	3172	1771
0	North West Operating Unit	Platinum Zone	Mooinooi CNC			Sub not Metered -> All Fdrs Metered	MODDERSPRUIT 88/11kV Substation	299499785	Meter_MODDERSPRUIT- 11kV Makolokwe FDR	Online	341699393	MODDERSPRUIT / MOKOLOKWE 11kV Feeder MV Overhead Line	202105	509,747.50	36.71	1	19	0	2468	1198
0	North West Operating Unit	Platinum Zone	Mooinooi CNC			Sub not Metered -> All Fdrs Metered	WONDERKOP 88/11kV Substation	299499634	Meter_WONDERKOP-TURF 11kV Overhead Line	Online	317245213	WONDERKOP / TURF 1 11kV Feeder MV Overhead Line	202105	507,900.58	72.52	1	2	0	153	100
0	North West Operating Unit	Platinum Zone	Mooinooi CNC			Sub not Metered -> All Fdrs Metered	THARISA 88kV Substation	299499487	Meter_THARISA / MAMALEKA 1 11kV Feeder MV Overhead	Online	323659648	THARISA / MAMALEKA 1 11kV Feeder MV Overhead Line	202105	493,442.50	39.22	3	44	0	759	215
0	North West Operating Unit	Mmabatho Sector	Molopo CNC			Sub not Metered -> All Fdrs Metered	VRYBURG ROAD 33/22/11kV Substation	299499618	Meter_VRYBURG ROAD / MOCOSENG 1 11kV Feeder MV Ove	Online	221683630	VRYBURG ROAD / MOCOSENG 1 11kV Feeder MV Overhead Line	202105	486,169.17	58.61	0	10	1	2666	1205
0	North West Operating Unit	Mmabatho Sector	Zeerust CNC			Sub not Metered -> All Fdrs Metered	GOPANI MINE 88/22kV Substation	299499922	Meter_GOPANI MINE - Gopane	Online	199812879	GOPANI MINE / GOPANI 1 22kV Feeder MV Overhead Line	202105	484,508.25	65.36	0	17	0	5122	1247
0	North West Operating Unit	Mmabatho Sector	Koster CNC			Sub not Metered -> All Fdrs Metered	KGETLENG RIVER 88/22/11kV Substation	299499877	Meter_KGETLENG RIVER-SKILPAD 22kV Overhead Line	Online	317107163	KGETLENG RIVER / SKILPAD 1 22kV Feeder MV Overhead Line	202105	478,462.08	47.12	4	89	0	134	46
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC		Sub not Metered -> All Fdrs Metered	BAFOKENG 7 88/33kV Substation	299499994	Meter_Bafokeng / Ga-Luka 1 11kV Feeder Overhead Li	Online	323452646	BAFOKENG 7 / GA-LUKA 1 11kV Feeder MV Overhead Line	202105	478,284.00	64.58	1	15	0	2760	825
0	North West Operating Unit	Mmabatho Sector	Mmabatho CNC			Sub not Metered -> All Fdrs Metered	CHARLES SHAFT 88/11/6.6kV Substation	299499859	Meter_CHARLES SHAFT / KHUMA EXT9 1 11kV Feeder MV	Online	198765999	CHARLES SHAFT / KHUMA EXT9 1 11kV Feeder MV Overhead Line	202105	474,666.58	77.31	0	8	0	1370	772
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Matooster CNC		Sub not Metered -> All Fdrs Metered	RUIGHOEK 88/22kV Substation	299499727	Meter_RUIGHOEK-RUST MINERALS 22kV Overhead Line	Online	317166661	RUIGHOEK / RUST MINERALS 1 22kV Feeder MV Overhead Line	202105	472,082.83	65.93	0	9	0	3551	1076
0	North West Operating Unit	Mmabatho Sector	Lichtenburg CNC			Sub not Metered -> All Fdrs Metered	ITSOSENG RR 88/11kV Substation	299499898	Meter_ITSOSENG RURAL / THUSONG 1 11kV Feeder MV Ov	Online	197641065	ITSOSENG RURAL / THUSONG 1 11kV Feeder MV Overhead Line	202105	471,695.67	55.39	2	36	2	2050	1021
0	North West Operating Unit	Mmabatho Sector	Molopo CNC			Sub not Metered -> All Fdrs Metered	VRYBURG ROAD 33/22/11kV Substation	299499617	Meter_VRYBURG ROAD / VRYHOF SILO 1 22kV Feeder MV	Online	221683602	VRYBURG ROAD / VRYHOF SILO 1 22kV Feeder MV Overhead Line	202105	463,291.67	51.09	18	0	0	3779	1906
0	North West Operating Unit	Mmabatho Sector	Mmabatho CNC			Meter Stats missing -> Losses past Year	RIVER CRESCENT 11kV Switching Station	299499547	Meter_RIVER CRESCENT / MOLOPO RIVER-MS 1 11kV Feede	Meter Stats missing			202105	460,703.50	70.49	0	0	0	0	0
0	North West Operating Unit	Mmabatho Sector	Molopo CNC			Sub not Metered -> All Fdrs Metered	ARMY CAMP 33/11kV Substation	299499544	Meter_ARMY CAMP / TSETSE 1 11kV Feeder MV Overhead	Online	197670693	ARMY CAMP / TSETSE 1 11kV Feeder MV Overhead Line	202105	453,977.42	47.09	5	22	1	2497	970
0	North West Operating Unit	Platinum Zone	Brits CNC			Sub not Metered -> All Fdrs Metered	BRITS RURAL 88/11kV Substation	299499969	Meter_BRITS RURAL/UITVAL 11kV Overhead Line	Online	341700695	BRITS RURAL / UITVAL 1 11kV Feeder MV Overhead Line	202105	452,444.67	34.14	3	222	0	187	69
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Stella CNC		Sub not Metered -> All Fdrs Metered	EDWARDSDAM 88/22kV Substation	299499937	Meter_EDWARDSDAM / MORCA 1 22kV Feeder MV Overhead	Online	221574998	EDWARDSDAM / MORCA 1 22kV Feeder MV Overhead Line	202105	452,137.92	51.37	11	84	0	231	158

0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Taung CNC	Sub not Metered -> All Fdrs Metered	NORLIM 66/22kV Substation	2994997691	Meter_NORLIM / MOKGARENG 1 22kV Feeder MV Overhead	Online	2217051481	NORLIM / MOKGARENG 1 22kV Feeder MV Overhead Line	202105	244,422.00	42.22	1	28	1	3802	1962				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Matooster CNC	Sub not Metered -> All Fdrs Metered	RHINO RURAL 88/11kV Substation	2994997743	Meter_RHINO-SUNDOWN 11kV Overhead Line	Online	3173553441	RHINO / SUNDOWN 11kV Feeder MV Overhead Line	202105	244,334.67	52.32	4	50	0	100	21				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Vaalkop CNC	Sub not Metered -> All Fdrs Metered	VEKKRAAL RURAL 88/11kV Substation	2994997633	Meter_VEEKRAAL/BLAAUWBANK 11kV Overhead Line	Online	3419121199	VEEKRAAL / BLAAUWBANK 11kV Feeder MV Overhead Line	202105	241,262.42	24.36	4	122	0	162	58				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	MIMOSA RR 88/22kV Substation	2994997789	Meter_MIMOSA RURAL / MARGARETHA 1 22kV Feeder MV O	Online	198461339	MIMOSA RURAL / MARGARETHA 1 22kV Feeder MV Overhead Line	202105	239,549.83	70.44	0	44	0	25	13				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Stella CNC	Sub not Metered -> All Fdrs Metered	FERNDALE 88/22kV Substation	2994995557	Meter_FERNDALE SUB - RATLOU Feeder MV Overhead Lin	Online	200447724	FERNDALE / RATLOU 1 22kV Feeder MV Overhead Line	202105	235,755.75	36.38	1	35	0	3731	1828				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranieville CNC	Sub not Metered -> All Fdrs Metered	KANANA 132/11kV Substation	2994995889	Meter_KANANA / HIGH BASE 1 11kV Feeder MV Overhead	Online	221349248	KANANA / HIGH BASE 1 11kV Feeder MV Overhead Line	202105	235,015.17	53.79	1	5	1	1249	561				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranieville CNC	Sub not Metered -> All Fdrs Metered	MANYA 11kV Switching Station	2994998008	Meter_MANYA / RESERVOIRS 1 11kV Feeder MV Overhead	Online	221349329	MANYA / RESERVOIRS 1 11kV Feeder MV Overhead Line	202105	235,469.17	52.65	1	4	0	2276	686				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Sub not Metered -> All Fdrs Metered	CHURCHILL AVENUE 11kV Switching Station	2994995594	Meter_CHURCHILL SWS / WILLIAM DICK Feeder	Online	197537827	CHURCHILL AVENUE SWS / SECOND STREET SWS 1 11kV Feeder MV Underground Cable	202105	231,813.33	38.45	5	98	0	23	10				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Vryburg CNC	Sub not Metered -> All Fdrs Metered	HAVELOCK 66/22kV Substation	2994994975	Meter_HAVELOCK / GUGU 1 22kV Feeder MV Overhead Li	Online	200772749	HAVELOCK / GUGU 1 22kV Feeder MV Overhead Line	202105	231,176.42	26.26	4	46	0	3627	1972				
0	North West Operating Unit	Rustenburg Sector	Rustenburg Sector	Matooster CNC	Meter Stats missing -> Losses past Year	SUN CITY 88/11kV Substation	2994995683	Meter_SUN CITY-Heyboer 22kV Overhead Line	Meter Stats missing			202105	231,151.44	42.29	0	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Zeerust CNC	Sub not Metered -> All Fdrs Metered	MARICO MINERALS 88/22/6.6kV Substation	2994995799	Meter_MARICO MINERALS / PETRUSDAM 1 22kV Feeder MV	Online	221771843	MARICO MINERALS / PETRUSDAM 1 22kV Feeder MV Overhead Line	202105	227,952.50	46.37	1	77	2	2036	1025				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Koster CNC	Sub not Metered -> All Fdrs Metered	SYFERBULT RURAL 132/11kV Substation	2994995671	Meter_SYFERBULT-BOONS 11kV Overhead Line	Online	317481679	SYFERBULT / BOONS 1 11kV Feeder MV Overhead Line	202105	222,894.25	53.59	2	57	0	894	260				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Delareyville CNC	Sub not Metered -> All Fdrs Metered	SANNIESHOF MAIN 88/22/11kV Substation	2994997251	Meter_SANNIESHOF MUNIC / LEEUPAN 1 11kV Feeder MV	Online	221467676	SANNIESHOF MUNIC / LEEUPAN 1 11kV Feeder MV Overhead Line	202105	222,860.00	39.08	3	88	1	1732	772				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Vaalkop CNC	Sub not Metered -> All Fdrs Metered	ONTGIN 88/22/11kVSubstation	2994997161	Meter_ONTGIN/LIEFLING 11kV Overhead Line	Online	341861131	ONTGIN / LIEFLING 1 11kV Feeder MV Overhead Line	202105	222,121.83	28.99	9	87	0	3	2				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Taung CNC	Sub not Metered -> All Fdrs Metered	MAGOPELA 132/22kV Substation	2994998819	Meter_MAGOPELA / Pudimoe fdr 22kV Feeder MV Overhe	Online	198768565	MAGOPELA / PUDIMOE 1 22kV Feeder MV Overhead Line	202105	221,614.33	45.65	1	7	0	0	0				
0	North West Operating Unit	Rustenburg Sector	Rustenburg Sector	Mmabatho CNC	Sub not Metered -> All Fdrs Metered	CENTRAL BUSSINESS DISTRICT 11kV Switching Station	2994995508	Meter_CENTRAL BUSSINESS DISTRICT / Unit2 MS2-1 11K	Online	197789737	CENTRAL BUSINESS DISTRICT / REGOMO FLATS 1 11kV Feeder 11kV MV Underground Cable	202105	220,364.50	61.82	2	35	1	456	221				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Zeerust CNC	Sub not Metered -> All Fdrs Metered	GOPANI MINE 88/22kV Substation	2994998921	Meter_Gopani Mine - Khunotswana	Online	199812767	GOPANI MINE / KHUNOTSWANA 1 22kV Feeder MV Overhead Line	202105	219,875.67	63.37	1	14	1	1336	609				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Vryburg CNC	Sub not Metered -> All Fdrs Metered	LYKSO 66/22kV Substation	2994998827	Meter_LYKSO / CASSEL 1 22kV Feeder MV Overhead Lin	Online	221832348	LYKSO / CASSEL 1 22kV Feeder MV Overhead Line	202105	218,798.50	29.71	0	68	0	4329	2465				
0	North West Operating Unit	Rustenburg Sector	Rustenburg Sector	Matooster CNC	Sub not Metered -> All Fdrs Metered	RHINO RURAL 88/11kV Substation	2994997742	Meter_RHINO / VLAKTE 11kV Overhead Line	Online	318018179	RHINO / VLAKTE 1 11kV Feeder MV Overhead Line	202105	217,161.83	66.68	0	49	0	867	175				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranieville CNC	Sub not Metered -> All Fdrs Metered	KANANA 132/11kV Substation	2994998090	Meter_KANANA / BATHABILE 1 11kV Feeder MV Overhead	Online	199384989	KANANA / BATHABILE 1 11kV Feeder MV Overhead Line	202105	216,783.58	56.79	0	0	0	1376	864				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Stella CNC	Sub not Metered -> All Fdrs Metered	MAREETSANE 88/22kV Substation	2994995516	Meter_MAREETSANE / BATHO BATHO 1 22kV Feeder MV Ov	Online	199305163	MAREETSANE / BATHO BATHO 1 22kV Feeder MV Overhead Line	202105	213,585.25	47.32	1	30	0	2354	1032				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Sub not Metered -> All Fdrs Metered	UNIT 13 88/11kV Substation	2994996368	Meter_UNIT 13 / EXT39 1 11kV Feeder MV Overhead Li	Online	199656463	UNIT 13 / EXT39 1 11kV Feeder MV Overhead Line	202105	210,967.00	34.76	2	5	0	3019	1591				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Delareyville CNC	Sub not Metered -> All Fdrs Metered	DELAREYVILLE MUN 88/22/11kV Substation	2994999951	Meter_DELAREYVILLE MUNIC / BARBERSPAN 1 22kV Feede	Online	221708559	DELAREYVILLE MUNIC / BARBERSPAN 1 22kV Feeder MV Overhead Line	202105	209,883.83	35.6	0	30	2	2641	1316				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Sub not Metered -> All Fdrs Metered	UNIT 13 88/11kV Substation	2994996540	Meter_UNIT 13 / AIRPORT ROAD 1 11kV Feeder MV Over	online	221683595	UNIT 13 / AIRPORT ROAD 1 11kV Feeder MV Overhead Line	202105	209,616.17	41.13	0	5	0	577	237				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC	Sub not Metered -> All Fdrs Metered	DONALDSVALE TRACTION 88kV Substation	2994995565	Meter_Donaldsvale Sub - Bonru 11kV Overhead Line	Online	317345715	DONALDSVALE / BONRU 1 11kV Feeder MV Overhead Line	202105	209,133.17	39.45	2	24	0	3423	761				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC	Sub not Metered -> All Fdrs Metered	BAFOKENG 7 88/33kV Substation	2994995568	Meter_BAFOKENG 7 / THORISHO 1 11kV Feeder Overhead	Online	323407968	BAFOKENG 7 / THORISHO 1 11kV Feeder MV Overhead Line	202105	203,794.42	26.66	1	6	0	2547	702				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Taung CNC	Sub not Metered -> All Fdrs Metered	NORLIM 66/22kV Substation	2994996768	Meter_NORLIM / Nortim - Taung 1 22kV Feeder MV Ove	Online	221718580	NORLIM / TAUNG 1 22kV Feeder MV Overhead Line	202105	203,297.58	26.78	0	48	4	5383	2988				
0	North West Operating Unit	Rustenburg Sector	Rustenburg Sector	Brits CNC	Sub not Metered -> All Fdrs Metered	BRITS RURAL 88/11kV Substation	2994995968	Meter_BRITS RURAL / ZANDSLOOT 11kV Overhead Line	Online	343464581	BRITS RURAL / ZANDSLOOT 1 11kV Feeder MV Overhead Line	202105	203,034.92	33	1	83	0	0	0				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Zeerust CNC	Sub not Metered -> All Fdrs Metered	DINORUTSHE 22/11kV Substation	2994994982	Meter_DINORUTSHE / IKAKGELENG 1 22kV Feeder MV Ove	Estimated	200493631	DINORUTSHE / IKAKGELENG 1 22kV Feeder MV Overhead Line	202105	200,807.50	73.16	0	2	0	1077	318				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranieville CNC	Sub not Metered -> All Fdrs Metered	MAKUONE 11kV Switching Station	2994998515	Meter_MAKUONE / HIGH BASE 1 11kV Feeder MV Undergr	Online	221347482	MAKUONE / HIGH BASE 1 11kV Feeder MV Underground Cable	202105	197,120.00	53.64	0	5	0	884	403				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Matooster CNC	Sub not Metered -> All Fdrs Metered	RUIGHOEK 88/22kV Substation	2994997313	Meter_RUIGHOEK-HORISONE CHROME 22kV Feeder MV Ove	Online	317164059	RUIGHOEK / HORISON CHROME 1 22kV Feeder MV Overhead Line	202105	194,626.08	42.84	3	3	0	2098	714				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranieville CNC	Sub not Metered -> All Fdrs Metered	OTTOSDAL MUN 88/22/11kV Substation	2994999759	Meter_OTTOSDAL / BOSBULT 1 11kV Feeder MV Overhead	Online	221349405	OTTOSDAL / BOSBULT 1 11kV Feeder MV Overhead Line	202105	194,046.00	45.45	3	95	0	43	12				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranieville CNC	Sub not Metered -> All Fdrs Metered	DROOGEKRAAL 88/22/11kV Substation	2994999942	Meter_DROOGEKRAAL / WERDA 1 11kV Feeder MV Overhea	Online	221329390	DROOGEKRAAL / WERDA 1 11kV Feeder MV Overhead Line	202105	192,423.67	38.16	5	25	0	2	1				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Sub not Metered -> All Fdrs Metered	MOLIMA 11kV Switching Station	2994999406	Meter_MOLIMA / TRAFFIC - MS 11 11kV Feeder MV Overh	Online	197535593	MOLIMA SWS / TRAFFIC-MS 1 11kV Feeder MV Underground Cable	202105	188,988.83	72.11	2	2	0	139	65				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Lichtenburg CNC	Sub not Metered -> All Fdrs Metered	ITSOSENG RR 88/11kV Substation	2994999000	Meter_ITSOSENG RURAL / ITSOSENG TOWN 1 11kV Feeder	Online	197559027	ITSOSENG RURAL / ITSOSENG TOWN 1 11kV Feeder MV Overhead Line	202105	188,983.33	32.04	4	66	0	1862	929				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Matooster CNC	Sub not Metered -> All Fdrs Metered	SUNRISE BB/11kV Substation	2994999678	Meter_SUNRISE-BULTFONTEIN 11kV Overhead Line	Online	319687079	SUNRISE / BULTFONTEIN 1 11kV Feeder MV Overhead Line	202105	185,336.33	36.73	3	23	0	6	0				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Delareyville CNC	Sub not Metered -> All Fdrs Metered	DELAREYVILLE MUN 88/22/11kV Substation	2994999976	Meter_DELAREYVILLE MUNIC / BOSCHRAND 1 22kV Feede	Online	197629373	DELAREYVILLE MUNIC / BOSCHRAND 1 22kV Feeder MV Overhead Line	202105	184,021.08	26.93	1	117	0	735	462				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Molopo CNC	Meter Stats missing -> Losses past Year	VRYBURG ROAD 33/22/11kV Substation	2994996621	Meter_VRYBURG ROAD - LETSAPA 1 11kV MV Overhead Li	Meter Stats missing			202105	178,681.33	48.17	0	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Vaalkop CNC	Sub not Metered -> All Fdrs Metered	TWINRIVERS 88/22kV Substation	2994996564	Meter_TWINRIVERS/TAMBOTIE 22kV Overhead Line	Online	343163539	TWINRIVERS / TAMBOTIE 22kV Feeder MV Overhead Line	202105	178,106.58	31.44	7	45	0	1307	593				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Monoinoi CNC	Sub not Metered -> All Fdrs Metered	THARISA BB6V Substation	2994994848	Meter_THARISA / RAMOSERE 1 11kV Feeder MV Overhead	Online	323784534	THARISA / RAMOSER 1 11kV Feeder MV Overhead Line	202105	177,578.92	28.42	6	57	0	54	11				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	LEEUDORINGSTAD MUN 88/11kV Substation	2994998853	Meter_LEEUDORINGSTAD MUNIC / UITKYK 1 11kV Feeder	Online	198461343	LEEUDORINGSTAD MUNIC / UITKYK 1 11kV Feeder MV Overhead Line	202105	174,073.92	42.72	3	71	0	21	6				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	SCHWEIZER RENEKE MUN 88/11kV Substation	2994999517	Meter_SCHWEIZER RENEKE MUNIC / GORDON 1 11kV Feede	Online	200697473	SCHWEIZER RENEKE MUNIC / GORDON 1 11kV Feeder MV Overhead Line	202105	173,525.00	44.88	0	3	1	2066	1266				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Zeerust CNC	Sub not Metered -> All Fdrs Metered	LERATO 88/11kV Substation	2994998839	Meter_LERATO / UNIT ONE 1 11kV Feeder MV Overhead	Online	221797297	LERATO / UNIT ONE 1 11kV Feeder MV Overhead Line	202105	172,587.00	48.81	0	19	0	1337	580				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Stella CNC	Sub not Metered -> All Fdrs Metered	FERNDALE 88/22kV Substation	2994999930	Meter_FERNDALE SUB - RKAAIPAN Feeder MV Overhead L	Online	221586890	FERNDALE / RKAAIPAN 1 22kV Feeder MV Overhead Line	202105	172,469.58	34.07	0	25	1	1869	945				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Molopo CNC	Sub not Metered -> All Fdrs Metered	RAMATLABAMA 33/11kV Substation	2994999747	Meter_RAMATLABAMA / MEGA 1 11kV Feeder MV Overhead	Online	221682590	RAMATLABAMA / MEGA 1 11kV Feeder MV Overhead Line	202105	172,245.83	55.87	0	12	0	1392	638				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Thomas CNC	Sub not Metered -> All Fdrs Metered	KHUMA 88/11kV Substation	2994997674	Meter_KHUMA / HOZTELL 1 11kV Feeder MV Overhead Li	Online	221330962	KHUMA / HOZTELL 1 11kV Feeder MV Overhead Line	202105	171,439.25	61.76	0	2	0	874	454				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Potchefstroom CNC	Sub not Metered -> All Fdrs Metered	BRITSKOP RR 88/11kV Substation	2994999964	Meter_BRITSKOP RURAL / CHUBBY CHICKS 1 11kV Feeder	Online	198633013	BRITSKOP RURAL / CHUBBY CHICKS 1 11kV Feeder MV Overhead Line	202105	169,780.00	19.64	7	135	0	2	2				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranieville CNC	Sub not Metered -> All Fdrs Metered	DONALDSVALE 88/11kV Substation	2994999654	Meter_DONALDSVALE / BONRU 1 11kV Feeder MV Overhead L	Online	320591701	DONALDSVALE / BONRU 1 11kV Feeder MV Overhead Line	202105	169,606.33	36.71	2	56	0	380	133				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Morokweng CNC	Sub not Metered -> All Fdrs Metered	HEUNINGVLEI 132/22kV Substation	2994999532	Meter_HEUNINGVLEI / LOOPENG 1 22kV Feeder MV Overh	Online	200546698	HEUNINGVLEI / LOOPENG 1 22kV Feeder MV Overhead Line	202105	168,860.83	28.21	0	43	0	4950	2539				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Zeerust CNC	Sub not Metered -> All Fdrs Metered	STRAATSDRIFT RR 88/22kV Substation	2994996838	Meter_STRAATSDRIFT RURAL / PELLA 1 22kV Feeder MV	Online	221838317	STRAATSDRIFT RURAL / PELLA 1 22kV Feeder MV Overhead Line	202105	167,099.33	33.59	3	52	1	1261	1055				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Meter Stats missing -> Losses past Year	MOTSATSI 11kV Switching Station	2994995881	Meter_MOTSATSI SWS / Unit8 - MS1	Meter Stats missing			202105	166,136.86	68.7	0	0	0	0	0				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Taung CNC	Sub not Metered -> All Fdrs Metered	PUDIMOE 22/11kV Substation	2994999752	Meter_PUDIMOE / DRYHARTS 1 11kV Feeder MV Overhead	Online	221705123	PUDIMOE / DRYHARTS 1 11kV Feeder MV Overhead Line	202105	165,501.50	23.5	1	22	0	4059	2236				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Delareyville CNC	Sub not Metered -> All Fdrs Metered	SANNIESHOF MUN 88/22/11kV Substation	2994997720	Meter_SANNIESHOF MUNIC / MAKOEISPAN 1 11kV Feeder	Online	221467701	SANNIESHOF MUNIC / MAKOEISPAN 1 11kV Feeder MV Overhead Line	202105	165,446.08	29.36	1	110	2	870	502				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Thomas CNC	Sub not Metered -> All Fdrs Metered	LEUDO 88/22kV Substation	2994998641	Meter_LEUDO/LEOPARD 11kV Overhead Line	Online	344676035	LEUDO / LEOPARD 1 11kV Feeder MV Overhead Line	202105	162,957.17	28.43	8	47	0	6	6				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Sub not Metered -> All Fdrs Metered	UNIT 13 88/11kV Substation	2994996645	Meter_UNIT 13 / UNIT 13 SOUTH 1 11kV Feeder MV Ove	Online	197535019	UNIT 13 / UNIT 13 SOUTH 1 11kV Feeder MV Overhead Line	202105	162,867.25	68.07	0	1	0	463	218				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Hermes CNC	Sub not Metered -> All Fdrs Metered	KHUMA 88/11kV Substation	2994998871	Meter_KHUMA / MOKGETI 1 11kV Feeder MV Overhead Li	Online	197948201	KHUMA / MOKGETI 1 11kV Feeder MV Overhead Line	202105	160,470.83	60.6	0	5	0	1150	424				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Meter Stats missing -> Losses past Year	MAGONARE PARK 11kV Switching Station	2994995531	Meter_MAGONARE PARK / MAGONARE-MSS-1 11kV Feeder	Online	197535429	MAGONARE PARK / MAGONARE-MSS-1 11kV Feeder MV Underground Cable	202105	160,160.83	51.02	1	63	0	219	115				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Hermes CNC	Sub not Metered -> All Fdrs Metered	KHUMA 88/11kV Substation	2994998873	Meter_KHUMA / LEEUW 1 11kV Feeder MV Overhead Line	Online	221330987	KHUMA / LEEUW 1 11kV Feeder MV Overhead Line	202105	158,950.92	67.03	0	4	0	746	314				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Lichtenburg CNC	Sub not Metered -> All Fdrs Metered	ITSOSENG RR 88/11kV Substation	2994999001	Meter_ITSOSENG RURAL / BLAAUWBANK 1 11kV Feeder MV	Online	197559037	ITSOSENG RURAL / BLAAUWBANK 1 11kV Feeder MV Overhead Line	202105	158,840.50	34.03	5	42	0	23	12				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranieville CNC	Sub not Metered -> All Fdrs Metered	HEUNINGVLEI 132/22kV Substation	2994998747	Meter_HEUNINGVLEI / BONA BONA 1 22kV Feeder MV Ov	Online	200785761	HEUNINGVLEI / BONA BONA 1 22kV Feeder MV Overhead Line	202105	153,449.75	38.91	0	22	0	2514	1274				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Koster CNC	Sub not Metered -> All Fdrs Metered	KGETLENG RIVER 88/22/11kV Substation	2994998881	Meter_KGETLENG RIVER-EAGLES PRIDE 22kV Feeder Over	Online	320125985	KGETLENG RIVER / EAGLES PRIDE 22kV Feeder MV Overhead Line	202105	152,740.42	22.03	1	0	0	1556	591				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranieville CNC	Sub not Metered -> All Fdrs Metered	MAKUONE 11kV Switching Station	2994998111	Meter_MAKUONE / VAAL REEFS 1 11kV Feeder MV Underg	Online	221347562	MAKUONE / VAAL REEFS 1 11kV Feeder MV Underground Cable	202105	146,759.67	56	0	2	0	1061	510				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranieville CNC	Sub not Metered -> All Fdrs Metered	MANYA 11kV Switching Station	2994998553	Meter_MANYA / MASEKENG 1 11kV Feeder MV Overhead L	Online	198559773	MANYA / MASEKENG 1 11kV Feeder MV Overhead Line	202105	145,656.08	53.41	0	7	1	1538	495				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Hennops CNC	Sub not Metered -> All Fdrs Metered	SKEERPOORT RURAL 88/11kV Substation	2994999704	Meter_SKEERPOORT/LYNKLOOP 11kV Overhead Line	Online	341813925	SKEERPOORT / LYNKLOOP 1 11kV Feeder MV Overhead Line	202105	145,212.75	19.88	5	152	0	2	1				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Delareyville CNC	Sub not Metered -> All Fdrs Metered	DELAREYVILLE MUN 88/22/11kV Substation	2994999946	Meter_DELAREYVILLE MUNIC / RAPULE 1 22kV Feeder MV	Online	199808965	DELAREYVILLE MUNIC / RAPULE 1 22kV Feeder MV Overhead Line	202105	145,134.83	40.33	1	46	0	0	0				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Mmabatho CNC	Sub not Metered -> All Fdrs Metered	DISANENG 33/11kV Substation	2994999944	Meter_DISANENG / DISANENG 1 11kV Feeder MV Overhea	Online	197678889	DISANENG / DISANENG 1 11kV Feeder MV Overhead Line	202105	139,228.58	37.59	1	23	1	2229	1117				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Hermes CNC	Sub not Metered -> All Fdrs Metered	CHARLES SHAFT 88/11/6.6kV Substation	2994999960	Meter_CHARLES SHAFT / KENTRON 1 11kV Feeder MV Ove	Online	221331004	CHARLES SHAFT / KENTRON 1 11kV Feeder MV Overhead Line	202105	135,565.42	23.35	7	99	0	83	66				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Koster CNC	Sub not Metered -> All Fdrs Metered	SYFERBULT RURAL 132/11kV Substation	2994999600	Meter_AROLA-RIETFONTEIN 11kV Overhead Line	Online	317085481	AROLA / RIETFONTEIN 11kV Feeder MV Overhead Line	202105	135,058.58	29.7	14	39	0	12	2				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranieville CNC	Sub not Metered -> All Fdrs Metered	DELAREYVILLE MUN 88/22/11kV Substation	2994999947	Meter_DELAREYVILLE MUNIC / MIGDOL RURAL 1 22kV Fee	Online	221469515	DELAREYVILLE MUNIC / MIGDOL RURAL 1 22kV Feeder MV Overhead Line	202105	134,100.67	47.55	2	38	0	2	0				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	LEEUFONTEIN RR 88/22kV Substation	2994998847	Meter_LEEUFONTEIN RURAL / TROTSVILLE 1 22kV Feeder	Online	199363018	LEEUFONTEIN RURAL / TROTSVILLE 1 22kV Feeder MV Overhead Line	202105	133,317.25	14.54	0	15	1	6578	4378				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranieville CNC	Sub not Metered -> All Fdrs Metered	BRAKSPRUIT RR 132/22kV Substation	2994999982	Meter_BRAKSPRUIT RURAL / BEATRIX 1 22kV Feeder MV	Online	221327749	BRAKSPRUIT RURAL / BEATRIX 1 22kV Feeder MV Overhead Line	202105	132,269.25	33.9	3	89	0	1	1				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Morokweng CNC	Sub not Metered -> All Fdrs Metered	HEUNINGVLEI 132/22kV Substation	2994999004	Meter_HEUNINGVLEI / HEUNINGVLEI 1 22kV Feeder MV O	Online	221941869	HEUNINGVLEI / HEUNINGVLEI 1 22kV Feeder MV Overhead Line	202105	130,720.25	36.14	0	30	3166	1580					
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC	Meter Stats missing -> Losses past Year	SHYLOCK-BB/11kV Substation	2994999708	Meter_SHYLOCK-MOEDWIL 11kV Overhead Line	Meter Stats missing			202105	129,853.20	35.43	0	0	0	0	0				
0	North West Operating Unit	Mmabatho Sector	Koster CNC	Sub not Metered -> All Fdrs Metered	SWARTRUGGENS 88/22/11kV Substation	2994999672	Meter_SWARTRUGGENS-VLEIDRAAI 22kV Overhead Line	Estimated	317088616	SWARTRUGGENS / VLEIDRAAI 1 22kV Feeder MV Overhead Line	202105	129,736.00	56.65	3	62	0	1	1				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Lichtenburg CNC	Sub not Metered -> All Fdrs Metered	COLIGNY RR 88/11kV Substation	2994999956	Meter_COLIGNY RURAL / PUTFONTEIN 1 11kV Feeder MV	Online	221738990	COLIGNY RURAL / PUTFONTEIN 1 11kV Feeder MV Overhead Line	202105	129,218.58	40.08	1	55	0	212	93				
0	North West Operating Unit	Mmabatho Sector	Stella CNC	Meter Stats missing -> Losses past Year	MAREETSANE 88/22kV Substation	2994999514	Meter_MAREETSANE / MOOIFONTEIN 1 22kV Feeder MV Ov	Meter Stats missing				202105	129,013.18	25.73	0	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Klerksdorp Sector	Uranieville CNC	Sub not Metered -> All Fdrs Metered	ROAN 132/22/6.6kV Substation	2994999739	Meter_ROAN SWITCHING STATION / HARTEBEESFONT

0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Vryburg CNC	Sub not Metered -> All Fdrs Metered	VRYBURG 132/88/11kV Substation	299499518	Meter_VRYBURG / ITHUMELENG 1 11kV Feeder MV Overhe	Online	200374480	VRYBURG / ITHUMELENG 1 11kV Feeder MV Overhead Line	202105	70,998.42	30.37	0	4	0	1043	789						
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Meter Stats missing -> Losses past Year	MOTSATSI 11kV Switching Station	299499584	Meter_MOTSATSI SWS / Unit10 - MS11	Meter Stats missing			202105	70,620.43	36.01	0	0	0	0	0						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Potchefstroom CNC	Sub not Metered -> All Fdrs Metered	BRITSKOP RR 88/11kV Substation	299499963	Meter_BRITSKOP RURAL / KROMDRAAI 1 11kV Feeder MV	Online	199716781	BRITSKOP RURAL / KROMDRAAI 1 11kV Feeder MV Overhead Line	202105	70,590.50	26.91	3	75	0	3	3						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranianville CNC	Sub not Metered -> All Fdrs Metered	BRAKSPRUIT RR 132/22kV Substation	299499981	Meter_BRAKSPRUIT RURAL / PROTEA 1 22kV Feeder MV O	Online	221328449	BRAKSPRUIT RURAL / PROTEA 1 22kV Feeder MV Overhead Line	202105	70,133.00	24.91	1	73	0	6	1						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	TSWELELANG 11kV Switching Station	299499659	Meter_TSWELELANG / TSWELELANG 1 11kV Feeder MV Ove	Online	221214019	TSWELELANG / TSWELELANG 1 11kV Feeder MV Overhead Line	202105	69,683.08	39.94	0	1	1	603	431						
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Morokweng CNC	Sub not Metered -> All Fdrs Metered	VESEL 132/22kV Substation	299499624	Meter_VESEL / VOSTERSHOOP 1 22kV Feeder MV Overhea	Estimated	221808337	VESEL / VOSTERSHOOP 1 22kV Feeder MV Overhead Line	202105	69,096.58	28	0	97	0	1	1						
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Vaalkop CNC	Sub not Metered -> All Fdrs Metered	TWINRIVERS 88/22kV Substation	299499656	Meter_TWINRIVERS/CORONA 22kV Overhead Line	Online	341893577	TWINRIVERS / CORONA 1 22kV Feeder MV Overhead Line	202105	68,087.75	21.95	6	39	0	106	55						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranianville CNC	Sub not Metered -> All Fdrs Metered	OTTOSDAL MUN 88/22/11kV Substation	299499760	Meter_OTTOSDAL / BAMBOESSPRUIT 1 22kV Feeder MV Ov	Online	197905537	OTTOSDAL / BAMBOESSPRUIT 1 22kV Feeder MV Overhead Line	202105	66,416.67	26.74	3	45	0	37	15						
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Vryburg CNC	Sub not Metered -> All Fdrs Metered	BOPHIRIMA 132/22kV Substation	299499464	Meter_BOPHIRIMA / MOROKANE 1 22kV Feeder MV Overhe	Online	200865406	BOPHIRIMA / MOROKANE 1 22kV Feeder MV Overhead Line	202105	65,876.42	46.94	0	52	0	2	0						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	LEEUFONTEIN RR 88/22kV Substation	299499848	Meter_LEEUFONTEIN RURAL / STRYPDOORT 1 22kV Feeder	Online	198383431	LEEUFONTEIN RURAL / STRYPDOORT 1 22kV Feeder MV Overhead Line	202105	65,651.58	31.33	3	67	0	19	3						
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC	Sub not Metered -> All Fdrs Metered	MOEDWIL 88/11kV Substation	299499554	Meter_MOEDWIL / WOODSTOCK 11kV Feeder MV Overhead	Online	317366038	MOEDWIL / WOODSTOCK 1 11kV Feeder MV Overhead Line	202105	64,381.08	41.4	2	45	0	3	2						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Potchefstroom CNC	Sub not Metered -> All Fdrs Metered	LOOPSPRUIT RURAL 88/11kV Substation	299499833	Meter_LOOPSPRUIT RURAL / MOOIRIVIER 1 11kV Feeder	Online	221333927	LOOPSPRUIT RURAL / MOOIRIVIER 1 11kV Feeder MV Overhead Line	202105	62,523.92	17.96	4	102	0	7	0						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	TSWELELANG 11kV Switching Station	299499658	Meter_TSWELELANG / TSWELELANG 2 11kV Feeder MV Ove	Online	221365363	TSWELELANG / TSWELELANG 2 11kV Feeder MV Overhead Line	202105	61,310.00	13.46	2	8	2	2421	1892						
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Lichtenburg CNC	Sub not Metered -> All Fdrs Metered	WHITES LICHTENBURG 88/11/3.3kV Substation	299499616	Meter_WHITES LICHTENBURG / ELAND 1 11kV Feeder MV	Online	200303865	WHITES LICHTENBURG / ELAND 1 11kV Feeder MV Overhead Line	202105	59,931.92	8.53	6	105	0	46	14						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranianville CNC	Sub not Metered -> All Fdrs Metered	HARTEBEESFONTEIN MUN 22/11kV Substation	299499916	Meter_HARTEBEESFONTEIN MUNIC / SABC HARTEBEESFONTE	Online	221347568	HARTEBEESFONTEIN MUNIC / SABC HARTEBEESFONTEIN 1 11kV Feeder MV Overhead Line	202105	57,643.00	30.75	2	61	0	58	23						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Potchefstroom CNC	Sub not Metered -> All Fdrs Metered	FRANS LOURENS 11kV Switching Station	299499927	Meter_FRANS LOURENS / POTCH 1 11kV Feeder MV Overh	Online	221380515	FRANS LOURENS / POTCH OUDEDORP 1 11kV Feeder MV Overhead Line	202105	57,492.92	16.41	4	77	0	1	1						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Potchefstroom CNC	Sub not Metered -> All Fdrs Metered	LOOPSPRUIT RURAL 88/11kV Substation	299499831	Meter_LOOPSPRUIT RURAL / WELGEBOOM 1 11kV Feeder M	Online	221333973	LOOPSPRUIT RURAL / WELGEBOOM 1 11kV Feeder MV Overhead Line	202105	56,543.67	10.34	7	111	0	0	0						
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mogwase CNC	Sub not Metered -> All Fdrs Metered	MOGWASE INDUSTRIAL 88/11kV Substation	299499551	Meter_MOGWASE-TRAINING CENTRE 11kV Overhead Line	Online	317446569	MOGWASE INDUSTRIAL / TRAINING CENTRE 11kV Feeder MV Overhead Line	202105	56,464.17	46.33	6	1	0	25	5						
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Stella CNC	Sub not Metered -> All Fdrs Metered	EDWARDSDAM 88/22kV Substation	299499934	Meter_EDWARDSDAM / WILDEBEES 1 22kV Feeder MV Over	Online	197559217	EDWARDSDAM / WILDEBEES 1 22kV Feeder MV Overhead Line	202105	55,947.92	20.31	2	104	0	579	211						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	MIMOSA 22kV Switching Station	299499787	Meter_MIMOSA SWS / GROOTDOORNS 1 22kV Feeder MV Ov	Online	199237501	MIMOSA SWS / GROOTDOORNS 1 22kV Feeder MV Overhead Line	202105	55,613.00	57.9	0	27	0	1	1						
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Taung CNC	Sub not Metered -> All Fdrs Metered	REIVILO 66/11kV Substation	299499746	Meter_REIVILO / REIVILO NORTH FARMERS 1 11kV Feede	Online	221707383	REIVILO / REIVILO NORTH FARMERS 1 11kV Feeder MV Overhead Line	202105	55,305.75	39.2	0	37	1	418	209						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	KLIPFONTEIN 22kV Switching Station	299499866	Meter_KLIPFONTEIN / WOLMARANS 2 22kV Feeder MV Ove	Online	221253837	KLIPFONTEIN / MOLOPO 1 22kV Feeder MV Overhead Line	202105	54,772.67	30.81	3	45	0	2	1						
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Meter Stats missing -> Losses past Year	JAMES WATT CRESCENT 11kV Switching Station	299499550	Meter_JAMES WATT CRESCENT / JAMES WATT-MS1 1 11kV	Meter Stats missing			202105	53,804.64	38.55	0	0	0	0	0						
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mooinooi CNC	Sub not Metered -> All Fdrs Metered	MARIKANA 88/11kV Substation	299499798	Meter_MARIKANA-TLHAPA 11kV Overhead Line	Online	317111811	MARIKANA / TLHAPA 1 11kV Feeder MV Overhead Line	202105	52,499.75	30.18	2	11	1	468	159						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranianville CNC	Sub not Metered -> All Fdrs Metered	SKIETPAN RR 88/22kV Substation	299499703	Meter_SKIETPAN RURAL / DROOGEKRAAL 1 22kV Feeder M	Online	198379099	SKIETPAN RURAL / DROOGEKRAAL 1 22kV Feeder MV Overhead Line	202105	50,653.33	14.43	4	47	0	34	9						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	LEEUDORINGSTAD MUN 88/11kV Substation	299499852	Meter_LEEUDORINGSTAD MUNIC / WITPOORT 1 11kV Feede	Online	221236182	LEEUDORINGSTAD MUNIC / WITPOORT 1 11kV Feeder MV Overhead Line	202105	49,817.25	20.39	1	53	1	496	300						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	LEEUDORINGSTAD MUN 88/11kV Substation	299499854	Meter_LEEUDORINGSTAD MUNIC / KOEDOESDRAAI 1 11kV F	Online	221230826	LEEUDORINGSTAD MUNIC / KOEDOESDRAAI 1 11kV Feeder MV Overhead Line	202105	47,898.42	9.42	0	47	3	2698	1918						
0	North West Operating Unit	Matlosana Zone	Uranianville CNC	Uranianville CNC	Sub not Metered -> All Fdrs Metered	KANANA / MAAUW 11kV Switching Station	299499885	Meter_KANANA / MAAUW 1 11kV Feeder MV Overhead Lo	Online	221347549	KANANA / MAAUW 1 11kV Feeder MV Overhead Line	202105	45,926.83	44.05	1	2	0	110	59						
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Stella CNC	Sub not Metered -> All Fdrs Metered	EDWARDSDAM 88/22kV Substation	299499938	Meter_EDWARDSDAM / MOLOPO 1 22kV Feeder MV Overhea	Online	221574962	EDWARDSDAM / MOLOPO 1 22kV Feeder MV Overhead Line	202105	45,722.37	53.8	0	35	0	0	0						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Hermes CNC	Sub not Metered -> All Fdrs Metered	VAAL REEFS TWO 88/6.6kV Substation	299499343	Meter_VAAL REEFS TWO / ANGLOGOLD LIMITED - MP3 6.6	Online	101117806	VAAL REEFS TWO / ANGLOGOLD LIMITED MP3 6.6kV Bulk Load Overhead Line	202105	45,654.83	11.62	1	0	0	0	0						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranianville CNC	Sub not Metered -> All Fdrs Metered	KANANA 132/11kV Substation	299499883	Meter_KANANA / KAGISO 1 11kV Feeder MV Overhead Li	Online	199393227	KANANA / KAGISO 1 11kV Feeder MV Overhead Line	202105	44,760.25	62.48	0	0	0	190	133						
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Vryburg CNC	Sub not Metered -> All Fdrs Metered	BOPHIRIMA 132/22kV Substation	299499465	Meter_BOPHIRIMA / DWAALVLAKTE 1 22kV Feeder MV Ove	Online	200877876	BOPHIRIMA / DWAALVLAKTE 1 22kV Feeder MV Overhead Line	202105	44,536.08	20.93	5	53	0	1	1						
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mooinooi CNC	Sub not Metered -> All Fdrs Metered	MOOINOOI 88/11kV Substation	299499774	Meter_MOOIRIVIER RR / KATOOMBNBOSCH 1 11kV Feede	Online	199544449	MOOIRIVIER RR / KATOOMBNBOSCH 1 11kV Feeder MV Overhead Line	202105	43,896.75	11.28	6	65	0	1	0						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	KLIPFONTEIN RR 88/22/11kV Substation	299499861	Meter_KLIPFONTEIN RURAL / KINGSWOOD 1 22kV Feeder	Online	221229699	KLIPFONTEIN RURAL / KINGSWOOD 1 22kV Feeder MV Overhead Line	202105	43,186.25	36.67	0	42	0	0	0						
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Stella CNC	Sub not Metered -> All Fdrs Metered	EDWARDSDAM 88/22kV Substation	299499940	Meter_EDWARDSDAM / DONEGAL 1 22kV Feeder MV Overhe	Online	221574926	EDWARDSDAM / DONEGAL 1 22kV Feeder MV Overhead Line	202105	42,720.92	26.26	0	60	0	0	0						
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC	Sub not Metered -> All Fdrs Metered	FREEDOM PARK 88/22kV Substation	299499469	Meter_FREEDOM PARK / WILDEBEES 1 22kV Feeder MV Un	Online	320661521	FREEDOM PARK / WILDEBEES 1 22kV Feeder MV Underground Cable	202105	42,394.58	76.84	0	0	0	212	36						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Mogwase CNC	Sub not Metered -> All Fdrs Metered	DORP 11kV Switching Station	299499479	Meter_DORP-TLOU 11kV Overhead Line	Online	317156867	DORP / TLOU 11kV Feeder MV Overhead Line	202105	41,894.25	88.55	0	0	0	18	5						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	MIMOSA 22kV Switching Station	299499793	Meter_MIMOSA / KOOSFONTEIN 1 22kV Feeder MV Overhe	Online	198427097	MIMOSA / KOOSFONTEIN 1 22kV Feeder MV Overhead Line	202105	41,374.83	14.86	5	57	0	108	12						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranianville CNC	Sub not Metered -> All Fdrs Metered	BRAKSPRUIT RR 132/22kV Substation	299499980	Meter_BRAKSPRUIT RURAL / SCHOONSPRUIT 1 22kV Feede	Online	221328605	BRAKSPRUIT RURAL / SCHOONSPRUIT 1 22kV Feeder MV Overhead Line	202105	40,433.25	39	2	27	1	80	68						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranianville CNC	Sub not Metered -> All Fdrs Metered	SCHOONSPRUIT RR 22/11kV Substation	299499718	Meter_SCHOONSPRUIT RURAL / ALWYN 1 11kV Feeder MV	Online	221359221	SCHOONSPRUIT RURAL / ALWYN 1 11kV Feeder MV Overhead Line	202105	37,690.83	22.42	2	68	0	15	5						
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mogwase CNC	Meter Stats missing -> Losses past Year	MANYANE 88/11kV Substation	299499803	Meter_MANYANE-UNIT 4 & 5 11kV Overhead Line	Meter Stats missing			202105	37,501.00	81.43	0	0	0	0	0						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranianville CNC	Sub not Metered -> All Fdrs Metered	BRAKSPRUIT RR 132/22kV Substation	299499983	Meter_BRAKSPRUIT RURAL / AFRIKANER 1 22kV Feeder M	Online	199220517	BRAKSPRUIT RURAL / AFRIKANER 1 22kV Feeder MV Overhead Line	202105	37,456.92	25.15	1	24	0	39	18						
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Stella CNC	Meter Stats missing -> Losses past Year	MAREETSANE 88/22kV Substation	299499803	Meter_MAREETSANE / WESTEND 1 22kV Feeder MV Overhe	Meter Stats missing			202105	36,994.56	11.56	0	0	0	4	0						
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Vryburg CNC	Sub not Metered -> All Fdrs Metered	LYKSO 66/22kV Substation	299499523	Meter_LYKSO / DITHAKONG 1 22kV Feeder MV Overhead	Online	200454496	LYKSO / DITHAKONG 1 22kV Feeder MV Overhead Line	202105	36,858.00	7.27	0	43	0	4584	2651						
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Meter Stats missing -> Losses past Year	CENTRAL BUSINESS DISTRICT 11kV Switching Station	299499538	Meter_CENTRAL BUSINESS DISTRICT / FCS1-SWS 1 11kv	Meter Stats missing			202105	35,843.11	41.23	0	0	0	0	0						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranianville CNC	Sub not Metered -> All Fdrs Metered	SKIETPAN RR 88/22kV Substation	299499703	Meter_SKIETPAN RURAL / SYFERGAT 1 22kV Feeder MV O	Online	198094721	SKIETPAN RURAL / SYFERGAT 1 22kV Feeder MV Overhead Line	202105	35,383.33	21.34	1	51	0	5	2						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Potchefstroom CNC	Sub not Metered -> All Fdrs Metered	LOOPSPRUIT RURAL 88/11kV Substation	299499832	Meter_LOOPSPRUIT RURAL / VAAL 1 11kV Feeder MV Ove	Online	221331015	LOOPSPRUIT RURAL / VAAL 1 11kV Feeder MV Overhead Line	202105	34,480.67	17.43	3	49	0	0	0						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	MARICO FLUORSPAR 88/22kV Substation	299499849	Meter_MARICO FLUORSPAR / BOKMEULEN 1 22kV Feeder MV	Online	221271440	MARICO FLUORSPAR / BOKMEULEN 1 22kV Feeder MV Overhead Line	202105	34,161.58	8.58	1	157	1	145	97						
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Vryburg CNC	Sub not Metered -> All Fdrs Metered	KAALPUT 88/22kV Substation	299499894	Meter_KAALPUT / STELLA 1 22kV Feeder MV Overhead L	Estimated	221927227	KAALPUT / STELLA 1 22kV Feeder MV Overhead Line	202105	30,072.25	29.75	1	50	0	1	0						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	KLIPFONTEIN 22kV Switching Station	299499868	Meter_KLIPFONTEIN / BRITTEN 1 22kV Feeder MV Overh	Online	221226140	KLIPFONTEIN / BRITTEN 1 22kV Feeder MV Overhead Line	202105	29,781.58	19.42	2	41	0	3	3						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Potchefstroom CNC	Sub not Metered -> All Fdrs Metered	MOEDWIL 88/11kV Substation	299499527	Meter_MOEDWIL / LUVANTE 1 11kV Feeder MV Overhead Li	Online	321569221	MOEDWIL / LUVANTE 1 11kV Feeder MV Overhead Line	202105	29,358.17	33.55	1	30	0	0	0						
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Zeerust CNC	Sub not Metered -> All Fdrs Metered	GOPANI MINE 88/22kV Substation	299499920	Meter_Gopani Mine - Radikhudu	Online	199800051	GOPANI MINE / RADIKHUDU 1 22kV Feeder MV Overhead Line	202105	28,734.58	23.08	2	2	0	58	25						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Potchefstroom CNC	Sub not Metered -> All Fdrs Metered	BRITSKOP RR 88/11kV Substation	299499965	Meter_BRITSKOP RURAL / BRITSKOP REPEATER 1 11kV Fe	Online	221374845	BRITSKOP RURAL / BRITSKOP REPEATER 1 11kV Feeder MV Overhead Line	202105	28,676.83	10.63	4	42	0	20	9						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	MIMOSA RR 88/22kV Substation	299499795	Meter_MIMOSA RURAL / DIEWEIDRAAI 1 22kV Feeder MV O	Online	221254797	MIMOSA RURAL / DIEWEIDRAAI 1 22kV Feeder MV Overhead Line	202105	28,340.42	19.61	2	27	0	0	0						
0	North West Operating Unit	Matlosana Zone	Mmabatho Sector	Mmabatho CNC	Sub not Metered -> All Fdrs Metered	MAGONARE PARK / BNDC FLATS RMU 1 11kV Feeder MV	299499530	Meter_MAGONARE PARK / BNDC FLATS RMU 1 11kV Feeder	Online	197535439	MAGONARE PARK / BNDC FLATS-RMU 1 11kV Feeder MV Underground Cable	202105	26,646.83	28.6	3	5	0	17	9						
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mogwase CNC	Sub not Metered -> All Fdrs Metered	MOGWASE INDUSTRIAL 88/11kV Substation	299499476	Meter_CASH BUILD-BOSTON 11kV Overhead Line	Online	317224917	CASH BUILD / BOSTON 11kV Feeder MV Overhead Line	202105	26,449.75	24.33	1	1	0	1	1						
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC	Meter Stats missing -> Losses past Year	SKYLOCK EB/22kV Substation	299499716	Meter_SKYLOCK-BOSCHOEK 11kV Overhead Line	Meter Stats missing			202105	26,176.20	8.09	0	0	0	0	0						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranianville CNC	Sub not Metered -> All Fdrs Metered	SKIETPAN RR 88/22kV Substation	299499702	Meter_SKIETPAN RURAL / HARRISBURG 2 22kV Feeder MV	Online	221365697	SKIETPAN RURAL / HARRISBURG 2 22kV Feeder MV Overhead Line	202105	25,636.83	15.79	1	47	0	14	3						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranianville CNC	Sub not Metered -> All Fdrs Metered	OTTOSDAL MUN 88/22/11kV Substation	299499758	Meter_OTTOSDAL / GESTOPTEFONTEIN 1 22kV Feeder MV	Online	221512133	OTTOSDAL / GESTOPTEFONTEIN 1 22kV Feeder MV Overhead Line	202105	25,574.83	11.27	3	31	0	0	0						
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Sub not Metered -> All Fdrs Metered	JAMES WATT CRESCENT 11kV Switching Station	299499542	Meter_JAMES WATT CRESCENT / BAREND TYRES MS 1 11kV	Online	197538393	JAMES WATT CRESCENT / BAREND TYRES MS 1 11kV Feeder MV Underground Cable	202105	24,376.33	10.21	1	16	0	0	0						
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Sub not Metered -> All Fdrs Metered	RIVER CRESCENT 11kV Switching Station	299499548	Meter_RIVER CRESENT / RENOU MOTORS-MS 1 11kV Feede	Online	197540877	RIVER CRESCENT / RENOU MOTORS-MS 1 11kV Feeder MV Underground Cable	202105	23,325.67	16.81	2	21	0	4	0						
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Hennops CNC	Sub not Metered -> All Fdrs Metered	SKEERPOORT RURAL 88/11kV Substation	299499706	Meter_SKEERPOORT/DE RUST 11kV Overhead Line	Online	341797413	SKEERPOORT / DE RUST 11kV Feeder MV Overhead Line	202105	22,813.25	2.12	9	49	0	0	0						
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Sub not Metered -> All Fdrs Metered	UNIVER VIEW 11kV Switching Station	299499406	Meter_UNIVER VIEW / MM WATER TOWER-MS 1 11kV FEE	Online	197535315	UNIVER VIEW / MM WATER TOWER-MS 1 11kV Feeder from MV Underground Cable	202105	22,388.08	15.62	3	0	0	0	0						
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Stella CNC	Sub not Metered -> All Fdrs Metered	FERNDALE 88/22kV Substation	299499570	Meter_FERNDALE SUB - WOLWEHOEK Feeder MV Overhead	Online	200447720	FERNDALE / WOLWEHOEK 1 22kV Feeder MV Overhead Line	202105	22,314.17	30.94	1	24	0	0	0						
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mooinooi CNC	Sub not Metered -> All Fdrs Metered	MOOINOOI 88/11kV Substation	299499775	Meter_MOOINOOI-MINERALS 11kV Overhead Line	Online	324633520	MOOINOOI / MINERALS 1 11kV Feeder MV Overhead Line	202105	21,743.25	47.21	0	7	0	2	0						
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Meter Stats missing -> Losses past Year	MOTSATSI 11kV Switching Station	299499586	Meter_MOTSATSI SWS / Unit7 - MS7	Meter Stats missing			202105	19,931.29	14.24	0	0	0	0	0						
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Hennops CNC	Sub not Metered -> All Fdrs Metered	BAKWENA 88/11kV Substation	299499992	Meter_BAKWENA/BOSBOK 11kV Overhead Line	Online	343531083	BAKWENA / BOSBOK 11kV Feeder MV Overhead Line	202105	19,901.33	2.34	8	129	0	13	6						
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Stella CNC	Sub not Metered -> All Fdrs Metered	EDWARDSDAM 88/22kV Substation	299499935	Meter_EDWARDSDAM / VERGELEE 1 22kV Feeder MV Overh	Online	221586837	EDWARDSDAM / VERGELEE 1 22kV Feeder MV Overhead Line	202105	19,890.17	8.67	4	95	0	658	425						
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Sub not Metered -> All Fdrs Metered	MMABATHO MAIN 88/33/11kV Substation	299499507	Meter_MMABATHO MAIN - MANPOWER 1 11kV Feeder MV Un	Online	197533209	MMABATHO MAIN / MANPOWER 1 11kV Feeder MV Underground Cable	202105	17,188.58	24.85	1	1	0	0	0						
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mogwase CNC	Sub not Metered -> All Fdrs Metered	MORULENG 88/11kV Substation	299499526	Meter_MORULENG-SHOPPING COMPLEX 11kV Overhead Line	Online	323393326	MORULENG / SHOPPING COMPLEX 11kV Feeder MV Overhead Line	202105	15,032.00	1.78	1	8	0	195	47						
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Sub not Metered -> All Fdrs Metered	LEOPARD PARK 33/11kV Substation	299499473	Meter_LEOPARD PARK / GOLF COURSE-MS9 1 11kV Feeder	Online	197535489	LEOPARD PARK / GOLF COURSE-MS9 1 11kV Feeder MV Underground Cable	202105	14,991.42	33.92	1	10	0	29	13						
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Sub not Metered -> All Fdrs Metered	MMABATHO MAIN 88/33/11kV Substation	299499509	Meter_ASSAGATE - MANYANE 1 11kV Feeder MV Overhead	Online	197538355	ASSAGATE RMU / MANYANE 1 11kV Feeder MV Overhead Line	202105	14,957.25	33.7	0	10	0	0	0						
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Potchefstroom CNC	Sub not Metered -> All Fdrs Metered	FRANS LOURENS 11kV Switching Station	299499929	Meter_FRANS LOURENS / BOSKOP 1 11kV Feeder MV Over	Online	221395321	FRANS LOURENS / BOSKOP 1 11kV Feeder MV Overhead Line	202105	14,490.83	3.36	8	72	0	1	1						
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Vaalkop CNC	Sub not Metered -> All Fdrs Metered	TWINRIVERS 88/22kV Substation	299499653	Meter_TWINRIVERS/TWEELING 22kV Overhead Line	Online	341781555	TWINRIVERS / TWEELING 1 22kV Feeder MV Overhead Line	202105	14,480.67	1.93	13	59	0	199	78						
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Lichtenburg CNC	Sub not Metered -> All Fdrs Metered	LOVEDALE 88/3.3kV Substation	299499399	Meter_LOVEDALE / BLUE CIRCLE CEMENT PTY LTD MP1 3.	Online	101117089	LOVEDALE / BLUE CIRCLE CEMENT PTY LTD MP1 3.3kV Bulk Load Overhead Line	202105	14,183.44	40.2	1	0	0	0	0

0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	LEEUBOS TR 132kV Traction Substation	299499411	Meter_LEEUBOS / SATS KIMBERLEY - MP1 132kV Bulk Lo	Online	101117073	LEEUBOS / SATS KIMBERLEY MP1 132kV Bulk Load Overhead Line	202105	10,267.80	-14.04	1	0	0	0	0				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	MAKWASSIE TR 132kV Traction Substation	299499396	Meter_MAKWASSIE TRACTION / SATS KIMBERLEY - MP1 13	Online	101117092	MAKWASSIE TRACTION / SATS KIMBERLEY MP1 132kV Bulk Load Overhead Line	202105	10,537.83	-3.64	1	0	0	0	0				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Potchefstroom CNC	Sub not Metered -> All Fdrs Metered	LOSBERG TR 88kV Traction Substation	299499400	Meter_LOSBERG TRACTION / SATS KIMBERLEY - MP1 88kV	Online	101117087	LOSBERG TRACTION / SATS KIMBERLEY MP1 88kV Bulk Load Overhead Line	202105	11,369.83	-3.12	2	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Matooster CNC	Sub not Metered -> All Fdrs Metered	RUIGHOEK 88/22kV Substation	299499374	Meter_RUIGHOEK / MAKGOPE 22kV Feeder MV Overhead L	Online	318975883	RUIGHOEK / MAKGOPE 22kV Feeder MV Overhead Line	202105	12,828.33	-5.46	1	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Matooster CNC	Sub not Metered -> All Fdrs Metered	RUIGHOEK 88/22kV Substation	299499729	Meter_RUIGHOEK-MINES 22kV Overhead Line	Online	322569028	RUIGHOEK / MINES 1 22kV Feeder MV Overhead Line	202105	12,907.42	-32.68	1	2	0	7	6				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Taung CNC	Sub not Metered -> All Fdrs Metered	REIVILO 66/11kV Substation	299499375	Meter_REIVILO / REIVILO MUNICIPALITY - MP1 11kV Bu	Online	101117323	REIVILO / REIVILO MUNICIPALITY MP1 11kV Bulk Load Overhead Line	202105	13,272.42	-6.69	1	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Koster CNC	Sub not Metered -> All Fdrs Metered	OLIFANTSNEK RURAL 132/11kV Substation	299499764	Meter_OLIFANTSNEK-RAINBOW / KLIPDRIFT 1 11kV Feeder MV	Online	317101767	OLIFANTSNEK / RAINBOW 1 11kV Feeder MV Overhead Line	202105	13,636.50	-1.1	14	4	0	0	0				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Sub not Metered -> All Fdrs Metered	JAMES WATT CRESCENT 11kV Switching Station	299499309	Meter_JAMES WATT CRESCENT / CHICKEN ABATTOIR 1 11k	Online	197538475	JAMES WATT CRESCENT / CHICKEN ABATTOIR 1 11kV Feeder MV Underground Cable	202105	13,975.50	-1.03	1	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Lichtenburg CNC	Sub not Metered -> All Fdrs Metered	SPRINGBOKPAN 88/22/3.3kV Substation	299499357	Meter_SPRINGBOKPAN / BLUE CIRCLE CEMENT PTY LTD -	Online	101117155	SPRINGBOKPAN / BLUE CIRCLE CEMENT PTY LTD MP1 3.3kV Bulk Load Overhead Line	202105	14,695.00	-7.16	1	0	0	0	0				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Hermes CNC	Sub not Metered -> All Fdrs Metered	MARGARET SHAFT / DRANIE MYNBOU EN VERVOER MP1 6.6	299499522	Meter_MARGARET SHAFT / DRANIE MYNBOU EN VERVOER 1 6.6kV Feeder MV Overhead Line	Online	198204557	MARGARET SHAFT / DRANIE MYNBOU EN VERVOER MP1 6.6kV Feeder MV Overhead Line	202105	15,498.83	-7.7	2	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Molopo CNC	Sub not Metered -> All Fdrs Metered	LOTLHAKANE 88kV Substation	299499830	Meter_LOTHLAKANE / CHIEF JOSEPH 1 11kV Feeder MV O	Online	199128673	LOTHLAKANE / CHIEF JOSEPH 1 11kV Feeder MV Overhead Line	202105	15,726.42	-4.59	0	30	3	3538	1604				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Potchefstroom CNC	Sub not Metered -> All Fdrs Metered	KLIPDRIFT TR 88kV Traction Substation	299499414	Meter_KLIPDRIFT TRACTION / SATS KIMBERLEY SECTION	Online	101117066	KLIPDRIFT TRACTION / SATS KIMBERLEY SECTION MP1 88kV Bulk Load Overhead Line	202105	17,829.00	-5.32	1	0	0	0	0				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Potchefstroom CNC	Sub not Metered -> All Fdrs Metered	POTCHEFSTROOM TR 88kV Traction Substation	299499377	Meter_POTCHEFSTROOM TRACTION / TRANSNET FREIGHT RA	Online	101117124	POTCHEFSTROOM TRACTION / TRANSNET FREIGHT RAIL MP1 88kV Bulk Load Overhead Line	202105	18,943.33	-19.53	1	0	0	0	0				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	STRYDERS TR 132kV Traction Substation	299499353	Meter_STRYDERS TRACTION / SATS KIMBERLEY - MP1 132	Online	101117174	STRYDERS TRACTION / SATS KIMBERLEY MP1 132kV Bulk Load Overhead Line	202105	20,258.67	-12.41	1	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mogwase CNC	Sub not Metered -> All Fdrs Metered	MOGWASE INDUSTRIAL 88/11kV Substation	299499317	Meter_CASH BUILD-BAR LOUNGE 11kV Overhead Line	Estimated	317367397	CASH BUILD / BAR LOUNGE 11kV Feeder MV Overhead Line	202105	25,476.14	-103.25	1	2	0	534	145				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Taung CNC	Sub not Metered -> All Fdrs Metered	PUDIMOE 22/11kV Substation	299499749	Meter_PUDIMOE / PUDIMOE TOWNSHIP 1 11kV Feeder MV	Online	221707363	PUDIMOE / PUDIMOE TOWNSHIP 1 11kV Feeder MV Overhead Line	202105	26,568.42	-48.06	0	11	0	237	142				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Meter Stats missing -> Losses past Year	MAFIKENG MAIN 88/33/11kV Substation	299499480	Meter_MAFIKENG MAIN / MOSIANE PARK 1 11kV Feeder M	Meter Stats missing			202105	26,716.00	-16.38	0	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mooinooi CNC	Meter Stats missing -> Losses past Year	MARIKANA 88/11kV Substation	299499797	Meter_MARIKANA-VAN ZYL 11kV Overhead Line	Meter Stats missing			202105	27,190.88	-15.01	0	0	0	0	0				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Potchefstroom CNC	Sub not Metered -> All Fdrs Metered	LOOPSPRUIT RURAL 88/11kV Substation	299499834	Meter_LOOPSPRUIT RURAL / KLIPDRIFT 1 11kV Feeder M	Online	197778691	LOOPSPRUIT RURAL / KLIPDRIFT 1 11kV Feeder MV Overhead Line	202105	28,529.08	-7.37	6	101	0	0	0				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranierville CNC	Sub not Metered -> All Fdrs Metered	KLERKSDORP TR 88kV Traction Substation	299499416	Meter_KLERKSDORP TRACTION / TRANSNET FREIGHT RAIL	Online	101117060	KLERKSDORP TRACTION / TRANSNET FREIGHT RAIL MP1 88kV Bulk Load Overhead Line	202105	28,852.33	-19.22	1	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Koster CNC	Sub not Metered -> All Fdrs Metered	KGETLENG RIVER 88/22/11kV Substation	299499879	Meter_KGETLENG RIVER-METZ 11kV Overhead Line	Estimated	317161773	KGETLENG RIVER / METZ 11kV Feeder MV Overhead Line	202105	31,579.58	-8.01	4	179	2	1327	360				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Vryburg CNC	Sub not Metered -> All Fdrs Metered	LYKSO 66/22kV Substation	299499825	Meter_LYKSO / LAURIKA 1 22kV Feeder MV Overhead Li	Online	221863327	LYKSO / LAURIKA 1 22kV Feeder MV Overhead Line	202105	32,368.67	-36.77	0	42	0	5	1				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Stella CNC	Sub not Metered -> All Fdrs Metered	STELLA MUNIC 22/11kV Substation	299499356	Meter_STELLA MUNIC / STELLA MUNICIPALITY - MP1 11k	Online	101118055	STELLA MUNIC / STELLA MUNICIPALITY MP1 11kV Bulk Load Overhead Line	202105	32,451.00	-7.16	1	0	0	0	0				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	LEEUDORINGSTAD MUN 88/11kV Substation	299499855	Meter_LEEUDORINGSTAD MUNIC / KGAKALA 1 11kV Feeder	Online	199512227	LEEUDORINGSTAD MUNIC / KGAKALA 1 11kV Feeder MV Overhead Line	202105	32,563.00	-37.01	0	0	1	814	668				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Taung CNC	Sub not Metered -> All Fdrs Metered	TAUNG 22/11kV Substation	299499665	Meter_TAUNG / Taung Village 1 11kV Feeder MV Overhe	Online	197597839	TAUNG / TAUNG VILLAGE 1 11kV Feeder MV Overhead Line	202105	32,608.75	-83.94	2	1	0	3	2				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Delareyville CNC	Sub not Metered -> All Fdrs Metered	KATBOS RURAL 22/11kV Substation	299499883	Meter_KATBOS / KINKELSPRUIT 1 11kV Feeder MV Overh	Online	221467764	KATBOS / KINKELSPRUIT 1 11kV Feeder MV Overhead Line	202105	33,426.67	-21.42	2	59	0	7	1				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Matooster CNC	Sub not Metered -> All Fdrs Metered	PAUL BIEKV Traction Substation	299499358	Meter_Spoornet Paul Traction 132kV MP1	Online	316818900	PAUL TRACTION / SPOORNET BBKV MP1 Bulk Load Overhead Line	202105	34,211.20	-6.63	1	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Sub not Metered -> All Fdrs Metered	WESTERN REEFS TWO 88/6.6/3.3kV Substation	299499334	Meter_WESTERN REEFS TWO / CHINA AFRICAN PRECIOUS M	Online	101118309	WESTERN REEFS TWO / CHINA AFRICAN PRECIOUS METALS (PTY) LTD MP1 6.6kV Bulk Load Overhead Line	202105	34,552.36	-6.84	1	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Meter Stats missing -> Losses past Year	IMPERIAL RESERVE 11kV Switching Station	299499490	Meter_IMPERIAL RESERVE / IMPERIAL RESERVE-MS5 1 11	Meter Stats missing			202105	35,348.89	-321.19	0	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Sub not Metered -> All Fdrs Metered	LEOPARD PARK 132/11kV Substation	299499472	Meter_LEOPARD PARK / EAST GOLF COURSE-MS8 1 11kV F	Online	197535489	LEOPARD PARK / EAST GOLF COURSE-MS8 1 11kV Feeder MV Underground Cable	202105	36,111.17	-47.18	0	56	0	45	24				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Taung CNC	Sub not Metered -> All Fdrs Metered	BOPHIRIMA 132/22kV Substation	299499462	Meter_BOPHIRIMA / NALEDI 1 22kV Feeder MV Overhead	Online	200449556	BOPHIRIMA / NALEDI 1 22kV Feeder MV Overhead Line	202105	36,534.42	-5.88	1	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Koster CNC	Sub not Metered -> All Fdrs Metered	KGETLENG RIVER 88/22/11kV Substation	299499880	Meter_KGETLENG RIVER-GOEDEHOOP 22kV Overhead Line	Online	317101727	KGETLENG RIVER / GOEDEHOOP 22kV Feeder MV Overhead Line	202105	37,965.50	-12.54	6	31	0	194	36				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Thlabane CNC	Sub not Metered -> All Fdrs Metered	DONALDSVALE TRACTION 88kV Substation	299499439	Meter_DONALDSVALE TRACTION / SPOORNET BBKV MP1 Bu	Online	316818901	DONALDSVALE TRACTION / SPOORNET BBKV MP1 Bulk Load Overhead Line	202105	38,352.50	-15.79	1	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Sub not Metered -> All Fdrs Metered	MOLIMA 132/11kV Substation	299499497	Meter_MOLIMA / TECHNICAL COLLEGE - MS 1 11kV FEEDE	Online	197535607	MOLIMA SWS / TECHNICAL COLLEGE-MS 1 11kV Feeder MV Underground Cable	202105	38,730.42	-13.47	3	70	1	1787	854				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mogwase CNC	Meter Stats missing -> Losses past Year	DORP 11kV Switching Station	299499320	Meter_DORP-TSHEPE 11kV Overhead Line	Meter Stats missing			202105	38,909.71	-763.26	0	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Sub not Metered -> All Fdrs Metered	CHURCHILL AVENUE 11kV Switching Station	299499596	Meter_CHURCHILL SWS / SOUTHERN PALACE Feeder	Online	197680479	CHURCHILL AVENUE SWS / SOUTHERN PALACE RMU 1 11kV Feeder MV Underground Cable	202105	40,321.92	-7.51	1	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Rustenburg CNC	Sub not Metered -> All Fdrs Metered	SLURRY RR 88/11kV Substation	299499609	Meter_SLURRY RURAL / KLIPPAN 1 11kV Feeder MV Over	Online	221796207	SLURRY RURAL / KLIPPAN 1 11kV Feeder MV Overhead Line	202105	41,745.92	-35.72	5	18	0	16	10				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranierville CNC	Sub not Metered -> All Fdrs Metered	OTTOSDAL MUN 88/22/11kV Substation	299499384	Meter_OTTOSDAL / OTTOSDAL VILLAGE COUNCIL MP1 11kV	Online	101117119	OTTOSDAL / OTTOSDAL VILLAGE COUNCIL MP1 11kV Bulk Load Overhead Line	202105	46,406.73	-8.21	1	0	0	0	0				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranierville CNC	Sub not Metered -> All Fdrs Metered	OTTOSDAL MUN 88/22/11kV Substation	299499755	Meter_OTTOSDAL / OTTOSDAL 1 22kV Feeder MV Overhead	Online	221348432	OTTOSDAL / OTTOSDAL 1 22kV Feeder MV Overhead Line	202105	46,858.75	-46.27	3	65	0	7	0				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Rustenburg CNC	Sub not Metered -> All Fdrs Metered	BIGHORN 275/88kV MTS Substation	299499345	Meter_TURNFORD / SPOORNET 22kV MP1 Bulk Load Over	Online	316818902	TURNFORD / SPOORNET 22kV MP1 Bulk Load Overhead Line	202105	46,867.40	-6.12	0	0	0	0	0				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Delareyville CNC	Sub not Metered -> All Fdrs Metered	SANNIESHOF MUN 88/22/11kV Substation	299499364	Meter_SANNIESHOF MUNIC / SANNIESHOF MUNISIPALITEIT	Online	101117285	SANNIESHOF MUNIC / SANNIESHOF MUNISIPALITEIT MP1 11kV Bulk Load Overhead Line	202105	50,879.91	-7.51	1	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Meter Stats missing -> Losses past Year	UNIT 13 88/11kV Substation	299499637	Meter_UNIT 19 / SEWAGE WORKS 1 11kV Feeder MV Ov	Meter Stats missing			202105	55,723.90	-17.48	0	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Rustenburg CNC	Sub not Metered -> All Fdrs Metered	PENDORING 88kV Traction Substation	299499382	Meter_MOLOPO / TECHNICAL COLLEGE - MS 1 11kV FEEDE	Online	345101391	PENDORING TRACTION / SPOORNET 88kV Bulk Load Overhead Line	202105	55,828.58	-12.1	1	0	0	0	0				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uranierville CNC	Sub not Metered -> All Fdrs Metered	HARTEBEESFONTEIN MUN 22/11kV Substation	299499917	Meter_HARTEBEESFONTEIN MUNIC / RENOSTERHOEK 1 11kV	Online	221323222	HARTEBEESFONTEIN MUNIC / RENOSTERHOEK 1 11kV Feeder MV Overhead Line	202105	56,868.00	-574.38	1	10	0	4	0				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	KLIPFONTEIN RW 88/22/11kV Substation	299499862	Meter_KLIPFONTEIN RW / KALKPOORT 1 (Ch Section)	Online	221226195	KLIPFONTEIN RURAL / KALKPOORT 1 (Wolmaranstad CNC Section) 22kV Feeder MV Overhead Line	202105	57,321.00	-3.4	20	32	0	0	0				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Lichtenburg CNC	Sub not Metered -> All Fdrs Metered	BOKHUTSO 132/11kV Substation	299499984	Meter_BOKHUTSO / TOWNSHIP 1 11kV Feeder MV Overhe	Online	221637271	BOKHUTSO / TOWNSHIP 1 11kV Feeder MV Overhead Line	202105	62,376.17	-18.86	0	18	2	3291	1648				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Matooster CNC	Sub not Metered -> All Fdrs Metered	SUNRISE 88kV Substation	299499529	Meter_SUNRISE-SRBSC 11kV Overhead Line	Online	320949916	SUNRISE / SRBSC 11kV Feeder MV Overhead Line	202105	62,650.17	-13.16	2	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Matooster CNC	Sub not Metered -> All Fdrs Metered	MOGWASE INDUSTRIAL 88/11kV Substation	299499553	Meter_MOGWASE IND-GRICO DOLL 11kV Overhead Line	Online	317162311	MOGWASE INDUSTRIAL / WHALTERS 1 22kV Feeder MV Overhead Line	202105	63,718.67	-8.44	1	2	0	62	16				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Lichtenburg CNC	Sub not Metered -> All Fdrs Metered	HENWILL CHICKENS BULK 88kV Switching Station	299499425	Meter_HENWILL CHICKENS BULK / DW PARKER CHICKEN FA	Online	101117029	HENWILL CHICKENS BULK / DW PARKER CHICKEN FARMS (PTY) LTD MP1 88kV Bulk Load Overhead Line	202105	65,954.75	-6.21	1	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Meter Stats missing -> Losses past Year	TWIST STREET 11kV Switching Station	800005005	Meter_TWIST STREET 11kV Switching Station (cluster	Meter Stats missing			202105	70,331.00	-27.66	0	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	WOLMARANSTAD MUNIC 22/11kV Substation	299499654	Meter_WOLMARANSTAD MUNIC / MAKWASSIE 1 11kV Feede	Online	221258876	WOLMARANSTAD MUNIC / MAKWASSIE 1 11kV Feeder MV Overhead Line	202105	70,637.25	-14.24	2	13	0	1	1				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Sub not Metered -> All Fdrs Metered	TWIST STREET 11kV Switching Station	299499590	Meter_TWIST SWS / SEWER 1 11kV Feeder	Estimated	197678829	TWIST STREET / BOPHELONG 1 11kV Feeder MV Overhead Line	202105	71,668.50	-27.01	1	0	0	0	0				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	DELAREYVILLE MUN 88/22/11kV Substation	299499949	Meter_DELAREYVILLE MUNIC / HARTSRIVIER 1 22kV Feed	Online	221469471	DELAREYVILLE MUNIC / HARTSRIVIER 1 22kV Feeder MV Overhead Line	202105	72,172.17	-3.87	5	109	1	1180	871				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Sub not Metered -> All Fdrs Metered	UNIVER VIEW 11kV Switching Station	299499403	Meter_MOLSUN / MOLSUN HOTEL - SWS 1 11kV FEED	Online	197678797	UNIVER VIEW / MOLSUN HOTEL 1 11kV Feeder MV Underground Cable	202105	73,300.83	-88.88	5	1	0	7	0				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Lichtenburg CNC	Sub not Metered -> All Fdrs Metered	TLHABOLOGANG 132/11kV Substation	299499662	Meter_Thabologang - Molefe 11kV	Online	199906158	TLHABOLOGANG / MOLEFE 1 11kV Feeder MV Overhead Line	202105	75,673.75	-36.64	0	0	1	2407	1386				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Rustenburg CNC	Sub not Metered -> All Fdrs Metered	RUSTENBURG PLATS 88/6.6kV Substation	299499457	Meter_Amplats Rustenburg Plats M/P 2	Online	100401281	RUSTENBURG PLATS / AMPLATS 6.6kV MP1 Bulk Load Overhead Line	202105	80,451.09	-7.6	1	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Rustenburg CNC	Sub not Metered -> All Fdrs Metered	SLURRY PPC 88/6.6/3.3kV Substation	299499362	Meter_SLURRY PPC / PRETORIA PORTLAND CEMENT (PTY)	Online	101117652	SLURRY PPC / PRETORIA PORTLAND CEMENT (PTY) LTD MP1A 3.3kV Bulk Load Overhead Line	202105	81,925.73	-7.12	1	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	KLIPFONTEIN RR 88/22/11kV Substation	299499694	Meter_STATS KLIPFONTEIN RU - Bloemhof Munic fdr	Online	221207934	KLIPFONTEIN RURAL / BLOEMHOF MUNIC 1 11kV Feeder MV Overhead Line	202105	84,098.45	-7.52	1	0	0	0	0				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Hermes CNC	Sub not Metered -> All Fdrs Metered	BUFFELS EAST 132/6.6kV Substation	299499447	Meter_BUFFELS EAST / CHEMWES (PTY) LTD MP5 6.6kV B	Online	101117259	BUFFELS EAST / CHEMWES (PTY) LTD MP5 6.6kV Bulk Load Overhead Line	202105	85,487.42	-2.56	1	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Rustenburg CNC	Sub not Metered -> All Fdrs Metered	RUSTENBURG PLATS 88/6.6kV Substation	299499444	Meter_DELAREYVILLE MUNIC / DELAREYVILLE MUNICIPALI	Online	100401357	RUSTENBURG PLATS / CHROME CHEMICALS 6.6kV MP1 Bulk Load Overhead Line	202105	85,904.83	-11.97	0	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC	Sub not Metered -> All Fdrs Metered	UNIVER VIEW 11kV Switching Station	299499305	Meter_UNIVER VIEW / UNIWEST 1 11kV Feeder MV Overhe	Online	197535305	UNIVER VIEW / UNIWEST 1 11kV Feeder MV Underground Cable	202105	90,257.00	-6.93	2	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Molopo CNC	Sub not Metered -> All Fdrs Metered	RAMATLABAMA 33/11kV Substation	299499500	Meter_RAMATLABAMA / AGRI CHICKS 1 11kV Feeder MV O	Online	221683583	RAMATLABAMA / AGRI CHICKS 1 11kV Feeder MV Overhead Line	202105	100,876.75	-19.8	5	0	0	1	1				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mogwase CNC	Sub not Metered -> All Fdrs Metered	MOGWASE INDUSTRIAL 88/11kV Substation	299499574	Meter_Mogwase Industrial Sub - Army 3 11kV Feeder	Online	317162705	MOGWASE INDUSTRIAL / ARMY 1 11kV Feeder MV Overhead Line	202105	102,416.92	-287.22	2	2	0	1	0				
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Lichtenburg CNC	Sub not Metered -> All Fdrs Metered	ROOIGROND RR 88/11kV Substation	299499736	Meter_ROOIGROND / FISCHHOEK 11kV Feeder MV Overh	Online	221745919	ROOIGROND / FISCHHOEK 1 11kV Feeder MV Overhead Line	202105	103,111.17	-13.9	4	94	0	1096	695				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	LEEUDORINGSTAD MUN 88/11kV Substation	299499410	Meter_LEEUDORINGSTAD MUNIC / LEEUDOORINGSTAD MUNIC	Online	101117074	LEEUDORINGSTAD MUNIC / LEEUDOORINGSTAD MUNICIPALITY MP1 11kV Bulk Load Overhead Line	202105	105,403.08	-6.77	1	0	0	0	0				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Hennops CNC	Sub not Metered -> All Fdrs Metered	LOMOND 275/88/11kV MTS Substation	299499404	Meter_LOMOND / ATOMIC ENERGY CORP 11kV Bulk Load O	Online	340784918	LOMOND / ATOMIC ENERGY CORP 11kV Bulk Load Overhead Line	202105	109,678.50	-6.14	1	0	0	0	0				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Taung CNC	Sub not Metered -> All Fdrs Metered	TAUNG 22/11kV Substation	299499669	Meter_TAUNG / Irrigation South Fdr	Online	221886215	TAUNG / IRRIGATION SOUTH 1 11kV Feeder MV Overhead Line	202105	110,401.33	-169.28	0	16	0	178	116				
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mogwase CNC	Sub not Metered -> All Fdrs Metered	MOGWASE INDUSTRIAL 88/11kV Substation	299499567	Meter_Mogwase Industry Sub - Bop Tyre 11kV Feeder	Online	317424409	MOGWASE INDUSTRIAL / BOP TYRES 1 11kV Feeder MV Underground Cable	202105	116,887.00	-85.03	2	1	0	0	0				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Taung CNC	Sub not Metered -> All Fdrs Metered	DELAREYVILLE MUN 88/22/11kV Substation	299499448	Meter_DELAREYVILLE MUNIC / DELAREYVILLE MUNICIPALI	Online	101116964	DELAREYVILLE MUNIC / DELAREYVILLE MUNICIPALITY MP1 11kV Bulk Load Overhead Line	202105	120,355.00	-7.43	1	0	0	0	0				
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Taung CNC	Sub not Metered -> All Fdrs Metered	TAUNG 22/11kV Substation	299499668	Meter_TAUNG / Irrigation West Fdr	Online	221886355	TAUNG / IRRIGATION WEST 1 11kV Feeder MV Overhead Line	202105	133,219.42	-119.61	1	22	0	1269	724				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Hermes CNC	Sub not Metered -> All Fdrs Metered	BUFFELS PIONEER 88/6.6kV Substation	299499445	Meter_BUFFELS PIONEER / BUFFELSFONTEIN GMC LTD MP2	Online	101117280	BUFFELS PIONEER / BUFFELSFONTEIN GMC LTD MP1 6.6kV Bulk Load Overhead Line	202105	149,348.42	-5.68	1	0	0	0	0				
0	North West Operating Unit	Potchefstroom CNC	Potchefstroom CNC	Potchefstroom CNC	Sub not Metered -> All Fdrs Metered	NASKOP 44/11/6.6kV Substation	299499388	Meter_NASKOP / NASCHEM PTY LTD - MP1 6.6kV Bulk Lo	Online	101117109	NASKOP / RHEINMETALL DENEL MUNITION MP1 6.6kV Bulk Load Overhead Line	202105	153,821.00	-46.14	1	2	0	1	0				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC	Sub not Metered -> All Fdrs Metered	SCHWEIZER RENEKE MUN 88/11kV Substation	299499363	Meter_SCHWEIZER RENEKE MUNIC / SCHWEIZER RENEKE MU	Online	101117142	SCHWEIZER RENEKE MUNIC / SCHWEIZER RENEKE MUNISIPALITEIT MP1 11kV Bulk Load Overhead Line	202105	159,468.75	-6.64	1	0	0	0	0				
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Hermes CNC	Sub not Metered -> All Fdrs Metered	WESTERN REEFS TWO 88/6.6/3.3kV Substation	299499337	Meter_WESTERN REEFS TWO / ANGLOGOLD LIMITED - MP2	Online	101117803	WESTERN REEFS TWO / ANGLOGOLD L

0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Rustenburg CNC	Sub not Metered -> All Fdrs Metered	RUSTENBURG FURNACE 88/6.6kV Substation	299499458	Meter_Amplats Rustenburg Furnace M/P 3	Online	100401276	RUSTENBURG FURNACE / AMPLATS 6.6kV MP1 Bulk Load Overhead Line	202105	-	3,893,193.82	-8.64	1	0	0	0	0
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Rustenburg CNC	Sub not Metered -> All Fdrs Metered	ACP 88/6.6kV Substation	299499460	Meter_ACP / AMPLATS 6.6kV MP3 Bulk Load Overhead L	Online	316827136	ACP / AMPLATS 6.6kV MP1 Bulk Load Overhead Line	202105	-	4,002,398.83	-76.11	1	0	0	0	0
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC	Sub not Metered -> All Fdrs Metered	SHAFT 16 88/33kV Substation	299499430	Meter_Genmin - Impala Platinum Shaft 16 M/P 2 Over	Online	321985369	SHAFT 16 / GENMIN IMPALA PLATS MP1 33kV Bulk Load Overhead Line	202105	-	4,328,745.56	-29.41	1	0	0	0	0
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mooinooi CNC	Sub not Metered -> All Fdrs Metered	KAREE PLATS 88/33kV Substation	299499403	Meter_Lonmin Karee Plats M/P 1	Online	100401295	KAREE PLATS / LONMIN 33kV MP1 Bulk Load Overhead Line	202105	-	5,265,064.73	-17.73	1	0	0	0	0
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mooinooi CNC	Sub not Metered -> All Fdrs Metered	EXCARBO 88/11kV Substation	299499433	Meter_EXCARBO / TC SMELTERS MP 1 33kV Bulk Load Ov	Online	318972075	EXCARBO / TC SMELTERS MP1 33kV Bulk Load Overhead Line	202105	-	12,289,202.08	-20.28	1	0	0	0	0
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Matooster CNC	Sub not Metered -> All Fdrs Metered	SA CHROME 88/33kV Substation	299499366	Meter_SA CHROME / FERROCHROME 33kV MP3 Bulk Load O	Online	319629087	SA CHROME / FERROCHROME 33kV MP2 Bulk Load Overhead Line	202105	-	25,983,898.73	-76.94	1	0	0	0	0
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC	Sub not Metered -> All Fdrs Metered	RUSTENBURG SMELTER 88/33kV Substation	299499367	Meter_Rustenberg CC City Smelters M/P 2	Online	100401316	RUSTENBURG SMELTER / CC CITY MP2 Bulk Load Overhead Line	202105	-	50,976,530.42	-180.77	1	0	0	0	0

Inathi Mpapa

From: Neo Mothibi <MothibNR@eskom.co.za>
Sent: 25 August 2021 09:12 AM
To: Meladi Botabota
Subject: RE: Load reduction feeders FBM for monthly trend.xlsx
Attachments: North West OU- Month to Month Losses Analysis per Feeder.xlsx

Good Morning Ma'am,

Please find attached as per request. Thanks

Neo Remofilwe Mothibi
Energy Balancing Analyst
Energy Trading
Customer Services
Mabe Park 1 Kgwebo Street Rustenburg
Tel +27 14 565 1102
Cell +27 82 814 3275
Mothibnr@eskom.co.za

From: Meladi Botabota <BotaboMR@eskom.co.za>
Sent: Wednesday, 25 August 2021 08:54
To: Neo Mothibi <MothibNR@eskom.co.za>
Subject: Load reduction feeders FBM for monthly trend.xlsx

Good morning doll

May you please send me July trend

I would like to understand if there is sales increment on the feeders that are now performing so that I can remove them or if its just luck,

Regards
Meladi Botabota



Feeder Description	April '20	May '20	June '20	July '20	Aug '20	Sep '20	Oct '20	Nov '20	Dec '20	Jan '21	Feb '21	Mar '21	Apr '21	May '21	June '21	July '21
Meter_ACP / AMPLATS 6.6kV MP3 Bulk Load Overhead Line	-254.76	-13.75	-100.36	-115.15	-66.4	-66.94	-60.75	-66.55	-328.37	-41.37	-69.85	-81.51	-43.96	-75.11	-67.06	-69.77
Meter_Amplats Incline M/P 1	-10	-10	-10	-10	-10	-10	-9.98	-10	-10	-10	-10	0	0	0	0	0
Meter_Amplats Paardekraal M/P 3	-10	-33.84	-10	-10	-10	-10	-10	-10	-29.49	-10	-10	0	0	0	0	0
Meter_Amplats Rustenburg Furnace M/P 3	25.11	23.49	2.11		-2.57	-15.34	-12.98	-6.52	-10.2	-7.74	-7.62	-11.58	9.61	-78.92	11.19	1.67
Meter_Amplats Rustenburg Plats M/P 2	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	50
Meter_Amplats Shaft M/P 3	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_Anglo Platinum Rustenburg Concentrator 88kV M/P1 1 11kV	49.33	58.35	56.89	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_ARMY CAMP / RAMATLABAMA 1 11KV Feeder MV Overhead Line	46.84	46.51	49.82	58.81	64.88	58.58	57.27	54.47	57.06	54.86	53.11	68.89	65.17	61.03	63.44	48.96
Meter_ARMY CAMP / TSETSE 1 11KV Feeder MV Overhead Line	26.43	42.5	44.45	45.6	49.11	42.18	40.17	44.39	40.49	45.73	43.1	56.93	57.45	46.32	51.78	48.22
Meter_AROLA-DWARSFONTEIN 11kV Overhead Line	47.78	0.07	21.55	64.49	41.57	18.88	35.6	34.29	-13.16	19.48	30.85	25.48	38.19	-8.8	38.86	37.88
Meter_AROLA-RIETFONTEIN 11kV Overhead Line	55.48	18.61	40.46	27.6	44.15	39.79	25.7	39.87	14.85	41.64	16.81	-23.78	51.66	19.29	38.56	37.4
Meter_AROLA-VLAKFONTEIN 11kV Overhead Line	33.31	4.27	32.19	23.44	29.5	38.55	27.38	28.44	12.98	46.11	8.82	0.16	51.65	70.08	17.74	-16.51
Meter_ASLAAGTE - MANYANE 1 11kV Feeder MV Overhead Line	36.36	-17.22	9.06	99.91	22.1	37.27	3.33	18.8	16.01	-9.31	23.12	65.2	45.87	34.93	31.24	26.73
Meter_ATAR TRACTION / SATS KIMBERLEY - MP1 132kV Bulk Load Overhead Line	-76.34	-172.37	30.61	-11.82	27.81	1.05	-23.44	-42.62	-59.82	-12.41	62.66	-23.9	18.15	-1.41	-2.78	16.75
Meter_Bafokeng / Ga-Luka 1 11kV Feeder Overhead Line	53.17	52.68	56.78	63.21	69.11	63.68	62.82	61.07	63.96	64.46	64.42	59.19	64.41	65.27	70.91	89.57
Meter_BAFOKENG 7 / IMPALA PLATINUM MP2 Bulk Load Overhead Line														2.21	2.33	-10.04
Meter_BAFOKENG 7 / KENAKO 1 11kV Feeder Overhead Line	67.14	62.04	67.34	73.52	77.31	72.61	72.76	71.51	72.61	56.4	69.85	70.9	72.71	73.43	74.55	73.97
Meter_BAFOKENG 7 / SEWERAGE 33kV Bulk Load Overhead Line	1.47	-10.79	10.18	-9.14	-11.79	-7.32	-17.92	-9.51	-20.64	-10.51	-0.3	-18.45	28.4	-18.64	17.98	-12.07
Meter_BAFOKENG 7 / THORISHO 1 11kV Feeder Overhead Line	12.69	4.2	17.97	34.28	38.5	31.81	23.9	26.31	18.92	19.32	17.89	13.37	24.03	23.54	39.54	37.61
Meter_BAKWENA / SILKAATSNEK11kV Overhead Line	11.37	-4.47	7.11	20.4	22.48	6.26	11.27	12.51	-0.68	4.15	-2.77	-4.41	1.08	-3.69	-148.5	-12.41
Meter_BAKWENA/BOSBOK 11kV Overhead Line	-1.09	-24.17	-0.97	13.9	16.2	4.28	10.61	13.6	-11.71	-12.32	-12.28	-7.88	11.89	11.16	-19.2	10.27
Meter_BAKWENA/BUSHVELD 11kV Overhead Line	51.83	55.24	67.13	58.63	58.26	53.27	57.67	60.86	57.53	63.11	64.61	59.11	62.61	71.22	68.18	61.01
Meter_BAKWENA/LUIPERD 11kV Overhead Line	22.43	28.07	39.29	37.35	34.9	28.51	32.05	25.29	19.55	90.57	45.8	42.31	37.08	28.7	37.52	40.65
Meter_BLOEMHOF TRACTION / SATS KIMBERLEY - MP1 132kV Bulk Load Overhead Line														0	0	0
Meter_BODERELO / CYNTON WIRE 11kV Feeder MV Overhead Line	1.28	-13.49														
Meter_BOIKHUTSO / LICHTENBURG TOWN COUNCIL MP3 11kV Bulk Load Overhead Line	-5.2	-11.07	-1.73	-18.41	-9.4	-21.29	-15.17	-14.86	68.42	-18.95	-1.45	-4.36	13.84	-4.56	12.54	-9.01
Meter_BOIKHUTSO / OPPASLAAGTE 1 11kV Feeder MV Overhead Line	29.05	29.61	35.99	44.62	26.74	35.37	35.03	70.17	15.84	19.65	49.26	-9.44	4.88	14.74	24.43	49.75
Meter_BOIKHUTSO / TOWNSHIP 1 11kV Feeder MV Overhead Line	-59.43	-58.11	-36.01	-13.65	-10.02	-15.84	-36.24	-33.92	-52.6	-45.08	-40.67	-45.71	-53.2	-42.12	43.91	-5.23
Meter_BOPHIRIMA / DWAALVLAKTE 1 22kV Feeder MV Overhead Line	-38.1	-9.3	19.2	6.08	5.93	1.76	-1.08	5.33	0.34	1.72	-9	-9.41	-0.28	59.27	56.45	1.35
Meter_BOPHIRIMA / MOROKANE 1 22kV Feeder MV Overhead Line	32.24	44.73	7.91	30.53	34.17	17.51	30.71	44.38	12.69	51.43	-52.36	123.17	82.43	68.98	56.68	66.81
Meter_BOPHIRIMA / NALEDI 1 22kV Feeder MV Overhead Line	-10	-9.69	-9.52	-10	-9.52	-9.6	-10	-10	-9.57	-9.56	-9.47	0	0	0	0.5	0.55
Meter_BOPHIRIMA / WATERLOO 1 22kV Feeder MV Overhead Line	27.08	-1.49	22.32	28.15	22.76	-2.45	49.55	20.02	14.57	17.79	22.58	-7.97	21.88	29.22	60.35	33.7
Meter_BOSCHKOPPIE / BAFOKENG RASIMONE MP4 Bulk Load Overhead Line	-18.25	13.3	-4.13	-13.69	-5.44	-10.14	-12.98	-6.84	-26.89	-13.7	-2.29	-11.8	10.88	-114.53	3.24	-3.35
Meter_BRAKSPRUIT RURAL / AFRIKANER 1 22kV Feeder MV Overhead Line	5.3	15.1	-11.9	26.71	45.35	29.2	25.2	40.38	-8.99	24.16	16.84	65	16.24	-3.52	16.27	32.34
Meter_BRAKSPRUIT RURAL / BEATRIX 1 22kV Feeder MV Overhead Line	32.07	-1.42	50.52	30.2	34.18	27.27	19.29	47.64	30.75	30.03	23.85	35.03	34.65	54.95	38.14	36.12
Meter_BRAKSPRUIT RURAL / PROTEA 1 22kV Feeder MV Overhead Line	14.92	15.57	13.86	33.17	38.75	19.36	27.82	23.26	8.78	15.96	15.39	27.82	37.67	19.34	24.53	31.93
Meter_BRAKSPRUIT RURAL / SCHOONSPRUIT 1 22kV Feeder MV Overhead Line	-7.36	0.78	23.89	80.23	37.74	32.51	35.32	29.49	-2.68	31.91	71.58	37.2	48.26	28.71	36.61	45.97
Meter_BRITS INDUSTRIES / MP1 88kV Bulk Load Overhead Line	-10.75	-25.32	9.49	-8.91	-4.49	-17.58	-16.26	-3.49	-11.73	-32.41	13.01	-11.42	8.96	-0.72	5.73	-0.96
Meter_BRITS MUNIC / LOCAL MUNICIPALITY OF MADIBENG 5 11kV Bulk Load Overhead Line	-17.06	-44.4	15.28	-4.24	-6.09	-12.94	-15.4	-2.28	-13.35	-22.97	5.41	-11.64	5.72	-1.31	4.18	-2.07
Meter_BRITS RURAL/BOKFONTEIN 11kV Overhead Line	-707.47	-857.24	8.26	74.9	55.84	21.67	36.44	32.92	28.97	30.45	21.59	-56.94	22.3	23.74	-4268.32	60.25
Meter_BRITS RURAL/RASHOOP 11kV Overhead Line	48.59	6.06	81.74	70.87	31.06	21.42	32.03	27.42	-3.9	14.17	19.48	-63.23	33.28	11.45	30.31	99.54
Meter_BRITS RURAL/SONOP 11kV Overhead Line	58.91	59.76	87.92	84.55	70.63	73.33	70.26	54.82	59.92	60.41	67.61	42.55	67.02	47.31	75.38	69.79
Meter_BRITS RURAL/UITVAL 11kV Overhead Line	22.75	15.15	81.96	72.26	31.03	28.61	36.38	30.66	-0.24	12.27	8.6	-88.42	31.98	32.37	37.18	65.37
Meter_BRITS RURAL/ZANDSLOOT 11kV Overhead Line	7.05	7.19	81.9	69.81	28.69	31.4	31.78	19.3	2.99	17	26.43	-74.91	24.59	21.16	30.47	42.29
Meter_BRITS/EAGLE QUARIES 11kV Overhead Line	1.34	25.58	78.1	77.15	21.21	15.55	23.8	20.41	2.19	-34.14	81.8	-70.24	21.4	23.46	30.47	10.85
Meter_BRITS-DE KROON 11kV Overhead Line	-8.2	0.69	80.4	68.4	15.57	7.21	15.84	4.69	0.44	34.74	7.69	-90.68	1.05	1.32	-42.34	12.94
Meter_BRITSKOP RURAL / BRITSKOP REPEATER 1 11kV Feeder MV Overhead Line	-5.38	-0.01	-6.07	11.17	11.84	10.4	10.87	19.77	-3.57	23.81	-0.62	-0.22	18.02	3.41	16.61	13.31
Meter_BRITSKOP RURAL / CHUBBY CHICKS 1 11kV Feeder MV Overhead Line	37.07	-4.46	20.07	23.11	26.52	8.43	36.96	32.29	8.04	28.25	0.96	3.8	28.67	12.67	6.44	23.56
Meter_BRITSKOP RURAL / KROMDRAAI 1 11kV Feeder MV Overhead Line	-31.96	22.1	26.75	23.86	33.58	29.88	26	28.82							19.11	-123.68
Meter_BRITSKOP RURAL / MOOIRIVIER 1 11kV Feeder MV Overhead Line	32.85	5.95	22.93	27.64	23.01	1.32	57.86	59.88	56.07	58.51	59.29	10.11	7.17	8.52	10.83	4.23
Meter_BRITSKOP RURAL / SCANDINAVIA 1 11kV Feeder MV Overhead Line	-0.33	1.89	10.23	13.31	43.41	34.18	47.91	36	-13.95	42.4	-9.34	36.79	-128.38	37.77	-14.96	55.52
Meter_BUFFELS EAST / BUFFELSFONTEIN GMC LTD - MP2 6.6kV Bulk Load Overhead Line	-9.91	-10	-9.82	-9.65	-9.83	-9.57	-10.51								0	0
Meter_BUFFELS EAST / CHEMWES (PTY) LTD MP5 6.6kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-10	-10	28.32	-19.18	5.18	-19.7	-20.85	13.19	5.47	5.32	1.05
Meter_BUFFELS MILL / BUFFELSFONTEIN GMC LTD - MP1 6.6kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_BUFFELS PIONEER / BUFFELSFONTEIN GMC LTD MP2 6.6kV Bulk Load Overhead Line	-595.64	-10	-10	-10	-10	-10	-10	29.07	-19.06	-114.44	68.98	4.32	13.63	3.53	-49.13	-32.66
Meter_CASH BUILD-BAR LOUNGE 11kV Overhead Line						174.95	-129.61	-93.73	-76.98	-89.15				280.22	-16.66	-53.09
Meter_CASH BUILD-BOSTON 11kV Overhead Line	35.82	42.24	53.4	50.08	43.34	29.23	23.65	34.64	10.04	22.32	3.54	21.19	24.79	23.73	5.47	22.12
Meter_CASH BUILD-RUSTENBURG 11kV Overhead Line	4.79	6.1	21.19	41.07	46.27	26.03	9.45	22.86	20.05	2.94	-1.03	6.89	11.34	6.91	33.97	-37.53
Meter_CENTRAL BUSSINESS DISTRICT / ECS1-SWS 1 11Kv Feeder MV Underground Cable	42.73	40.79	-33.73	-45.18	284.59	-13.52	21.27	41	24.4	33.64	34.11	38.03				
Meter_CENTRAL BUSSINESS DISTRICT / SEKAME RD FLATS-MS 1 11kV Feeder MV Underground Cable	-50.15	-71.51	-33.8	-35.34	51.9	45.87	-11270.7	44.08	48.51	29.34						
Meter_CENTRAL BUSSINESS DISTRICT / Tel Exchange CBD - SWS 1 11Kv Feeder MV Underground Cable	39.68	1.36	16.25	15.94	22.63	16.44	0.23	-21.17	-22.72	42.7	22.4	30.3	-13.54	31.89	-28.14	-29.75
Meter_CENTRAL BUSSINESS DISTRICT / Unit2 MS2-1 11Kv Feeder MV Underground Cable	51.37	47.17	50.86	62.42	58.33	55.97	76.25	70.37	51.74	61.27	56.21	36.16	58.73	65.02	61.54	53.38
Meter_CHARLES SHAFT / KENTRON 1 11kV Feeder MV Overhead Line	29.48	16.66	25.64	28.11	26.49	20.24	22.83	25.31	12.91	32.69	18.52	10.95	29.87	23.08	25.75	26.29
Meter_CHARLES SHAFT / KHUMA EXT9 1 11kV Feeder MV Overhead Line	65.66	68.56	71.14	73.15	76.5	72.43	70.11	68.3	67.26	66.82	66.78	72.03	72.26	69.55	73.4	76.83
Meter_Chrome Chemicals SA (PTY) LTD Rustenburg Plats M/P 1	-24.04	-42.9	19.1	-24.8	-29.13	-11.23	18.83	-23.81	-39.28	-15.27	-35.64	17.05	3.85	-13.06	3.07	-4.52
Meter_CHURCHILL SWS / CARNEY STR MS Feeder	7.05	-7.85	15.13	36.33	31.09	17.8	17.12	-32.83	-77.36	8.26	-25.69					
Meter_CHURCHILL SWS / SOUTHERN PALACE Feeder				-17.63	-5.16	-6.13	-2.41	7.63	-12.43	-5.59	-17.96	-9.04	-6.21	-7.35	-9.75	-12.64
Meter_CHURCHILL SWS / WILLIAM DICK Feeder	26.65	8.44	23.64	40.32	25.58	15.64	13.81	60.93	17.48	21.85	46.73	39.17	46.87	35.62	65.84	64.61
Meter_COLIGNY MUNIC / DITSOBOTLA COLIGNY MUNIC MP1 6.6kV Bulk Load Overhead Line														13.4	11.34	2
Meter_COLIGNY RURAL / BOSPOORT 1 11kV Feeder MV Overhead Line	13.17	14.11	25.13	22.72	26.31	24.05	19.56	18.56	11.37	15.03	22.17	-7.74	20.24	-12.12	26.16	8.07
Meter_COLIGNY RURAL / PUTFONTEIN 1 11kV Feeder MV Overhead Line	14	23.85	38.2	36.01	41.38	28.3	26.65	33.37	34.16	49.51	65.41	33.59	35.59	49.95	41.35	43.96
Meter_COLIGNY RURAL / ROOIPOORT 1 11kV Feeder MV Overhead Line	39.29	38.03	45.08	58.93	58.03	53.33	51.18	50.48	42.3	51.76	12.2	39.51	47.09	54.73	60.06	74.85
Meter_COLIGNY RURAL / TWEEBUFFELS 1 11kV Feeder MV Overhead Line	19.32	30.52	26.3	58.07	27.92	56.86	41.43	43.66	33.63	40.51	59.1	24.16	27.95	58.26	24.94	32.48
Meter_COLIGNY TRACTION / SATS KIMBERLEY MP1 132kV Bulk Load Overhead Line	-54	-96.19	23.8	-14.14	16.5	1.55	-26.61	-6.93	-38.64	15.56	-9.76	-13.49	5.92	-21.25	-75.33	3.51
Meter_CRAWTHORNE SUB - KCR44 Knoppies 11k Feeder MV Overhead Line																
Meter_CRESCENT TRACTION / SATS KIMBERLEY - MP1 88kV Bulk Load Overhead Line	-6.91	-187.67	33.39	6.54	8.48	1.38	-5.58	-51.64	-14.74	13.11	1.95	-18.28	19.32	0.36	-5.84	-1.49
Meter_DE KROON / PORTION 47 33kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-14.35	-10	-10	-10	-25.82	-4.06	0	0	0	0	0
Meter_DE WILDT TRACTION / SPOORNET - MP1 88kV Bulk Load Overhead Line														0	0	0

Meter_DELAREYVILLE MUNIC / ATAMELANG 1 11kV Feeder MV Overhead Line	25.24	22.88	25.86	43.71	42.59	38.57	34.87	32.38	27.98	6.51	33.05	23.16	44.14	26.01	36.51	45.31
Meter_DELAREYVILLE MUNIC / BARBERSPAN 1 22kV Feeder MV Overhead Line	34.24	43.56	32.85	40.29	44.97	41.09	38.3	42.2	36.59	-18.62	43.21	33.77	39.39	38.76	42.59	49.56
Meter_DELAREYVILLE MUNIC / BOSCHRAND 1 22kV Feeder MV Overhead Line	25.83	15.28	7.48	10.1	37.87	22.19	44.41	51.7	11.87	22.29	-12.21	26.95	26.15	28.35	30.45	7.84
Meter_DELAREYVILLE MUNIC / DELAREYVILLE MUNICIPALITY - MP1 11kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_DELAREYVILLE MUNIC / HARTSRIVIER 1 22kV Feeder MV Overhead Line	-3.72	-7.56	4.2	-11.9	-3.61	0.62	-15.13	7.32	-10.59	-13.38	15.52	-11.27	6.94	0.48	-9.44	-2.52
Meter_DELAREYVILLE MUNIC / MADIBOGO 1 22kV Feeder MV Overhead Line	31.94	32.96	39.58	31.15	39.35	36.37	37.16	37.59	35.39	35.54	34.59	34.71	39.35	40.55	35.11	41.81
Meter_DELAREYVILLE MUNIC / MIGDOL RURAL 1 22kV Feeder MV Overhead Line	48.82	44.75	55.05	56.35	59.25	52.72	51.81	56.1	35.03	50.63	2.71	53.31	49.48	35.12	46.07	47.68
Meter_DELAREYVILLE MUNIC / RAPULE 1 22kV Feeder MV Overhead Line	-31.24	43.33	4.91	16.37	37.33	20.76	24.54	52.14	19.89	37.11	-15.35	33.88	72.52	38.79	65.58	66.85
Meter_DELAREYVILLE MUNIC / ROOIWAL 1 22kV Feeder MV Overhead Line	44.04	45.23	49.05	52.97	54.54	51.73	48.56	48.74	48.91	43.24	54.42	50.71	51.23	52.17	56.48	58.62
Meter_DINORUTSHE / IKAKGELENG 1 22kV Feeder MV Overhead Line	71.63	73.8	70.89	71.09	74.37	75.71	75.77	73.46	74.39	74.99	69.5	70.96	66.21	76.18	71.24	78.8
Meter_DISANENG / DISANENG 1 11kV Feeder MV Overhead Line	38.01	35.94	34.26	35.52	44.23	38.61	40.21	33.44	40.44	35.2	40.11	23	35.48	40.59	40.73	45.95
Meter_DONALDSVALE / KINGS 1 11kV Feeder MV Overhead Line	61.27	66.72	34.09	75.55	40.82	27.47	43.77		82.73	84.5	83.87	81.67	83.09	82.42	87.4	84.11
Meter_Donaldsvale Sub - Bester 11kv MV Overhead Line	41.61	38.85	45.96	56.84	59.14	53.33	40.23	47.26	43.81	49.68	39.95	39.45	43.57	41.92	45.94	41.1
Meter_Donaldsvale Sub - Bonru 11kv MV Overhead Line	32.85	24.45	28.22	38.67	53.87	36.71	41.51	38.91	42.74	22.54	31.32	36.47	41.74	38.71	45.18	59.29
Meter_Donaldsvale Sub - Fire Brigade 11kv MV Overhead Line	75.99	78.26	79.8	85.04	77.77	76.12	80.04	79.26	78.38	91.51	79.5	81.58	81.6	67.57	79.33	63.76
Meter_Donaldsvale Sub - Gardens 11kv MV Overhead Line	64.24	64.87	64.45	71	73.41	69.09	70.02	68.43	67.03	67.12	65.63	67.78	67.67	66.01	68.5	69.3
Meter_Donaldsvale Sub - Industrial 11kv MV Overhead Line	-155.13	-109.19	-129.89	62.07	86.78	86.97	87.16	80.51	53.8	77.21	56.68	76.83	82.13	75.7	84.31	85.93
Meter_Donaldsvale Sub - Phokeng 11kv MV Overhead Line	70.39	72.84	74.38	76.1	72.43	59.17	54.89	65.61	-70.04	53.3	-40.19	42.68	53.38	47.77	59.82	54.57
Meter_Donaldsvale Sub - Sportveld 11kv MV Overhead Line	84.69	85.39	85.65	85.97	86.87	84.48	85.28	85.52	85.44	89.57	85.16	80.92	53.66	79.83	78.99	80.77
Meter_DONALDSVALE TRACTION / SPOORNET 88kV M/P1 Bulk Load Overhead Line	-33.22	-30.32				-6852.47							76.74	-85.24	9.39	-50.84
Meter_DORP-TLOU 11kV Overhead Line	87.13	84.21	88.14	89.38	88.72	89.15	88.91	87.42	87.83	89.12	88.61	87.97	87.43	88.72	88.55	88.76
Meter_DRIE RUITERS TRACTION / SATS KIMBERLEY - MP1 132kV Bulk Load Overhead Line	24.75	-165.99	29.57	3.3	-0.48	1.8	-14.88	-25.45	-17.96	2.54	14.97	-13.82	27.28	-21.5	8.1	-3.64
Meter_DROOGEKRAAL / BOSPOORT 1 11kV Feeder MV Overhead Line	19.26	7.69	-14.38	10.18	22.02	10.9	20.99	22.19	4.06	13.85	-1.14	-139.22	38.55	18.37	-89.19	-82.3
Meter_DROOGEKRAAL / WERDA 1 11kV Feeder MV Overhead Line	24.99	6.99	23.33	25.61	25.23	20.87	42.47	43.85	40.18	54.61	44.5	37.77	54.7	36.26	39.93	50.88
Meter_DUDFIELD / AFRISAM DUDFIELD 6.6kV MP3 Bulk Load Overhead Line	-10	-10	-10	-10	-10	-10	-10	-10	-35.87	-10	-10	0	0	0	0	0
Meter_EDWARDSDAM / CLAREMONT 1 22kV Feeder MV Overhead Line	25.95	12.87	9.2	21.77	17.97	16.05	26.58	48.72	4.9	-44.51	4.09	-0.48	22.13	31.27	8.33	1.31
Meter_EDWARDSDAM / DONEGAL 1 22kV Feeder MV Overhead Line	32.4	33.56	9.94	24.49	37.19	29.66	35.83	35.45	29.53	62.51	-47.95	-30.4	19.26	21.71	20.95	38.49
Meter_EDWARDSDAM / KADEBIS 1 22kV Feeder MV Overhead Line	28.59	26.89	27.6	25.81	35	30.1	32.15	31.55	23.08	10.61	22.92	42.57	32.84	30.53	34.5	28.24
Meter_EDWARDSDAM / MOLOPO 1 22kV Feeder MV Overhead Line	15.19	21.9	27.52	17.96	25.89	11.83	22.42	25.68	48.11	50.36	38.95	29.92	15.01	42.45	17.15	34.36
Meter_EDWARDSDAM / MORCA 1 22kV Feeder MV Overhead Line	36.64	41.42	49.86	52.05	55.64	47.99	53.84	47.39	21.02	61.47	46.47	37.71	63.44	53.87	56.31	56.46
Meter_EDWARDSDAM / PARADYS 1 22kV Feeder MV Overhead Line	13.51	44.08	17.16	32.88	28.6	21.16	2.04	17.87	6.88	32.22	-142.92	5.06	-21.11	16.94	11.92	11.19
Meter_EDWARDSDAM / VERGELEE 1 22kV Feeder MV Overhead Line	26.68	22.42	20.27	17.55	15.55	2.58	16.71	-5.99	6.95	35.21	21.54	40.63	-39.88	16.71	-12.57	15.16
Meter_EDWARDSDAM / WILDEBEES 1 22kV Feeder MV Overhead Line	20.09	19.08	-0.12	34.56	24.77	26.43	45.47	17.77	24.16	22.49	-23.73	27.87	26.07	10.65	9.11	73.38
Meter_EERSTELING TRACTION / SATS KIMBERLEY - MP1 132kV Bulk Load Overhead Line	-11.1	-34.59	-4.01	-1.17	15.76	-27.08	-14.14	0.94	-24.91	17.05	5.75	-21.73	31.92	-76.65	4.6	-4.1
Meter_ELAND 11kV CUSTOMER 1 Supply Overhead Line	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_ELANDSDRIFT-RONDALIA 11kV Overhead Line	16.48	11.13	38.49	42.54	36.27	31.65	26.06	18.8	18.54	18.93	5.03	25.15	44.08	18.02	28.15	23.21
Meter_ELANDSDRIFT-THARISA 11kV Overhead Line																
Meter_ELANDSDRIFT-UTOPIA 11kV Overhead Line	23.85	20.23	29.65	37.32	88.63	46.21	49.35	48.3	56.29	52.33	64.6	27.27	90.15	85.26	55.97	-20.87
Meter_ENSELSPRUIT TRACTION / SATS KIMBERLEY - MP1 88kV Bulk Load Overhead Line	0.27	-234.87			-6.82	5.42	-31.68	-2.39	-15.96	-27.98	16.74	-25.6	21.76	-5.6	3.43	-14.97
Meter_EXCARBO / TC SMELTERS MP 1 33kV Bulk Load Overhead Line	-10	-10	-10	-10	-283.42	-10	-10	-10	-10	-10	-10	0	0	0	-142.03	0
Meter_FERNDALE SUB - KRAAIPAN Feeder MV Overhead Line	13.12	15.79	12.62	-19.39	25.48	16.78	-18.92	17.51	14.79	24.07	28.78	53.55	66	50.49	22.67	34.12
Meter_FERNDALE SUB - RATLOU Feeder MV Overhead Line	42.14	41.58	43.76	-2.73	45.19	41.53	21.69	41.59	41.56	41.11	30.54	43.84	44.77	39.96	45.81	58.24
Meter_FERNDALE SUB - SETLAGOLE Feeder MV Overhead Line	13.64	13.21	18.68	-14.1	25.62	18.05	5.11	22.87	17.5	23.63	15.14	20.89	21.29	18.7	26.67	35.02
Meter_FERNDALE SUB - WOLWEHOEK Feeder MV Overhead Line	9.89	-110.61	-47.63	-34.2	-67.06	-77.24	-708.98	40.86	26.82	46.47	40.38	51.63	53.3	133.53	48.72	42.72
Meter_FRANK / MP2 33kV Bulk Load Overhead Line														0	0	
Meter_FRANS LOURENS / BOSKOP 1 11kV Feeder MV Overhead Line	7.16	0.68	-12.89	10.66	14.25	-10.7	15.78	-12.09	-17.76	15.35	3.96	-11.66	6.75	12.64	7.8	8.28
Meter_FRANS LOURENS / MUISKRAAL 1 11kV Feeder MV Overhead Line	3.44	-11.76	-17.62	-9.07	0.01	44.95	2.56	14.21	-27.92	2.16	-9.46	-11.46	14.06	-20.48	-22.88	3.1
Meter_FRANS LOURENS / POTCH 1 11kV Feeder MV Overhead Line	26.27	19.87	28.64	34.61	30.25	22.73	17.78	26.19	-34.91	22.36	17.07	65.05	-64.25	2.1	37.63	43.54
Meter_FREDERICKSTAD TRACTION / SATS KIMBERLEY MP1 44kV Bulk Load Overhead Line														-33.85	-32.17	47.56
Meter_FREEDOM PARK / KGOLOLESEGO 1 22kV Feeder MV Underground Cable	84.08	59.56	79.99	83.31	84.31	81.66	81.84	82.03	81.89	81.73	73.48	-42.41	62.71	63.21	69.79	74.52
Meter_FREEDOM PARK / WILDEBEES 1 22kV Feeder MV Underground Cable	-134.47	-124.4	-32.34	23.07	37.71	30.4	10.82	3.66	-114.59	-367.7	80.06	85.52	84.67	84.44	85.25	84.61
Meter_GAtIEP / SATS KIMBERLEY - MP1 132kV Bulk Load Overhead Line	-59.33	-64.13	18.77	-18.02	-0.29	11.44	-13.69	-7.42	-38.86	1.53	0.8	-15.53	6.79	30.46	-63.73	-5.59
Meter_GELUK RURAL/BETHANIE 11kV Overhead Line	51.32	48.39	63.15	59.19	54.94	53.88	52.05	50.43	46.52	47.21	50.54	48.21	55.62	53.02	53.7	58.85
Meter_GELUK RURAL/GRANITE 11kV Overhead Line	38.32	-10.33	37.17	23.87	23.02	34.88	46.36	19.57	3.85	13.15	22.38	32.45	68.76	18.07	28.47	19.55
Meter_GELUK RURAL/KAREE 11kV Overhead Line	35.11	33.72	42.77	52.87	66.18	60.49	60.9	59.37	52.64	56.87	51.35	70.74	65.72	52.72	67.3	65.68
Meter_GELUK RURAL/LOSPERFONTEIN 11kV Overhead Line	36.3	14.33	17.32	38.58	37.59	39.48	46.69	53.33	29.33	36.29	46.62	50.69	53.09	32.1	24.35	57.77
Meter_Genmin - Impala Platinum Shaft 16 M/P 2 Overhead Line	-26.04	-41.96	19.93	-19.86	-10.47	-5.65	-5.77	-2.19	-106.07	-25.85	12.31	-80.43	-61.79	-88.35	-59.18	-40.98
Meter_Genmin - Impala Platinum UG 2 M/P 1	-29.25	-908.54	62.62	-15.18	-10.62	-8.3	-9.78	-6.86	-15.17	-37.06	22.7	-8.7	3.68	-44.64	2.84	-9.86
Meter_GOLDEN BROWN BRICKS / GOLDEN BROWN BRICK AND TILE CO LTD MP1 2.2kV Bulk Load Overhead Line	-13.18	-130.9	0.26	-6.42	-5.64	-17.28	-24.97	-11.49	-14.27	-8.93	-9.39	-23.17	18.94	-0.7	16.99	27.9
Meter_Gopani Mine - Gopane	59.32	58.73	59.63	64	66.03	65.27	58.94	53.98	103.88	54.47	56.93	81.89	55.3	62.71	63.72	67.3
Meter_Gopani Mine - Khunotswana	66.34	66.87	62.49	67.22	69.66	67.58	66.48	64.71	61.84	61.15	59.84	61.93	35.63	62.46	66.54	67.31
Meter_Gopani Mine - Radikhudu	30.18	22.36	23.06	21.63	24.49	19.71	15.39	28.67	14.04	28.13	21.64	16.77	25.36	28.85	29.97	25.21
Meter_GOPANI MINE / DINOKANA 1 22kV Feeder MV Overhead Line	60.06	62.11	61.87	61.29	66.69	66.41	65.79	64.84	58.26	63.57	59.29	63.67	53.76	67.71	72.46	71.62
Meter_GOPANI MINE / MOTSWEDI 1 22kV Feeder MV Overhead Line	52.73	56.83	53.62	59.52	61.48	60.61	58.02	57.25	50.47	52.36	47.77	57.75	35.18	54.25	62.13	61.42
Meter_HALFPAD TRACTION / SATS KIMBERLEY MP1 132kV Bulk Load Overhead Line	-50.76	-35.55	10.02	-35.03	5.57	11.33	-18.31	-8.38	-30.81	-1.59	-3.93	-17.54	4.02	-11.28	-39.19	-3.73
Meter_HARTEBEESFONTEIN MUNIC / RENOSTERHOEK 1 11kV Feeder MV Overhead Line	-457.99	-595.73	-579.73	-566.91	-454.48	-575.84	-597.65	-540.11	-586.03	-408.95	-622.14	-622.95	-910.17	-497.45	-564.56	-651.58
Meter_HARTEBEESFONTEIN MUNIC / SABC HARTEBEESFONTEIN 1 11kV Feeder MV Overhead Line	-10.49	12.28	33.03	37.47	28.16	24.48	31.7	40.56	32.47	37.19	22.5	27.31	26.5	19.38	36.43	-61.8
Meter_HARTEBEESPOORTDAM / CITY OF TSHWANE METROPOLITAN MUNICIPALITY 33kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-8.37	-10	-10	-10	-10	-56.62	0	0	0		0
Meter_HAVELOCK / COETZERSDAM 1 22kV Feeder MV Overhead Line	17.16	1.16	-10.63	-17.27	16.26	12.7	30.81	21.7	18.85	-1.68	-30.56	-34.1	21.57	-38.6	-113.83	-25.66
Meter_HAVELOCK / GANYESA 1 22kV Feeder MV Overhead Line	35.94	36.45	37.99	40	49.79	44.39	40.39	-29.37	45.22	35.3	34.54	40.79	85.5	46.51	43.53	47.96
Meter_HAVELOCK / GUGU 1 22kV Feeder MV Overhead Line	30.13	21.36	23.98	25.53	34.05	29.14	27.8	8.75	-6.8	68.01	20.74	30.13	-29.68	25.29	35.94	32.29
Meter_HAVELOCK / HOUTKRAAL 1 22kV Feeder MV Overhead Line	-0.3	17.11	27.68	23.08	22.07	6.42	45	61.02	27.07	27.6	-368.75	-644.32	28.64	34	29.33	-8.85
Meter_HAVELOCK / MIDDELPAN 1 22kV Feeder MV Overhead Line	2.23	-20.99	-6.59	-12.14	9.89	5.1	25.24	28.36	23.96	23.95	-46.9	-45.95	-20.8	25.27	-6.43	2.96
Meter_HEKPOORT/DIE MOOT 11kV Overhead Line																
Meter_HEKPOORT/TSHEPO 11kV Overhead Line																
Meter_HENNOPS/RIVERSIDE1 11kV Overhead Line (Brits Red6)																
Meter_HENNOPS/VILLA 11kV Feeder Overhead Line																
Meter_HENWILL CHICKENS BULK / DW PARKER CHICKEN FARMS (PTY) LTD MP1 88kV Bulk Load Overhead Line	-6.5	-15.1	-4.48	-17.74	-7.58	-4.24	-19.37	-1.26	-18.41	-11.71	3.99	-15.11	-7.43	13.16	7.63	-5.75
Meter_HEUNINGVLEI / BONA BONA 1 22kV Feeder MV Overhead Line	35.77	37.33	36.32	31.04	44.01	38.98	43.87	38.23	45.16	44.84	11.36	36.03	39.42	51.74	42.72	43.66

Meter_HEUNINGVLEI / HEUNINGVLEI 1 22kV Feeder MV Overhead Line	34.55	30.48	35.17	30.91	43.72	34	38.15	37.73	34.47	30.37	22.28	33.76	47.95	42.03	38.02	39.58
Meter_HEUNINGVLEI / LOOPENG 1 22kV Feeder MV Overhead Line	30.49	30.08	29.61	21.57	33.03	29.37	33.44	32.77	29.51	25.32	11.92	29.2	28.85	32.73	30.85	37.39
Meter_HIBERNIA / MAKOEISPAN RURAL 1 11kV Feeder MV Overhead Line	28.37	14.85	30.21	33.93	45.63	25.79	36.85	42.61	26.04	37.49	20.15	22.14	52.15	35.75	39.18	35.08
Meter_HIBERNIA / RENOSTER 1 11kV Feeder MV Overhead Line	42.03	42.57	47.43	56.53	53.4	52.49	52.92	49.14	38.7	39.11	46.43	27.21				
Meter_IKAGENG / TLOKWE LOCAL MUN MP2 11kV Bulk Load Overhead Line	-2.52	-12.95	-4.01	-10.98	-8.36	-11.78	-15.78	-6.97	-13.84	-6.58	-10.51	-10.26	9.61	-3.56	6.28	-2.13
Meter_Impala Platinum Shaft 15 M/P 1	-25.39	-53.72	20.99	-14.98	-7.45	-11.97	-7.44	-0.73	-90.06	-17.72	0.67	-10.63	2.3	4.26	-0.9	-12.84
Meter_IMPALA PLATS / IMPALA MP 6 Bulk Load Overhead Line	-26.33	-22.11	12.06	-11.13	-5.98	-7.11	-11.74	-8.63	-5.95	-31.36	1.89	-8.32	4.59	3.95	8.35	-8.68
Meter_IMPERIAL RESERVE / GOVERNERS-MS 1 11kV Feeder MV Underground Cable															-80.86	-395.19
Meter_IMPERIAL RESERVE / IMPERIAL RESERVE-MS1 1 11kV Feeder MV Underground Cable	7.69	4.67	15.98	16.25	30.22	21.1	13.76	16.39	8.52	26.86	6.94	102.75	-8.65	-13.59	13.39	16.39
Meter_IMPERIAL RESERVE / IMPERIAL RESERVE-MS5 1 11kV Feeder MV Underground Cable	-498.96	-546.27	-414.95	-354.84	-219.84	-233.96	-301.02	-338.51	-517.59	-524.32	-538.95	-127.41				-39.62
Meter_INTERNATIONAL SCHOOL / MP1 11kV Bulk Load Overhead Line														-47.83	31.09	1.31
Meter_ITSOSENG RURAL / BLAAUWBANK 1 11kV Feeder MV Overhead Line	14.8	-14.76	3.24	8.78	37.14	17.1	33.52	35.56	9.15	35.88	39.29	39.97	62.46	40.04	-0.22	56.04
Meter_ITSOSENG RURAL / ITSOSENG TOWN 1 11kV Feeder MV Overhead Line	38.91	37.01	42.49	39.25	49.44	52.16	47.26	40.77	-78.58	35.74	6.38	34.33	39.91	38.52	48.29	42.29
Meter_ITSOSENG RURAL / SPRINGBOKPAN SILOS 1 11kV Feeder MV Overhead Line	22.1	60.4	64.13	73.15	72.28	72.81	71.36	68.07	73.73	64.91	59.44	70.04	68.67	55.56	73.58	73.82
Meter_ITSOSENG RURAL / THUSONG 1 11kV Feeder MV Overhead Line	43.03	38.71	47.56	56.28	57.07	57.41	-0.41	47.04	44.82	47.51	41.2	70.75	72.75	62.67	63.13	54.75
Meter_ITSOSENG RURAL / VERDWAAL 1 11kV Feeder MV Overhead Line	57.3	57.05	59.08	66.58	69.6	66.82	65.16	64.35	61.96	58.98	58.45	43.38	59.93	45.03	70.37	68.81
Meter_JAMES WATT CRESCENT / BARDEN TYRES MS 1 11kV Feeder MV Underground Cable	14.24	2.65	29.47	26.37	23.59	13.06	8.04	20.26	13.14	12.54	30.48	17.61	24.91	13.59	25.25	23.34
Meter_JAMES WATT CRESCENT / CHICKEN ABATTOIR 1 11kV Feeder MV Underground Cable														3.77	-5.45	-0.62
Meter_JAMES WATT CRESCENT / JAMES WATT-MS1 1 11kV Feeder MV Underground Cable	9.97	-17.68	7.32	34.42	21.56	9.56	18.3	32.14	-0.45	27.81	213.33	36.19	24.68	-10.42		
Meter_JOUBERTON / KLERKSDORP CITY COUNCIL MP1 11kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_KAALPUT / CORSICA 1 22kV Feeder MV Overhead Line	-3.26	-2.93	19.47	45.01	43.44	53.1	41.13	31.57	13.43	13.2	16.54	-18.8	-244.4	54.73	22.23	10.66
Meter_KAALPUT / GENOA 1 22kV Feeder MV Overhead Line	-5.31	-13.58	-6.86	17.15	66.8	9.67	22.1	10	-45.62	-17.76	-24.49	-20.65	30.11	-8.75	46.4	
Meter_KAALPUT / STELLA 1 22kV Feeder MV Overhead Line	26.01	6.25	29.05	49.47	31.51	31.18	39.43	22.49	-10.41	2.1	-22.16	68.38	-4.89	22.17	25.88	
Meter_KANA-BOSPOORT 22kV Overhead Line	-111.12	-86.75	-78.4	-61.19	-29.5	-65.51	-68.84	-70.28	-74.42	-40.78	-55.56	-81.33	-54.66	-25.79	-98.46	-57.11
Meter_KANA-MERITING 22kV Overhead Line	45.63	41.74	42.7	51.37	58.84	54.48	54.89	55.83	62.74	54.31	49.04	53.47	57.5	60.49	61.16	52.61
Meter_KANANA / BATHABILE 1 11kV Feeder MV Overhead Line	-103.62	28.61	39.05	49.63	57.31	52.44	48.11	46.32	33.21	42.04	33.81	45.12	46.2	67.79	79.25	80.43
Meter_KANANA / HIGH BASE 1 11kV Feeder MV Overhead Line	40.32	66.89	40.4	62.2	61.77	57.74	54.51	52.15	48.07	49.88	43.85	46.07	50.72	49.35	57.06	60.8
Meter_KANANA / KAGISO 1 11kV Feeder MV Overhead Line	51.81	52.74	57.33	60.69	66.1	63.71	61.23	59.53	69.28	56.93	72.08	59.68	59.33	11.18	64.53	66.59
Meter_KANANA / KHOTSO 1 11kV Feeder MV Overhead Line	-89.84	59.75	63.17	68.14	72.82	70.23	66.24	65.29	64.67	63.76	64.14	65.39	65.04	66.17	70.6	72.14
Meter_KANANA / LERATO 1 11kV Feeder MV Overhead Line	43.75	56.82	60.86	65.89	58.12	67.47	62.97	61.83	60.28	59.26	60.12	60.34	62.21	49.92	48.75	48.82
Meter_KANANA / MAKUONE 1 11kV Feeder MV Overhead Line	32.59	39.51	40.42	49.53	52.47	41.35	35.31	35.06	32.95	37.58	47.73	45.17	47.07	48.41	51.58	57.54
Meter_KANANA / VAAL MASERU 1 11kV Feeder MV Overhead Line	63.69	41.5	46.84	54.56	61.07	56.27	51.94	51.02	48.48	49.06	48.48	49.49	50.39	67.79	37.97	64.3
Meter_KATBOS / KINKELSPRUIT 1 11kV Feeder MV Overhead Line	-6.35	-10.42	8.83	12.24	4.26	-3.54	-12.83	19.16	-103.42	-59.69	-143.95	-114.74	5.2	-35.57	-14.1	9.82
Meter_KATBOS / PALMIET 1 11kV Feeder MV Overhead Line	0.51	75.9	13.21	26.08	17.72	16.04	2.98	14.97	8.58	15.88	43.43	-7	19.84	12.2	12.12	12.63
Meter_KAYTOO / 11kV MP3 Bulk Load Overhead Line	-22.84	-8.66	8.27	-14.93	-6.05	-5.87	-15.18	-8.99	-12.22	-17.01	5.81	-10.57	5.95	0.88	0.75	-6.59
Meter_KGETLENG RIVER / MUNIC 11kV Feeder MV Overhead Line				-10	-10	-10	-10	-10	-10	-10	-10	0	-49.64	-380.94	0	0
Meter_KGETLENG RIVER-EAGLES PRIDE 22kV Feeder Overhead Line	25.46	17.47	24.07	24.71	29.22	25.03	47.36	5.87	13.48	25.58	22.53	11.91	-1.3	34.09	18.1	29.06
Meter_KGETLENG RIVER-GOEDEHOOP 22kV Overhead Line	-8.34	8.65	-6.34	21.45	8.66	-107.62	-117.79	-1.79	-19.21	-9.05	8.17	-13.28	-16.43	-20.36	12.63	2.97
Meter_KGETLENG RIVER-METZ 11kV Overhead Line	5.56	-11.04	0.03	13.49	12.26	13.04	-3.53	-6.76	-17.48	1.99	76.87	-7.71	-58.17	-16.59	-133.27	-57.21
Meter_KGETLENG RIVER-REAGILE 11kV Overhead Line	72.63	71.88	72.67	77.45	79.75	79.3	77.4	76.09	76.11	80.42	75.25	75.56	72.25	79.78	70.14	79.7
Meter_KGETLENG RIVER-SKILPAD 22kV Overhead Line	37.21	13.36	29.12	37.44	45.12	58.31	56.25	56.23	42.52	52.53	24.61	42.83	53.3	46.05	30.01	33.11
Meter_KGETLENG RIVER-TAFELKOP 22kV Overhead Line	42.13	-11.05	43.91	41.15	58.35	49.3	67.81	52.59	31.61	65.18	55.89	5.58	31.12	-2.84	92.15	57.87
Meter_KHUMA / BORAK 1 11kV Feeder MV Overhead Line	54.7	57.33	61.35	66.98	69.92	66.54	63.74	60.56	56.62	58.22	60.33	60.33	61.91	63.92	72.12	74.05
Meter_KHUMA / HOZTELL 1 11kV Feeder MV Overhead Line	54.6	56.91	60.85	64.82	69.06	65.28	64.86	59.59	56.76	57.89	57.13	58.64	59.5	62.51	66.83	70.69
Meter_KHUMA / LEEUW 1 11kV Feeder MV Overhead Line	57.82	61.23	65.78	68.89	73.06	70.97	65.78	64.05	62.31	61.07	65.5	62.88	61.5	65.26	70.77	74.23
Meter_KHUMA / MALKOETSPRUIT 1 11kV Feeder MV Overhead Line	2.46	29.52	-10.7	23.62	26.31	36.57	81.6	39.57	-59.73	20.3	19.94	26.38	-2.94	1.98	27.54	
Meter_KHUMA / MHLANGA 1 11kV Feeder MV Overhead Line	63.35	67.66	67.01	72.95	74.37	72.69	77.62	68.31	55.55	63.77	63.96	66.17	65.06	78.37	73.24	75.96
Meter_KHUMA / MOKGETI 1 11kV Feeder MV Overhead Line	54.35	56.12	60.06	65.81	69.28	64.77	61.07	60.25	54.21	56.92	53.36	58.92	59.44	40.1	66.2	69.94
Meter_KHUMA / PARKS 1 11kV Feeder MV Overhead Line	49.94	56.63	62.6	67.94	70.44	66.88	65.26	58.5	58.1	57.23	55.26	57.69	58.78	61.85	68.56	71.81
Meter_KHUMA / UTLWAN 1 11kV Feeder MV Overhead Line	51.6	53.74	59.68	65.74	70.21	64.85	62.75	57.16	57.23	53.66	65.13	57.74	57.34	61.68	66.85	70.15
Meter_KIRSTENBOSCH / ELIZE -ANN MS 1 11kV Feeder MV Underground Cable					-196.94	-315.8	-262.93	-271.37	-769.55	-168.66	-1071.39	-166.7				
Meter_KIRSTENBOSCH / KIRSTENBOSCH-MS19-7 1 11kV Feeder MV Underground Cable	52.5	35.92	32.46	65.26	61.35	42.59	26.81	9.45	40.7	30.98	-33.67	16.72	32.63	-16.21	28.11	53.25
Meter_KLERKSDORP MUNIC / KLERKSDORP CITY COUNCIL MP3 11kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_KLERKSDORP NORTH / KLERKSDORP CITY COUNCIL MP1 11kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-10	-10	-10	-17.93	-10	-10	0	0	0	0	0
Meter_KLERKSDORP TRACTION / TRANSNET FREIGHT RAIL MP1 88kV Bulk Load Overhead Line	-41.47	-546.68	-123.69	-74.8	-377.72							-11.87	27.35	-8.92	9.02	-7.09
Meter_KLERKSDORP WEST / KLERKSDORP CITY COUNCIL MP3 11kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_KLIPDRIFT TRACTION / SATS KIMBERLEY SECTION - MP1 88kV Bulk Load Overhead Line	-10.45	-166.75	32.52	6.54	-16.29	-17.78	-6.73	0.49	-13.03	-53.89	11.4	-18.96	23.54	-7.36	3.72	7.44
Meter_KLIPFONTEIN / BRITTEN 1 22kV Feeder MV Overhead Line	15.1	9.8	85.09	34.31	25.74	27.01	24.13	23.56	10.97	26.74	7.04	-60.48	23.59	33.44	19.2	14.92
Meter_KLIPFONTEIN / DIGGERS 1 22kV Feeder MV Overhead Line	6.95	-38.99	-6.01	36.55	57.01	19.88	34.35	17.98	-19.95	5.47	8.14	-16.21	-29.18	0.41	-6.1	-1.62
Meter_KLIPFONTEIN / MOOIPLAAS 1 22kV Feeder MV Overhead Line	21.21	-5.01	35.56	50.53	31.35	26.21	86.73	13.67	27.64	23.9	31.33	19.99	34.65	-9.02	26.86	21.89
Meter_KLIPFONTEIN RURAL / BOITUMELONG 1 11kV Feeder MV Overhead Line	71.18	55.21	60.11	67.98	74.77	73.09	80	80.86	78.21	72.17	68.36	72.55	73.81	69.71	66.74	72.13
Meter_KLIPFONTEIN RURAL / COVERDALE 1 11kV Feeder MV Overhead Line	55.17	56.59	60.45	66.37	69.92	65.63	64.13	61.97	58.7	60.4	65.14	60.97	62.55	63.65	66.44	68.33
Meter_KLIPFONTEIN RURAL / GLASGOW 1 11kV Feeder MV Overhead Line																
Meter_KLIPFONTEIN RURAL / KALKPOORT 1 (CR Section) 22kV Feeder MV Overhead Line	-1.82	-77.74	10.22	5.12	6	9.09	12.11	3.13	-36.89	-3.16	22.01	-28.08	-2.25	-15.94	-16.05	21.46
Meter_KLIPFONTEIN RURAL / KINGSWOOD 1 22kV Feeder MV Overhead Line	34.55	22.01	38.22	38.81	33.32	26.04	31.72	52.92	24.35	31.1	44.76	17.05	26.96	380.56	-254.98	50.72
Meter_KOEKEMOER TRACTION / SATS KIMBERLEY - MP1 88kV Bulk Load Overhead Line														0	0	0
Meter_KROONDAL CHROME / BRONNE 11kV MP1 Bulk Load Overhead Line														0		0
Meter_Kroondal Platinum Aquarius M/P 1	-22.93	-7	-1.38	-2	-10.65	-0.75	-13.61	-9.6	-14.38	-12.49	5.91	-11.07	6.89	3.71	0.26	-7.48
Meter_LAEZONIA/CHAD 11kV Overhead Line																
Meter_LAEZONIA/DIMAKATSO 1 11kV Overhead Line																
Meter_LAEZONIA/GEM 11kV Overhead Line																
Meter_LAEZONIA/KARP 1 11kV Feeder MV Overhead Line																
Meter_LAEZONIA/PEACH 1 11kV Feeder Overhead Line																
Meter_LEEUBOS / SATS KIMBERLEY - MP1 132kV Bulk Load Overhead Line	6.77	-74.66	22.54	11.76	-52.44	-4.95	8.65	-75.54			27.25	-50.03	46.83	-70.2	-273.89	0
Meter_LEEUDORINGSTAD MUNIC / KGAKALA 1 11kV Feeder MV Overhead Line	-53.82	-39.85	-42.59	-39.49	-27.88	-48.3	-45.79	-54.2	20.28	-65.01	-59.55	-62.13	-49.88	-45.95	-30.79	-27.96
Meter_LEEUDORINGSTAD MUNIC / KOEDOESDRAAI 1 11kV Feeder MV Overhead Line	0.4	12.73	8.3	12.87	21.34	7.65	12.03	18.78	-72.13	13.96	4.65	7.09	11.59	16.19	12.2	17.64
Meter_LEEUDORINGSTAD MUNIC / LEEUDOORINGSTAD MUNICIPALITY MP1 11kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_LEEUDORINGSTAD MUNIC / UITKYK 1 11kV Feeder MV Overhead Line	45.68	57.17	53.08	44	50.46	34.57	47.36	36.35	34.4	45.63	8.35	50.87	48.04	66.93	41.87	9.11
Meter_LEEUDORINGSTAD MUNIC / WITPOORT 1 11kV Feeder MV Overhead Line	21.87	31.52	28.36	31.1	31.35	24.01	25.63	-63.42	23.65	29.89	-30.49	27.68	25.05	31.62	29.01	46.01

Meter_LEEUDORINGSTAD TRACTION / SATS KIMBERLEY - MP1 132kV Bulk Load Overhead Line	-15.8	-294.55	40.62	6.85	12.77	-0.65	-20.54	-15.54	-14.22	-3.6	-31.61	-12.29	-35.62	48.51	7.28	-3.91
Meter_LEEUFONTEIN RURAL / GREYLINGSDRIFT 1 22kV Feeder MV Overhead Line	38.94	-138.93	35.68	40.39	52.38	42.08	39.04	43.18	46.88	41.83	41.1	38.45	46.12	47.22	47.83	46.91
Meter_LEEUFONTEIN RURAL / KAREEPAN 1 22kV Feeder MV Overhead Line																
Meter_LEEUFONTEIN RURAL / MIETJIESDOORN 1 22kV Feeder MV Overhead Line	46.85	20.59	35.54	41.58	49.83	35.47	45.73	38.69	15.63	52.39	70.48	21.14	32.45	91.53	51.82	7.64
Meter_LEEUFONTEIN RURAL / STRYDPOORT 1 22kV Feeder MV Overhead Line	27.27	20.36	32.04	33.69	42.02	34.53	25.63	30.68	27.64	4.68	22	26.55	49.33	55.18	21.15	17.93
Meter_LEEUFONTEIN RURAL / TROTSVILLE 1 22kV Feeder MV Overhead Line	15.18	16.17	14.5	16.44	23.26	12.94	18.76	-3.13	16.5	14.92	-2.77	17.66	19.28	18.9	20.99	27.31
Meter_LEFKO/AMANZI 11kV Overhead Line	-149.12	-162.06	-91.77	37.84	-55.07	-201.75	-76.17	-101.76	-200.42	-192.95	-119.67	-138.34	-85.56	-84.32	-106.94	-119.3
Meter_LEFKO/CASHAN 11kV Overhead Line	33.49	-2.86	43.32	52.26	100.94	40.01	44.05	46.11	39.62	44.53	50.43	51.58	67.13	53	65.85	56.44
Meter_LEFKO/MAROELA 11kV Overhead Line	-176.1	-176.96	-173.99	-182.98	-156.85	-147	-139.47	-154.52	-348.78	-270.09	-236.19	-187.44				-233.02
Meter_LEFKO/SIELING 11kV	12.97	-4.79	-63.34	-105.05	13.65	17.46	9.42	12.3	-9.6	2.16	-3.67	-2.77	11.15	13.28	-39.23	-7.23
Meter_LELOKO/CARIBBEAN BEACH 11kV Overhead Line	-12.12	-34.69	-12.48	-13.39	-14.27	-23.65	-17.17	-9.95	-23.63	-8.78	-21.92	-28.66	-9.75	-95.19	-10.19	-0.26
Meter_LEOPARD PARK / BESSEMER RMU 1 11kV Feeder MV Underground Cable	34.29	15.5	37.01	-58.23	-45.66	-78.97	-38.01	-23.88	-44.47	-27.38	-55.85	-74.09	-2230.32	-18.59	-39.48	-352.45
Meter_LEOPARD PARK / EAST GOLF COURSE-MS8 1 11kV Feeder MV Underground Cable	-50.13	-23.53	-9.24	12.26	32.04	5.77	32.57	-48.06	-351.71	-106.78	-242.56	-174.62	-39.59	-26.66	-74.84	65.59
Meter_LEOPARD PARK / GOLF COURSE-MS9 1 11kV Feeder MV Underground Cable	66.95	59.38	64.53	32.8	42.42	42.93	63.04	62.95	54.07	14.05	0.37	-65.01	-92.34	38.96	-14.58	67.14
Meter_LEOPARD PARK / SIGNAL HILL 1 11kV Feeder MV Overhead Line	59.05	61.33	64.61	71.57	72.9	68.35	68.22	-439.19	60.42	64.81	57.68				70.56	73.08
Meter_LERATO / NTSWELETSOKU 1 11kV Feeder MV Overhead Line	1.61	43.8	47.3	43.45	46.89	50.49	51.21	56.35	55.19	56.64	54.14	60.57	61	-39.55	-118.77	54.79
Meter_LERATO / UNIT ONE 1 11kV Feeder MV Overhead Line	41.66	41.85	46.92	49.62	54.92	54.18	49.59	47.5	44.39	48.43	32.91	45.45	50.23	44.96	55.58	57.93
Meter_LERATO / UNIT ONE EXTENSION 1 11kV Feeder MV Overhead Line	67.36	69.02	72.29	65.31	76.32	73.02	71.7	-22.6	55.03	61.8	57.58					
Meter_LERATO / UNIT TWO 1 11kV Feeder MV Overhead Line	44.39	46.12	47.6	49.63	-30.19	32.57	41.99	46.73								
Meter_LETHABONG / BOJANALA 1 22kV FEEDER										-48.51	-4.39	5.37	2.73	7.42	3.58	5.57
Meter_LETHLABILE / TOWN 88kV Feeder Bulk Load Overhead Line	-87.38	-136.24	-96.02	-124.64	-148.85	-142.25	-118.42	-120.26	-117.04	-80.4	-76.94	-86.4	-47.53	-100.61	73.32	-67
Meter_LICHTENBURG MUNIC / LICHTENBURG MUNICIPALITY MP1 11kV Bulk Load Overhead Line																
Meter_LICHTENBURG MUNIC / LICHTENBURG MUNICIPALITY MP2 11kV Bulk Load Overhead Line	-64	-25.94	0.82	-3.04	-7.45	-14.42	-18.83	-4.65	-13.56	-12.72	-9.47	-18.7	1.82	2.36	5.7	3.93
Meter_LICHTENBURG TRACTION / SATS KIMBERLEY MP1 88kV Bulk Load Overhead Line	-44.61	-107.59	33.73	6.71	-16.27	6.97	-26.79	-9.37	-33.07	3.38	4.88	0.4	12.19	-19.38	-62.29	-12.85
Meter_LOCO / SPOORNET - MP1 11kV Bulk Load Overhead Line														-6.45	3.14	2.87
Meter_LOMOND / ATOMIC ENERGY CORP 11kV Bulk Load Overhead Line	-10.84	-16.41	-6.19	-10.32	-7.63	-8.42	-8.75	-10.68	-13.06	-9.59	-8.12	-8.48	10.22	-5.73	5.04	-4.41
Meter_Lonmin Karee Plats M/P 1	-20.84	11.49	-4.93		-3.73	-9.52	-10.59	-8.59	-14.46	-17.95	-2.18	-16.95	7.18	-9546.55	0.52	-6.34
Meter_Lonmin Western Plats M/P1 1 88kV	-19.84	12.38	-3.1	-20.08	-6.23	-17.28	-0.37	-8.25	-21.47	-8.23	-3.51	-9.11	4.93	5.57	-0.24	-4.41
Meter_LONMIN WESTERN PLATS MIDDELKRAAL M/P 1 6.6kV	-24.85	37.45	-8.98	-15.44	-7.3	-7.82	-11.96	-10.48	-45.96	-6.99	-8.16	-12.77	6.64	7.31	-0.05	-7.94
Meter_LOOPSPRUIT RURAL / ELANDSHEUWEL 1 11kV Feeder MV Overhead Line	23.7	9.04	37.64	36.8	25.97	35.17	19.4	33.27	-0.9	24.85	51.63	32.14	-21.08	26.24	3.36	-1.51
Meter_LOOPSPRUIT RURAL / KLIPDRIFT 1 11kV Feeder MV Overhead Line	-3.05	-15.76	-10.73	8.35	-5.78	-50.13	-10.27	6.97	-6.11	11.5	-3.81	-8.11	1.02	-13.27	-26.49	-60.18
Meter_LOOPSPRUIT RURAL / MOOIRIVIER 1 11kV Feeder MV Overhead Line	9.52	1.76	20.14	24.87	23.47	20.26	21.63	30.89	10.31	2.87	6.11	9.69	17.77	16.37	20.29	-3.67
Meter_LOOPSPRUIT RURAL / VAAL 1 11kV Feeder MV Overhead Line	26.8	17.18	26.41	14.29	34.19	30.16	36.6	35.52	20.08	53.5	19.58	18.29	-21.65	56.46	-7.91	-13
Meter_LOOPSPRUIT RURAL / WELGEBOOM 1 11kV Feeder MV Overhead Line	4.32	8.73	15.63	32	21.77	-32.24	12.87	19.62	22.35	17	1.32	12.01	-8.72	-52.21	66.46	12.61
Meter_LOSBERG TRACTION / SATS KIMBERLEY - MP1 88kV Bulk Load Overhead Line	-10.43	-161.57	30.63	10.56	-12.08	-1.14	-15.15	-7.78	-16.49	-18.89	10.81	-16.59	19.4	-7.04	4.86	-6.2
Meter_LOTHLAKANE / CHIEF JOSEPH 1 11kV Feeder MV Overhead Line	-35.9	-17.84	-17	-5.08	9.49	0.55	-4.87	-2.81	-19.8	-10.29	-17.06	-13.94	-4.41	-1.8	4.23	21.15
Meter_LOTHLAKANE / MATHE VILLAGE 1 11kV Feeder MV Overhead Line	79.53	81.12	81.71	83.2	83.39	82.84	81.8	79.72	81.71	84.15	83.11	79.8	82.07	81.92	83.37	84.08
Meter_LOVEDALE / BLUE CIRCLE CEMENT PTY LTD MP1 3.3kV Bulk Load Overhead Line	-16.43	-10	-10	-10	-10	-10	-10	-10	-10	78.94	-15.74	0	0	0	0	0
Meter_LYKSO / BEGINSELSPAN 1 22kV Feeder MV Overhead Line	18.6	-11.64	15.63	6.61	38.73	33.37	39.3	44.98	33.99	42.21	-22.66	-9.79	37.52	33.19	21.4	-2.43
Meter_LYKSO / CASSEL 1 22kV Feeder MV Overhead Line	23.5	30.64	31.73	28.59	36.48	29.75	43.29	35.97	30.81	27.83	14.31	13.54	27.58	33.31	28.99	33.16
Meter_LYKSO / DITHAKONG 1 22kV Feeder MV Overhead Line	-2.82	3.43	-4.46	-6.82	14.07	1.09	11.46	29.37	11.54	6.49	-4.29	6.36	8.36	-3.23	9.68	10.19
Meter_LYKSO / LAURIKA 1 22kV Feeder MV Overhead Line	-64.34	-31.97	-39.01	-31.99	1.3	-5.26	4.83	18.93	-6.71	-18.49	-362.68	-168.09	-45.4	-19.38	4.38	-23.29
Meter_MACHAVIE TRACTION / SATS KIMBERLEY - MP1 88kV Bulk Load Overhead Line	-10.61	-126.07	20.01	4.83	10.3	-9.58	-5.77	-26.18	-16.54	7.19	-35.28	-16.6	30.41	-6.28	0.56	4.46
Meter_MAFIKENG MAIN / MOSIANE PARK 1 11kV Feeder MV Overhead Line				-48	-43.07	-47.21	26.47									
Meter_MAFIKENG MAIN BLOCKHOUSE / MAJEMANTSHO 1 11kV Feeder MV Overhead Line	45.83	41.81	49.72	63.55	65.19	61.82	61.73	59.78	61.18	59.12	57.48	57.04	58.3	60.84	57.15	58.95
Meter_MAFIKENG MAIN BLOCKHOUSE / SIGNAL HILL 1 11kV Feeder MV Overhead Line	56.55	58.5	60.49	65.13	70.11	65.88	-573.49	56.21	57.46	58.22						
Meter_MAGONARE PARK / BNDC FLATS RMU 1 11kV Feeder MV Underground Cable	50.75	49.97	57.86	33.7	28.68	21.97	19.12	26.46	23.8	24.26	32.74	20.63	46.53	29.85	35.03	23.63
Meter_MAGONARE PARK / MAGONARE-MS3-4 1 11kV Feeder MV Underground Cable	25.37	12.53	20.49	25.39	31.85	22.26	29.49	19.06	-34.21	-56.1	-36.4	-59.3	-20.45	-6.55	6.02	7.94
Meter_MAGONARE PARK / MAGONARE-MS6-1 1 11kV Feeder MV Underground Cable	53.38	47.66	50.12	59.42	60.36	55.19	58.25	48.25	35.08	45.95	57.89	40.34	27.71	55.95	55.36	73.1
Meter_MAGONARE PARK / MAGONARE-MS6-6 1 11kV Feeder MV Underground Cable	-17.51	-32.64	-82.27	-83.66	-45.09	-35.7	-26.98	-10.63	-6.79	-3.97	5.06	-11.25	-52.48	-34.94	-49.83	-47.18
Meter_MAGOPELA / CHOSENG 1 22kV Feeder MV Overhead Line	66.56	66.35	39.52	33.13	54.09	53.06	50.86	50.01	37.51	33.82	34.49	26.46	35.11	49.25	14.45	64.32
Meter_MAGOPELA / LOKALENG 1 22kV Feeder MV Overhead Line	22.94	28.62	26.28	48.34	37.07	39.3	36.39	43.05	20.25	31.49	29.34	41.15	36.16	35.3	48.51	43.4
Meter_MAGOPELA / MODIMONG 1 22kV Feeder MV Overhead Line	35.18	35.5	36.58	22.63	46.03	41.64	40.06	38.89	38.49	34.06	37.02	21.96	35.58	36.67	40.95	45.98
Meter_MAGOPELA / Pudimoe fdr 22kV Feeder MV Overhead Line	12.93	-1.93	-0.72	8.84	12.42	8.14	50.16	59.56	37.96	40.61	41.28	-57.04	46.23	79.49	83.63	74.49
Meter_MAJEDIA - DIAMOND MINE 1 22kV Feeder MV Overhead Line																
Meter_MAKOKSKRAAL RURAL / OMEGA 1 11kV Feeder MV Overhead Line	-11.47	46.34	10.13	31.87	37.74	32.51	48.98	44.49	52.96	-15.3	46.45	14.52	34.2	-20.38	-184.4	28.85
Meter_MAKOKSKRAAL RURAL / RATSEGAI 1 11kV Feeder MV Overhead Line	-0.71	-54.5	21.6	34.7	40.69	18.52	34.05	29.12	-12.35	34.64	56.44	3.17	6.63	10.69	-71.41	3.96
Meter_MAKOKSKRAAL TRACTION / SATS KIMBERLEY MP1 132kV Bulk Load Overhead Line	-2.02	30.62	-16.85	-56.36	8.12	3.42	-17.89	-8.41	-39.77	6.13	-3.15	-14.28	3.72	-15.96	-60.28	15.44
Meter_MAKUONE / HIGH BASE 1 11kV Feeder MV Underground Cable	59.04	59.56	64.4	68.87	73.59	76.56	70.28	69.02	67.62	69.01	68.06	68.81	68.21	66.82	-109.11	74.69
Meter_MAKUONE / OLD TAXI 1 11kV Feeder MV Overhead Line	55.02	56.47	61.7	66.48	70.83	68.15	64.53	62.7	61.25	60.08	58.96	60.8	61.1	73.37	65.35	61.6
Meter_MAKUONE / POLICE STATION 1 11kV Feeder MV Overhead Line	22	22.81	33.87	41.46	45.55	40.95	29.73	30.12	19.16	24.8	19.96	11.77	29.07	53.78	37.61	5.6
Meter_MAKUONE / VAAL REEFS 1 11kV Feeder MV Underground Cable	35.59	38.16	48.54	57.27	64.27	61.85	56.69	50.14	50.83	48.23	50.01	50.1	52.03	54.53	62.35	67.88
Meter_MAKWASSIE TRACTION / SATS KIMBERLEY - MP1 132kV Bulk Load Overhead Line	-13.67	-114.87	17.66	6.48	-0.36	-7.94	-13.31	-16.68	-16.51	-8.58	10.65	-17.29	28.65	-27.22	5.34	-2.75
Meter_MANYA / MASEKENG 1 11kV Feeder MV Overhead Line	44.65	54.41	61.02	66.82	71.02	65.81	61.07	56.85	58.35	-26.23	58.55	60.1	60.38	-45.72	64.26	72.52
Meter_MANYA / PARKE 1 11kV Feeder MV Overhead Line	55.91	58.8	63.92	68.83	73.59	71.6	68.07	66.48	65.96	64.85	64.03	64.9	65.83	63.93	71.85	72.97
Meter_MANYA / RESERVOIRS 1 11kV Feeder MV Overhead Line	32.75	55.71	34.72	58.31	68.05	68.82	63.86	16.04	39.06	42.38	45.75	61.56	31.15	51.3	58.36	62.88
Meter_MANYA / SPOOR 1 11kV Feeder MV Overhead Line	46.64	48.64	52.42	60.89	66.57	64.19	61.65	59.28	57.44	55.86	54.1	55.21	56.42	39.72	63.89	64.86
Meter_MANYANE / IVORY TREE LODGE 11kV MP1 Bulk Load Overhead Line														5.14	4.15	
Meter_MANYANE-DORP 11kV Overhead Line	44.54	52.27	58.37	39.26	-183.09	62.55	60.09	62.17				55.16	48.17	59.23	63.49	61.81
Meter_MANYANE-SANDFONTEIN 11kV Overhead Line	70.54	73.17	74.64	74.99	75.75	71.56	67.14	69.77	35.78	71.29	72.06	70.7	70.66	72.33	74.96	75.13
Meter_MANYANE-SAULSPOORT 11kV Overhead Line	56.15	56.95	58.94	68.68	72.61	62.12	64.28	64.91	67.19	65.27	63.97	63.43	66.57	65.87	68.59	68.81
Meter_MANYANE-UNIT 4 & 5 11kV Overhead Line	83.54	84.65	86.65	84.88	77.03	77.03	80.16	83.01								
Meter_MANYANE-UNIT 4 & 5 11kV Overhead Line	83.54	84.65	86.65	84.88	77.03	77.03	80.16	83.01								
Meter_MAREETSANE / BATHO BATHO 1 22kV Feeder MV Overhead Line	43.1	45.43	46.07	43.52	55.7	52.82	56.47	54.21	42.21	-96.71	-164.09	55.96	44.15	73.95	53.55	65.37
Meter_MAREETSANE / GANNALAAGTE 1 22kV Feeder MV Overhead Line	44.4	44.61	46.68	38.99	55.94	50.56	52.22	48.18	45.9	42.59	-176.1	54.13	51.01	58.67		
Meter_MAREETSANE / MOOIFONTEIN 1 22kV Feeder MV Overhead Line	30.03	27.3	32.21	30.74	33.51	27.39	28.16	32.02	30.56	32.56	-155.31	42.53	12.21	23.3		
Meter_MAREETSANE / UPLANDS 1 22kV Feeder MV Overhead Line	34.32	33.35	36.7	41.17	46.04	38.43	40.65	38.25	-40.16	29.92	-294.36	68.03	26.49	34.4		
Meter_MAREETSANE / WESTEND 1 22kV Feeder MV Overhead Line	17.1	9.47	18.95	31.03	21.08	4.31	-0.23	29.99	-3.9	24.63	18.1	-34.42				
Meter_MARGARET SHAFT / ORANJE MYNBOU _VERVOER 1 6.6kV Feeder MV Overhead Line	79.56	63.49	26.91	4.24	0.2	-11.35	-10.83	-7.64	-11.61	-55.58	19.63	-18.72	9.31	-21.11	-2.79	-9.72

Meter_MARGARET SHAFT / ORANJE MYNBOU EN VERVOER MP1 3RD PARTY 6.6kV Bulk Load Overhead Line	-5.8	-8.96	-6.25	-13.79	-6.68	-11.57	-11.83	-7.52	-12.86	-8.39	-8.03	-9.01	8.81	-2.97	3.34	-3.11
Meter_MARICO FLUORSPAR / BOKKRAAL 1 22kV Feeder MV Overhead Line	22.33	20.36	25.58	32.67	44.88	26.86	28.62	32.61	-113.6	36.25	-90.78	10.13	-29.5	21.38	7.22	-683.16
Meter_MARICO MINERALS / MARICO CHROME CORP PTY LTD - MP1 6.6kV Bulk Load Overhead Line	-22.95	14.29	-3.45	-15.56	6.44	-29.97	2.44	-9.44	-18.47	-35.3	14.33	-16.47	19.81	-0.95	0.45	2.31
Meter_MARICO MINERALS / PETRUSDAM 1 22kV Feeder MV Overhead Line	37.66	42.31	39.45	40.68	49.43	47.9	47.06	47.08	43.96	44.19	43.55	41.58	46.76	47.29	55.08	38.9
Meter_MARIKANA-TLHAPA 11kV Overhead Line	15.7	26.88	35.5	33.57	20.42	37.18	21.18	32.01	15.04	30.88	31.48	33.23	37.3	38.42	28.75	28.79
Meter_MARIKANA-VAN ZYL 11kV Overhead Line	-18.36	-208.43	22.5	60.13	88.58	-25.38	-136	-9.32	-101.03	-79.77	30.87					
Meter_MATTE SMELTERS MP 2	-18.25	-0.26	-3.02	-29.9	-5.03	-20.32	-11.67	-8.97	-31.81	5.82	-8.64	-22.01	12.07	-2.07	-6.08	-3.11
Meter_MIDPLOTS / TAUNG CONSUMER 1 11kV Feeder MV Overhead Line	3.36	-29.71	27.48	27.84	35.89	9.08	15.57	33.91	-21.26	4.8	-54.24	34.67	32.42	39.55	17.77	28.06
Meter_MIDPLOTS /Magogong	29.7	-7.36	0.01	15.28	9.19	24.24	7.85	26.35	-10.93	13.62	5.48	-8.96	18.08	28.01	68.33	-53.69
Meter_MILLENIUM / IMPALA PLATINUM (PTY) LTD 6.6 kV MP 2 Bulk Load Overhead Line	-23.4	-32.98	11.63	-13.24	-7.83	-7.52	-9.23	-5.71	-10.75	-20.57	4.23	-11.14	3.79	2.27	0.25	-11.13
Meter_MILLENIUM / IMPALA PLATINUM 6.6kV Bulk Load Overhead Line	-19.93	-23.61	-6.83	-17.51	-10.45	-4.1	-1.91	-1.26	-8.46	-7.21	-4.3	-13.11	3.22	-1.94	-8.5	-14.2
Meter_MIMOSA / AANDSTER 1 22kV Feeder MV Overhead Line	26.86	-27.46	-9.97	-29.18	8.25	-12.37	14.24	41.42	29.42	40.08	24.22	7.92	22.54	-14.28	-102.41	38.36
Meter_MIMOSA / KOOSFONTEIN 1 22kV Feeder MV Overhead Line	-8.75	7.56	25.31	15.04	29.1	-0.67	3.69	29.36	33.65	-2.55	-2	26.21	-1.6	13.8	25.52	4.91
Meter_MIMOSA RURAL / AMALIA 1 22kV Feeder MV Overhead Line	-0.28	-19.48	-12.51	-1.24	5.89	-11.31	8.19	-3.77	-8.16	-111.36	-7.17	4.38	1.09	2.11	18.88	33.19
Meter_MIMOSA RURAL / DIEWEDRAAI 1 22kV Feeder MV Overhead Line	26.6	44.11	60.51	45.94	52.95	66.57	87.39	67.91	51.21	28.18	14.78	-26.05	7.68	7.24	-19.5	12.64
Meter_MIMOSA RURAL / GLAUDINA 1 22kV Feeder MV Overhead Line	34.81	28.88	41.91	30.06	49.44	38.47	41.2	41.35	38.72	37.96	20.4	2.39	40.8	22.35	-6.58	24.53
Meter_MIMOSA RURAL / MARGARETHA 1 22kV Feeder MV Overhead Line	58.87	58.74	62.18	51.53	62.02	56.95	60.14	65.9	55.14	78.15	83.1	81.59	55.19	53.37	77.08	55.79
Meter_MIMOSA SWS / GROOTDOORNS 1 22kV Feeder MV Overhead Line	52.22	60.09	105.64	60.27	68.65	67.47	47.47	64.19	67.73	55.85	50.2	53.03	58.09	38.15	50.59	149.88
Meter_MINPRO / IMPALA PLATINUM MP5 33kV Bulk Load Overhead Line	-35.36	18.16	-26.52	4.8	-1.01	-9.58	-17.81	-4.97	-5	-33.98	14.31	-11.13	-3.84	-0.08	20.3	-15.02
Meter_MMABATHO MAIN - TEACHERS R/CENTRE -MS 1 11kV Feeder MV Underground Cable				82.29	0.34	-4.19	-9.27	-2.55	-10.71	-4.58	-7.53	-11.8	-3.51	-11.18	4.59	1.14
Meter_MMABATHO MAIN - YB GARAGE 1 11kV Feeder MV Overhead Line	68.15	68.73	65.38	27.57	40.99	26.3	22.49	37.51	24.24	23.02	25.03	29.02	30.53	36.44	41.57	49.08
Meter_MODDERSPRUIT / INTERNATIONAL FERRO METALS 11kV Feeder MV Overhead Line							86.44	-39.48	27.37	-54.11	-18.25	-38.31	50.27	9.89	-19.32	22.5
Meter_MODDERSPRUIT- 11kV Makolokwe FDR	31.71	32.59	34.73	37.64	43.61	28.1	32.27	38.94	33.19	34.14	33.78	31.01	40.8	39.76	44.32	42.09
Meter_MODDERSPRUIT-11kV Bapong Feeder	63.7	64.17	67.16	74.96	76.45	75.53	73.53	66.8	69.04	68.78	67.7	68.19	70.65	71.81	70.95	77.7
Meter_MODDERSPRUIT-BUFFELS CHROME 11kV Overhead Line	27.48	23.62	42.7	39.84	43.28	38.29	41.22	40.94	37.96	30.07	42.94	2.73	18.89	6.84	26.88	46.18
Meter_MODDERSPRUIT-TORNADO 11kV Feeder Overhead Line	-106.09	-119.33	-109.71	-148.86	-143.83	-165.58	-138.55	-107.72	-114.8	-108.58	-116.87	-123.55	-91.9	-98.38	-97.01	-109.82
Meter_MODDERSPRUIT-WATERKLOOF 11kV Feeder Overhead Line	70.86	68.94	71.21	75.66	75.45	76.53	71.75	74.5	77.45	73.91	66.83	71.05	59.91	77.55	76.41	65.47
Meter_MOEDWIL / BLINKWATER 11kV Feeder MV Overhead Line	32.07	28.85	32.63	63.89	78.92	81.22	83.85	83.83	81.93	93.54	70.34	84.2	71.54	77.14	91.81	81.39
Meter_MOEDWIL / JUVANTE 11kV Feeder MV Overhead Line	41.33	13.14	75.68	27.88	37.91	12.32	27.28	33.1	53.63	55.43	46.25	-83.15	96.89	48.8	35.58	62.19
Meter_MOEDWIL / WOODSTOCK 11kV Feeder MV Overhead Line	49.23	47.29	55.17	33.78	53.52	57.37	77	50.48	50.6	106.78	-156.84	36.72	44.44	56.51	73.5	-2.45
Meter_MOGWASE IND-GRICO DOLLS 11kV Overhead Line	-8.43	-20.22	-1.04	-11.73	-4.57	-7.78	-13.14	-0.55	-13.81	-30.08	13.98	-20.21	4	-14.87	-3.63	-10.98
Meter_MOGWASE IND-SEWERAGE PLANT 11kV Overhead Line	50.29	55.49	65.09	71.12	55.56	66.98	65.44	64.41	65.46	64.49	63.48	63.78	65.07	66.18	69.08	70.06
Meter_Mogwase Industry Sub - Army 3 11kV Feeder	-3573.57	-3886.03	-2367.29	-1899.33	-1757	-2660.31	-4415.93	-4303.38	-3661.78	-3128.23	-2992.88	-3412.96	-3612.63	-2888.44	-3207.37	-2212.85
Meter_Mogwase Industry Sub - Bagatla 11kV Feeder	72.75	72.17	73.04	75.6	78.52	76.51	75.83	77.21	78.34	76.39	76.28	77.77	77.81	78.19	79.84	79.67
Meter_Mogwase Industry Sub - Bodirelo 1 11kV Feeder																
Meter_Mogwase Industry Sub - Bodirelo 2 11kV Feeder																
Meter_Mogwase Industry Sub - Bop Tyre 11kV Feeder	-71.49	-90.1	-40.5	-35.35	-41.19	-52.9	-84.02	-88.46	-100.8	-76.41	-116.79	-166.45	-108.75	-126.32	-79.81	-75.19
Meter_Mogwase Industry Sub - Unit 4&5 11kV Feeder																
Meter_MOGWASE-TRAINING CENTRE 11kV Overhead Line	67.69	71.58	-135.57	53.59	53.28	53.15	55.61	63.06	21.45	31.38	58.02	35.29	64.66	35.56	38.62	34.85
Meter_MOLIMA / FIRE STATION - MS 1 11kV FEEDER MV UNDERGROUND CABLE	87.03	85.95		36.52	37.71	34.44	32.46	47.43	-8.3	-7.7	-2.82	-11.12	64	-542.98	-308.56	-366.76
Meter_MOLIMA / MOLEMA - MS1 - 16 11kV FEEDER MV UNDERGROUND CABLE	42.56	38.81	45.35	47.97	52.05	47.33	44.02	42.15	40.2	43.2	47.84	46.88	53.23	43.74	63.99	52.65
Meter_MOLIMA / TECHNICAL COLLEGE - MS 1 11kV FEEDER MV UNDERGROUND CABLE	-26.98	-15.17	-2.98	16.96	22.48	7.38	0.84	-7.67	-37.07	4.41	-5135.61	-19.77	1.84	63.47	-1082.36	-30.27
Meter_MOLIMA / TRAFFIC - MS 111kV FEEDER MV UNDERGROUND CABLE	35.76	27.6	35.23	40.26	36.58	43.45	40.15	42.07	59.24	73.82	73.51	69.32	74.32	81.34	105.82	81.18
Meter_MONTSHIWA STAD / MAGOGWE CENTRE 1 11kV Feeder MV Overhead Line	49.93	52.28	58	63.35	66.99	62.15	60.21	58.17	57.2	56.93	53.46	41.97	43.18	49.46	52.56	55.26
Meter_MONTSHIWA STAD / MAGOGWE KOI KOI 1 11kV Feeder MV Overhead Line	55.9	57.6	61.29	67.21	68.6	72.96	58.55	6.31	72.82	44.97	33.87	46.99	39.3	50.26	58.86	54.71
Meter_MONTSHIWA STAD / MAGOGWE TAR 1 11kV Feeder MV Overhead Line	63.64	58.15	62.4	68.37	66.43	71.23	64.86	66.42	62.93	62.02	60.44	47.4	46.75	46.59	57.14	61.35
Meter_MONTSHIWA STAD / TLHABOLOGO 1 11kV Feeder MV Overhead Line	54.02	57.11	61.06	66.03	68.52	70.4	60.4	60.29	54.27	59.17	42.17	46.52	2.3	49.67	85.65	53.69
Meter_MOOINOOI-MINERALS 11kV Overhead Line	-705.84	-645.46	-495.7	-297.24	-192.17	-42.24	-38.2	-48.16	-53.28	-42.27	-13.2	-109.86	-103.9	18.56	100.56	86.31
Meter_MOOIRIVIER RR / KATDOORNBOSCH 1 11kV Feeder MV Overhead Line	27.35	5.05	16.23	13.4	21.58	-0.19	27.62	5.18	-3.28	18.61	-14.51	-1.22	29.46	7.45	22.47	47.78
Meter_MORULENG / DIKWEIPI 11kV Overhead Line										65.39	67.83	69.31	80.29	71	74.31	74.88
Meter_MORULENG-MANAMAKGOTHENG 11kV Overhead Line	61.31	64.08	65.6	70.6	74.08	70.13	70.76	70.63	68.93	67.31	67.74	68.19	68.17	71.11	73.79	88.27
Meter_MORULENG-SEGAKWANENG 11kV Overhead Line	53.85	43.24	-354.89	-200.22	71.83	47.62	50.71	50.49	53.05	55.32	63.43	69.84	53.95	60.22	75.91	75.14
Meter_MORULENG-SHOPPING COMPLEX 11kV Overhead Line	0.01	-15.92	11.72	5.94	13.79	5.31	2.98	12.73	-2.82	0.87	-2	-18.39	1.45	-2.77	4.48	10.73
Meter_MOTSATSI SWS / Unit10 - MS1	56.56	62.76	66.63	70.08	75.34	73.63	-131.06	67.97	67.49	67.5						
Meter_MOTSATSI SWS / Unit10 - MS11	26.25	28.03	35.32	48.61	44.42	36.17	-285.72	40.48	35.64	31.96						
Meter_MOTSATSI SWS / Unit7 - MS7-3	5.34	22.37	41.85	45.99	32.54	30.72	-854.02	13.16	2.37	31.95						
Meter_MOTSATSI SWS / Unit8 - MS1	56.85	52.34	62.06	68.42	68.13	65.53	-213.5	47.49	46.67	58.85						
Meter_MOTSATSI SWS / Unit8 - MS12	50.45	43.41	48.01	53.05	55.63	54.55	-290.13	65.23	61.34	59.82						
Meter_NASKOP / FRANS LOURENS 1 11kV Feeder MV Overhead Line																
Meter_NASKOP / NASCHEM PTY LTD - MP1 6.6kV Bulk Load Overhead Line	-10	-72.17	-38.67	-41.1	-39.52	-47.7	-60.88	-60.98	-64.97	-68.83	-51.4	-33.19	-27.23	-41.19	-26.43	-25.59
Meter_NORLIM / Dikhuting 1 22kV Feeder MV Overhead Line	38.23	38.95	39.26	33.7	48.32	46.15	47.76	49.09	44.76	42.75	41.55	41.41	48.04	41.84	45.84	48.63
Meter_NORLIM / Dinokeng 1 22kV Feeder MV Overhead Line	13.1	10.34	14.57	-76.5	34.75	17.12	16.99	14.12	13.68	7.89	37.45	38.7	33.25	19.97	-51.32	23.18
Meter_NORLIM / MOKGARENG 1 22kV Feeder MV Overhead Line														-3.64	61.84	-515.66
Meter_NORLIM / Norlim - Taung 1 22kV Feeder MV Overhead Line	19.77	22.01	24.72	15.05	34.82	30.02	27.67	28.8	22.09	20.2	18.56	40.92	21.14	27.55	35.21	35
Meter_NORLIM / Pampierstad 1 22kV Feeder MV Overhead Line	-7341.09	13.29	-9.49	19.36		-5077.38	-3966.91	-3360.72	-59.3	14.18	-191.49	8.62	-18.31	18.47	20.14	34.54
Meter_NORLIM / Takapori 1 22kV Feeder MV Overhead Line	31.07	32.48	33.88	23.45	42.73	40.06	36.92	35.27	32.83	30.4	34.86	40.25	30.38	37.52	101.55	47.26
Meter_NORLIM / Vaaltuin 1 22kV Feeder MV Overhead Line	26.43	21.95	25.5	8.82	-40.24	28.47	33.53	33.77	23.51	26.36	45.98	58.34	42.87	45.39	34.5	39.11
Meter_OLIFANTSNEK-ALMORO 11kV Overhead Line	37.02	45.93	40.62	49.85	63.39	65.27	61.48	67.84	59.58	59.37	83.55	43.91	72.16	53.9	60.66	47.99
Meter_OLIFANTSNEK-MAANHAAR 11kV Overhead Line	37.33	12.94	33.51	53.2	41.09	35.94	34.76	37.95	29.42	50.28	43.46	20.77	50.84	8.36	36.36	26.51
Meter_OLIFANTSNEK-RAINBOW 11kV Overhead Line	15.5	-8.23	-14.38	-1.48	14.39	-18.28	5.23	8.24	-17.76	28.35	-12.4	-25.22	17.59	-9.29	-10.53	-7.31
Meter_ONTGIN/HARTEBEESFONTEIN 22kV Overhead Line	54.87	51.67	58.31	65.35	67.72	69.64	64.9	61.31	60.62	62.02	61.19	59.52	65.1	66.82	76.6	68.15
Meter_ONTGIN/KATNAEL 11kV Overhead Line	45.22	28.37	44.85	49.18	48.74	45.37	47.42	43.23	15.16	3.32	30.01	34.53	45.26	34.54	47.53	46.2
Meter_ONTGIN/LIEFLING 11kV Overhead Line	30.69	-16.48	10.9	49.06	17.34	-39.72	52.06	43.85	-19.39	47.19	37.57	14.89	64.74	11.18	29.01	49.16
Meter_ONTGIN-SPOORNET 88kV CUSTOMER SUPPLY Overhead Line	-10.02													0	0	0
Meter_ORKNEY MUNIC / ORKNEY TOWN COUNCIL MP1 6.6kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_ORKNEY MUNIC / SATS KIMBERLEY - MP1 88kV Bulk Load Overhead Line													0	0	0	0
Meter_OTTOSDAL / BAMBOESSPRUIT 1 22kV Feeder MV Overhead Line	35.28	8.27	30.78	37.9	33.64	23.18	48.47	50.43	14.51	35.08	-19.56	13.95	24.01	-3.55	37.43	122.57
Meter_OTTOSDAL / BOSBULT 1 11kV Feeder MV Overhead Line	28.61	22.89	57.22	45.56	44.32	39.69	46.41	70.83	30.56	36.22	24.2	32.29	47.58	37.08	38.46	29.57
Meter_OTTOSDAL / GESTOPTEFONTEIN 1 22kV Feeder MV Overhead Line	-3.81	15.25	31.45	2.12	29.3	11.82	18.55	9.61	-94.53	14.97	37.43	37.62	10.43	30.1	20.93	9.37

Meter_OTTOSDAL / LETSOPA 1 11kV Feeder MV Overhead Line	23.19	25.83	22.42	27.52	34.34	29.05	30.02	-120.18	29.54	25.43	25.36	26.52	26.96	-84.27	-29.65	-31.42
Meter_OTTOSDAL / OTTOSDAL VILLAGE COUNCIL MP1 11kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_OTTOSDAL / SKIETPAN 1 22kV Feeder MV Overhead Line	33.25	4.91	32.73	17.41	18.95	28.42	33.29	9.32	25.14	25.13	26.83	-1.26	51.95	5.92	33.03	10.85
Meter_OTTOSDAL / WALTERS 1 22kV Feeder MV Overhead Line	-29.56	-47.5	-10.23	-15.98	-15.37	-195.59	-41	40.36	-45.83	-45.08	-59.25	-111.94	-28.62	-2.26	-27.84	-54.43
Meter_OTTOSHOOP HOLDINGS / PHELPS DODGE MINING LIMITED - MP1 6.6kV Bulk Load Overhead Line	-12.13	-10	-10	-10	-10	-10	-10	-10	-10	-6.01	-17.49	0.75	2.77	0	0	0
Meter_PENDORING TRACTION / SPOORNET 22kV Bulk Load Overhead Line	-127.63	-205.54		-51.74	-38.01	36.32	-62.26	49.55	10.47	-60.68	-34.14	40.79	-325.95	-10.04	2.57	94.3
Meter_PHOKENG - CIVIC 11kV Overhead Line	33.35	19.48	31.3	48.73	62.86	50.33	33	25.37	24.19	30.33	33.13	24.3	35.47	36.89	44.35	41.78
Meter_PHOKENG / BAKERY 11kV Feeder MV Overhead Line	62.03	66.45	65.02	67.5	68.51	54.83	50.09	54.71	46.18	63.91	61.95	62.54	67.42	70.87	66.79	60.7
Meter_PHOKENG / KGALE 11kV Feeder MV Overhead Line	71.61	70.4	77.57	79.57	77.34	73.33	70.75	72.42	83.64	71.32	72.63	70.71	58.29	73.23	75.87	64.79
Meter_PHOKENG / MOSHATE 11kV Feeder MV Overhead Line	36.95	32.92	40.49	40.47	37.98	49.13	38.15	40.35	31.34	35.48	33.69	31.27	38.65	32.8	42.83	39.18
Meter_PHOKENG / STADIUM 1 11kV Bulk Load Overhead Line	-5.35	-14.85	-5.07	-13.06	-6.59	-11.15	-9.02	-8.26	-13.03	-10.27	-7.41	-12.32	8.17	-1.28	1.85	-6.88
Meter_POTCHEFSTROOM DS / TLOKWE LOCAL MUN TLOKWE 1 132kV Bulk Load Overhead Line	-27.65	-15.57	0.18	-6.4	-7.24	-13.93	-17.7	-3.9	-14.05	-13.4	-4.84	-9.46	8.86	-2.65	7.89	-11.35
Meter_POTCHEFSTROOM MUNIC / TLOKWE LOCAL MUN MP12 66kV Bulk Load Overhead Line	-9.13	-16.73	-1.49	-6.79	-6.59	-14.09	-16	-4.26	-14.4	-13.04	-6.51	-9.29	9.41	-1.33	6.69	-1.68
Meter_POTCHEFSTROOM MUNIC / TLOKWE LOCAL MUN MP4 11kV Bulk Load Overhead Line	-8.76	-18.69	-1.4	-7.39	-5.73	-13.67	-125.67	-1.01	-14.19	-15.91	-0.44	-11.99	10.33	-2.46	5.36	-2.61
Meter_POTCHEFSTROOM TRACTION / TRANSNET FREIGHT RAIL MP1 88kV Bulk Load Overhead Line	-15.62	-114.02	-2.54	-4.53	-11.47	-51.9	-29.47	14.18	-31.88	-52	-18.39	-49.69	-12.11	-21.71	7.01	-24.27
Meter_PUDIMOE / DRYHARTS 1 11kV Feeder MV Overhead Line	26.64	25.56	21.51	17.72	50.13	30.08	21.33	22.07	22.78	13.67	25.04	25.11	19.87	32.04	-56.72	16.61
Meter_PUDIMOE / MAGOPELA 1 11kV Feeder MV Overhead Line	-33.83	-44.9	-36.98	-22.39	-2.13	-11.37	-18.61	-5.96	-14.55	-9.68	-11.73	38.99	5.49	10.57	15.7	18.45
Meter_PUDIMOE / MATLAPANENG 1 11kV Feeder MV Overhead Line	34.82	-14.51	-1187.24	-556.77	490.81	-200.17	190.53	80.09	61.2	43.37	0.09	35.79	25.75	-112.02	103.97	67.84
Meter_PUDIMOE / PUDIMOE TOWNSHIP 1 11kV Feeder MV Overhead Line	-3.54	-25.05	-30.18	-40.23	-18.05	-2.49	-9.43	-3.28	-6.37	-11.33	-20.57	-289	4.21	-190.76	-36.7	3.84
Meter_RAMATLABAMA / AGRI CHICKS 1 11kV Feeder MV Overhead Line	-19.46	-17.35	-17.69	-27.3	-16.84	-23.16	-35.59	-13.85	-26.39	-11.41	-27.15	-23.35	-10.08	-15.15	-10.3	-27.8
Meter_RAMATLABAMA / MIGA 1 11kV Feeder MV Overhead Line	47.14	48.96	52.6	55.91	60.22	56.56	56.09	54.57	53.4	54.61	64.87	52.15	57.13	42.72	59.77	62.48
Meter_RATSEGAAI TRACTION / SPOORNET MP1 132kV Bulk Load Overhead Line	-58.04	-39.13	19.24	-16.65	6.82	8.7	-22.03	-6.88	-36.61	0.62	-0.73	-7.12	-4.42	-22.34	-83.75	-10.49
Meter_RECREATION / COM HOUSE - MS 1 11KV Feeder MV Underground Cable						-67.54	56.9	60.01	60.29	63.39	56.81	-30.47	1.53	-32.69	-112.94	-76.28
Meter_REIVILO / REIVILO MUNICIPALITY - MP1 11kV Bulk Load Overhead Line	-1.74	-15.56	-2.32	-8.22	-8.78	-9.23	-16.08	-7.51	-16.34	-8.44	-13.18	-8.39	10.7	-0.43	5.78	-2.5
Meter_REIVILO / REIVILO NORTH FARMERS 1 11kV Feeder MV Overhead Line	-96.76	-19.7	17.88	14.97	30.77	84	35.08	35.26	23.82	29.11	9.81	39.75	-19.75	52.16	119.36	47.09
Meter_RHINO-Bulhoek 11kV Overhead Line	31.82	27.93	21.05	31.25	35.82	26.38	35.47	33.91	30.5	51.18	42.88	28.13	80.33	24.73	36.66	41.71
Meter_RHINO-KROKODILDRIFT 11kV Overhead Line	49.58	52.75	53.1	58.99	63.39	56.05	54.46	55.68	56.55	36.9	47.89	54.26	61.24	64.98	66.5	69.79
Meter_RHINO-SUNDOWN 11kV Overhead Line	28.69	25.56	31.02	38.52	36.82	31.41	96.13	35.72	25.63	27.45	90.59	60.5	66.45	51.15	54.65	47.23
Meter_RHINO-VLAKTE 11kV Overhead Line	30.06	31.13	22.49	22.24	67.81	66.18	69.6	68.21	69.52	78.52	73.15	61.16	67.04	55.18	66.29	56.34
Meter_RIVER CRESENT / MOLOPO RIVER-MS 1 11kV Feeder MV Underground Cable	72.12	65.3	58.21	71.96	69.14											
Meter_RIVER CRESENT / MOLOPO RIVER-MS 1 11kV Feeder MV Underground Cable	72.12	65.3	58.21	71.96	69.14											
Meter_RIVER CRESENT / RENOU MOTORS-MS 1 11kV Feeder MV Underground Cable	20.3	-3.6	11.7	111.12	51.26	34.41	-16.98	-149.08	-3.46	7.19	-3.15	-6.27	16.98	71.96	35.82	29.12
Meter_ROAN SWITCHING STATION / AFRIKANER 1 22kV Feeder MV Overhead Line	11.55	5.92										-5.61	8.09	7.81	-7465.67	-2555.82
Meter_ROAN SWITCHING STATION / HARTEBEESFONTEIN 1 22kV Feeder MV Overhead Line	9.34	13.52	11.87	12.98	16.06	12.99	6.98	12.55	6.48	7.79	6.77	9	10	9.03	15.4	5.37
Meter_ROAN SWITCHING STATION / SCHOEMANSFONTEIN 1 22kV Feeder MV Overhead Line	38.97	37.96	46.59	51.66	44.63	38.93	36.62	55.49	52.21	52.45	-0.78	47.37	42.45	48.71	24.4	50.8
Meter_ROAN SWITCHING STATION / TEGANI TOWNSHIP 1 22kV Feeder MV Overhead Line	22.26	19.87	22.57	29.43	38.29	31.7	29.44	28.73	26.75	25.02	25.75	26.75	29.83	19.74	33.85	37.54
Meter_ROOIGROND / FISCHHOEK 1 11kV Feeder MV Overhead Line	20.56	8.86	20.35	17.75	-251.15	-36.16	15.68	8.81	17.14	19.81	28.24	10.81	35.26	22.09	31.63	62.7
Meter_ROOIGROND / GRASFONTEIN BAKERVILLE 1 11kV Feeder MV Overhead Line	41.49	38.67	43.87	44.68	48	50.29	50.87	51.54	57.5	49	46.3	46.71	54.1	47.46	59.62	63.7
Meter_ROOIGROND / GREEFSLAAGTE 1 11kV Feeder MV Overhead Line	45.7	44.61	14.46	3.04	41.14	50.39	62.49	70.83	44.68	55.03	100.69	-0.11	53.8	35.1	-97.35	-14.44
Meter_ROOIGROND / SABC ROOIGROND 1 11kV Feeder MV Overhead Line	26.58	18.05	23.91	26.65	34.19	31.37	35.43	39.36	26.16	34.07	26.84	14.43	31.71	21.88	22.49	27.84
Meter_RUIGHOEK / MAKGOPE 22kV Feeder MV Overhead Line	-7.95	-82.04		-298.43	-11.54	0.79	-6.75	9.03	-18.74	-50.03	21.23	-10.53	14.86	-4.48	6.81	-9.42
Meter_RUIGHOEK-HORISON CHROME 22kV Overhead Line	31.84	33.81	38.41	35.67	48.77	43.88	46.53	44.65	43.45	49.24	40.07	42.44	39.26	36.85	39.93	42.27
Meter_RUIGHOEK-MANAMELA 22kV Overhead Line	53.45	65.46	63.81	65.97	70.04	67.5	57.85	72.36	67.15	63.18	68.65	66.25	67.85	70.38	69.41	70.22
Meter_RUIGHOEK-MINES 22kV Overhead Line	-7.22	-20.31	-15.43	-18.17	-15.32	-21.6	-20.02	-5.95	-41.43	-37.78	-51.63	-68.71	-44.54	-51.42	-48.01	-43.16
Meter_RUIGHOEK-NTUANE 22kV Overhead Line	57.9	54.57	61.74	67.09	71.89	64.26	71.5	57.17	67.83	64.49	67.42	67.14	68.78	68.86	74.08	65.79
Meter_RUIGHOEK-RUST MINERALS 22kV Overhead Line	55.87	61.69	63.41	68	71.98	68.72	68.15	68.61	64.32	57.38	61.68	61.74	63.48	63.89	67.59	66.43
Meter_RUIGHOEK-SEDIBELO 22kV Overhead Line	39.97	41.61	48.65	49.46	54.76	47.3	47.16	49.3	38.81	26.92	30.45	20	44.59	32.26	35.7	15.19
Meter_Rustenberg CC City Industries M/P 1	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_Rustenberg CC City Smelters M/P 2	-205.31	-35.18	-42.67	-20.61	-371.52	-38.74	-144.44	-184.68	-177.63	-174.03	-188.24	-184.16	-193.29	-194.57	-194.02	-259.46
Meter_RUSTENBURG-BOKAMOSO 11kV Overhead Line	39.33	42.88	46.33	-721.85	23.7	-4.93	32.07									-179.55
Meter_RUSTENBURG-PHOTSANENG 11kV Overhead Line								76.6	77.67	-1.68	74.95	75.92	76.28	77.78	76.62	63
Meter_SA CHROME / FERROCHROME 33kV MP3 Bulk Load Overhead Line	-95.49	-10	-10	-36.42	-10	42.5	-105.58	-97.77	-95.88	-92.92	-94.88	-84.89	-359.65	0	0	0
Meter_SA X Strara CCt Wonderkop M/P 3		-3817.36	-1281.95													
Meter_SAFARI RURAL / ATOMIC ENERGY CORP 22kV Bulk Load Overhead Line	-8.64	-20.12	-6.69	-11.4	-6.58	-10.43	-11.21	-9.37	-13.08	-6.22	-9.87	-9.53	2.85	-4.63	3.11	-1.77
Meter_SAMANCOR Chromore Mooinooi M/P 1	-10	-10	-10	-339.24	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	-64.56
Meter_SANNIESHOF MUNIC / GELUKSPAN 1 22kV Feeder MV Overhead Line	59.02	37.41	49.12	53.63	52.83	52.88	48.27	51.34	47.23	47.33	30.9	45.54	50.34	56.18	52.71	57.43
Meter_SANNIESHOF MUNIC / LEEUPAN 1 11kV Feeder MV Overhead Line	28.04	25.84	32.63	55.11	38.71	36.07	34.34	33.14	37	38.08	29.11	25.69	44.87	79.67	15.58	34.31
Meter_SANNIESHOF MUNIC / MAKOEISPAN 1 11kV Feeder MV Overhead Line	30.48	26.73	30.71	34.63	34.11	16.91	46.54	45.51	39.46	36.88	-5.74	4.63	22.58	38.89	31.61	43.03
Meter_SANNIESHOF MUNIC / OTTOSDAL 1 22kV Feeder MV Overhead Line	32.71	29.02	32.84	35.56	40.86	32.17	33.8	35.03	40.45	39.88	45.29	34.37	11.13	45.01	54.26	34.54
Meter_SANNIESHOF MUNIC / SANNIESHOF MUNISIPALITEIT MP1 11kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_SCHOONSPRUIT RURAL / ALWYN 1 11kV Feeder MV Overhead Line	41.07	3.61	33.62	41.72	33.24	26.75	30.17	28.43	13.15	30.58	20.26	17.41	-84.82	78.43	36.61	30.05
Meter_SCHOONSPRUIT RURAL / WITKLIP 1 11kV Feeder MV Overhead Line	27.92	20.85	30.28	55.5	29.54	34.21	30.67	29.05	26.17	27.6	25.88	16.16	-4.09	45.58	77.5	40.21
Meter_SCHWEIZER RENEKE MUNIC / GORDON 1 11kV Feeder MV Overhead Line	26.49	30.69	29.62	33.16	34.55	69.76	41.63	40.18	37.7	31.15	33.25	39.13	36.56		44.38	51.23
Meter_SCHWEIZER RENEKE MUNIC / IPELEGENG 1 11kV Feeder MV Overhead Line	38.97	39.19	40.95	49.18	49.56	30.09	24.47	47.44	43.38	48.9	48.29	49.82	51.66	52.07	56.84	61.13
Meter_SCHWEIZER RENEKE MUNIC / MAREESIN 1 11kV Feeder MV Overhead Line	28.64	27.48	33.32	41.85	60.73	62.4	61.18	47.52	42.38	42.6	57.46	57.87	60.13	59.34	50.91	53.4
Meter_SCHWEIZER RENEKE MUNIC / SCHWEIZER RENEKE MUNISIPALITEIT - MP1 11kV Bulk Load Overhead Line	-4.9	-15.38	0.24	-1.02	-13.23	-16.34	-19.18	-2.26	-14.73	-9.24	-8.38	-13.13	8.24	-1.49	9.67	-3.37
Meter_SECOND STREET / BNDC4-MS 1 11kV Feeder MV Underground Cable																
Meter_SECOND STREET / BUS DEPOT-MS 1 11kV Feeder MV Underground Cable	23.88	9.89	44.42	25.12	21.65	23.69	20.75	32.28	21.15	26.59	23.52	20.88	25.86	25.59	33.38	34.15
Meter_SECOND STREET / PETROL DEPOT SWS 1 11kV Feeder MV Underground Cable	57.3	64.4	64.11	56.91	51.48	39.2	39.03	64.74	59.2	66.56	68.54	75.99	69.06	76.48	81.64	78.59
Meter_SECOND STREET / TILES MS 11kV Feeder MV Underground Cable																
Meter_SEPHAKU / SEPHAKU CEMENT (PTY) LTD MP2 11kV Bulk Load Overhead Line	-12.59	-10.65	-2.5	-9.65	-11.26	-9.03	-11.26	-11.31	-9.46	-7.91	-9.98	-11.33	1.24	1.68	0.11	-0.87
Meter_SHAFT 15-KOPANO 22kV Feeder Overhead Line	33.91	37.23	34.93	44.06	52.2	47.76	47.08	47.85	47.36	46.14	45.85	48	47.04	52.97	54.29	54.46
Meter_SHAFT 15-TLASENG 22kV Overhead Line	58.56	60.64	61.57	66.9	71.19	66.94	67.36	66.39	66.23	64.5	66.45	66.84	68.18	69.72	74.28	70.69
Meter_SHAFT15-FREEDOM PARK 22kV Overhead Line	54.2	52.6	53.42	63.47	68.62	63.1	64.84	63.9	64.28	70.45	38.06	62.51	65.74	66.98	68.05	71.34
Meter_SHYLOCK-BOSCHOEK 11kV Overhead Line	-158.75	-7.85	4.32	13.67	-143.81	23.17	17.31	18.8								
Meter_SHYLOCK-DOORNLAAGTE 11kV Overhead Line	54.6	53.38	49.63	58.85	-3.21	48.83	54.49	56.07								
Meter_SHYLOCK-MOEDWIL 11kV Overhead Line	-63.39	12.87	36.67	-3.27	-92.97	16.69	29.51	144.2								
Meter_SHYLOCK-UNION 11kV Overhead Line	-87.29	9.41	64.81	63.2	73.93	46.24	85.38	49.59								
Meter_SKEERPOORT/DE RUST 11kV Overhead Line			10.11	5.91	5.19	0.16	-5.03	6.06	-4.84	6.62	5.3	-12.36	-0.7	1.78	11.88	0.13

Meter_SKEERPOORT/KOSMOS 11kV Overhead Line	-5.39	5.56	15.15	28.84	22.19	17.21	17.57	22.45	11.2	19.68	17.06	6.74	25.19	8.94	23.46	27.76
Meter_SKEERPOORT/LYNKLOOF 11kV Overhead Line	-126.16	-316.7	26.56	31.48	10.71	26	8.81	29.09	3.19	11.1	19.22	14.09	24.42	19.72	35.72	33.4
Meter_SKIETPAN RURAL / DROOGEKRAAL 1 22kV Feeder MV Overhead Line	24.78	15.01	10.79	26.75	19.66	6.95	14.03	23.03	4.83	20.76	24.24	2.19	28.28	-23.56	17.53	-59.04
Meter_SKIETPAN RURAL / HARRISBURG 1 22kV Feeder MV Overhead Line	32.28	26.35	40.46	38.96	44.49	31.72	7.69	0.53	25.13	28.72	-77.59	13.48	15.53	16.47	29.19	32.65
Meter_SKIETPAN RURAL / SYFERGAT 1 22kV Feeder MV Overhead Line	2.22	46.73	29.54	35.81	12.17	28.81	14.99	14.74	8.3	14.7	-53.56	86.41	33.1	32.46	33.5	3.02
Meter_SLURRY PPC / PRETORIA PORTLAND CEMENT (PTY) LTD MP2A 6.6kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_SLURRY PPC / PRETORIA PORTLAND CEMENT (PTY) LTD MP2B 6.6kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_SLURRY RURAL / JAGERSFONTEIN 1 11kV Feeder MV Overhead Line	34.91	36.36	10.33	42.04	32.99	21.08	36.58	31.92	24.05	43.08	38.14	78.48	30.87	44.59	43.93	25.15
Meter_SLURRY RURAL / KLIPPAN 1 11kV Feeder MV Overhead Line	-24.53	-17.94	41.25	-13.86	-20.56	-17.16	-46.78	124.74	-280.04	-18.17	-40.3	-63.32	-64.82	-32.01	-16.07	139.39
Meter_SLURRY RURAL / LANRIC 1 11kV Feeder MV Overhead Line	34.34	32.7	27.94	40.11	51.86	32.13	44.81	37.23	21.9	59.9	55.9	13.23	7.08	28.94	51.69	29.38
Meter_Spoornet Arthursview Traction 132kV M/P 1	-12.42	-20.19														
Meter_Spoornet Paul Traction 132kV M/P1	8.37	-22.46				-8.64	-19.08	-7.2	-7.62	-48.43	-50.13	38.15	-47.8	25.63	15.7	-11.04
Meter_SPRINGBOKPAN / BLUE CIRCLE CEMENT PTY LTD - MP1 3.3kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-10	-10	-10	-10	0.75	-20.39	0	0	0	0	0
Meter_SPRINGBOKPAN / BODIBE TOWN 1 22KV Feeder MV Overhead Line	69.49	70.71	72.45	76.19	74.83	75.48	74.73	73.53	68.74	71.21	77.29	73.23	73.73	72.67	76.21	78.17
Meter_SPRINGBOKPAN / MATILE DUIKERBOS 1 22kV Feeder MV Overhead Line	62.16	60.97	59.67	67.44	67.3	65.29	66.53	61.21	62.11	62.29	57.6	63.92	62.97	61.47	67.25	70.49
Meter_STATS KLIPFONTEIN RU - Bloemhof Munic fdr	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_STATS KLIPFONTEIN RU - Bloemhof Munic fdr	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_STELLA MUNIC / STELLA MUNICIPALITY - MP1 11kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_STILFONTEIN TOWN / LANZA 1 6.6kV Feeder MV Overhead Line	3.49	-4.92	-1.33	15.31	12.36	-28.25	18	7.88	-6.33	-2.75	14.94	-5.33	4.69			
Meter_STILFONTEIN TOWN / STILFONTEIN STADSRAAD - MP2 6.6kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	-151.27	-55.6
Meter_STRAATSDRIFT RURAL / DORINGKRAAL 1 22kV Feeder MV Overhead Line	43.61	24.27	38.67	43.23	51.61	51.51	43.49	46.69	-12.89	44.93	30.42	-22.84	63.58	45.87	-39.78	14.87
Meter_STRAATSDRIFT RURAL / MADIKWE TOWNS 1 22kV Feeder MV Overhead Line	83.36	83.79	83.96	81.86	72.35	71.79	70.75	71.83	38.77	70.62	71.14	62.1	64.86	71.72	66.17	74.47
Meter_STRAATSDRIFT RURAL / PACHSDRAAI 1 22kV Feeder MV Overhead Line	85.32	56.41	59.26	77.56	82.69	83.23	83.11	83.66	84.21	84.8	85.38	85.36	85.37	85.29	83.56	85.33
Meter_STRAATSDRIFT RURAL / PELLA 1 22kV Feeder MV Overhead Line	67.93	63.84	66.21	64.58	60.17	59.78	36.18	52.03	-29.59	-14.81	-30.09	-53.04	-19	-22.34	-27.12	11.97
Meter_STRATHVAAL PUMPS / MIDVAAL WATER COMPANY - MP1 3.3kV Bulk Load Overhead Line	-3.99	-12.31	-3.55	-13.39	-7.33	-11.63	-14	-5.07	-58.9				0		-508.1	0
Meter_STRYDERS TRACTION / SATS KIMBERLEY - MP1 132kV Bulk Load Overhead Line	-38.17	-119.08	14.58	16.25	-20.16	-17.93	-1.67	2.41	-20.01	-8.95	-23.43	0	0	0	0	0
Meter_STYLDRIFT / CUSTOMER 4 11kV Bulk Load Overhead Line	-42.81	-38.48	-48.7	-60.49	-50.04	-61.79	-58.59	-46.19	-56.99	-52.84	-43.31	-59.38	-30.36	-25.26	-16.17	-16.12
Meter_SUN CITY-CHANENG 11kV Overhead Line	5.22	-10.4	5.99	28.79	52	3.79	9.62	10.58	20.89	-15.44	7.27	13.65	58.52	26.98	43.19	7.53
Meter_SUN CITY-Heyterkrand 22kV Overhead Line	28.6	32.11	46.09	59.37	64.64	51.55	41.85	36.67	-267.44	28.12	53.39	32.1				
Meter_SUN CITY-Madikwe 22kV Overhead Line	-114.06	-124.96	-41.67	-69.33	-77.09	-86.9	-222.66	-108	-119.06	-130.92	-95.56	-72.39	-144.7	-70.98	-41.91	-48.2
Meter_SUN CITY-MATOOSTER 11kV Overhead Line	44.78	52.07	56.07	-56.9	68.87	59.68	55.16	53.67	45.79	44.38	37.9	46.3	51.66	53.05	59.05	59.54
Meter_SUNRISE-BULTFONTEIN 11kV Overhead Line	20.17	4.48	28.36	22.79	54.86	56.5	50.58	50.2	42.92	45.66	41.69	-11.75	-4.57	-6.6	2.63	11.4
Meter_SUNRISE-ROBEGA 11kV Overhead Line	72.9	70.3	74.5	76.76	78.75	73.67	72.68	72.68	74.49	72.47	72.02	73.11	75.83	73.76	81.94	83.17
Meter_SUNRISE-SRBSC 11kV Overhead Line	-24	-3.19	-3.39	-35.62	-12.17	-34.61	19.67	-4.58	-15.22	-62.97	22.77	23.44	1.99	-14.62	-87.06	-7.18
Meter_SWARTGROND TRACTION / SATS KIMBERLEY - MP1 132kV Bulk Load Overhead Line	-11.6	-197.83	33.39	6.32	1.89	-8.44	-10.02	-13.99	-17.03	-48.2	1.64	-25.37	22.94	-19.42	4.97	1.41
Meter_SWARTRUGGENS / RODEON 11kV Feeder MV Overhead Line																
Meter_SWARTRUGGENS-BESTERHOEK 11kV Overhead Line	49.28	46.21	55.58	79.61	79.9	76.08	77.43	74.04	-41.54	-49.48	38.05	32.56	32.28	13.53	47.05	47.83
Meter_SWARTRUGGENS-KLIPBANK 11kV Overhead Line	-35.34	-44.63	-30.4	-5.76	25.16	14.31	-34.79	49.96	65.53	59.34	86.36	63.84	57.47	-0.02	-29.84	-0.84
Meter_SWARTRUGGENS-LINDLEYS 11kV Overhead Line	40.01	38.25	41.45	43.04	46.54	39.83	45.95	42.69	36.6	41.34	36.4	34.85	23.07	16.44	17.43	11.21
Meter_SWARTRUGGENS-VLEIDRAAI 22kV Overhead Line	108.76	41.5	33.71	62.24	63.68	63.96	47.21	50.02	62.43	51.84	97.74	24.41	67.6	30.81	45.66	53.02
Meter_SYFERBULT-BOONS 11kV Overhead Line	50.84	46.03	54.71	60.13	60.66	52.54	58.66	57.95	39.1	54.75	54.42	45.89	49.21	46.35	55.36	57.43
Meter_TARENTAAL TRACTION / SATS KIMBERLEY - MP1 88kV Bulk Load Overhead Line	-9.68	-169.29	23.52	7.04	-1.38	-13.03	-27.24	7.68	-28.69	-106.91	22.97	-26.24	-244.46	0	0	0
Meter_TATODI TRACTION / SATS KIMBERLEY MP1 132kV Bulk Load Overhead Line	-45.37	-74.26	19.61	-17.01	12.83	5.31	-20.52	-5.34	-39.04	-6.44	9.13	-18.26	6.89	-24.94	-64.47	-5.02
Meter_TAUNG / Irrigation South Fdr	-114.93	-43.39	-156.28	-41.73	-93.13	-122.16	-4.52	-56.29	-94.62	-240.3	-376.5	-571.87	-137.55	-101.02	-1005.61	-157.5
Meter_TAUNG / Irrigation West Fdr	-163.26	-218.6	-222.81	129.99	-129.39	-28.87	-93.46	-83.43	-240.6	-165.88	-192.1	-293.79	-180.65	-143.5	-133.12	-155.53
Meter_TAUNG / Taung Township fdr	-86.19	-150.38	-120.75	-86.84	-83.4	-98.36	-105.6	-72.46	-56.39	-129.38	-96.79	-81.11	-121.48	-74.27	-73.67	-86
Meter_TAUNG / Taung Village	-85.92	-69.73	-67.24	-54.05	-79.65	-80.96	-95.48	-89.03	-103.05	-94.67	-75.5	-101.18	-66.41	-114.32	-73.68	-96.6
Meter_THARISA / MAMALEKA 1 11kV Feeder MV Overhead Line	15.28	20.75	27.91	33.89	49.01	37.81	36.61	36.31	31.31	34.03	36.24	29.48	10.33	31.74	98.54	62.61
Meter_THARISA / MINERALS MP1 88kV Bulk Load Overhead Line	-22.5	5.61	-3.4	-12.79	-6.63	-10.29	-14.66	-5.88	-13.18	-6.72	-12.39	-10.95	10.74	-12.12	7.29	-2.82
Meter_THARISA / RAMOSERE 1 11kV Feeder MV Overhead Line	19.51	22.25	35.93	41.35	37.43	30.43	34.38	24.17	19.75	22.68	20.41	16.95	28.61	27.42	33.71	37.44
Meter_THARISA / SERAMER 1 11kV Feeder MV Overhead Line	-166.48	-209.93	-173.98	39.89	-135.88	-142.9	-157.33	-115.1	-184.07	-139.05	-183.61	-228.32	-115.12	-152.04	-122.1	-163.61
Meter_Tlhabologang - Mogatwe 11KV	50.31	50.18	53.22	59.32	62.03	60.31	56.87	57.89	57.6	55.1	54.95	54.12	56.59	54.26	59.34	63.85
Meter_Tlhabologang - Molefe 11 KV	-112.33	-45.44	-39.87	-30.66	-26.53	-34.61	-34.88	-37.08	-40.97	-47.35	-44.54	-40.78	-34.61	-46.97	-25.83	-20.18
Meter_TSWELELANG / TSWELELANG 1 11kV Feeder MV Overhead Line	36.82	33.65	35.55	42.06	46.53	39.94	39.73	37.24	38.11	33.74	37.57	37.47	39.46	40.59	43.74	48.52
Meter_TSWELELANG / TSWELELANG 2 11kV Feeder MV Overhead Line	5.89	5.6	9.56	14.26	21.67	12.06	13.52	10.85	15.16	11.21	6.66	10.26	12.49	14.05	17.35	20.87
Meter_TSWELELANG / TSWELELANG 3 11kV Feeder MV Overhead Line	2.59	-0.72	-2.31	7.45	15.6	6.22	9.33	8.16	6.78	7.27	-7.98	6.35	-12.66	7.47	11.33	13.41
Meter_TURF SHAFT / AMPLATS 11kV MP3 Bulk Load Overhead Line	-106.91	-97.57	-77.72	-52.94	-31.44	-88.67	-143.27	-137.57	-52.04	-443.44	-160.89	-2681.04	0		0	0
Meter_TURFGROND / SPOORNET 22kV MP1 Bulk Load Overhead Line	1.53	-64.4	17.98			14.98	-24.66	-13.4	-2.89	-38.28	-61.91	39.99	2.19	-3.63	10.41	-152.26
Meter_TWINRIVERS/CORONA 22kV Overhead Line	18.7	-18.77	35.42	29.67	47.61	26.91	35.41	21.55	-32.85	22.61	25.23	-19.77	2.54	6.55	27.61	26.71
Meter_TWINRIVERS/EERSTELING 22kV Overhead Line	45.61	43.81	56.66	57.74	68.62	57.37	58.72	54.9	12.45	50.41	51.95	55.34	44.07	43.39	63.73	76.03
Meter_TWINRIVERS/TAMBOTIE 22kV Overhead Line	-3.78	18.04	25.5	38.43	40.15	38.31	31.53	26.72	-8.68	30.68	19.71	33.33	40.33	42.21	33.3	42.48
Meter_TWINRIVERS/TWEELING 22kV Overhead Line	26.99	-32.52	-26.3	17.64	20.21	6.18	9.15	-9.23	-55.19	14.27	7	-68.99	17.37	-56.84	29.45	39.73
Meter_TWIST SWS / CONVENT 11KV Feeder																
Meter_UCAR MINERALS / LANGSTRAAT 11kV Overhead Line	30.49	17.09	4.99	6.77	34.78	44.3	54.93	40.98	18.13	5.92	25.16	27.47	54.45	36.27	37.27	49.94
Meter_UCAR MINERALS / OSKRAAL 11kV Overhead Line	74.21	74.25	76.41	80.03	82.13	81.15	80.67	79.24	73.73	65.27	76.75	77.98	81.44	75.03	70.25	74.22
Meter_UCAR MINERALS / VAMETCO MINERALS CORPORATION 6.6kV Bulk Load Overhead Line	-20.09	5	-4.71	-12.08	-7.35	-9.83	-16.57	-3.8	-46.73	-5.94	-10.4	-13.79	7.36	6.98		-3.38
Meter_UCAR MINERALS/STEPHANUS 11kV Overhead Line	69.28	69.14	69.05	78	79.01	76.96	75.71	72.97	73.69	71.02	73.17	57.34	56.99	57.23	76.95	78.55
Meter_UNIT 13 - UNIT 13 NORTH 1 11kV Feeder MV Overhead Line	44.02	37.39	50.3	29.32	50.38	56.92	46.69	50.66	50.64	80.32	7.66	49.04	51.84	55.05	59.59	61.14
Meter_UNIT 13 - UNIT 13 SOUTH 1 11kV Feeder MV Overhead Line	57.96	57.88	60	75.46	73.58	68.28	66.26	64.38	63.62	64.43	58.85	62.01	64.83	65.39	70.5	70.8
Meter_UNIT 13 - UNIT 14 NORTH 1 11kV Feeder MV Overhead Line	46.45	44.17	49.36	64.89	68.38	67.26	65.87	65.25	63.64	60.71	64.55	70.59	62.63	61.35	66.38	68.27
Meter_UNIT 13 - UNIT 15 NORTH 1 11kV Feeder MV Overhead Line	72.7	73.18	74.92	56.91	62.28	57.55	56.28	54.92	53.93	50.23	51.32	50.84	53.12	54.55	58.02	59.54
Meter_UNIT 13 - UNIT 15 SOUTH 1 11kV Feeder MV Overhead Line	57.22	39.6	43.61													
Meter_UNIT 13 / AIRPORT ROAD 1 11kV Feeder MV Overhead Line	80.78	80.71	81.22	26.21	36.63	30.15	19.7	35.27	37.58	42.21	43.48	43.91	47.45	40.36	81.82	81.73
Meter_UNIT 13 / EXT39 1 11kV Feeder MV Overhead Line	-22.63	-27.36	-7.13	40.21	48.76	42.92	36.49	34.42	31.12	31.24	28.74	33.2	35.17	36.06	10.07	20.4
Meter_UNIT 13 / SETLOGELO 1 11kV Feeder MV Overhead Line																
Meter_UNIT 13 / SEWERAGE WORKS 1 11kV Feeder MV Overhead Line	-29.14	-29.96	-20.99	-9.78	11.78	0.67	-6.69	-34.29	-23.75	-59.31	-20.39	58.2	-19.23			20.71
Meter_UNIT 4 & 5 / LUCKY 7 11kV Feeder MV Overhead Line	84.15	80.13	80.94	85.75	85.24	85.09	84.39	82.56	83.62	81.32	84.06	83.6	83.82	73.2	84.93	84.19
Meter_UNIT 4 & 5 / MODISE 11kV Overhead Line	83.2	80.3	82.21	85.4	86.64	87.7	87.09	87.89	86.82	87.56	86.27	86.94	88.02	87.32	87.12	88.69
Meter_UNIVER VIEW / BEIRUT-MS5-4 1 11kV FEEDER MV UNDERGROUND CABLE	67.99	63.58	69.06	72.62	75.05	70.23	69.28	68.06	68.39	72.73	59.34	63.67	69.93	92.8	80.77	76.95

Meter_UNIVER VIEW / HOSPI - MS 1 11kV FEEDER MV UNDERGROUND CABLE																
Meter_UNIVER VIEW / MM WATER TOWER - MS 1 11kV FEEDER MV UNDERGROUND CABLE	31.62	30.95	40.23	40.04	20.97	6.67	-1.33	16.9	-0.55	16.52	26.79	12.24	22.13	4.44	15.9	2.65
Meter_UNIVER VIEW / MOLSUN HOTEL - SWS 1 11kV FEEDER MV UNDERGROUND CABLE	-165.77	-160.01	-119.61	-51.17	-109.4	-104.03	-89.14	-41.93	-122.87	-155.25	-155.33	-187.64	-82.93	-85.12	9.85	-1.88
Meter_UNIVER VIEW / NWDC OFFICE - SWS 1 11kV FEEDER MV UNDERGROUND CABLE							-3907.63	-1548.95	-1711.06	-1877.55	-1953	-2361.69	-2086	-1812.66	-1115.54	-1149.53
Meter_UNIVER VIEW / UNIWEST 1 11kV Feeder MV Underground Cable														-12.11	-3.47	-16.25
Meter_VAAL REEFS FIVE / ANGLOGOLD LIMITED - MP1 6.6kV Bulk Load Overhead Line																
Meter_VAAL REEFS TWO / ANGLOGOLD LIMITED - MP3 6.6kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-10	-10	37.19	-34.74	61.37	-30.86	-896.51	7.43	-16.67	94.61	9.44
Meter_VAAL REEFS TWO / ANGLOGOLD LIMITED - MP3 6.6kV Bulk Load Overhead Line					-10	-10	-10	37.19	-34.74	61.37	-30.86	-896.51	7.43	-16.67	94.61	9.44
Meter_VAAL REEFS TWO / CHINA AFRICAN PRECIOUS METALS (PTY) LTD MP2 6.6kV Bulk Load Overhead Line														0	0	0
Meter_VAALKOP PUMPS / MAGALIES WATERRAAD MP2 11kV Bulk Load Overhead Line														-4.81		-2.78
Meter_VEEKRAAL/BLAAUWBANK 11kV Overhead Line	38	19.94	30.1	38.39	33.11	34.34	42.21	35.67	14.73	11.43	24.52	28.12	29.62	-18.17	17.79	22.7
Meter_VEEKRAAL/DIKHOLOLO 11kV Overhead Line	62.8	70.53	73.64	76.02	72.76	68.84	64.04	62.65	57.93	37.11	55.83	60.24	63.44	61.29	62.35	67.4
Meter_VEEKRAAL/JERUSALEM 11kV Overhead Line	38.54	-8.24	-9.28	29.71	32.58	60.82	47.53	42.87	37.33	39.77	32.71	38.65	44.7	41.25	42.57	49.2
Meter_VEEKRAAL/KLIPKOP 11kV Overhead Line	24.67	-5.66	27.05	25.84	29.39	41.36	28.58	38.2	-21.04	47.18	24.41	38.49	37.67	19.71	33.75	27.16
Meter_VEEKRAAL/RIETGAT 11kV Overhead Line	31.56	25.41	28.13	49.45	56.29	47.99	46.13	40.63	39.71	4.53	11.19	58.18	44.95	38.83	48.93	50.54
Meter_VENTERSDORP / JB MARKS LOCAL MUNIC MP2 11kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-10	-10	-10	-42.81	-10	-10	0	0	0	0	0
Meter_VENTERSDORP TRACTION / SATS KIMBERLEY - MP1 132kV Bulk Load Overhead Line	-53.87	-50.34	-19.44	-32.94	-4.26	-8.7	-12.19	-5.36	-13	-6.06	-10.58	-14.44	9.62	-5.85	2.96	-2.03
Meter_VESEL / BRAY 1 22kV Feeder MV Overhead Line	-62.21	-1.94	4.36	-12.2	2.72	-6.72	15.76	11.03	5.76	4.91	2.44	1.2	44.53	42.41	56.65	56.1
Meter_VESEL / MOROKWENG 1 22kV Feeder MV Overhead Line	34.41	31.75	33.17	25.07	39.81	31.11	37.73	37.56	32.69	26.28	32.87	36.68	66.22	54.82	63.96	69.57
Meter_VESEL / TOSCA 1 22kV Feeder MV Overhead Line	29.38	25.38	27.08	25.3	37.85	24.53	36.12	34.1	22.58	30.59	27.42	9.25	28.99	48.95	58.1	60.21
Meter_VESEL / VOSTERSHOOP 1 22kV Feeder MV Overhead Line	23.36	11.3	7.02	26.38	14.12	5.38	8.86	27.67	24.64	43.94	26.29	12.37	59.46	39.98	21.98	57.85
Meter_VESEL / WATERSEND 1 22kV Feeder MV Overhead Line	-88.22	-69.94	14.25	-14.21	-10.87	23.59	45.47	27.76	16.97	30.62	-16.11	-22.49	-3	72.08	50.87	46.94
Meter_VRYBURG / HUHUDI 1 11kV Feeder MV Overhead Line	82.97	18.3	22.11	30.81	36.75	29.05	34.57	27.52	30.39	24.5	25.53	30.45	33.91	33.87	40.78	36.72
Meter_VRYBURG / ITHUMELENG 1 11kV Feeder MV Overhead Line	24.97	24.01	25.62	28.58	38.68	31.09	27.65	24.99	24	24.25	23.87	36.57	28.09	29.01	44.47	34.7
Meter_VRYBURG / NALEDI LOCAL MUNICIPALITY MP1 11kV Bulk Load Overhead Line	-10	-10	-471.41	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_VRYBURG ROAD - LETSAPA 1 11kV MV Overhead Line	38.3	30.93	39.23	48.53	58.95	46.84	42.88	76.58	-157.4	46.57	47.71	50.22				
Meter_VRYBURG ROAD - SETLOPO 1 11kV Feeder MV Overhead Line	75.09	75.85	77.52	77.38	79.51	69.68	76.34	76.02	78.22	76.65	75.29	87.6	78.22	77.4	80.68	81.21
Meter_VRYBURG ROAD / DIBATE 1 11kV Feeder MV Overhead Line	59.76	59.12	63.22	68.92	70.22	66.86	65.28	64.29	62.75	62.34	55.04	61.67	63.16	65	69.2	71.44
Meter_VRYBURG ROAD / MOCOSENG 1 11kV Feeder MV Overhead Line	52.39	53.22	56.51	60.16	65.11	60.59	57.84	56.5	55.97	54.9	54.74	54.55	57.17	57.54	62.6	67.48
Meter_VRYBURG ROAD / VRYHOF SILO 1 22kV Feeder MV Overhead Line	44.06	45.09	50.29	54.31	57.36	50.91	49.99	49.42	48.55	48.36	52.87	46.97	48.66	47.66	54.59	59.9
Meter_WESTERN REEFS ONE / CHINA AFRICAN PRECIOUS METALS (PTY) LTD MP2 6.6kV Bulk Load Overhead Line	-9.99	-10.01	-10	-10	-10.01	-10.01	-10	-10	-10	-10	-10	0	0	0.01	0.01	0
Meter_WESTERN REEFS TWO / ANGLOGOLD LIMITED - MP2 6.6kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_WESTERN REEFS TWO / CHINA AFRICAN PRECIOUS METALS (PTY) LTD MP1 6.6kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_WHITES LICHTENBURG / ELAND 1 11kV Feeder MV Overhead Line	-10.32	6.15	39.75	30.5	39.9	-190.46	88.03	33.51	4.71	21.89	40.54	14.46	4.12	-7	26.58	14.98
Meter_WHITES LICHTENBURG / LAFARGE CEMENT MP2 3.3kV Bulk Load Overhead Line	-7.06	-13.15	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_WHITES LICHTENBURG / MANANA 1 11kV Feeder MV Overhead Line	1.27	-67.14	17.82	-47.53	46.82	51.31	37.75	56.3	25.98	42.91	59.95	28	39.84	50.71	32.92	30.56
Meter_WHITES NORTH / BLUE CIRCLE CEMENT PTY LTD MP4 3.3kV Bulk Load Overhead Line	-10	-48.2	-9.3	-9.71	-9.68	-9.69	-9.68	-9.68	-9.54	-9.67	-9.61	0.29	1.68	0.35	0.29	0.27
Meter_WHITES NORTH / BLUE CIRCLE CEMENT PTY LTD MP5 6.6kV Bulk Load Overhead Line	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_WILDEPLATS / IMPALA PLATINUM MP1 Bulk Load Overhead Line	-23.96	-6.53	2.83	-8.6	-5.53	-10.67	-4.67	-1.88	-14.57	-29.39	7.13	-11.54	-1.18	6.43	-2.08	-20.47
Meter_WILDEPLATS / IMPALA PLATINUM MP2 Bulk Load Overhead Line	-30.22	-26.31	1.53	-7.83	-5.53	-10.67	-4.67	-1.88	-14.57	-29.39	7.13	-11.54	-1.18	6.43	-2.08	-20.47
Meter_WOLMARANSSTAD MUNIC / MAKWASSIE 1 11kV Feeder MV Overhead Line	26.77	3.39	-17.62	-6.59	-5.6	-4.26	-2.7	-0.04	-2.65	-147.68	3.57	10.9	1.37	-149.01	-26.81	0.03
Meter_WOLMARANSSTAD MUNIC / WOLMARANSSTAD MUNICIPALITY - MP1 11kV Bulk Load Overhead Line	-10	-6.2	20.41	-42.09	-10	-10	-10	-10	-10	-10	-10	0	0	0	0	0
Meter_WOLMARANSSTAD MUNIC / WOLMARANSSTAD RURAL 1 11kV Feeder MV Overhead Line	6.03	-46.78	-22.16	-4125.03	-27.57	-56.11	-44.95	-34.33	-4.03	-23.04	72.31	17.48	73.64	60.62	37.77	-35.04
Meter_WONDERKOP-MARIKANA 11kV Overhead Line	70.73	71.36	77.62	79.27	78.33	77.02	74.56	79.25	84.03	73.97	71.19	71.85	73.43	72.98	87.2	6.11
Meter_WONDERKOP-QUARRIES 11kV Overhead Line	81.29	81.53	82.31	84.18	72.47	83.4	81.21	80.65	80.53	79.91	78.61	78.76	80.46	81.38	81.92	82.77
Meter_WONDERKOP-TURF 11kV Overhead Line	88.03	77.08	76.26	78.92	78.67	74.76	68.83	68.62	67.21	73.38	70.66	66.45	67.45	66.88	79.79	58.75
Meter_WOODHOUSE / WD4 Dwaalvlakte fdr																
Meter_WOODHOUSE / WOM2 Morakane fdr																
Meter_ZEERUST CHROME / NIETVERDIEND 1 22kV Feeder MV Overhead Line	6.9	14.13	12.25	7.47	34.31	41.07	39.22	40.97	35.06	38.23	39.64	38.28	44.7	35.03	71.17	49.16
Meter_ZEERUST CHROME / ZEERUST CHROME MINES LTD - MP1 11kV Bulk Load Overhead Line	-122.39	-12.76	-7.58	-11.59	-18.77	-13	-14.72	-8.94							0	0
Meter_ZEERUST MUNIC / ENZELSBERG 1 22kV Feeder MV Overhead Line	45.71	40.81	50.27	55.66	47.16	44.47	52.04	57.47	47.84	56.38	56.11	42.45	53.03	48.31	57.05	91.43
Meter_ZEERUST MUNIC / LUCERN 1 11kV Feeder MV Overhead Line	39.05	36.42	32.24	37.45	44.3	34.5	29.21	47.91	32.05	-13.12	31.32	4.26	27.72	77.88	214.62	30.56
Meter_ZEERUST MUNIC / MARICO 1 22kV Feeder MV Overhead Line	41.36	31.12	38.53	40.55	16.42	32.68	37.69	38.89	39.75	46.69	31.53	19.77	20.04	59.26	54.37	29.94
Meter_ZEERUST MUNIC / ZEERUST MUNICIPALITY MP2 11kV Bulk Load Overhead Line	-5.68	-20.16	1.38	-3.03	-7.98	-17.14	-17.82	-3.02	-14.9	-8.32	-11.88	-9.01	5.99	-0.66	6.98	3.39
Meter_ZEERUST WATERWORKS / OTTOSHOOP 1 11kV Feeder MV Overhead Line	27.83	30.34	42.27	46.5	-41.35	44.1	40.08	38.26	22.26	53.55	82.09	14.87	23.39	17	39.6	45.78
Meter_ZEERUST WATERWORKS / ZEERUST PUMPS 1 11kV Feeder MV Overhead Line	18.81	17.71	16.6	9.48	22.99	24.58	26.34	19.68	12.75	23.06	16.15	3.45	10.14	51.58	-103.46	-76.16

Inathi Mpapa

From: Neo Mothibi <MothibNR@eskom.co.za>
Sent: 18 October 2021 10:04 AM
To: Werner Greyling
Subject: NWOU Load Reduction Feeders
Attachments: Load Reduction Feeders_ Losses Analysis Report.xlsx

Good Morning Werner,

Please find attached the Load Reduction feeders for NWOU.

Meladi is currently running with this initiative. If you need any info please feel free to contact her. Thank you

Neo Remofilwe Mothibi
Energy Balancing Analyst
Energy Trading
Customer Services
Mabe Park 1 Kgwebo Street Rustenburg
Tel +27 14 565 1102
Cell +27 82 814 3275
Mothibnr@eskom.co.za

Exclude_Flg	OPS_UNIT	ZONE	CNC_SECTOR	CNC	Meter_Flg	Scenario	Substation	Meter_Location
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Hermes CNC		Sub not Metered -> All Fdrs Metered	CHARLES SHAFT 88/11/6.6kV Substation	299499959
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Hermes CNC		Sub not Metered -> All Fdrs Metered	KHUMA 88/11kV Substation	299499511
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Hermes CNC		Sub not Metered -> All Fdrs Metered	KHUMA 88/11kV Substation	299499869
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Hermes CNC		Sub not Metered -> All Fdrs Metered	KHUMA 88/11kV Substation	299499870
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Hermes CNC		Sub not Metered -> All Fdrs Metered	KHUMA 88/11kV Substation	299499871
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Hermes CNC		Sub not Metered -> All Fdrs Metered	KHUMA 88/11kV Substation	299499873
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Hermes CNC		Sub not Metered -> All Fdrs Metered	KHUMA 88/11kV Substation	299499874
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Hermes CNC		Sub not Metered -> All Fdrs Metered	KHUMA 88/11kV Substation	299499875
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uraniaville CNC		Meter Stats missing -> Losses past Year	KANANA 132/11kV Substation	299499886
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uraniaville CNC		Sub not Metered -> All Fdrs Metered	KANANA 132/11kV Substation	299499887
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uraniaville CNC		Sub not Metered -> All Fdrs Metered	KANANA 132/11kV Substation	299499888
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uraniaville CNC		Sub not Metered -> All Fdrs Metered	MAKUONE 11kV Switching Station	299499813
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uraniaville CNC		Sub not Metered -> All Fdrs Metered	MAKUONE 11kV Switching Station	299499815
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uraniaville CNC		Sub not Metered -> All Fdrs Metered	MANYA 11kV Switching Station	299499807
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Uraniaville CNC		Sub not Metered -> All Fdrs Metered	MANYA 11kV Switching Station	299499809
0	North West Operating Unit	Matlosana Zone	Klerksdorp Sector	Wolmaranstad CNC		Sub not Metered -> All Fdrs Metered	MIMOSA 22kV Switching Station	299499787
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Taung CNC		Sub not Metered -> All Fdrs Metered	MAGOPELA 132/22kV Substation	299499822
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Taung CNC		Sub not Metered -> All Fdrs Metered	NORLIM 66/22kV Substation	299499770
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Vryburg CNC		Sub not Metered -> All Fdrs Metered	HAVELOCK 66/22kV Substation	299499914
0	North West Operating Unit	Matlosana Zone	Vryburg Sector	Vryburg CNC		Sub not Metered -> All Fdrs Metered	VRYBURG 132/88/11kV Substation	299499622
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Lichtenburg CNC		Sub not Metered -> All Fdrs Metered	ITSOSENG RR 88/11kV Substation	299499897
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Lichtenburg CNC		Sub not Metered -> All Fdrs Metered	ITSOSENG RR 88/11kV Substation	299499899
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Lichtenburg CNC		Sub not Metered -> All Fdrs Metered	ROOIGROND RR 88/11kV Substation	299499734
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC		Sub not Metered -> All Fdrs Metered	CENTRAL BUSINESS DISTRICT 11kV Switching Station	299499508
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC		Sub not Metered -> All Fdrs Metered	LEOPARD PARK 33/11kV Substation	299499473
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC		Sub not Metered -> All Fdrs Metered	LEOPARD PARK 33/11kV Substation	299499481
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC		Sub not Metered -> All Fdrs Metered	MMABATHO MAIN 88/33/11kV Substation	299499506
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC		Sub not Metered -> All Fdrs Metered	UNIT 13 88/11kV Substation	299499640
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC		Sub not Metered -> All Fdrs Metered	UNIT 13 88/11kV Substation	299499642
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC		Sub not Metered -> All Fdrs Metered	UNIT 13 88/11kV Substation	299499644
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Mmabatho CNC		Sub not Metered -> All Fdrs Metered	UNIT 13 88/11kV Substation	299499645
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Molopo CNC		Sub not Metered -> All Fdrs Metered	LOTLHAKANE 88kV Substation	299499829
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Molopo CNC		Sub not Metered -> All Fdrs Metered	MONTSHIWA 88/11kV Substation	299499776
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Molopo CNC		Sub not Metered -> All Fdrs Metered	MONTSHIWA 88/11kV Substation	299499777
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Molopo CNC		Sub not Metered -> All Fdrs Metered	MONTSHIWA 88/11kV Substation	299499778
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Molopo CNC		Sub not Metered -> All Fdrs Metered	MONTSHIWA 88/11kV Substation	299499779
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Zeerust CNC		Meter Stats missing -> Losses past Year	DINORUTSHE 22/11kV Substation	299499482
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Zeerust CNC		Meter Stats missing -> Losses past Year	LERATO 88/11kV Substation	299499838
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Zeerust CNC		Sub not Metered -> All Fdrs Metered	GOPANI MINE 88/22kV Substation	299499918
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Zeerust CNC		Sub not Metered -> All Fdrs Metered	GOPANI MINE 88/22kV Substation	299499922
0	North West Operating Unit	Platinum Zone	Mmabatho Sector	Zeerust CNC		Sub not Metered -> All Fdrs Metered	STRAATSDRIFT RR 88/22kV Substation	299499683
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Brits CNC		Sub not Metered -> All Fdrs Metered	GELUK RURAL 88/11kV Substation	299499926
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Matooster CNC		Meter Stats missing -> Losses past Year	SUN CITY 88/11kV Substation	299499681
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Matooster CNC		Sub not Metered -> All Fdrs Metered	LEDIG 132/22/11kV Substation	299499679
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Matooster CNC		Sub not Metered -> All Fdrs Metered	LEDIG 132/22/11kV Substation	299499680
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Matooster CNC		Sub not Metered -> All Fdrs Metered	LEDIG 132/22/11kV Substation	299499682
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Matooster CNC		Sub not Metered -> All Fdrs Metered	RUIGHOEK 88/22kV Substation	299499726
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Matooster CNC		Sub not Metered -> All Fdrs Metered	RUIGHOEK 88/22kV Substation	299499728
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mogwase CNC		Sub not Metered -> All Fdrs Metered	MANYANE 88/11kV Substation	299499804
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mogwase CNC		Sub not Metered -> All Fdrs Metered	MANYANE 88/11kV Substation	299499805
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mogwase CNC		Sub not Metered -> All Fdrs Metered	MOGWASE INDUSTRIAL 88/11kV Substation	299499575
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mogwase CNC		Sub not Metered -> All Fdrs Metered	MORULENG 88/11kV Substation	299499772
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mogwase CNC		Sub not Metered -> All Fdrs Metered	MORULENG 88/11kV Substation	299499773
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mooinooi CNC		Sub not Metered -> All Fdrs Metered	MODDERSPRUIT 88/11kV Substation	299499780
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Mooinooi CNC		Sub not Metered -> All Fdrs Metered	MODDERSPRUIT 88/11kV Substation	299499784
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Rustenburg CNC		Sub not Metered -> All Fdrs Metered	KANA 22kV Switching Station	299499891
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Rustenburg CNC		Sub not Metered -> All Fdrs Metered	KANA 22kV Switching Station	299499892
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Tlhabane CNC		Sub not Metered -> All Fdrs Metered	SHAFT 15 88/22kV Substation	299499713
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Vaalkop CNC		Sub not Metered -> All Fdrs Metered	ONTGIN 88/22/11kVSubstation	299499763
0	North West Operating Unit	Platinum Zone	Rustenburg Sector	Vaalkop CNC		Sub not Metered -> All Fdrs Metered	VEEKRAAL RURAL 88/11kV Substation	299499628

Stats_Meter	Meter_Status	Fdr_Location	Feeder	Month	Month_Var1	IsLatest	Comments	Fdrs	Meters
Meter_CHARLES SHAFT / KHUMA EXT9 1 11kV Feeder MV	Online	198765999	CHARLES SHAFT / KHUMA EXT9 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_KHUMA / MHLANGA 1 11kV Feeder MV Overhead Li	Online	200715595	KHUMA / MHLANGA 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_KHUMA / UTLWAN 1 11kV Feeder MV Overhead Lin	Online	221331001	KHUMA / UTLWAN 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_KHUMA / PARKS 1 11kV Feeder MV Overhead Line	Online	221330993	KHUMA / PARKS 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_KHUMA / MOKGETI 1 11kV Feeder MV Overhead Li	Online	197948201	KHUMA / MOKGETI 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_KHUMA / LEEUW 1 11kV Feeder MV Overhead Line	Online	221330987	KHUMA / LEEUW 1 11kV Feeder MV Underground Cable	202108	202107	Y	None	1	1
Meter_KHUMA / HOZTELL 1 11kV Feeder MV Overhead Li	Online	221330962	KHUMA / HOZTELL 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_KHUMA / BORAK 1 11kV Feeder MV Overhead Line	Online	221076914	KHUMA / BORAK 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_KANANA / LERATO 1 11kV Feeder MV Overhead Li	Meter Stats missing			202108	202107	Y	None	0	0
Meter_KANANA / KHOTSO 1 11kV Feeder MV Overhead Li	Online	199383031	KANANA / KHOTSO 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_KANANA / KAGISO 1 11kV Feeder MV Overhead Li	Online	199393327	KANANA / KAGISO 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_MAKUONE / OLD TAXI 1 11kV Feeder MV Overhead	Online	221341883	MAKUONE / OLD TAXI 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_MAKUONE / HIGH BASE 1 11kV Feeder MV Undergr	Online	221347482	MAKUONE / HIGH BASE 1 11kV Feeder MV Underground Cable	202108	202107	Y	None	1	1
Meter_MANYA / SPOOR 1 11kV Feeder MV Overhead Line	Estimated	221349343	MANYA / SPOOR 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_MANYA / PARKE 1 11kV Feeder MV Overhead Line	Estimated	197761647	MANYA / PARKE 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_MIMOSA SWS / GROOTDOORNS 1 22kV Feeder MV Ov	Online	199237501	MIMOSA SWS / GROOTDOORNS 1 22kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_MAGOPELA / CHOSENG 1 22kV Feeder MV Overhead	Online	197635057	MAGOPELA / CHOSENG 1 22kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_NORLIM / Dikhuting 1 22kV Feeder MV Overhead	Online	199231483	NORLIM / DIKHUTING 1 22kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_HAVELOCK / HOUTKRAAL 1 22kV Feeder MV Overhe	Estimated	197597843	HAVELOCK / HOUTKRAAL 1 22kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_VRYBURG / HUHUDI 1 11kV Feeder MV Overhead L	Online	221895567	VRYBURG / HUHUDI 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_ITSOSENG RURAL / VERDWAAL 1 11kV Feeder MV O	Estimated	198499241	ITSOSENG RURAL / VERDWAAL 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_ITSOSENG RURAL / SPRINGBOKPAN SILOS 1 11kV F	Online	198436111	ITSOSENG RURAL / SPRINGBOKPAN SILOS 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_ROOIGROND / GREEFSLAAGTE 1 11kV Feeder MV Ov	Online	198643437	ROOIGROND / GREEFSLAAGTE 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_CENTRAL BUSSINESS DISTRICT / Unit2 MS2-1 11K	Online	197789737	CENTRAL BUSINESS DISTRICT / KEGOMO FLATS 1 11kV Feeder 11kV MV Underground Cable	202108	202107	Y	None	1	1
Meter_LEOPARD PARK / GOLF COURSE-MS9 1 11kV Feeder	Online	197535489	LEOPARD PARK / GOLF COURSE-MS9 1 11kV Feeder MV Underground Cable	202108	202107	Y	None	1	1
Meter_LEOPARD PARK / SIGNAL HILL 1 11kV Feeder MV	Online	200380745	LEOPARD PARK / SIGNAL HILL 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_MMABATHO MAIN - TEACHERS R/CENTRE -MS 1 11kV	Online	197533213	MMABATHO MAIN / TEACHERS R/CENTRE-MS 1 11kV Feeder MV Underground Cable	202108	202107	Y	None	1	1
Meter_UNIT 13 / AIRPORT ROAD 1 11kV Feeder MV Over	Online	221683595	UNIT 13 / AIRPORT ROAD 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_UNIT 13 - UNIT 15 NORTH 1 11kV Feeder MV Ove	Online	197535287	UNIT 13 / UNIT 15 NORTH 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	2	1
Meter_UNIT 13 - UNIT 14 NORTH 1 11kV Feeder MV Ove	Online	197535277	UNIT 13 / UNIT 14 NORTH 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_UNIT 13 - UNIT 13 SOUTH 1 11kV Feeder MV Ove	Online	197535019	UNIT 13 / UNIT 13 SOUTH 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_LOTHLAKANE / MATHE VILLAGE 1 11kV Feeder MV	Online	199128679	LOTHLAKANE / MATHE VILLAGE 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_MONTSHIWA STAD / TLHABOLOGO 1 11kV Feeder MV	Online	221691319	MONTSHIWA STAD / TLHABOLOGO 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_MONTSHIWA STAD / MAGOGWE TAR 1 11kV Feeder M	Online	221683517	MONTSHIWA STAD / MAGOGWE TAR 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_MONTSHIWA STAD / MAGOGWE KOI KOI 1 11kV Feed	Online	221686557	MONTSHIWA STAD / MAGOGWE KOI KOI 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_MONTSHIWA STAD / MAGOGWE CENTRE 1 11kV Feede	Online	221683501	MONTSHIWA STAD / MAGOGWE CENTRE 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_DINORUTSHE / IKAKGELENG 1 22kV Feeder MV Ove	Meter Stats missing			202108	202107	Y	None	0	0
Meter_LERATO / UNIT ONE EXTENSION 1 11kV Feeder MV	Meter Stats missing			202108	202107	Y	None	0	0
Meter_GOPANI MINE / MOTSWEDI 1 22kV Feeder MV Over	Online	199800045	GOPANI MINE / MOTSWEDI 1 22kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_Gopani Mine - Gopane	Online	199812879	GOPANI MINE / GOPANI 1 22kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_STRAATSDRIFT RURAL / PELLA 1 22kV Feeder MV	Online	221838317	STRAATSDRIFT RURAL / PELLA 1 22kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_GELUK RURAL/BETHANIE 11kV Overhead Line	Estimated	342067195	GELUK RURAL / BETHANIE 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_SUN CITY-Heyterkrand 22kV Overhead Line	Meter Stats missing			202108	202107	Y	None	0	0
Meter_SUN CITY-MATOOSTER 11kV Overhead Line	Online	324954084	LEDIG / MATOOSTER 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_SUN CITY-Madikwe 22kV Overhead Line	Online	324942992	LEDIG / MADIKWE 1 22kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_SUN CITY-CHANENG 11kV Overhead Line	Online	324906452	LEDIG / CHANENG 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_RUIGHOEK-SEDIBELO 22kV Overhead Line	Online	319153099	RUIGHOEK / SEDIBELO 22kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_RUIGHOEK-NTUANE 22kV Overhead Line	Online	317465308	RUIGHOEK / NTUANE 22kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_MANYANE-SAULSPOORT 11kV Overhead Line	Online	324575157	MANYANE / SAULSPOORT 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_MANYANE-SANDFONTEIN 11kV Overhead Line	Online	319238535	MANYANE / SANDFONTEIN 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_Mogwase Industry Sub - Bagatla 11kV Feeder	Online	317143285	MOGWASE INDUSTRIAL / BAKGATLA 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_MORULENG-SEGAKWANENG 11kV Overhead Line	Online	324575110	MORULENG / SEGAKWANENG 1 11kV Feeder Overhead Line	202108	202107	Y	None	1	1
Meter_MORULENG-MANAMAKGOTHENG 11kV Overhead Line	Online	317912729	MORULENG / MANAMAKGOTHENG 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_MODDERSPRUIT-WATERKLOOF 11kV Feeder Overhead	Online	320525745	MODDERSPRUIT / WATERKLOOF 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_MODDERSPRUIT-11kV Bapong Feeder	Online	341689761	MODDERSPRUIT / BAPONG 1 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_KANA-MERITING 22kV Overhead Line	Online	317243049	KANA / MERITING 22kV Feeder HV Overhead Line	202108	202107	Y	None	1	1
Meter_KANA-BOSPOORT 22kV Overhead Line	Online	317293921	KANA / BOSPOORT 1 22kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_SHAFT 15-TLASENG 22kV Overhead Line	Online	318623497	SHAFT 15 / TLASENG 1 22kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_ONTGIN/HARTEBEESFONTEIN 22kV Overhead Line	Online	341681153	ONTGIN / HARTEBEESFONTEIN 1 22kV Feeder MV Overhead Line	202108	202107	Y	None	1	1
Meter_VEEKRAAL/RIETGAT 11kV Overhead Line	Online	341714097	VEEKRAAL / RIETGAT 11kV Feeder MV Overhead Line	202108	202107	Y	None	1	1

ED_kWh	ED_kWh_YEAR	ED_kWh_12MMA	NTL_kWh	NTL_kWh_YEAR	NTL_kWh_12MMA	NTL_%_12MMA	Balanced	Outside_Range	Inside_Range	Significant_Losses	All_kwh_used	Kwh_deliver_adjust	Tech_loss_kwh	Tech_loss_perc
818600	7898800	658233.33	615586	5686996	473916.33	72	1	1	0	N	121154	0	81860	10
753186.8	6990969.8	582580.82	560562	4939673	411639.42	70.66	1	1	0	N	117306	0	75318.68	10
588876.72	4945166.72	412097.23	421350	3161585	263465.42	63.93	1	1	0	N	108639	0	58887.67	10
552262	4936965	411413.75	393517	3180421	265035.08	64.42	1	1	0	N	103519	0	55226.2	10
289137.28	3078184.28	256515.36	188184	1870276	155856.33	60.76	1	1	0	N	72040	0	28913.73	10
299028.24	2762623.24	230218.6	219126	1867788	155649	67.61	1	1	0	N	49999	0	29902.82	10
339956.96	3205341.96	267111.83	244100	2054180	171181.67	64.09	1	1	0	N	61861	0	33995.7	10
579246.96	5441812.96	453484.41	416356	3586109	298842.42	65.9	1	1	0	N	104966	0	57924.7	10
0	5629674	511788.55	0	3234393	294035.73	57.45	0	1	0	N	0	0	0	0
793929.6	7924833.6	660402.8	559815	5360733	446727.75	67.64	1	1	0	N	154722	0	79392.96	10
79403.12	859976.12	71664.68	48442	540346	45028.83	62.83	1	1	0	N	23021	0	7940.31	10
1669752.96	8653556.96	721129.75	1346742	5976451	498037.58	69.06	1	1	0	N	156036	0	166975.3	10
442609.28	4306982.28	358915.19	323570	2292501	191041.75	53.23	1	1	0	N	74778	0	44260.93	10
262107	5423474	451956.17	63340	2935392	244616	54.12	1	1	0	N	172556	0	26210.7	10
508110	4342564	361880.33	372420	2878656	239888	66.29	1	1	0	N	84879	0	50811	10
98157.76	1085133.76	90427.81	50042	698185	58182.08	64.34	1	1	0	N	38300	0	9815.78	10
1633350.72	16752397.72	1396033.14	1093049	7880730	656727.5	47.04	1	1	0	N	376967	0	163335.07	10
725520	8499800	708316.67	127288	3720409	310034.08	43.77	1	1	0	N	525680	0	72552	10
357026	5058631	421552.58	35745	839662	69971.83	16.6	1	0	1	N	285578	0	35702.6	10
1024922.72	11031637.72	919303.14	371350	3574252	297854.33	32.4	1	1	0	N	551080	0	102492.27	10
208932.78	4583221.78	381935.15	67242	2688606	224050.5	58.66	1	1	0	N	120798	0	20893.28	10
1184324.4	11275559.4	939629.95	830639	7814790	651232.5	69.31	1	1	0	N	235253	0	118432.44	10
167657.56	2227637.56	185636.46	83952	1078219	89851.58	48.4	1	1	0	N	66940	0	16765.76	10
377021.12	4228634.12	352386.18	235352	2619502	218291.83	61.95	1	1	0	N	103967	0	37702.11	10
119710.5	716883.5	59740.29	74269	356282	29690.17	49.7	1	1	0	N	33470	0	11971.05	10
1320397.6	9467468.6	1051940.96	943508	6215558	690617.56	65.65	1	1	0	N	244850	0	132039.76	10
347307.28	4217016.28	351418.02	-18932	-267205	-22267.08	-6.34	1	0	1	N	331509	0	34730.73	10
509175.4	6114164.4	509513.7	410329	3265424	272118.67	53.41	1	1	0	N	47929	0	50917.54	10
652215.04	6567729.04	547310.75	377305	3623315	301942.92	55.17	1	1	0	N	209689	0	65221.5	10
177168.8	1903225.8	158602.15	119342	1254329	104527.42	65.91	1	1	0	N	40110	0	17716.88	10
265389.6	2580427.6	215035.63	181350	1701117	141759.75	65.92	1	1	0	N	57501	0	26538.96	10
1417920.96	14292132.96	1191011.08	1205873	11829393	985782.75	82.77	1	1	0	N	70256	0	141792.1	10
368783.72	4757902.72	396491.89	185921	2358492	196541	49.57	1	1	0	N	145984	0	36878.37	10
770347.64	9796509.64	816375.8	455355	5779786	481648.83	59	1	1	0	N	237958	0	77034.76	10
525204.6	5354892.6	446241.05	332533	2833316	236109.67	52.91	1	1	0	N	140151	0	52520.46	10
593930.4	7262033.4	605169.45	313101	3901249	325104.08	53.72	1	1	0	N	221436	0	59393.04	10
0	2646500	264650	0	1947573	194757.3	73.59	0	1	0	N	0	0	0	0
0	625618	125123.6	0	364773	72954.6	58.31	0	1	0	N	0	0	0	0
1163940.96	12351850.96	1029320.91	1317546	7500183	625015.25	60.72	1	1	0	N	-269999	0	116394.1	10
782340.96	8818491.96	734874.33	536143	5815196	484599.67	65.94	1	1	0	N	167964	0	78234.1	10
827252.64	4990919.64	415909.97	104598	882167	73513.92	17.68	1	0	1	N	639929	0	82725.26	10
1005280	14594880	1216240	380359	7264767	605397.25	49.78	1	1	0	N	524393	0	100528	10
0	2737232	456205.33	0	798358	133059.67	29.17	0	0	1	N	0	0	0	0
2449516.32	24658745.32	2054895.44	1417636	12908710	1075725.83	52.35	1	1	0	N	786929	0	244951.63	10
273487.48	6030581.48	502548.46	-730029	-6536435	-544702.92	-108.39	1	1	0	Y	976168	0	27348.75	10
213103.16	5376893.16	448074.43	97191	1250198	104183.17	23.25	1	0	1	N	94602	0	21310.32	10
1465620.02	8007540.02	667295	1032366	3575344	297945.33	44.65	1	1	0	N	286692	0	146562	10
1518240.02	14991960.02	1249330	1082887	10280090	856674.17	68.57	1	1	0	N	283529	0	151824	10
1155350	12534265	1044522.08	757167	8213148	684429	65.53	1	1	0	N	282648	0	115535	10
234150	10973415	914451.25	-1771	7605726	633810.5	69.31	1	1	0	N	212506	0	23415	10
2395973.78	27082160.78	2256846.73	1839556	21015566	1751297.17	77.6	1	1	0	N	316820	0	239597.38	10
1047279.86	12212586.86	1017715.57	646842	7491865	624322.08	61.35	1	1	0	N	295710	0	104727.99	10
1528243.06	16345406.06	1362117.17	1074528	11678210	973184.17	71.45	1	1	0	N	300891	0	152824.31	10
2061616.35	24120811.35	2010067.61	1398728	17637342	1469778.5	73.12	1	1	0	N	456727	0	206161.64	10
1782566.81	23821210.81	1985100.9	1254828	17020058	1418338.17	71.45	1	1	0	N	349482	0	178256.68	10
1528038.22	16353902.22	1362825.18	881110	9081516	756793	55.53	1	1	0	N	494124	0	152803.82	10
546708.84	5564158.84	463679.9	-287109	-3360136	-280011.33	-60.39	1	1	0	N	779147	0	54670.88	10
4478690.4	31562298.4	2630191.53	3470251	21932731	1827727.58	69.49	1	1	0	N	560570	0	447869.04	10
1960656.5	22378247.5	1864853.96	1265376	14565750	1213812.5	65.09	1	1	0	N	499215	0	196065.65	10
800522	8670679	722556.58	354097	3101783	258481.92	35.77	1	1	0	N	366373	0	80052.2	10

Trfr_bulk_total	Cnl_total	Kwh_lpu	Kwh_spu	Kwh_ppu	Kwh_street	Kwh_cdu	Cust_lpu	Cust_spu	Cust_street	Cust_ppu	Cust_buy_ppu	Kwh_lpu_actual	Kwh_spu_actual	Kwh_street_actual	Kwh_lpu_estimate	Kwh_spu_estimate
19	18	0	7471	113682.7	0	0	0	8	0	1370	761	0	0	0	0	7471
29	27	4517	15997	96791.6	0	0	1	7	0	1456	643	4517	1055	0	0	14942
20	20	0	21229	87410	0	0	0	6	0	1543	644	0	0	0	0	21229
24	23	0	9458	94060.8	0	0	0	10	0	1571	694	0	0	0	0	9458
14	14	0	5925	66115.3	0	0	0	5	0	1150	404	0	0	0	0	5925
5	5	0	5841	44158	0	0	0	3	0	746	309	0	4640	0	0	1201
13	12	0	64	61797.3	0	0	0	2	0	876	428	0	0	0	0	64
20	20	3814	6693	89254.4	5205	0	1	6	1	1359	622	3814	0	5205	0	6693
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	31	0	321	154400.9	0	0	0	1	0	2156	1024	0	321	0	0	0
6	6	0	0	23020.9	0	0	0	0	0	191	135	0	0	0	0	0
31	29	0	17278	138758.2	0	0	0	17	0	1853	872	0	0	0	0	17278
9	9	0	2360	72418.4	0	0	0	4	0	885	392	0	0	0	0	2360
31	30	0	14562	157993.9	0	0	0	4	0	2657	1054	0	0	0	0	14562
27	26	0	6257	78621.8	0	0	0	5	0	1650	563	0	0	0	0	6257
44	38	0	38025	274.5	0	0	0	27	0	1	1	0	35600	0	0	2425
140	132	68	6167	352211.5	18521	0	1	37	3	5119	2780	68	-31223	18521	0	37390
97	89	0	240917	281083.4	3680	0	0	24	2	3356	1942	0	233700	3680	0	7217
114	107	129778	155420	379.6	0	0	3	85	0	1	1	129778	42087	0	0	113333
54	53	0	41411	505848.7	3820	0	0	37	1	3385	2603	0	0	3820	0	41411
41	39	0	7839	112959.5	0	0	0	3	0	2058	867	0	6248	0	0	1591
42	31	3755	36579	194918.7	0	0	1	12	0	2476	1189	3755	36527	0	0	52
47	35	9729	55155	2055.6	0	0	1	25	0	27	15	9729	-10050	0	0	65205
9	9	6186	22279	75501.6	0	0	1	34	1	455	253	6186	1209	0	0	21070
4	3	12020	11623	9826.7	0	0	1	10	0	29	12	12020	4592	0	0	7031
70	66	0	40292	204558.3	0	0	0	19	0	2889	1247	0	0	0	0	40292
4	2	331509	0	0	0	0	2	0	0	0	0	331509	0	0	0	0
56	45	0	11222	36706.7	0	0	0	5	0	621	257	0	4778	0	0	6444
28	27	0	10193	199495.7	0	0	0	7	0	1417	732	0	0	0	0	10193
11	10	0	4104	36006.1	0	0	0	3	0	292	143	0	0	0	0	4104
10	9	0	811	56689.7	0	0	0	1	0	463	240	0	0	0	0	811
94	71	0	5171	64593.5	492	0	1	7	1	937	569	0	-537	492	0	5708
24	24	0	29447	116537.3	0	0	0	11	0	1570	710	0	7418	0	0	22029
47	44	0	10853	227105.3	0	0	0	39	1	3495	1507	0	-14319	0	0	25172
59	56	17078	-12950	136023.2	0	0	1	18	0	2332	942	17078	-26547	0	0	13597
29	28	0	17537	203899.2	0	0	0	29	0	2721	1196	0	1015	0	0	16522
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
153	135	116440	-568891	182452.3	0	0	5	39	1	3497	1382	116440	-361502	0	0	-207389
68	65	0	-4345	172308.8	0	0	0	18	0	3199	1314	0	-10015	0	0	5670
183	174	41785	457498	140646.2	0	0	3	53	1	3280	1101	41785	416844	0	0	40654
140	135	51167	108912	364313.9	0	0	3	54	0	4591	2157	51167	104813	0	0	4099
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	64	489045	39044	258839.9	0	0	2	37	0	6208	1604	489045	26194	0	0	12850
83	71	319435	186355	185162.2	285216	0	4	59	1	4410	1451	319435	108505	285216	0	77850
133	129	0	-99006	193608.2	0	0	0	94	0	3873	1120	0	-221453	0	0	122447
79	76	53065	37820	183549.3	12258	0	3	41	1	4579	1305	53065	28939	12258	0	8881
111	108	29792	54290	199447.5	0	0	3	18	0	4066	1456	29792	16037	0	0	38253
38	35	0	49584	233064.5	0	0	0	28	0	4899	1358	0	18751	0	0	30833
58	54	0	5983	206522.8	0	0	0	4	0	3963	1275	0	5400	0	0	583
131	129	0	33420	283399.6	0	0	0	9	0	4521	1806	0	3245	0	0	30175
77	69	14794	90696	190220.4	0	0	4	52	0	3877	1264	14794	21281	0	0	69415
94	90	0	26298	274592.8	0	0	0	20	0	4371	1684	0	0	0	0	26298
117	114	38416	251011	167299.9	0	0	2	67	0	3756	1149	38416	171856	0	0	79155
88	85	46368	28532	274581.8	0	0	2	38	0	4225	1675	46368	37	0	0	28495
113	113	0	18571	475552.9	0	0	0	8	0	5863	2379	0	0	0	0	18571
59	54	481039	37033	259402.9	1672	0	4	28	8	4456	1627	481039	3472	1672	0	33561
207	202	0	34197	526373.5	0	0	0	28	0	7543	3319	0	231	0	0	33966
95	92	37195	39417	422602.5	0	0	2	23	0	6100	2999	37195	10245	0	0	29172
88	81	4311	53529	308533.3	0	0	1	18	0	6091	2441	4311	19438	0	0	34091

Kwh_street_estimate	Cust_lpu_actual	Cust_spu_actual	Cust_street_actual	Cust_lpu_estimate	Cust_spu_estimate	Cust_street_estimate	Nmd_lpu	Nmd_spu	Nmd_street	Cdu_revenue	Kva	Cust_total	Nmd_total	Cust_actual_total
0	0	0	0	0	8	0	0	100	0	0	3275	1378	100	0
0	1	1	0	0	6	0	200	125	0	0	4175	1464	325	2
0	0	0	0	0	6	0	0	150	0	0	2231	1549	150	0
0	0	0	0	0	10	0	0	241	0	0	2541	1581	241	0
0	0	0	0	0	5	0	0	150	0	0	2345	1155	150	0
0	0	1	0	0	2	0	0	75	0	0	1760	749	75	1
0	0	0	0	0	2	0	0	125	0	0	1650	878	125	0
0	1	0	1	0	6	0	200	75	0	0	3031	1367	275	2
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0	12.5	0	0	6341	2157	12.5	1
0	0	0	0	0	0	0	0	0	0	0	1200	191	0	0
0	0	0	0	0	17	0	0	505	0	0	4266	1870	505	0
0	0	0	0	0	4	0	0	116	0	0	2835	889	116	0
0	0	0	0	0	4	0	0	100	0	0	3041	2661	100	0
0	0	0	0	0	5	0	0	141	0	0	2666	1655	141	0
0	0	21	0	0	6	0	0	1066	0	0	1698	28	1066	21
0	1	3	3	0	34	0	200	742	0	0	6361	5160	942	7
0	0	7	2	0	17	0	0	383	0	0	3492	3382	383	9
0	3	41	0	0	44	0	450	4261	0	0	6277	89	4711	44
0	0	0	1	0	37	0	0	835	0	0	5550	3423	835	1
0	0	2	0	0	1	0	0	225	0	0	3925	2061	225	2
0	1	10	0	0	2	0	500	354	0	0	7917	2489	854	11
0	1	3	0	0	22	0	100	1555	0	0	2729	53	1655	4
0	1	1	1	0	33	0	200	738	0	0	3020	491	938	3
0	1	1	0	0	9	0	200	241	0	0	1630	40	441	2
0	0	0	0	0	19	0	0	520	0	0	4613	2908	520	0
0	2	0	0	0	0	0	6300	0	0	0	1575	2	6300	2
0	0	2	0	0	3	0	0	166	0	0	3230	626	166	2
0	0	0	0	0	7	0	0	157	0	0	5600	1424	157	0
0	0	0	0	0	3	0	0	91	0	0	2200	295	91	0
0	0	0	0	0	1	0	0	25	0	0	1675	464	25	0
0	1	3	1	0	4	0	200	114	0	0	3293	946	314	5
0	0	3	0	0	8	0	0	291	0	0	2132	1581	291	3
0	0	11	1	0	28	0	0	867	0	0	3989	3535	867	12
0	1	3	0	0	15	0	315	472.99	0	0	3311	2351	787.99	4
0	0	3	0	0	26	0	0	714	0	0	3050	2750	714	3
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	5	20	1	0	19	0	1240	1362	0	0	8228	3542	2602	26
0	0	11	0	0	7	0	0	439	0	0	3178	3217	439	11
0	3	33	1	0	20	0	900	1594	0	0	7362	3337	2494	37
0	3	46	0	0	8	0	815	1176	0	0	11432	4648	1991	49
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	2	21	0	0	16	0	1800	854	0	0	8643	6247	2654	23
0	4	23	1	0	36	0	2800	1370	0	0	9746	4474	4170	28
0	0	30	0	0	64	0	0	2136	0	0	6097	3967	2136	30
0	3	13	1	0	28	0	440	988	0	0	5072	4624	1428	17
0	3	7	0	0	11	0	1225	646	0	0	7993	4087	1871	10
0	0	6	0	0	22	0	0	628	0	0	3146	4927	628	6
0	0	2	0	0	2	0	0	125	0	0	5985	3967	125	2
0	0	1	0	0	8	0	0	300	0	0	12569	4530	300	1
0	4	14	0	0	38	0	1925	1345	0	0	7756	3933	3270	18
0	0	0	0	0	20	0	0	442	0	0	7325	4391	442	0
0	2	12	0	0	55	0	400	2158	0	0	7883	3825	2558	14
0	2	1	0	0	37	0	870	1039	0	0	7132	4265	1909	3
0	0	0	0	0	8	0	0	357	0	0	10898	5871	357	0
0	4	2	8	0	26	0	3100	740	0	0	13446	4496	3840	14
0	0	2	0	0	26	0	0	637	0	0	16550	7571	637	2
0	2	3	0	0	20	0	415	921	0	0	9872	6125	1336	5
0	1	5	0	0	13	0	25	496	0	0	6445	6110	521	6

Cust_estimate_total	Inside_Range_%	Balanced_Grace_period_Months	Significant_Losses_Range_%	ED_Year_Months	DateVar
8	30	3	100	12	0
6	30	3	100	12	0
6	30	3	100	12	0
10	30	3	100	12	0
5	30	3	100	12	0
2	30	3	100	12	0
2	30	3	100	12	0
6	30	3	100	12	0
0	30	3	100	11	0
0	30	3	100	12	0
0	30	3	100	12	0
17	30	3	100	12	0
4	30	3	100	12	0
4	30	3	100	12	0
5	30	3	100	12	0
6	30	3	100	12	0
34	30	3	100	12	0
17	30	3	100	12	0
44	30	3	100	12	0
37	30	3	100	12	0
1	30	3	100	12	0
2	30	3	100	12	0
22	30	3	100	12	0
33	30	3	100	12	0
9	30	3	100	12	0
19	30	3	100	9	0
0	30	3	100	12	0
3	30	3	100	12	0
7	30	3	100	12	0
3	30	3	100	12	0
1	30	3	100	12	0
4	30	3	100	12	0
8	30	3	100	12	0
28	30	3	100	12	0
15	30	3	100	12	0
26	30	3	100	12	0
0	30	3	100	10	0
0	30	3	100	5	0
19	30	3	100	12	0
7	30	3	100	12	0
20	30	3	100	12	0
8	30	3	100	12	0
0	30	3	100	6	0
16	30	3	100	12	0
36	30	3	100	12	0
64	30	3	100	12	0
28	30	3	100	12	0
11	30	3	100	12	0
22	30	3	100	12	0
2	30	3	100	12	0
8	30	3	100	12	0
38	30	3	100	12	0
20	30	3	100	12	0
55	30	3	100	12	0
37	30	3	100	12	0
8	30	3	100	12	0
26	30	3	100	12	0
26	30	3	100	12	0
20	30	3	100	12	0
13	30	3	100	12	0

Inathi Mpapa

From: Tendani Moloto <MolotoT@eskom.co.za>
Sent: 10 December 2021 03:08 PM
To: bobrakbv@mweb.co.za
Cc: Ntshavheni Nenguda; Louis Van Der Walt
Subject: RE: [CAUTION:EXTERNAL EMAIL] - Vivo - Load Reduction Issue
Attachments: 20211202 Load reduction Media Statement.pdf

Good Day,

Find attached Media Statement that we have issued regarding Load Reduction.
Customer Relations Manager for your Area is Mr: Ntshavheni Nenguda (015 962 7880) who will contact you to make arrangements for a meeting.

Kind regards

Tendani Moloto

-----Original Message-----
From: bobrakbv@mweb.co.za <bobrakbv@mweb.co.za>
Sent: Friday, 10 December 2021 14:25
To: Tendani Moloto <MolotoT@eskom.co.za>
Subject: [CAUTION:EXTERNAL EMAIL] - Vivo

Good day ms Moloto,

Thank you for the time you made available to phone me due to our problem regarding the Eskom load reduction on the Zebra en Ingwe lines.

Load reduction is a very serious issue as some of these lines have supply shortage of up to 4 hours per day. 2 hours in the morning and again 2 hours in the afternoon. I was contacted by mr Louis van der Walt on 1 December 2021 in order to facilitate a meeting between the farmers and Eskom in order to discuss the issues relating to load reduction. Mr Van der Walt indicated that he will provide 2 dates on which the farmers can decide which will be best to interact. We have unfortunately not received any further information.

There is a request from our members that the fact that load reduction is on the lines as indicated above, the real reason for this implementation need to be confirmed. There is a lot of speculation and it leaves the users in the dark.

We take note of mr De Ruyter's explanation of the terminology of load reduction as well as explained by Hilton Rampedi but the situation differs from area to area and from line to line. We need the specific detail within our area what load reduction means and why it has been implemented without notice to the users. The users pay very expensive line fees and they are entitled to better supply of electricity as what is current the situation. Load reduction is a specific area bounded implementation and we need the detail of the reasons for the implementation.

We take note that mr Hilton Rampedi has left the service of Eskom to enjoy his pension. Can you please indicate who will be the contact person to whom we can forward our queries.

Thank you for your attention to our issue.

Regards

Erika Helm
Agricultural Representative
Landbou Verteenwoordiger
0796996032

MEDIA STATEMENT

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02 December 2021: Load reduction in Limpopo

Eskom continues to record a substantially high trend of energy demand during peak periods in the mornings and evenings between 05:00 and 09:00, and again between 17:00 and 21:00 respectively.

Load reduction is therefore Eskom's immediate response to safeguard its assets from repeated failure and damage due to overloading caused by illegal connections, meter bypasses and tampering with electricity infrastructure. These illegal acts are prevalent across the country and especially in high density areas.

The Limpopo Province is not spared in the implementation of load reduction. Since its inception in August 2020 Eskom has made a concerted effort to make customers aware of load reduction. An impact analysis of electricity theft is periodically conducted to identify areas where overloading and equipment failure frequently occurs in order to determine the duration of load reduction required to save Eskom infrastructure and minimise the inconvenience to customers.

Eskom would like to take this opportunity to urge customers to report any acts of electricity theft like cable theft and illegal connection by calling hotline number 0800112722 or at their nearest South African Police Service station.

ENDS

Media queries may be referred to Eskom's Media Desk on tel.: 011 800 3304 or
email: mediadesk@eskom.co.za
Issued by: Eskom Distribution Limpopo Province; LimLanga Cluster

Inathi Mpapa

From: Meladi Botabota <BotaboMR@eskom.co.za>
Sent: 31 January 2022 11:41 AM
To: Uriel Heideman
Cc: Kolodi Makola
Subject: Load reduction implementations and savings calculations
Attachments: 2022121 Load Reduction Methodology.pptx; Load Reduction Breaker Operating Guide Rev 11.8.xlsm; LRP Schedule Platinum Zone (05h00_09h00 & 17h00_21h00) _rev 3.xlsx

Good day Uriel

Thank you so much for the support offered for Load reduction
Let me also express my excitement about the establishment of NOS in out cluster given the struggle we are experiencing with support from the LOU and GOU

NB:

- Attached is the feeders NWOU feeders incorporated in the LOU and GOU schedule which is still not effective
- My suggestion is that your team should have all our balanced feeders for them to perform the technical and non-technical study to establish the correct split
- After that your team need to also advise on the feeders deserving to be on load reduction and then create a daily schedule based on the control schedule to switch off
- Then your team also need to do calculation on the curtailed/ saved energy on the monthly bases because it is required we are submit the figures to national

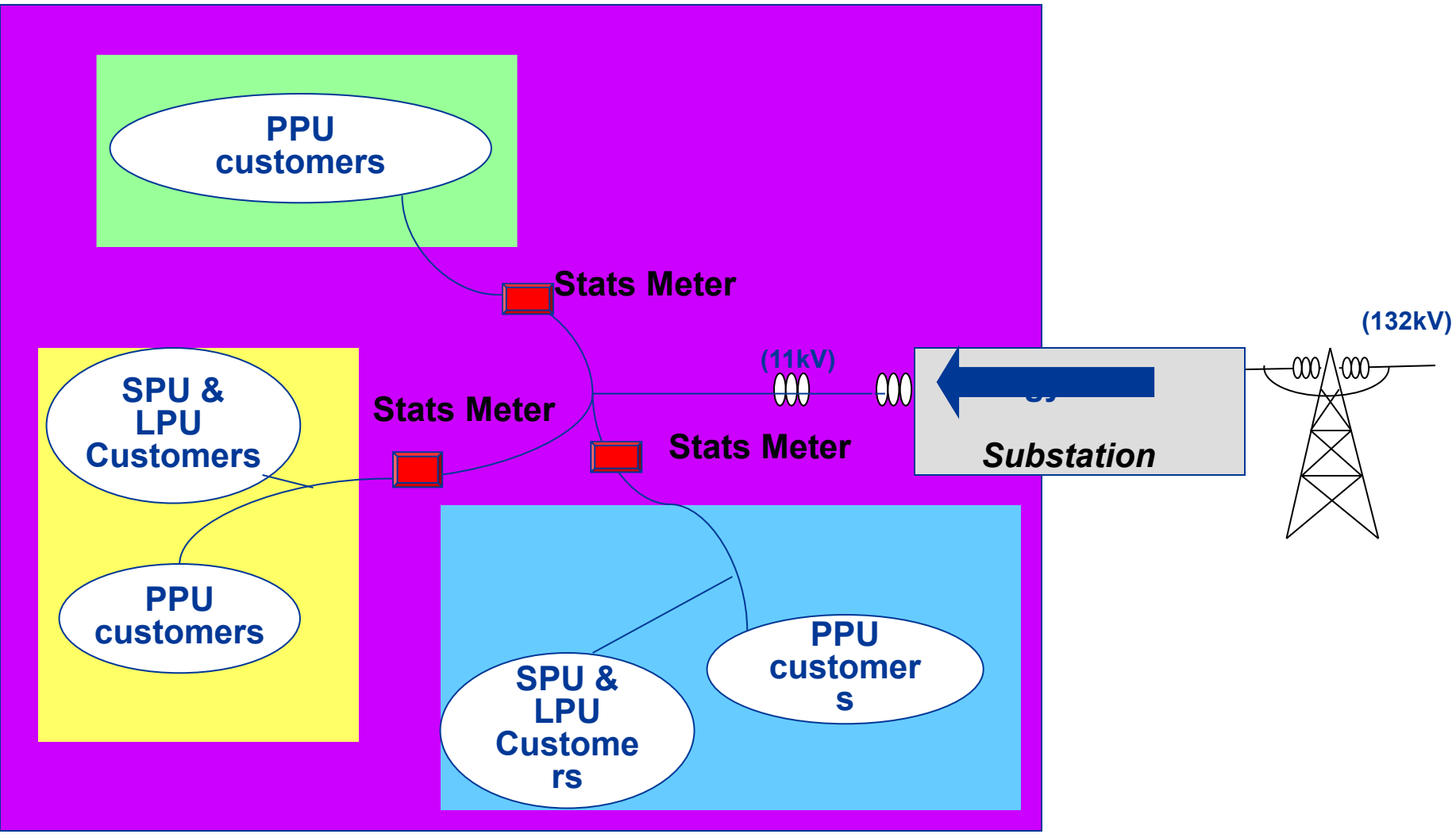
Let us have a brief session to discuss the way forward

Regards
Meladi Botabota



LOAD REDUCTION METHODOLOGY

Feeders with Different customer mix



Feeders Selection Criteria

- In a process to finalise the load reduction process.
- Feeders can be included under the following conditions:
  - *Feeder must be balanced in FBM with functioning Stats Meter*
  - *Worst performing feeders*
  - *Predominantly PPU/SPU customers*
  - *Actual non-technical losses volume with a threshold of >= 200 000 kWh*
  - *Networks or feeders that are consistently tripping due to overload*

Load Reduction Schedule

- Four hours in the morning and fours in the evening, that can differ from OU's
- Feeders are interrupted four times a week

Losses Calculation



FBM

Determine Average Losses % of All Selected Feeders

Stop/ Avoided Losses Computation

Apply the Ave Losses % to the Unserved Energy

Stopped Losses

MWh

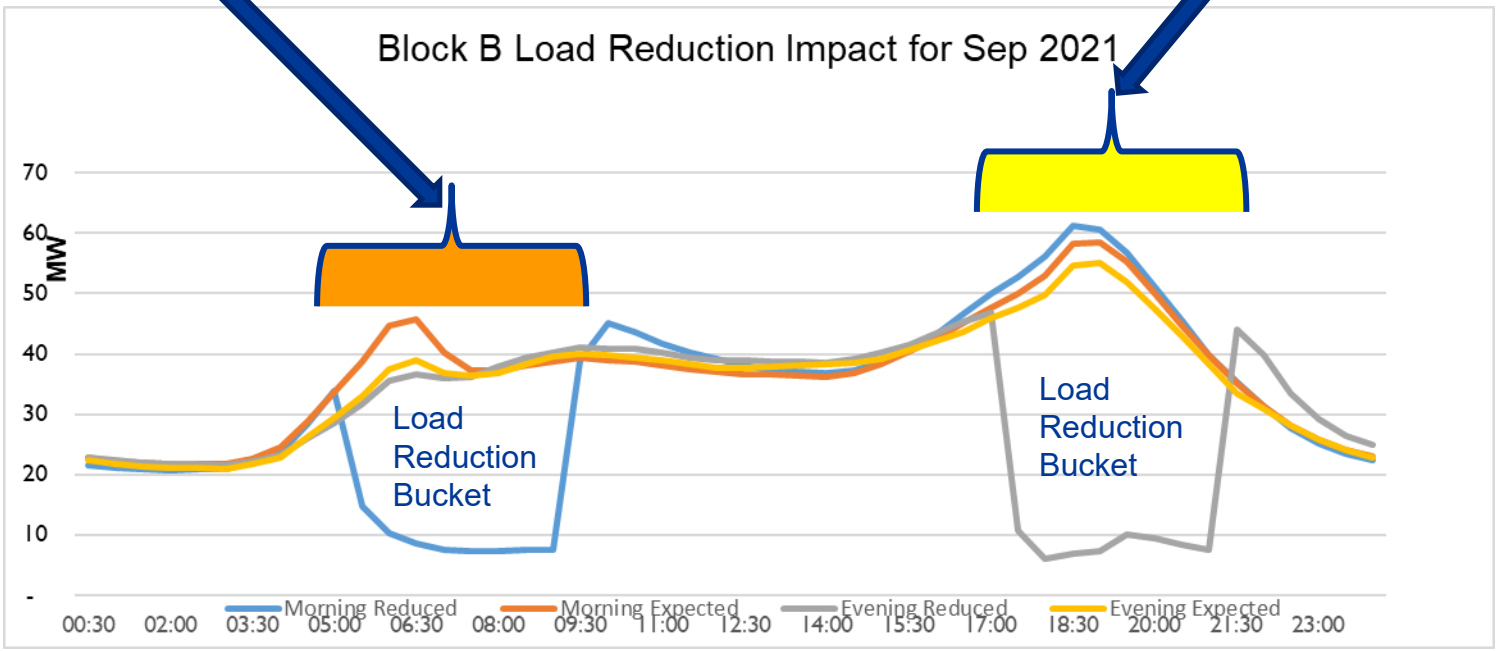
Losses Methodology

Eskom

Morning Baseline

Evening Baseline

Baseline: Similar days in a week



Avoided Energy Computation

Morning	
Expected	Reduced
36 120	24 242
41 643	12 497
45 128	9 473
42 944	8 152
38 799	7 476
37 267	7 307
37 590	7 400
38 410	7 551
39 051	23 234
39 176	41 979
396 127	149 308
	246 819.00

Evening	
Expected	Reduced
44 855	46 098
46 803	28 744
48 670	8 396
52 175	6 567
54 889	7 196
53 519	8 769
49 666	9 824
45 196	8 922
40 654	7 971
35 930	25 838
472354.50	158323.00
	314 031.50

Load Reduction Report

Period	Target (MWh)	Total Energy Purchases/ Delivered (MWh) FBM	Curtailed/ Unserved Energy Purchase (MWh)	Curtailed/Unserved Energy Purchase Savings (R'000)	Non-Tech Energy Losses (MWh) FBM	Avoided Energy Losses / Savings (MWh)	Energy Losses Saving (R'000)	Forgone Energy Volume (MWh)	Forgone Revenue (R'000)
Apr-21	10 000	131 800	3 168	R 4 800	74 731	2 123	R 3 216	1 045	R 1 584
May-21	10 000	133 607	6 309	R 9 558	75 755	3 470	R 5 257	2 839	R 4 301
Jun-21	10 000	141 800	7 709	R 11 679	80 401	4 240	R 6 424	3 469	R 5 256
Jul-21	10 000	150 301	9 189	R 13 921	88 835	5 422	R 8 214	3 767	R 5 708
Aug-21	10 000	148 010	8 917	R 13 509	83 922	5 261	R 7 970	3 656	R 5 539
Sep-21	10 000	161 333	7 264	R 11 005	91 476	3 995	R 6 053	3 269	R 4 952
Oct-21	10 000	144 475	7 093	R 10 746	81 917	3 901	R 5 910	3 192	R 4 836
Nov-21	10 000	144 475	7 093	R 10 746	81 917	3 901	R 5 910	3 192	R 4 836
Dec-21	10 000	144 475	7 093	R 10 746	81 917	3 901	R 5 910	3 192	R 4 836
Jan-22	10 000	144 475	7 093	R 10 746	81 917	3 901	R 5 910	3 192	R 4 836
Feb-22	10 000	144 475	7 093	R 10 746	81 917	3 901	R 5 910	3 192	R 4 836
Mar-22	10 000	144 475	7 093	R 10 746	81 917	3 901	R 5 910	3 192	R 4 836
Total	120 000	1 733 701	85 114	R128 947.71	986 623	47 917	R72 594.41	37 197	R56 353.30

Conclusion

- The following OU's are using the similar methodology
  - EC – Two feeders interrupted eight times a month
  - North West – 64 feeders
  - Free state
  - Limpopo 62 feeders interrupted four hours in the morning and fours in the evening
  - Gauteng?
  - Northern Cape?
  - KZN?
  - Western Cape?
  - Limpopo

Eskom



Thank You

Revision Control		
Rev	**Date**	**Reasons**
Rev 1.0	23-Dec-19	Created using criteria of shedding at substation TRFR level. Only customers whose feeder losses are 40% and above are selected for inclusion into the loss reduction schedule.
Rev 2.0	09-Jan-20	Include Ekurhuleni and Tshwane stations as well. Ekurhuleni breaker operating guide to be developed by FSOU Net Ops and to be implemented by Bloemfontein control. Blocks named A to I, where H and I are Ekurhuleni blocks.
Rev 3.0	13-Jan-20	Issues picked up by control have been noted and effected. Kagiso - Michal 1, 2 and 3 updated in Block D. Previously Michal 1 feeder appeared thrice instead of stating 1, 2 and 3. Jetta TRFR 3 can only be opened on 88 kV level as there is an isolator on the 11 kV side. This was updated in new Revision. From Block Diepkloof extension feeders excluded from Diepkloof Main sub as these constitute a larger bulk of paying customers than non-paying customers. From Block F the Erasmus - Aviva feeder excluded as this supplied the Munic and Munics are not included in the loss reduction schedules. Lochvaal Rural in Block D TRFR 1 isolator cannot be opened via supervisory therefore the TRFR was replaced with the feeders. All blocks and cover pages will reflect the latest revison and the cover pages will also reflect the latest revision date. The rev number and revision date on each sheet is linked to cover page A.
Rev 4.0	29-Jan-20	Tahiti excluded fontein, Lidequesdrift and Repeater Woodlands feeders from Block D as these are bulk paying customers. Glen Harpy feeder excluded from block A as there is a T-off to City Power. Meadow - Marie Louise feeder from Block A excluded as there is an IPP on that feeder.
Rev 5.0	23-Feb-20	Excluded Boys, Zico, Mostyn, Bloubos and city Mall feeders from Cosmo city in Block B. Tahiti excluded from block D as it is supplying Emfuleni Munic
Rev 5.0	10-Mar-20	Removal of Golfview from block F and Ironside Shedding 3 Feeders only and Hammanskraal scenario change
		Removed Mooilande all Feeders from Block A
		Removed Cosmocity Rhamadin, Seetha, Zico and Bloubos from Block B
		Removed from Ironside Debonair Park,De Deur,Walkerville from Block C
		Removed Laezonia and Lochvaal Rural from Block D
		Added Golfview_Orange Farmer Feeder In block In Block F
		Removed Henley Rural from Block F
		Removed Dilopye, Erasmus, Hotel , Witport all feeders and Pelly Lushof and Naphan Feeder. At Makapanstad Removed Kgomo and College Feeders

Rev 6.0	30-Apr-20	**These are stations and feeders that have dropped below the 50% mark and those that are supplying a mix of Industrial, Commercial and SPU Small Holding Farms (Plots). Changes Requested by K Jamjam**
Rev 6.1.	28-May-20	Please note that we don't trust the stats feeder at Molebatsi feeder it has dropped by almost 40% from 2018 to 2020. Can we include this station to the Load Reduction schedule Khutsong (Hostel 1&2, Molebatsi & Skoonplaas). Requesed by K Jam Jam. Changes done by NL
Rev 6.1.	08-Jun-20	Removed Meadow TRF 3(to Fix the operating Scenario) to exclude Marie louise in Block A . Done by Thembakazi Lamani
Rev 7.0	15-Jun-20	Removed feeders on which lowered trip settings were applied. The feeders were removed from Moroka, Mofolo and Zola according to the spreadsehhet received from Settings dept. on 15 Jun 2020. The loads were adjusted accordingly and no reshuffling of any other loads was done, therefore blocks in which there were no exclusions remain unchanged. The blocks that are affected by this exclusion is Block B, C and D.
Rev.7.1	23-Jun-20	Schedule updated to the winter load. Block B, C and D moved from feeder switching due to settings back to the old trfr settings. Done by Nwabisa Letsoha (Reverted to 7.0 after two days)
Rev.7.2	13-Jul-20	Removal of Krog 2/2 Feeder at Mapetla_ Block E to Exclude Protea South Mall(Paying Customer) Authorised by K JamJam. Done by Thembakazi Lamani
Rev 7.3	08-Sep-20	Added a block J for NWOU stations. Added load per breaker operation. Added a list entry in the "Supervisory Aailable" column. If it is yes then the load shed is recorded, otherwise a 0MW is recorded. Done by Yaaseen
Rev 7.4	03-Dec-20	Added Dalkeith feeders(Harris, Zandspruit, Honeydew Farmall and Cathrine to loadblock B)These feeders are above the 50% .Removed Ant and Moni from Cosmocity. Authorised by K JamJam. Done by TL Lamani
Rev 7.5	03-Dec-20	Removed Honeydew feeder as it was mistakenly identified as thhe feeder that is above 50% from Dalkeith authorised by Jam Jam K done by TL Lamani
Rev 7.6	10-Dec-20	Removed Feeders that are not commissioned at Block B , Mofolo Main. Requested by Thoko ..done by Thembakazi
Rev 8.0	11-Dec-20	shared the NWOU load with other blocks, and moving some load from GOU to block J. Did not affet the blocks H and I as these are the Ekurhuleni blocks done by Bloemfontein control. Done by Yaaseen
Rev 8.1	11-Dec-20	Split NWOU loads into blocks B, D, E, F & G and removed Block J. Put the GOU back into the original blocks as was the case from revision 7.6.
Rev 8.2	25-Dec-20	Added Moroka-Maponya Mall and Moroka-MORM2/2279 feeders to Moroka Main in block D. This was done on instruction from Kgomotso and requested by Thembakazi. Changes done by YA
Rev 8.3	29-Dec-20	Removed Maponya Mall and MORM2/2279 feeders from Moroka Main in block D. This was done as per the request from Kgomotso as the previous request was ambigous. Changes done by YA
Rev 8.4	27-Jan-21	Removed Ivory Park -sloth Feeder because its supplying the Ivory Park Mall. Requested by Kgomotso. Done by Thembakazi
Rev 8.5	02-Feb-21	Added Kagiso TRF 1 and 2 to Block D and TRF 3and 4 in Block B. Requested By Kgomotso . Done by Thembakazi Lamani

Rev 8.6	08-Mar-21	Exclusion of Magherita from Mimosa inBlock F_ Done bu TL Lamani Requested by Meladi Botabota
Rev 9	25-Mar-21	Added and Removed Feeder based on Load Reduction List from Kgomotso
Rev 9.1	31-Mar-21	Removed Ivory Park -sloth Feeder because its supplying the Ivory Park Mall. Requested by Walter. Done by Thembakazi
		Removal of trf2 Moroka Transformer feeders to be returned on the 12th of April from Block D , I removed Jabavu bcz its feeding from trf 2 FORM Block D
		PIM4/2621/T3,PIM4/11484 Removed from Moroka Main and JAB5/214,JAB3/826,JAB2/1346 From Jabavu all feeding Moroka Trf 2
		Teballo Feeding from **Kubu**
		Setumo
		Pheko
		Pale
		Moeti
		Tlou feeding from **Kwena**
		Tswene
		Noha
		Shane Feeding from **Lesedi**
		Robin
		Ntsu
Rev 9.2	05-Apr-21	Removed Kubu and Kwena andLesediFeeders From Block J feeding from Sebokeng Sub To be returned on the 12 April 2021
Rev 9.3	06-Apr-21	Removal of Babelegi Switch House B_ Wolf Tools Feeder from block G
Rev 9.4	07-Apr-21	Updated Kagiso Load Reduction in Block B.. Done By Thembakazi
Rev 9.5	15-Apr-21	Returned Moroka Main Trf 2 Feeders and Jabavu in block D and Removed Klevebank_ Witkoppen Feeder in Block B up until 21 April as per Daphe Request
Rev 9.6	15-Apr-21	Remove Lochvaal in Block J
Rev 9.7	21-Apr-21	Added new block H and I (Ekurhuleni stations) as received from FSOU team. Done by YA
Rev 9.8	30-Apr-21	Changed operation from feeders to TRFRs at Rethabiseng substation in Block G. Done by NL
Rev 9.9	10-May-21	Returned Kubu, Kwena and Lesedi Feeders in Block J .Deleted Mabopane B Trf 1 , Currently laodshedding some feeders at Mabopane B
		Removed Lochvaal in Block J as I had erronously added in Rev 9.9
Rev 10	11-May-21	Removed National Ceramics_ Grasmere Feeder in block F
Rev 10.1	26-May-21	Removed Trf 2 at Jetta to loadshed feeders so to exclude Pieter Feeder (Vaccination point) . Removed Dalkeith_ Farmall Feeder from Block B.

Rev 11	05-Jul-21	Updated Area names on the schedule as per customer service request
Rev 11.1	07-Jul-21	Removed Laezonia_Gem Feeder because of Perfomance done by TL Lamani in Block D
Rev 11.2	04-Aug-21	Removed Havelock from block D done by TL Lamani
Rev 11.3	11-Aug-21	Added Roodeplaat area in for Peblee Rock Sub Block G done by TL Lamani
Rev 11.4	13-Aug-21	Removed Leekop_ Horse Feeder because of Perfomance in block D.. Requested by Walter Lemeko done by TL Lamani
Rev 11.5	02-Sep-21	In block F changed Elim/Alfred to operate the PMB on the feeder rather than the breaker at the substation as per request from Customer Services and Field Services done by ZK.
Rev 11.6	19-Oct-21	Removal of 4 Feeders from Glen(Porcupine, Zaid ,Tadpole and Quoll) from Block A because of their improved perfomance
Rev 11.7	29-Nov-21	Removal Of Meadow_MDLW3/1474 Feeder in Block A because of (MDLW3/29097 Minisub FEEDERS that are paying) .Request came from Mahlangu. Done by TL
Rev 11.8	18-Dec-21	Removal of Eskom College_Reed Feeder in Block C because of Perfomance(Request came from Mahlangu). Done by TL

Load Reduction Breaker Operating Guide

Last Revised 18/12/2021

Rev 11.8

BLOCK A



CONTROL CENTRES
Bloem Control _(051 404 2114)
Eskom Control_ (011 871 3020)

Network Optimisation Contacts
Magic Sibuyi (0825005457) Nwabisa Latsoha(065 977 2299) Thembakazi Lamani (072 270 9750)

LOG	
DATE	
TIME	

Rev 11.8	Load Reduction Breaker Operating Guide																				
Block	Sub Block		Switching Sequence				Geographical Areas	Winter 2019 Peak	Eskom Sub Load [MW]	Eskom Sub Load [MW]	City Power Sub Load [MW]	Eskom Load [MW]	City Power Load [MW]	Total Load [MW]			Time Off	Time On	Supervisory Available [Y/N]	Shed Load [MW]
			Station	Operating Sequence	Breaker to Open	kV															
A		A1			Ensure ALL 22 kV Bus couplers AND Bus section breakers are open																
			Ivory Park	1	Ocag	22	Ivory Park Ext 12;Tswelapele Ext 6	78.38	4.12	4.12	0		0	4.12					☐	0
				2	Jackal		Tembisa Ext 5		4.12	4.12				4.12					☐	0
				3	Elephant		Rabie Ridge		4.12	4.12				4.12					☐	0
				4	Hippo		Ivory Park Ext 8		4.12	4.12				4.12					☐	0
				5	Ebony		Ivory Park Ext 9		4.12	4.12				4.12					☐	0
				6	Renoster		Ivory Park Ext 10		4.12	4.12				4.12					☐	0
				7	Namtap		Ivory Park Ext 5		4.12	4.12				4.12					☐	0
				8	Camel		Ivory Park Ext 6		4.12	4.12				4.12					☐	0
														0					☐	0
			Glen	1	Ensure Bussection Breakers are open	11	Protea Glen Ext 8	72.86			0.0		0	0					☐	0
				2	Parsley		Protea Glen Ext 4		8.6	8.6									☐	0
				3	Kami		Protea Glen Ext 2		3.8	3.8				8.6					☐	0
				4	Vageta		Protea Glen Ext 3		3.86	3.86				3.8					☐	0
				5	Nappa		Protea Glen Ext 1		1.3	1.3				1.99					☐	0
				6	Frog		Protea Glen Ext 15		6.3	6.3				1.3					☐	0
				7	Falcon		Protea Glen Ext 7		5.1	5.1				6.3					☐	0
				8	Eel		Protea City Outlying		10.2	10.2				5.1					☐	0
				9	Ape		Doornkop		2.3	2.3				10.2					☐	0
							Glen Ridge							2.3					☐	0
							Protea Industrial Park												☐	0
							Protea South												☐	0
							Zuurbult 240-lq												☐	0
			Arola	1	Magopa	11	Arola												☐	0
			Meadow	1	Ensure Bussection Breaker is open	11		55.99058247		0	0	0	0	0					☐	0
				2	MDLE4/48		Meadowlands East Zone 2		5.2	5.2				5.2					☐	0
				3	MDLE5/29709		Meadowlands East Zone 1		11.1	11.1				11.1					☐	0
				4	MDLW 4/674		Roodepoort 302-lq		8.99	8.99				8.99					☐	0
				5	Ngwaneso		Meadowlands Zone 8		4.82803169	4.82803169				4.82803169					☐	0
							Meadowlands Zone 2		2.627662459	2.627662459				2.627662459					☐	0
							Meadowlands Zone 10												☐	0
							Meadowlands Zone 6												☐	0
							Meadowlands Zone 4												☐	0
							Meadowlands Ext 11												☐	0
							Bram Fischerville												☐	0
							ROBERTVILLE												☐	0
							Fleurhof												☐	0
							Stormill Ext 9 and 9												☐	0
							Lea Glen Ext 2												☐	0
							Lea Glen												☐	0
							Rand Leases Gold Mine												☐	0
							Robertville Ext 3												☐	0
							Robertville Ext 4												☐	0
							Robertville Ext 1												☐	0
							Robertville Ext 10												☐	0
							Robertville Ext 5												☐	0
																			☐	0
			Vlei	1	Mayibuye	22	Krugersdorp Rietvallei and Kagiso	N/A	N/A	N/A				0					☐	0
				2	Taxi				N/A	N/A				0					☐	0
				3	Sultan				N/A	N/A				0					☐	0
				4	Putco				N/A	N/A				0					☐	0
				5	Lusaka				N/A	N/A				0					☐	0
				6	Duke				N/A	N/A				0					☐	0
													TOTAL LOAD SHED =							
										107.1656941	0	0	0	107.1656941					TOTAL LOAD SHED =	0

Load Reduction Breaker Operating Guide

Last Revised 18/12/2021

Rev 11.8

BLOCK B



CONTROL CENTRES
Bloem Control _(051 404 2114)
Eskom Control_ (011 871 3020)

Network Optimisation Contacts
Magic Sibuyi (0825005457) Nwabisa Latsoha(065 977 2299) Thembakazi Lamani (072 270 9750)

LOG	
DATE	
TIME	

Rev 11.8	Load Reduction Breaker Operating Guide																
Block	Sub Block		Switching Sequence				Geographical areas	Winter 2019 Peak	Eskom Sub Load [MW]	Eskom Sub Load [MW]	City Power Sub Load [MW]	Eskom Load [MW]	City Power Load [MW]	Total Load [MW]	Time Off	Time On	Supervisory Available [Y/N]
			Station	Operating Sequence	Breaker to Open	kV											
B										0	0			0			☐
										0				0			☐
				3	MDLW2/3247		Meadowlands West Zone 10		3.1	3.1				3.1			☐
				4	MDLW2/3070		Meadowlands West Zone 10		6.379854622	6.37985462				6.3798546			☐
				5	MOFN3/866		Soweto Dube		1.814398523	1.81439852				1.8143985			☐
				6	MOFN3/2274		Soweto Dube		1.388675628	1.38867563				1.3886756			☐
				7	MOFN4/941		Soweto Dube		5.6	5.6				5.6			☐
				8	MOFN2/483		Soweto Mofolo Central		3.2	3.2				3.2			☐
			Mofolo Main	9	MOFN1/306	11	Mofolo Central and Mofolo North	68.25683456	3.3	3.3				3.3			☐
				10	MOFN1/204		Mofolo Central and Mofolo North		2.4	2.4				2.4			☐
														0			☐
														0			☐
														0			☐
														0			☐
														0			☐
														0			☐
														0			☐
		B1			Ensure MDLW3/1474 N/O is open at MDLW3/1967 FEEDER												
					MDLW3/1967		Meadowlands West Zone 9		0.8	0.8				0.8			☐
			Meadowlands West		MDLW4/155		Meadowlands Zone 8 & 7		2.1	2.1				2.1			☐
					MDLW4/2005		Meadowlands Zone 8 & 9		1.2	1.2				1.2			☐
					MDLW2/3579		Meadowlands West Zone 10		0.6	0.6				0.6			☐
					MDLW1/63		Meadowlands Zone 6 & 7		4.1	4.1				4.1			☐
														0			☐
														0			☐
														0			☐
				1	MDLE3/292		Meadowlands East Zone 3		3.2	3.2				3.2			☐
				2	MDLE2/62		Meadowlands East Zone 4		0.9	0.9				0.9			☐
			Meadowlands East	3	MDLE2/528		Meadowlands East Zone 4		1	1				1			☐
														0			☐
														0			☐
														0			☐
														0			☐
														0			☐
										0				0			☐
			Cosmo City	1	Fly	11	Cosmo City	30.42712154	6.857413871	6.85741387	0		0	6.8574139			☐
				2	Bee				1.599276086	1.59927609				1.5992761			☐
		B3			Ensure ALL 11 kV Bus couplers AND Bus section breakers are open									0			☐
			Kagiso	1	Cheesa 2 AND 3	11	Kagiso Central	16	16	16				16			☐
				2	Michal 1, 2 AND 3		Kagiso Ext 8	25	25	25				25			☐
				3	Sinqobile		Sinqobile	4.64	4.64	4.64				4.64			☐
				1	Louis		Cosmo City		19.87	0.16				0.16			☐
		B4	Dalkeith	2	Zandspruit	11	Zandspruit 191-IQ	19.87	6.15	6.15				6.15			☐
				4	Cathrine		Cosmo City		6.14	6.14				6.14			☐
			Central Business District	1	Unit2 - MS2- 1	11			**1.2**					1.2			☐
		B5						1.2		1.2		1.2		0			☐
			Charles Shaft	1	Khuma Ext 9	11	Stilfontein Extension 9	**2.4**	**2.4**	2.4		2.4		2.4			☐
			Dinorutshe	1	Ikakgeleng	22	Dinokana	**0.9**	**0.9**	0.9		0.9		0.9			☐
									0.0	**0.0**				0			☐
		B6	Klevebank	1	Iron	11	Diepsloot West 2	**30.0**	**6.0**	**6.0**				6			☐
				2	Cuprite		Diepsloot West 2		**8.0**	**8.0**				8			☐
				3	Bronze		Diepsloot West 1 & 3		**5.0**	**5.0**				5			☐
										131.129619	**0**		**0**	**131.12962**	**TOTAL LOAD SHED =**		

Shed Load [MW]
0
0
0

Load Reduction Breaker Operating Guide

Last Revised 18/12/2021

Rev 11.8

BLOCK C



CONTROL CENTRES

Bloem Control _(051 404 2114)
Eskom Control_ (011 871 3020)

Network Optimisation Contacts

Magic Sibuyi (0825005457)
Nwabisa Latsoha(065 977 2299)
Thembakazi Lamani (072 270 9750)

LOG	
DATE	
TIME	

Rev 11.8	Load Reduction Breaker Operating Guide																		
Block	Sub Block		Switching Sequence				Geographical areas	Winter 2019 Peak	Eskom Sub Load [MW]	Eskom Sub Load [MW]	City Power Sub Load [MW]	Eskom Load [MW]	City Power Load [MW]	Total Load [MW]	Time Off	Time On	Supervisory Available [Y/N]	Shed Load [MW]	
			Station	Operating Sequence	Breaker to Open	kV													
C					Ensure ALL 11 kV Bus couplers AND Bus section breakers are open														
			Zola	1	ZOL1/1703	11	Soweto Zola		6.7	6.7				6.7			☐	0	FALSE
				2	ZOL2/6087		Soweto Jabulani, Zola		4.5	4.5				4.5			☐	0	
				3	ZOL2/804		Soweto Jabulani		4.9	4.9				4.9			☐	0	
				4	ZOLA1 SHOPRITE		Soweto Zola		3.8	3.8				3.8			☐	0	
				5	NALEDI 1		Soweto Naledi, Zola		6.9	6.9				6.9			☐	0	
				6	NALEDI 2		Soweto Naledi, Zola		6.9	6.9				6.9			☐	0	
				7	NALEDI 3		Soweto Naledi, Zola		6.9	6.9				6.9			☐	0	
				8	ZOLA1 SHOPRITE		Soweto Zola		2.16	2.16				2.16			☐	0	
				9	MOL1/6019		Soweto Tladi, Zola		3	3				3			☐	0	
				10	ZON2/T3		Soweto Jabulani, Zondi		2.16	2.16				2.16			☐	0	
				11	ZONDI1/6020				2.16	2.16				2.16			☐	0	
				12	DOBS2/2992				2.16	2.16				2.16			☐	0	
				13	NAL1/2055		Soweto Zola		3.4	3.4				3.4			☐	0	
				14	DOB4/12515		Soweto Dobsonville		2	2				2			☐	0	
				15						0				0			☐	0	
				16						0				0			☐	0	
				17	DOBS4/12515		Soweto Dobsonville		2.16	2.16				2.16			☐	0	
	C1		Civic Centre	1	CIVIC5/HVC/JAB		Soweto Jabulani		2.3	2.3				2.3			☐	0	
				2	CIVIC1/2195		Soweto Jabulani		1.1	1.1				1.1			☐	0	
														0			☐	0	
														0			☐	0	
														0			☐	0	
														0			☐	0	
														0			☐	0	
														0			☐	0	
														0			☐	0	
														0			☐	0	
			Dobsonville 11 kV	1	DOB3/11900		Soweto Dobsonville		3.4					0			☐	0	
				2	DOB3/8360		Soweto Dobsonville		1.9					0			☐	0	
				3	DOB2/4100		Soweto Dobsonville		3.6					0			☐	0	
				4	DOB1/4052		Soweto Dobsonville		4.4					0			☐	0	
														0			☐	0	
														0			☐	0	
														0			☐	0	
														0			☐	0	
			Moletsane	1	MOL2/605		Soweto Tladi		4.4	4.4				4.4			☐	0	FALSE
														0			☐	0	
														0			☐	0	
														0			☐	0	
														0			☐	0	
														0			☐	0	


0
0

																	☐	0	
		Emdeni	1	EMD5/139		Soweto Emdeni		1.3					0				☐	0	
			2	EMD4/1467		Soweto Naledi		4.6					0				☐	0	
			3	EMD4/1406		Soweto Emdeni		4.2					0				☐	0	
			4	EMD3/1339		Soweto Emdeni		3					0				☐	0	
			5	EMD3/1052		Soweto Emdeni		3.3					0				☐	0	
			6	EMD2/5591		Soweto Zola		5.2					0				☐	0	
			7	EMD1/587		Soweto Emdeni		3.7					0				☐	0	
			8	EMD1/404		Soweto Emdeni		3.5					0				☐	0	FALSE
													0				☐	0	FALSE
													0				☐	0	FALSE
																	☐		
									67.6	**0**	**0**	**0**	**67.6**	**TOTAL LOAD SHED =**				**0**	

Load Reduction Breaker Operating Guide

Last Revised 18/12/2021

Rev 11.8

BLOCK D



CONTROL CENTRES
Bloem Control _(051 404 2114)
Eskom Control_ (011 871 3020)

Network Optimisation Contacts
Magic Sibuyi (0825005457) Nwabisa Latsoha(065 977 2299) Thembakazi Lamani (072 270 9750)

LOG	
DATE	
TIME	

Rev 11.8 — **Load Reduction Breaker Operating Guide**

Block	Sub Block		Switching Sequence: Station	Operating Sequence	Breaker to Open	kV	Affected Station(s)	Geographical Areas	Eskom Sub Load [MW]	City Power Sub Load [MW]	Eskom Load [MW]	City Power Load [MW]	Total Load [MW]	Time Off	Time On	Supervisory Available [Y/N]	Shed Load [MW]
D		D1	Moroka Main		Ensure ALL 11 kV Bus couplers AND Bus section breakers are open	11	Moroka Main excluding: PIMVILLE2 PIMVILLE3 PIMVILLE4 PIMVILLE5 PIMVILLE6/PIM1/LIFATENG PIMVILLE7/PIM1/NANCEFIELD PIM5/3938 PIM5/5883A	Moroka, Dhlamini, Klipspruit								☐	
				1	JAB2/739A				3.8				3.8			☐	0
				2	MOR2/31				5.2				5.2			☐	0
				3	DHL2/1613(T3)								0			☐	0
				4	PIM4/2621/T3				5.44				5.44			☐	0
				5	PIM4/11484				7.07				7.07			☐	0
				6	MOR2/2432				5.3				5.3			☐	0
				7	MOR1/1808				4.5				4.5			☐	0
				8	MOR1/1757				2.7				2.7			☐	0
				9	PIM5/5883A				1.8				1.8			☐	0
				10	PIM5/3938				5.6				5.6			☐	0
				11	MORM2/2279				10.9				10.9			☐	0
				12	MORM1/CHILD/WELFARE				3.5				3.5			☐	0
				13	MORM1/739				3.4				3.4			☐	0
																☐	0
																☐	0
																☐	0
																☐	0
																☐	0
			Pimville	1	PIM2/90		Pimville	Klipspruit	4.2				4.2			☐	0
				2	PIM2/501				2.7				2.7			☐	0
																☐	0
																☐	0
			Dhlamini	1	DHL3/508	11	Dhlamini	Dhlamini, Chiawelo	3.5				3.5			☐	0
				2	DHL3/484				3.5				3.5			☐	0
				3	DHL1/582				3				3			☐	0
			Jabavu	1	JAB5/214	11	Jabavu	Jabavu Central Western	1.3				1.3			☐	0
				2	JAB3/826			Jabavu	3.4				3.4			☐	0
				3	JAB2/1346			Mofofolo South	1.3				1.3			☐	0
			Bekkersdal	1	TRFR 1	11	Bekkersdal	Bekkersdal	4.7				4.69			☐	0
				2	TRFR 2				0.1				0.1			☐	0
			Rivesand	1	Ensure N/O to Turnish is open	11	Rivesand									☐	0
				2	Zinc			Knopjeslaagte	0.2				0.16			☐	0
			Laezonia	1	Dimakatso	11	Laezonia	Laezonia	4.0				4			☐	0
			Kagiso		Ensure ALL 11 kV Bus couplers AND Bus section breakers are open	11	Kagiso	Kagiso								☐	0
				1	TRFR 1				13.1				13.13			☐	0
				2	TRFR 2				11.4				11.41			☐	0
																☐	0
																☐	0
			Gopani Mine		Ensure 22 kV bus section isolator is **OPEN**		Gopani Mine						0			☐	0
				1	TRFR 2	22			5.5				5.49			☐	0
				2	Gopani	22			2.1				2.13			☐	0
				3	Motswedi	22			2.9				2.89			☐	0

Lanseria	1	Zebra	11	Lanseria	Lanseria, Diepsloot Nature Reserve	0.4				0.4				0
	2	Botesdal	11			1.0				1				0
Itsoseng Rural	1	Springbokpan Silos	11	Itsoseng Rural	Rakgalo-Bodibe, Itsoseng	3.1				3.1				0
	2	Verdwaal	11			1.6				1.55				0
														0

		Khutsong	1	Skoonplass	11	Khutsong	Khutsong	5.3				5.3				0
			2	Hostel 1												
			3	Hostel 2												
			4	Woud												
						BLOCK D TOTAL [MW]		**137.46**				**137.46**	**TOTAL LOAD SHED =**			

Load Reduction Breaker Operating Guide

Last Revised 18/12/2021

Rev 11.8

BLOCK E



CONTROL CENTRES
Bloem Control _(051 404 2114)
Eskom Control_ (011 871 3020)

Network Optimisation Contacts
Magic Sibuyi (0825005457) Nwabisa Latsoha(065 977 2299) Thembakazi Lamani (072 270 9750)

LOG	
DATE	
TIME	

Rev 11.8	Load Reduction Breaker Operating Guide																
Block	Sub Block		Switching Sequence				Geographical Areas	Eskom Sub Load [MW]	Geographical Areas	City Power Sub Load [MW]	Eskom Load [MW]	City Power Load [MW]	Total Load [MW]	Time Off	Time On	Supervisory Available [Y/N]	Shed Load [MW]	
			Station	Operating Sequence	Breaker to Open	kV												
E			Mapetla Main	1	Ensure Bussection Breaker A is open	11	Mapetla, Protea South, Chiawelo, Protea North	88.2		0		0	88.2			☐	0	FALSE
				2	Ensure Bussection Breaker B is open											☑	0	TRUE
				3	Ensure East Buscoupler is open											☐	0	FALSE
				4	Ensure West Buscoupler is open											☐	0	FALSE
				5	TRFR 1											☐	0	FALSE
				6	MTLA4/2013											☐	0	
				7	MTLA2/2956											☐	0	FALSE
					MTLA1/2146											☐	0	
				8	KROG3/3466											☐	0	
				10	MTLA3/1A											☐	0	
					CHIA3/1375											☐	0	
				14	PRNT2/1420											☐	0	
			Protea North SWS		PRTN3/1017		Naledi	3.6					3.6			☐	0	
																☐	0	
																☐	0	
																☐	0	
																☐	0	
		E1	Chiawelo	1	CHIA3/2762	11	Chiawelo	2.1					2.1			☐	0	
				2	CHIA3/1777			1.9					1.9			☐	0	FALSE
				3	CHIA2/3790			3.1					3.1			☐	0	
				4	CHIA2/3159			3.3					3.3			☐	0	
				5	CHIA2/3007			2.3					2.3			☐	0	
			Ruggraat	1	TRFR 1	11	Bram Fischerville, Thulani,Protea Glen , Doornkop, Dobsonville Gardens	59.2		0		0	59.2			☐	0	FALSE
				2	TRFR 2											☐	0	
				3	TRFR 3											☐	0	
																☐	0	
																☐	0	
			Kanana	1	Khotso	11	**Kanana, Kanana Ext 5, Ext 6, Ext 13**	2.2					2.2			☐	0	
				2	Lerato	11		2.4					2.39			☐	0	FALSE
				3	Kagiso	11		0.2					0.24			☐	0	
			Khuma	1	Mhlanga	11	Khuma, Khuma Ext 1, 3, 4, 5 6, 7 & 10	2.0					2.04			☐	0	
				2	Leeuw	11		0.8					0.79			☐	0	
				3	Hoztell	11		1.0					0.99			☐	0	
				4	Borak	11		1.6					1.61			☐	0	FALSE
				5	Parks	11		1.6					1.62			☐	0	
				6	Utlwan	11		1.4					1.44			☐	0	
				7	Mokgeti	11		0.9					0.88			☐	0	
			Sandpit	1	Honing	11	Greengate									☐	0	
								177.94		0	0	0	177.94	TOTAL LOAD SHED =			0	

Load Reduction Breaker Operating Guide

Last Revised 18/12/2021

Rev 11.8

BLOCK F



CONTROL CENTRES
Bloem Control _(051 404 2114)
Eskom Control_ (011 871 3020)

Network Optimisation Contacts
Magic Sibuyi (0825005457) Nwabisa Latsoha(065 977 2299) Thembakazi Lamani (072 270 9750)

LOG	
DATE	
TIME	

Rev 11.8	Load Reduction Breaker Operating Guide																	
Block	Sub Block		Switching Sequence				Geographical Area	Eskom Sub Load [MW]	City Power Sub Load [MW]	Eskom Load [MW]	City Power Load [MW]	Total Load [MW]	Time Off	Time On	Supervisory Available [Y/N]	Shed Load [MW]	
			Station	Operating Sequence	Breaker to Open	kV											
F		F1	Diepkloof Main	1	TRFR 3	11	Diepkloof Diepkloof Zone 2, Zone 6, Orlando East	23.1				23.1			☐	0	FALSE
				2	DKF4/24098			5.18				5.18			☐	0	
				3	DMW1/7739		Diepkloof Zone 2	5.18				5.18			☐	0	FALSE
				4	DMW4/5771		Orlando East	5.18				5.18			☐	0	
				5	DMW5/6130		Orlando East	5.18				5.18			☐	0	
				6	Diepkloof 1		Diepkloof Zone 1 to 6	5.18				5.18			☐	0	
				7	Diepkloof 2		Diepkloof Zone 1 to 6	5.18				5.18			☐	0	
				8	Diepkloof 3		Diepkloof Zone 1 to 6	5.18				5.18			☐	0	
				9	Diepkloof 4		Diepkloof Zone 1 to 6	5.18				5.18			☐	0	
				10	ORLE3/2651		Orlando East	5.18				5.18			☐	0	
				11	Bapedi			5.18				5.18			☐	0	
				12	DMW 2/2695		Diepkloof Zone 2	5.18				5.18			☐	0	
				13	DMW 4/6434		Orlando East	6.3				6.3			☐	0	
				14	DKF 4/24097		Diepkloof Zone 2	2.2				2.2			☐	0	
				15	DMW 5/318		Soweto Nomzamo	6.15				6.15			☐	0	
					Except all Dieploof Extension Feeders and DMW3/811 and DMW3/7948A			2				2			☐	0	
								6	0			6			☐	0	
															☐	0	
															☐	0	
			Klipfontein Rural	1	Boitumelong	11	Bloemhof Coverndale Ext 1, Bloemhof Boitumelong	1.3				1.3			☐	0	
				2	Coverdale	11	Bloemhof Coverndale, Bloemhof Coverndale Ext 1, Bloemhof Coverndale Ext 2, Bloemhof Boitumelong,	3.3				3.3			☐	0	
			Leopard Park	1	Golf Course	11	Mmabatho	0.6				0.6			☐	0	
				2	Signal Hill	11	Mmabatho, Lonely Park, Signal Hill	0.6				0.6			☐	0	
			Lerato	1	Unit 1 Ext 1	11	Welbedacht, Setete	0.6				0.6			☐	0	
			Lothlakane	1	Mathe Village	11	Ditshilo, Lotlhakane, Mantsa, Letlhogori	3.5				3.5			☐	0	
			Mafikeng Main Blockhouse	1	Signal Hill 1	11	Mafikeng, Good Hope, Lonely Park, Signal Hill	7.5				7.5			☐	0	FALSE
			Mgopela	1	Choseng	22	Khaukhwe Karelstad Sedibeng Loselong A Loselong B Matlapaneng Mase Choseng Maganeng Ntswanahatshe Leshobo Moretele	4.3				4.3			☐	0	
			Makuone SWS	1	High Base	11	Orkney Kanana Ext 3, Orkney Kanana	1.2				1.2			☐	0	FALSE
				2	Old Taxi	11	Orkney Kanana Ext 8, Orkney Kanana, Orkney Kanana 12,	2.1				2.1			☐	0	
			Manya	1	Parke	11	Orkney Kanana Ext 10, Orkney Kanana 7, Orkney Kanana 9,	1.5				1.5			☐	0	
				2	Spoore	11	Orkney Kanana Ext 10, Orkney Kanana 12, Orkney Kanana 9,					0.0			☐	0	
			Mimosa SWS	1	Grootdoorn	11		0.3				0.3			☐	0	
			Thabiso	1	TRFR 2	11	Soweto Bram Fischerville Soweto Vlakfontein 238-Iq Roodepoort Roodepoort 237-Iq Soweto Bram Fischerville Soweto Bram Fischerville Soweto Bram Fischerville Soweto Bram Fischerville Soweto Bram Fischerville Soweto Vlakfontein 238-Iq Roodepoort Roodepoort 237-Iq	2.9				2.9			☐	0	
				2	TRFR 3			6.8				6.8			☐	0	FALSE
			Elim	1	Alfred EA23/9/2/3	11	Randfontein Rural Badirile	4.1				4.1			☐	0	
			Arola	1	Magopa	11		3				3			☐	0	

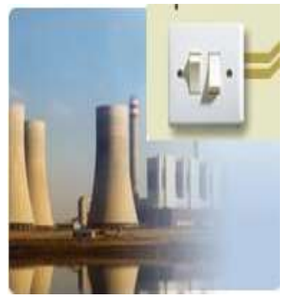
		139.11	0			139.11	TOTAL LOAD SHED =	0

Load Reduction Breaker Operating Guide

Last Revised 18/12/2021

Rev 11.8

BLOCK G



CONTROL CENTRES
Bloem Control _(051 404 2114)
Eskom Control_ (011 871 3020)

Network Optimisation Contacts
Magic Sibuyi (0825005457) Nwabisa Latsoha(065 977 2299) Thembakazi Lamani (072 270 9750)

LOG	
DATE	
TIME	

Rev 11.8	Load Reduction Breaker Operating Guide																
Block	Sub Block	Switching Sequence					Geographical Area	Eskom Sub Load [MW]	City Power Sub	Eskom Load [MW]	City Power Load	Total Load [MW]	Time Off	Time On	Supervisory Available [Y/N]	Shed Load [MW]
		Station	Operating Sequence	Breaker to Open	kV	MW										
G		Rethabiseng	1	TRTR 1		7.6	Rethabiseng Extension 1, 2 and Outlying.	7.6				7.6			☐	0
			2	TRTR 2		7.6		7.6				7.6			☐	0
		Kudube	1	ALL Retic feeders except Water Treatment Works 1 & 2		4.02	Kudube Unit 2, 6, 7, 11 and D	4.02				4.02			☐	0
		Temba Main	1	Hammanskraal West	11	5.06	Hammanskraal Extemsion1	5.06				5.06			☐	0
		Erasmus	1	Honingkrans	22	6.2	Bronkhorstspruit Durley AH	6.2				6.2			☐	0
		Temba One	1	Jackson	11	2.1	Kudube Unit 1	2.1				2.1			☐	0
			2	Checkers		1	Kudube Unit 2	1				1			☐	0
		Ga Motla	1	TRFR 1	22	14		14				14			☐	0
			2	TRFR 2								0			☐	0
		Klipgat	1	Shibambo	11	4.02	Mabopane Unit R, T and U	4.02				4.02			☐	0
			2	Odinburgh		7.4		7.4				7.4			☐	0
		Mathibestad	1	Potoane Opperman	22	5		5				5			☐	0
			2	Mathibe		3.5		3.5				3.5			☐	0
		Nooitgedacht	1	BTI	11	3.24		3.24				3.24			☐	0
		Makapanstad	1	Swartdam Feeder		1.5		1.5				1.5			☐	0
		Stinkwater	1	Mogogelo	22	n/a		n/a				n/a			☐	0
			2	Eersterus		6.4		6.4				6.4			☐	0
		Unit S	1	TRFR 1		1.26	Mabopane Unit S and D	1.26				1.26			☐	0
		Vuka SWS	1	Bushveld / Mahlwareng		5.64	Winterveld	5.64				5.64			☐	0
		Mabopane B	1	Mokwepa	11	5.1	Mabopane Unit A, B, D, M, X, S and Kopanong	5.1				5.13			☐	0
			2	Vincent	11	1.8		1.8				1.79			☐	0
			3	Umdumbi	11	2.9		2.9				2.88			☐	0
			4	Seboni	11	1.2		1.2				1.15			☐	0
			5	Moraba	11	0.8		0.8				0.77			☐	0
			6	Josi	11	2.8		2.8				2.78			☐	0
			7	Fakude	11	0.7		0.7				0.73			☐	0
			8	Carpensis	11	3.2		3.2				3.18			☐	0
			9	Xaba	11	0.6		0.6				0.59			☐	0
		Circle	1	Seboi 1	11	1.0	Mabopane Unit U and C	1.0				1			☐	0
			2	Ntuli 1	11	0.6		0.6				0.6			☐	0
			3	Makoka	11	1.5		1.5				1.5			☐	0
			4	Levino 1	11	0.7		0.7				0.7			☐	0
		Nonyane	1	Nsasane	11	2.13		2.13				2.13			☐	0
				Madidi South 1		6		6				6			☐	0
			2	Madidi North 1		2.5		2.5				2.5			☐	0
		Winterveld	1	Polana 1	11	1.26	Mabopane Unit E, CV, Soshanguve NN	1.26				1.26			☐	0
			2	Kopanang 1		2		2				2			☐	0
			3	Maseko 1		4.57		4.57				4.57			☐	0
		Midway	1	ALL Retic feeders **except Unit 9**	11	14.1	Garankuwa Unit 8, 7, 10, 15, 17 and 23	14.1				14.1			☐	0
		Mmabatho Main	1	YB garage	11	0.8	Lokaleng and Mmabatho	0.8				0.75			☐	0
			2	Teachers R/Centre	11	1.3		1.3				1.32			☐	0
		Montshiwa	1	Magogwe Koikoi	11	2.7	Dithakong, Magogwe, Majemantsho, Sethopo	2.7				2.72			☐	0
			2	Magogwe Tar	11	3.6		3.6				3.62			☐	0

Montshiwa	3	Magogwe Centre	11	2.6	Majemantshi, Sethopo, Thlabologo and Tloung	2.6				2.6			☐	0
	4	Thlabologo	11	1.9		1.9				1.9			☐	0
Norlim	1	Dikhuting	22	3.9	Gamoduana A, B, Gamokake, Lothwanyeng, Magogong, Maphoitsile A, B, Mogasa IA, IB, II and Norlim	3.9				3.85			☐	0
Rooigrond Rural	1	Greefslaagte	11	1.0	Rooigrond	1.0				1			☐	0
Springbokpan	1	TRFR 2	88	3.0		3.0				3			☐	0
Straatsdrift Rural	1	TRFR 2	22	6.6	Doornlaagte, Koffiekraal, Letlhakane, Madikwe, Pagsdraai,	6.6				6.6			☐	0
	2	Pella	22	3.0		3.0				3			☐	0
Pebble Rock	1	PEBBLE ROCK 1	11	3.7	Pebble Rock golf Village (Roodeplaat)	3.7				3.7			☐	0
Rayton	1	RAYVILLE	11	0.4		0.4				0.4			☐	0
Zonderwater	1	KRAAL	11	9.4	Lewzene Estate AH	9.4				9.4			☐	0
Thlabologang	1	Mogatwe	11	2.1		2.1				2.1			☐	0
Hotel	1	Rantol	11	1.7		1.7				1.66			☐	0
	2	Masuku	11	6.5		6.5				6.49			☐	0
	3	Cappi	11	3.5	Garanluwa Unit 2 and 6	3.5				3.5			☐	0
Garankuwa	1	Remaketse	11	4.1	Garankuwa Unit 2, 4, 5, 16, 20, 23 and 25	4.1				4.07			☐	0
	2	Telkom	11	2.2		2.2				2.22			☐	0
	3	Police	11	0.1		0.1				0.1			☐	0
	4	Mmakrau	11	4.3		4.3				4.34			☐	0
Unit 13	1	Airport Road	11	1.2	Makubung, Mmabatho and Tontonyane	1.2				1.2			☐	0
	2	Unit 13 South	11	0.8		0.8				0.75			☐	0
	3	Unit 15 North	11	0.7		0.7				0.67			☐	0
	4	Unit 14 North	11	0.9		0.9				0.85			☐	0
Vryburg	1	Huhudi	11	3.0	Huhudi Ext 1	3.0				3			☐	0
Vryburg Road	1	TRFR 1 RMU 1 Brkr	11	4.7	Dibate, Motlhabeng, Ramosadi and Seweding	4.7				4.67			☐	0
		Block G Total [MW]		**220.38**		**220.38**							**TOTAL LOAD SHED =**	0

Losses Reduction Breaker Operating Guide

Last Revised 18/12/2021

Rev 11.8

BLOCK H



CONTROL CENTRES
Bloem Control _(051 404 2114)
Eskom Control_ (011 871 3020)

Network Optimisation Contacts
Magic Sibuyi (0825005457) Nwabisa Latsoha(065 977 2299) Thembakazi Lamani (072 270 9750)

LOG	
DATE	
TIME	

Rev 11.8	Load Reduction Breaker Operating Guide														
Block	Switching Sequence				Affected Station(s)	Geographical Areas	Eskom Sub Load [MW]	City Power Sub Load [MW]	Eskom Load [MW]	City Power Load [MW]	Total Load [MW]	Time Off	Time On	Supervisory Available [Y/N]	Shed Load [MW]
	Station	Operating Sequence		kV											
	TWALA 11 KV	1	Twala-Tula 11kV	11		Mapanga	24	0	24		24			☐	0
H		1	Twala-Tugal 11kV			Mapanga								☐	0
		1	Twala-Tsongo 11kV			Monaheng								☐	0
		1	Twala-Tigor 11kV		Make sure that N/O is Open	Twala Ngema								☐	0
		1	Twala-Terrence 11kV			Makalu Moshoeshoe Skosana Credi								☐	0
		1	Twala-Targa 11kV			Monaneng Kotloung								☐	0
		1	Twala-Thobo 11kV			Skosana								☐	0
														☐	0
	Nhlapho	1	Nhlapho-Thamaho 11kV	11	Dispatch for both opening and closing	Mapanga								☐	0
		1	Nhlapho-Nosi 11kV			Nhlapo								☐	0
		1	Nhlapho-Noga 11kV			Tshongweni								☐	0
		1	Nhlapho-Ngana 11kV			Tshongweni								☐	0
		1	Nhlapho-Nepo 11kV			Nhlapo								☐	0
		1	Nhlapho-Nako 11kV			Admin								☐	0
														☐	0
	Sali	1	Sali-Solomon 11kV	11		Monise Mokoena	18	0	18	0	18			☐	0
		1	Sali-Slabbert 11kV			Mavimbela								☐	0
		1	Sali-Siyabonga 11kV			Zuma								☐	0
		1	Sali-Sikoli 11kV		Make sure that N/O is open	Ramakonopi East Ramakonopi								☐	0
		1	Sali-Sibela 11kV			Ramakonopi								☐	0
		1	Sali-Setoro 11kV			Likole								☐	0
		1	Sali-Selo 1 11kV			Radebe & Sali								☐	0
		1	Sali-Selepe 1 11kV			Zuma								☐	0
		1	Sali-Selena 11kV			Monosi Moseleke Mokoena								☐	0
		1	Sali-Seboko 11kV		Make sure that N/O is open	Mngadi								☐	0
		1	Sali-Sebata 11kV			Ndhlazi								☐	0
		1	Sali-Sardis 11kV			Radebe & Sali								☐	0
		1	Sali-Sampras 11kV			Cala								☐	0
		1	Sali-Saka 1 11kV			Moseleke Hlongwane								☐	0
														☐	0
	Voosloorus		Vosloorus-Intukwane 11kV	11		Vosloorus Ext 10								☐	0
			Vosloorus-Fox no.1 11kV	11	Dispatch for opening and closing	Vosloorus								☐	0
			Vosloorus-Fox no.2 11kV	11		Vosloorus								☐	0

													☐	0
Mfundo		Mfundo-Matlou 11kV	11		Vosloorus Ext 5								☐	0
		Mfundo-Extention 6 no.1 11kV			Vosloorus Ext 6	19				19			☐	0
													☐	0
Didetso		Didetso-Mokhele 11kV	11		Mabuya Park								☐	0
		Didetso-Mokbaba 11kV		Make sure that N/O is open	Vosloorus Ext 1								☐	0
													☐	0
													☐	0
Sam Sekoati		Sam Sekoati-Ramtsoe 11kV	11	Make sure that N/O is open Dispatch for closing	Vosloorus Ext 4	4				4			☐	0
		Sam Sekoati-Motinyane 11kV		Dispatch for closing	Vosloorus								☐	0
													☐	0
Likole	1	Likole-Luicy 11kV	11		Likole	15.6	0.0	15.6	0	15.6			☐	0
	1	Likole-Lucky 11kV			Likole								☐	0
	1	Likole-Logo 11kV			Likole								☐	0
	1	Likole-Lofti 11kV			Likole								☐	0
	1	Likole-Lisa 11kV			Ap Khumalo								☐	0
	1	Likole-Lilly 11kV			Moleleki								☐	0
	1	Likole-Leo 11kV			Likole								☐	0
	1	Likole-Lena 11kV			Kwenele								☐	0
	1	Likole-Laurel 11kV			Likole								☐	0
	1	Likole-Lapa 11kV			Moleleki								☐	0
	1	Likole-Lani 11kV			Likole								☐	0
													☐	0
Spruitview		Spruitview-Dr Sibazana 11kV	11	Dispatch for opening and closing	Spruitview	12.0	0.0	12.0		12.0			☐	0
		Spruitview-Dr Magagula 11kV			Spruitview								☐	0
		Spruitview-Dr Gobanyne 11kV			Spruitview								☐	0
													☐	0
Womans Hostel		Womans Hostel-Yeko 11kV	11		Vosloorus								☐	0
		Womans Hostel-Ulondolozo 11kV			Vosloorus Ext 3								☐	0
		Womans Hostel-Makhuvhele 11kV			Vosloorus Ext 1								☐	0
		Womans Hostel-Kereke 11kV			Vosloorus								☐	0
		Womans Hostel-Inyezane 11kV			Vosloorus Ext 7								☐	0
													☐	0
Zonkezizwe		Zonkezizwe-Zambezi 11kV	11		Zonkizizwe								☐	0
		Zonkezizwe-Sunrise View 11kV			Katlehong South & Moleleki								☐	0
		Zonkezizwe-Oliver Tambo 11kV		Make sure that N/O is open	Magagula Heights Zonkezizwe Katlehong South								☐	0

		Zonkezizwe-Moleleki 11kV			Moleleki								☐	0
		Zonkezizwe-Kwena 11kV			Zonkizizwe								☐	0
		Zonkezizwe-Ginger 11kV			Zonkizizwe								☐	0
													☐	0
KATLEHONG 11 KV	1	Katlehong trfr2 33kV	33		Mokoena Moseleke Moseleke East Palime Tsolo Phooko Ramakonopi East	23.0	0.0	23.0	0	23.0			☐	0
	2	Natalspruit Trfr 1 11kV Brk (Katlehong)	11		Phooki Mopedi Motsamai Hlahatsi								☐	0
				BLOCK E TOTAL [MW]		**115.6**	**0**	**92.6**	**0**	**92.6**	**TOTAL LOAD SHED =**			0

Losses Reduction Breaker Operating Guide

Last Revised 18/12/2021

Rev 11.8

BLOCK I



CONTROL CENTRES

Bloem Control _(051 404 2114)
Eskom Control_ (011 871 3020)

Network Optimisation Contacts

Magic Sibuyi (0825005457)
Nwabisa Latsoha(065 977 2299)
Thembakazi Lamani (072 270 9750)

LOG	
DATE	
TIME	

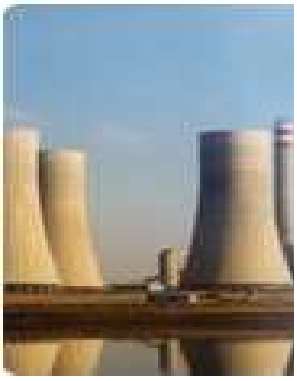
Rev 11.8	Load Reduction Breaker Operating Guide														
Block	Switching Sequence				Affected Station(s)	Geographical Areas	Eskom Sub Load [MW]	City Power Sub Load [MW]	Eskom Load [MW]	City Power Load [MW]	Total Load [MW]	Time Off	Time On	Supervisory Available [Y/N]	Shed Load [MW]
	Station	Operating Sequence	Breaker to Open	kV											
	NICHOLAS 11 KV	1	Nicholas-Poepiesklof 1 11kV	11	Dispatch for opening and closing	Chris Hani		0						☐	0
I			Nichola-Mai 11kV		Make sure that N/O is open	Daveyton	9		9		9			☐	0
			Nichola-Mabaso 11kV			Chris Hani								☐	0
			Nichola-Broker 11kV			Chris Hani								☐	0
			Nichola-Barwa 11kV			Daveyton								☐	0
														☐	0
	Vezi	1	Vezi-Yende 11kV	11		Daveyton								☐	0
		1	Vezi-Wieham 11kV			Daveyton								☐	0
		1	Vezi-Sojane 11kV			Daveyton								☐	0
		1	Vezi-Ramza 11kV			Daveyton								☐	0
		1	Vezi-Ntsoana 11kV			Daveyton								☐	0
		1	Vezi-Masondo 11kV			Daveyton								☐	0
		1	Vezi-Bomba 11kV			Daveyton								☐	0
														☐	0
														☐	0
	Gumede		Gumede-Turton 11KV	11	Dispatch for both opening and closing	Daveyton								☐	0
			Gumede-Jali 11KV			Daveyton								☐	0
			Gumede-Fokeng 11KV			Daveyton								☐	0
														☐	0
	Enoch	1	Enoch-Zamba 11kV	11			26.4		26.4	0	26.4			☐	0
		2	Enoch-Susan 11kV			Citicon								☐	0
		3	Enoch-Howard 11kV			Mandela Park								☐	0
			Enoch-Houston 11kV		Make sure that N/O is open	Emaphopheni Emaphupheni Albertina								☐	0
			Enoch-Bingo 11kV			Breswol AH								☐	0
			Enoch-28TH Street 11kV			Old Etwatwa East								☐	0
			Enoch-24TH Street 11kV			Old Etwatwa East								☐	0
														☐	0
	Etwatwa		Etwatwa-Long 11kV	11		Etwatwa								☐	0
			Etwatwa-Janet 11kV			Etwatwa								☐	0
			Etwatwa-Carlos 11kV			Old Etwatwa East								☐	0
			Etwatwa-Wilson 11kV			Old Etwatwa East								☐	0
														☐	0
	Watville (Dube Str)	1	Dube-Xuma 11kV	11	Dispatch for both opening and closing	Wattville	4.0		4.0		4.0			☐	0
			Dube-Mvulane 11kV			Wattville								☐	0
			Dube-Longhomes 11kV			Wattville								☐	0

Watville (Godlo Str)	1	Godlo-Mokholo			Wattville								☐	0
Mabuya Ave West	2	Xanadu			Wattville	2.0		2.0		2.0			☐	0
													☐	0
Duduza		Duduza-Zamane 11kV			Tsakane	27.0				27.0			☐	0
		Duduza-Vrystaat 11kV			Masetjhaba View Cool Breeze								☐	0
		Duduza-Pope 11kV			Tsakane								☐	0
		Duduza-Junior 11kV			Bluegum View Duduza								☐	0
		Duduza-Goat 11kV			Tsakane								☐	0
		Duduza-Blue Gum 11kV			Bluegum View								☐	0
													☐	0
Blackland Supply		Blackland-Kim 11kV		Dispatch for closing		1.5				1.5			☐	0
													☐	0
Erasmus	1	Erasmus-Vietnam 11kV	11	Dispatch for closing	Tsakane	6.0				6.0			☐	0
	1	Erasmus-Thusi 11kV			Tsakane								☐	0
	1	Erasmus-Ring 11kV			Tsakane								☐	0
	1	Erasmus-Musengi 11kV			Tsakane								☐	0
													☐	0
Jim Vinning		Jim Vinning-Pedi 11kV	11	Dispatch for both opening and closing	Tsakane								☐	0
		Jim Vinning-Ngwenya 11kV			Tsakane								☐	0
		Jim Vinning-Jacob 1 11kV			Tsakane								☐	0
													☐	0
Hall Satalite		Hall Satalite-Russia 11kV	11		Tsakane								☐	0
		Hall Satalite-Namibia West 11kV			Tsakane								☐	0
		Hall Satalite-Slove 11kV			Tsakane								☐	0
													☐	0
													☐	0
Rockville		Rockville-Kuba 11kV	11	Dispatch for closing	Tsakane								☐	0
													☐	0
Roets		Roets-Sekila 11kV	11	Dispatch for closing	Vosloorus	9.0				9.0			☐	0
		Roets-Olundi 11kV		Dispatch for closing	Vosloorus								☐	0
		Roets-Moputu 11kV		Dispatch for closing	Vosloorus								☐	0
		Roets-Le-Kgatsi 11kV		Dispatch for closing	Vosloorus								☐	0
													☐	0

Moagi		Moagi-Mbonani 11kV	11	Dispatch for closing	Vosloorus Ext 2	4.2		0.0		4.2			☐	0
		Moagi-Mbambwa 11kV			Vosloorus Ext 2								☐	0
		Moagi-Akati 11kV			Vosloorus								☐	0
				BLOCK E TOTAL [MW]		89.1	0	41.4	0	41.4	TOTAL LOAD SHED =			0

Losses Reduction Breaker Op

BLOCK



CONTROL CENTRES
Bloem Control _(051 404 2114)
Eskom Control_ (011 871 3020)

LOG	
DATE	
TIME	

erating Guide

Last Revised 18/12/2021

Rev 11.8

K J



Network Optimisation Contacts

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REV 2

TIME SLOT	
05:00	09:00
17:00	21:00

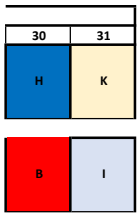
Blocks	Feeder Name	Breakers
A	ONTGIN - HAARTEBEESFONTEIN 22kV BRITS RURAL / SONOP 1 11kV DONALDSVALE / BESTER 1 11kV VEEKRAAL - RIETGAT 11kV TWINRIVERS / EERSTELING 1 22kV	Feeder Breakers at the Substation
B	ONTGIN - HAARTEBEESFONTEIN 22kV BRITS RURAL / SONOP 1 11kV DONALDSVALE / BESTER 1 11kV VEEKRAAL - RIETGAT 11kV TWINRIVERS / EERSTELING 1 22kV	Feeder Breakers at the Substation
C	SUN CITY - MADIKWE 11kV BAFOKENG 7 - KENAKO 1 11kV PHOKENG / BAKERY 11kV SUN CITY - HEYSTEKRAND 11kV SUN CITY - MATOOSTER 11kV	Feeder Breakers at the Substation
D	SUN CITY - MADIKWE 11kV BAFOKENG 7 - KENAKO 1 11kV PHOKENG / BAKERY 11kV SUN CITY - HEYSTEKRAND 11kV SUN CITY - MATOOSTER 11kV	Feeder Breakers at the Substation
E	KANA - BOSPOORT 22kV KANA - MERITING 22kV DONALDSVALE - SPORTVELD 11kV SHAFT 15 - TLASENG 22kV SHAFT15 - FREEDOM PARK 22kV	Feeder Breakers at the Substation
F	KANA - BOSPOORT 22kV KANA - MERITING 22kV DONALDSVALE - SPORTVELD 11kV SHAFT 15 - TLASENG 22kV SHAFT15 - FREEDOM PARK 22kV	Feeder Breakers at the Substation
G	MOGWASE INDUSTRY SUB - BAGATLA 11kV MANYANE - SANDFONTEIN 11kV SUN CITY - CHANENG 11kV SUNRISE / ROBEGA 1 11kV	Feeder Breakers at the Substation
H	MOGWASE INDUSTRY SUB - BAGATLA 11kV MANYANE - SANDFONTEIN 11kV SUN CITY - CHANENG 11kV SUNRISE / ROBEGA 1 11kV	Feeder Breakers at the Substation
I	MODDERSPRUIT - WATERKLOOF 11kV WONDERKOP-MARIKANA 11kV MANYANE - SAULSPOORT 11kV DONALDSVALE - KINGS 1 11kV	Feeder Breakers at the Substation
J	MODDERSPRUIT - WATERKLOOF 11kV WONDERKOP-MARIKANA 11kV MANYANE - SAULSPOORT 11kV DONALDSVALE - KINGS 1 11kV	Feeder Breakers at the Substation
K	MORULENG - SEGAKWANENG 11kV RUSTENBURG-PHOTSANENG 11kV PHOKENG / KGALE 11kV MORULENG - MANAMAKGOTHENG 11kV WONDERKOP / TURF 1 11kV PHOKENG - CIVIC 11kV	Feeder Breakers at the Substation
L	MORULENG - SEGAKWANENG 11kV RUSTENBURG-PHOTSANENG 11kV PHOKENG / KGALE 11kV MORULENG - MANAMAKGOTHENG 11kV WONDERKOP / TURF 1 11kV PHOKENG - CIVIC 11kV	Feeder Breakers at the Substation
M	MODDERSPRUIT - BAPONG 22kV MODDERSPRUIT - MOKOLOKWE 11kV RUIGHOEK - SEDIBELO 22kV THARISA - MAMALEKA 1 11kV WONDERKOP - QUARRIES 1 11kV	Feeder Breakers at the Substation
N	MODDERSPRUIT - BAPONG 22kV MODDERSPRUIT - MOKOLOKWE 11kV RUIGHOEK - SEDIBELO 22kV THARISA - MAMALEKA 1 11kV WONDERKOP - QUARRIES 1 11kV	Feeder Breakers at the Substation
O	GELUK RURAL - BETHANIE 11kV UCAR MINERALS - OSKRAAL 11kV RUIGHOEK - NTUANE 22kV RUIGHOEK - MANAMELA 22kV	Feeder Breakers at the Substation
P	GELUK RURAL - BETHANIE 11kV UCAR MINERALS - OSKRAAL 11kV RUIGHOEK - NTUANE 22kV RUIGHOEK - MANAMELA 22kV	Feeder Breakers at the Substation

BLOCK								
	1	2	3	4	5	6	7	8
MORNING BLOCK	A	C	D	E	H	O	P	I
EVENING BLOCK	G	M	L	B	J	F	K	N

Villages
Hartebeesfontein Township of Sonop Bester and GG in Tlhabane Maboloka Ramokokastad,Bojating Village and Phadi Village
Hartebeesfontein Township of Sonop Bester and GG in Tlhabane Maboloka Ramokokastad,Bojating Village and Phadi Village
Moshaneng, Swartkopfontein, Shupingstad & Farms Luka Mogono Section Lenatong, Salema and Lemenong Top Village, Signal Hill & Loney Park Lekwadi, Kagiso, Khasablanca, Mabieskraal
Moshaneng, Swartkopfontein, Shupingstad & Farms Luka Mogono Section Lenatong, Salema and Lemenong Top Village, Signal Hill & Loney Park Lekwadi, Kagiso, Khasablanca, Mabieskraal
Kanana, Mosenthal Meriting, Kanana part of Aukasie and part of GG Maumong, Tlaseng, Tsitsing, Tantanana, Mafika, Serutube, Mameritswe, Rankelenyane, Mabitse, Lesung, Lekgalong, Mogajane Freedom Park Township
Kanana, Mosenthal Meriting, Kanana part of Aukasie and part of GG Maumong, Tlaseng, Tsitsing, Tantanana, Mafika, Serutube, Mameritswe, Rankelenyane, Mabitse, Lesung, Lekgalong, Mogajane Freedom Park Township
Welgeval Segakwaneng, Welgeval Chaneng, Mabenya, Robega Bala, Rasimone and Robega Villages
Welgeval Segakwaneng, Welgeval Chaneng, Mabenya, Robega Bala, Rasimone and Robega Villages
Majakaneng Marikana Township Lerome GG, and part of Lefaragatlha Village
Majakaneng Marikana Township Lerome GG, and part of Lefaragatlha Village
Lesetlheng, Ramoga, Legkraal Photsaneng Village Greeside Masosobane and Kgale Village Manamakgotheng The Informal Settlement part of Greenside, Malla,Punodung,Winsor and Dithabaneng
Lesetlheng, Ramoga, Legkraal Photsaneng Village Greeside Masosobane and Kgale Village Manamakgotheng The Informal Settlement part of Greenside, Malla,Punodung,Winsor and Dithabaneng
Bapong Bapong Segwaelane and Makolokwe Villages Bapong, Mabalstad, Rietfontein, holfontein Marikana RDP and the Police station.
Bapong Bapong Segwaelane and Makolokwe Villages Bapong, Mabalstad, Rietfontein, holfontein Marikana RDP and the Police station.
Bethanie, Modikwe, Barseba Oskraal Village Witrantjies, Maologane, Tweelagte, Phalane, Makoshong, Mmamakau Mabieskraal,Letlhakeng,Khayakhulu,Katnagel,Manamela and Siga Village
Bethanie, Modikwe, Barseba Oskraal Village Witrantjies, Maologane, Tweelagte, Phalane, Makoshong, Mmamakau Mabieskraal,Letlhakeng,Khayakhulu,Katnagel,Manamela and Siga Village

DAYS OF THE MONTH

9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
B	F	G	K	M	N	L	J	D	G	P	A	N	B	O	L	M	E	J	C	F
D	A	H	P	C	I	O	E	K	L	F	H	M	C	J	G	P	O	A	N	D


30
31
H
K
B
I

Distribution System Operating Code

Version 6.2

(January 2022)

This document is approved by the National Energy Regulator of South Africa (NERSA)

Administered by:

RSA Grid Code Secretariat
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Table of Contents

1. OBJECTIVE **4**

2. SCOPE OF APPLICATION **4**

3. OPERATIONAL RESPONSIBILITIES OF *DISTRIBUTORS* **4**

4. OPERATIONAL RESPONSIBILITIES OF *EMBEDDED GENERATORS* AND OTHER *CUSTOMERS* **5**

5. OPERATIONAL AUTHORITY **6**

6. OPERATING PROCEDURES **6**

7. OPERATIONAL LIAISON **7**

8. EMERGENCY AND CONTINGENCY PLANNING **7**

9. OPERATION DURING *ABNORMAL CONDITIONS* **8**

10. INDEPENDENT ACTIONS BY PARTICIPANTS **9**

11. DEMAND AND VOLTAGE CONTROL **9**

12. FAULT REPORTING AND ANALYSIS/INCIDENT INVESTIGATION **10**

13. DISTRIBUTOR MAINTENANCE PROGRAM **11**

14. TESTING AND MONITORING **11**

15. SAFETY CO-ORDINATION **11**

16. DISCONNECTION AND RECONNECTION **12**

17. COMMISSIONING AND CONNECTION **12**

18. OUTAGE SCHEDULING AND CO-ORDINATION **13**

18.1 RESPONSIBILITIES OF THE *DISTRIBUTOR* 13
18.2 RISK-RELATED OUTAGES 14
18.3 COMMUNICATION OF SYSTEM CONDITIONS, OPERATIONAL INFORMATION AND *DISTRIBUTION SYSTEM* PERFORMANCE 14
18.4 UNPLANNED INTERRUPTIONS OR OUTAGES 14
18.5 REFUSAL/CANCELLATION OF OUTAGES 15
18.6 PLANNED INTERRUPTIONS OR OUTAGES 15

19. TELECONTROL **15**

1. Objective

(1) To set out the responsibilities and roles of the *participants* as far as the operation of the *Distribution System* is concerned and more specifically issues related to:

(a) economic operation, *reliability* and security of the *Distribution System*

(b) operational authority, communication and contingency planning of the *Distribution System*

(c) management of power quality

(d) operation of the *Distribution System* under normal and abnormal conditions

(e) field operation, maintenance and maintenance coordination/ outage planning

(f) safety of personnel and public

2. Scope of Application

(1) The *Distribution System Operating Code* shall apply to all *Users* of the *Distribution System* including:

(a) *Distributors*

(b) *Embedded Generators*

(c) *Generators*

(d) *End-use customers*

(e) *Traders / Retailers*

(f) *Resellers*

(g) Any other entities with equipment connected to the *Distribution System* (for example *transmission national service providers (TNSPs))*

(h) *System Operator (SO)*

3. Operational Responsibilities of *Distributors*

(1) The *Distributor* shall operate the *Distribution System* to achieve the highest degree of reliability and shall promptly take appropriate remedial action to relieve any condition that may jeopardise reliability.

(2) The *Distributor* shall co-ordinate voltage control, demand control, operating on the *Distribution System* and security monitoring in order to ensure safe, reliable, and economic operation of the *Distribution System*.

(3) In the event of an *embedded generator* having to shutdown or *island* plant because of a disturbance on the *Distribution network*, the *Distributor* shall carry out network restoration to minimise the time required to resynchronise the shed embedded generating *units*.

(4) Ensuring that the availability and reliability of every power station supply is maximised at all times under normal and abnormal conditions

(5) The *Distributor* may shed *customer* load to maintain system integrity. Following such action, *customer* load shall be restored as soon as possible after restoring and maintaining system integrity.

(6) The *Distributor* shall operate the *Distribution System* as far as practical so that instability, uncontrolled separation or cascading outages do not occur.

(7) The *Distributor* is responsible for efficient restoration of the *Distribution System* after *supply interruptions.* The restoration plans shall be prioritised in accordance with customer requirements and as described in *NRS 047*.

(8) The *Distributor* shall ensure it has sufficient *resources* to continuously monitor and operate the *Distribution System*.

(9) The *Distributor* shall establish and implement operating instructions, procedures, standards and guidelines to cover the operation of the *Distribution System* under normal and abnormal system conditions.

(10) The *Distributor* shall operate the *Distribution System* within defined technical standards and equipment operational ratings.

(11) The *Distributor* shall ensure adequate and reliable communications to all major users of the *Distribution System*. Communication with all *customers* shall be provided in terms of *NERSA* license requirement.

4. Operational Responsibilities of *Embedded Generators* and Other *Customers*

(1) When conditions on the *Distribution System,* under normal or abnormal conditions, become such that it may jeopardise plant or personnel of *customers, customers* shall immediately disconnect from the *Distribution Syste*m.

(2) The *Embedded Generator* shall ensure that its *generating units* are operated within the capabilities defined in the *Connection Agreement* entered into with the *Distributor*.

(3) The *Embedded Generator* shall reasonably cooperate with the *Distributor* in executing all the operational activities during an emergency generation condition.

(4) *Customers* shall assist the *Distributors* in correcting *quality of supply* problems caused by the *Customer's* equipment connected to the *Distribution System*.

(5) *Customers* shall at all times operate their equipment in such a manner to ensure that they comply with the conditions specified in their supply agreement.

(6) All customers must declare any generating plant except for Embedded Generators that may be paralleled with the Distribution network via switching, and specify the interlocking mechanism to prevent inadvertent parallel operation with the Distributor network.

(7) *Embedded generators* shall have the required protection to trip in the event of a momentary supply loss causing an island condition to prevent paralleling out of synchronism due to auto-reclose functionality on the *Distributor's* network.

5. Operational Authority

(1) The *Distributor* shall have the authority to instruct operating on the *Distribution System*. Operational authority for other networks shall lie with the respective asset owners.

(2) Network control, as it affects the interface between the *Distributor* and a *customer*, shall be in accordance with the *operating agreements* between the *participants*.

(3) Except where otherwise stated in this code, no *participant* shall be permitted to operate the equipment of another without the permission of such other *participant*. In such an event the asset owner shall have the right to test and authorise the relevant operating staff in accordance with its own standards before such permission is granted.

(4) Notwithstanding the provisions of section 3 of this code, *participants* shall retain the right to safeguard their own equipment.

6. Operating Procedures

(1) The *Distributor* shall develop and maintain operating procedures for the safe operating of the *Distribution System*, and for assets connected to the *Distribution System*. These operating procedures shall be adhered to by *participants* when operating equipment on the *Distribution System* or connected to the *Distribution System*.

(2) Each *customer* shall be responsible for his own safety rules and procedures at least in compliance with the relevant safety legislation. *Customers* shall ensure that these rules and procedures are compatible with the *Distributor* developed procedures defined in paragraph 6 (1) above.

(3) *Customers* and service providers shall enter into operating agreements where not included in the supply agreement, as defined in the *service provider* licenses.

7. Operational Liaison

(1) The *Distributor* shall be responsible for ensuring adequate operational liaison with connected *participants*.

(2) The *participants* shall appoint competent personnel to operate their network and where needed shall establish direct communication channels amongst themselves to ensure the flow of operational information between the *participants*.

(3) If any *participant* experiences an emergency, the *Distributor* may call upon other *participants* to assist to an extent as may be necessary to ensure that such emergency does not jeopardise the integrity of the *Distribution System*.

(4) Pursuant to 7(3) above, the relevant *participant* shall ensure that the emergency notification contain sufficient details in describing the event including the cause, timing and recording of the event to assist the *Distributor* in assessing the risk and implications to the *Distribution System* and all the affected *Customers'* equipment.

(5) For planned events, which have an identified operational effect on the Distribution System, or on *Customers'* equipment connected to the *Distribution System*, the relevant *participant* shall notify the *Distributor*.

(6) Where it is possible for a *customer* to *parallel supply points* or transfer load or *embedded generation* from one *point of supply* to another by performing switching operations on the *customer's* network, the *operating agreement* shall cover at least the operational communication, notice period requirements and switching procedures for such operations.

(7) The *Distributor* and *customers* shall agree on the busbar configuration(s) at each point of supply during normal and emergency conditions. The *Distributor* and *customers* shall agree on the busbar configuration(s) at each *point of supply* during normal and emergency conditions. The *Distributor* shall keep updated records of such agreements.

8. Emergency and Contingency Planning

(1) The *Distributor* shall develop and maintain emergency and contingency plans to manage the system contingencies and emergencies that affect the delivery of the *Distribution System* and the Interconnected Power System. Such plans shall be developed in consultation with all affected *participants*, and shall be consistent with internationally acceptable practices, and shall include but not be limited to:

(a) under-frequency load shedding

(b) Prevention of voltage slide and collapse

(c) meeting any national disaster management requirements including the necessary minimum load requirements
(d) forced outages at any point of connection
(e) restoration and continuation of supply to every power station during normal and abnormal conditions is to be classified as a high priority
(f) supply restoration.

(2) Emergency plans shall enable the safe and orderly recovery from a partial or complete system collapse, with minimum impact on *customers*.
(3) All contingency and emergency plans shall be reviewed biennially or in accordance with changes in network conditions.
(4) All contingency and emergency plans shall be verified by audits, if possible by using onsite inspections and actual tests. In the event of such tests causing undue risk or undue cost to a participant, the *Distributor* shall take such risks or costs into consideration when deciding whether to conduct the tests. Any tests shall be carried out at a time that is least disruptive to the *participants*. The costs of these tests shall be borne by the respective asset owners. The *Distributor* shall ensure the co-ordination of the tests in consultation with all affected *participants*.
(5) The *Distributor* shall, in consultation with the *NTC* and *SO*, set the requirements and implement:
(a) Automatic and manual under frequency load shedding in accordance with the *System Operator's* requirements.
(b) Automatic and manual under voltage load shedding to prevent voltage collapse.
(c) Manual load shedding to maintain network integrity.

(6) *Participants* shall make available loads and schemes to comply with these requirements.
(7) The *Distributor* shall be responsible for determining emergency operational limits on the *Distribution System*, updating these periodically and making these available to the *participants*.
(8) The *Distributor* shall conduct network studies which may include but not be limited to load flow, fault *level,* stability and resonance studies to determine the effect that various component failures would have on the reliability of the *Distribution System*.

9. Operation during *Abnormal Conditions*

(1) During *abnormal operating conditions* the *Distributor* shall be obliged to take necessary precautionary measures to prevent network disturbances from spreading and to restore supply to *consumers*.

(2) The *Distributor* shall cooperate with the *SO* and *TNSP* in taking corrective measures in the event of abnormal conditions on the *Distribution System*. The corrective measures shall include both supply-side and demand-side options. Where possible, warnings shall be issued by the *Distributor* to affected *participants* on expected utilisation of any contingency resources.

(3) The *Distributor* shall be entitled to disrupt some sections of the network in the event of a prolonged disturbance resulting from unsuccessful corrective measures undertaken.

(4) Termination of the use of emergency resources shall occur as the order of return being determined by the most critical loads, first in terms of safety and then plant.

(5) During emergencies that require load shedding, the request to shed load shall be initiated in accordance with procedures prepared by the *Distributor*.

10. Independent Actions by Participants

(1) Each *participant* shall have the right to reduce supply or demand, or disconnect a *point of connection* under emergency conditions, if such action is necessary for the protection of life or equipment and shall give advance notice of such action where possible.

11. Demand and Voltage Control

(1) The *Distributor* shall implement demand control measures when:

- (a) Instructed to by the *SO*
- (b) Abnormal conditions exist on the *Distribution System*,
- (c) Multiple outage contingency exists resulting in *island* grid operation
- (d) Any other operational event the *Distributor* deems to warrant the implementation of demand control measures for the safe operation of the *Distribution System*.

(2) Demand control shall include but not limited to:

- *(a)* *Customer* demand management
- (b) Automatic under-frequency load shedding
- (c) Automatic under-voltage load shedding
- (d) Emergency manual load shedding
- (e) Voluntary load curtailment

(3) The *Distributor* shall develop load reduction procedures, which shall be regularly updated, to reduce load in a controlled manner taking cognisance of the type of load.

(4) *The Distributor* shall endeavour to maintain system voltage to be within statutory limits at the *points of supply* or otherwise as agreed in the operating / supply agreement**.**

12. Fault Reporting and Analysis/Incident Investigation

(1) The *end-use customers* and *Embedded Generators* shall report the loss of major loads or *generation* (as agreed by the *participants*) to the *Distributor* within 15 minutes of the event occurring. Notice of the intention to reconnect such shall be given with at least 15 minutes advance notice to enable the *Distributor* to take any necessary action required.

(2) The *Distributor* shall investigate all incidents that materially affected the quality of supply to another *participant*. The *Distributor* shall initiate and co-ordinate such an investigation and make available the findings of such investigation to affected *participants* on request.

(3) The findings of such an investigation shall include where relevant:

(a) Date and time of the incident

(b) Location of the incident

(c) Duration of the incident

(d) Equipment involved

(e) Cause of the incident in compliance with *NRS048*.

(f) Demand control measures undertaken specifically recording the customer MWs shed and energy lost as a result of the measures taken.

(g) Supply restoration details.

(h) *Embedded Generation* interrupted

(i) Under-frequency Load Shedding response

(j) Estimated date and time of return to normal service

(k) *Customer* load tripped MW and energy lost when incident occurred or as a direct result of incident not including any Demand Control Measures taken

(l) Estimate number of *customers* having lost supply.

(m) Recommendations

(4) Any *participant* shall have a right to request an independent audit of the findings, at its own cost. If these audit findings disagree with the original findings, the *participant* may follow the dispute resolution mechanism as specified in the *Governance Code*.

13. Distributor Maintenance Program

(1) Each *Distributor* shall have a maintenance philosophy against which their maintenance practices and programs are compiled and documented in accordance with *NRS082*. These documented maintenance programs must be auditable.

(2) The *Distributor* shall compile at least an annual maintenance plan in line with the budget period.

(3) Accurate records of maintenance done shall be kept for a period of at least 5 years.

(4) Scheduling of planned outages should coincide with the maintenance requirements of other *participants* connected to the affected network.

(5) All participants that may be affected by the planned outages will be informed at least 2 days or 48 hours in advance.

14. Testing and Monitoring

(1) A *participant* has the right to request to test and / or monitor any equipment at the p*oint of connection* to the *Distribution System* to ensure that the *participants* are not operating outside the technical parameters specified in any part of the *Distribution Grid Code* and other applicable standards which the *participants* are required to comply with. Such testing and / or monitoring shall be carried out as mutually agreed by the *parties*.

(2) A *participant* found to be operating outside the technical parameters shall, within such time agreed upon by the parties involved, remedy the situation or disconnect from its network the equipment causing problems.

(3) Any dispute arising out of the test and monitoring process shall be resolved through the *dispute resolution* mechanism in the *Governance Code*.

15. Safety Co-ordination

(1) The *Distributor* shall comply with relevant legislation and develop Operating Regulations to ensure safety of personnel whilst operating on the *Distribution System* or any equipment connected to the *Distribution System*.

(2) Where operational boundaries exist, there shall be a joint agreement on operating procedures to be complied with by all affected *participants*.

(3) There shall be written authorisation of personnel who operate on or work on live equipment forming part of or connected to the *Distribution System*.

(4) The “Operating Regulations” referred to in section 15 (1) of this code shall include rules and regulations for the safe operating of plant, continuity of supply and authorisation of personnel related to the operating of *HV*, *MV* and *LV* equipment.

16. Disconnection and Reconnection

(1) The *Distributor* may disconnect supply to the *customer's* supply address if the *customer* fails to comply with the written notice of non-compliance issued by the *Distributor* or any arrangement entered into by the *Distributor* and the *customer* which the *customer* has failed to comply with including non-compliance with the *Distributor* applicable standards.

(2) The *Distributor* shall have the right to interrupt or disconnect supply if a threat of injury or material damage is anticipated as a result of the malfunctioning of the electrical installation equipment on the *Customer's* premises or on the *Distribution System.*

(3) The *Distributor* may disconnect immediately without notice the supply to the *customer's* supply address if:

(a) The supply of electricity to a *customer* is used anywhere else other than at the *customer's* premises as specified in the *connection agreement*.

(b) A *customer* takes at the *customer's* supply address electricity supplied to another *customer*.

(c) A *customer* is tampering with or permits tampering with the meter and associated components.

(d) A *customer* allows electricity supply to bypass the meter without the *Distributor's* consent.

(4) *Customer* (connected at *MV* and *HV* levels) shall give written notice to the *Distributors* of any intended voluntary disconnection.

(5) The *Distributor* shall reconnect supply to the *customer* on request by the customer or retailer on behalf of the *customer* subject to compliance with the relevant provisions of the *Distribution Code* and other *Distributor* applicable standards including the timing of reconnection and any reconnection charge imposed by the *Distributor*.

17. Commissioning and connection

(1) *MV* and *HV customers* shall supply commissioning programmes to the *Distributor* control and operating facility at least 1 month in advance. Subsequently, a notice of first connection shall be given to the *Distributor* control and operating facility at least 2 weeks before actual

connection. Details of the information required shall include but not be limited to the following:

(a) Commissioning procedures and programmes
(b) Documents and drawings required
(c) Proof of compliance with standards
(d) Documentary proof of the completion of all required tests
(e) SCADA information, to be available and tested before commissioning
(f) Site responsibilities and authorities.

(2) When commissioning equipment at the point of connection, the *Distributor* shall liaise with the affected participants on all aspects that could potentially affect their operation.

(3) The *Distributor* and *customers* shall perform all commissioning tests required in order to confirm that the *Distributor's* and the *customers'* plant and equipment meet all the requirements of the *Distribution Code* before being connected to and energised from the *Distribution* system.

18. Outage scheduling and co-ordination

18.1 Responsibilities of the *Distributor*

(1) *Distributors* shall, with reference to the relevant network *Service Providers* outage plans and relevant *Generators* outage programs, compile the daily outage schedule which shall:

(a) endeavour to cater for the planned maintenance and commissioning of new equipment
(b) describe the planned outage
(c) identifies the risks and impact on network performance in accordance with NRS 047
(d) describe the practical contingency plans devised to counter risks, and
(e) define the roles and responsibilities of the personnel designated to manage and minimise the impact of these outages on the *Distribution System* and its users.

(2) Not withstanding clause 18.1 (1) above, the *Distributor* shall co-ordinate relevant outages with the *SO.*

(3) In addition to paragraph 18.1 (1) above, the *Distributor* may require information from the *Customers* regarding major plant and associated equipment which may affect the performance of the *Distribution System* and may require additional resources to be committed during the outage planning process.

(4) *Customers* with co-generation and *Embedded Generators* with the maximum capacity greater than 1MW shall furnish to the *Distributor* information on *planned outages* in order for the *Distributor* to properly plan, and coordinate its control, maintenance and operation activities.

(5) The *Distribution* outage schedule shall be submitted to the *NER*SA upon request.

18.2 Risk-related Outages

(1) All risk-related outages shall be scheduled with an executable contingency plan in place. The compilation of the contingency plan is the responsibility of the relevant *Distributor*.

(2) Contingency plans shall address:

(a) Safety of personnel

(b) Security and rating of equipment

(c) Continuity of supply

(3) The relevant control centres shall confirm that it is possible to execute the contingency plan successfully.

18.3 Communication of System Conditions, Operational Information and *Distribution System* Performance

(1) The *Distributor* shall be responsible for providing *participants* with operational information as may be agreed from time to time. This shall include information regarding *planned* and *forced outages* on the *Distributor*.

(2) The *Distributor* shall inform *participants* of any network condition that is likely to impact the short and long-term operation of that *participant*.

(3) The *Distributor* shall record operational information as specified in the *Information Exchange Code*. This information shall be made available to all *participants* on request.

18.4 Unplanned Interruptions or Outages

(1) In case of unplanned interruptions or *outages* the *Distributor* may require a *customer* to comply with reasonable and appropriate instructions from the *Distributors* and may further:

(a) Require the *customer* to provide the *Distributor* emergency access to *customer* owned distribution equipment normally operated by the *Distributor* or *Distributor* owned equipment on *customer's* property.
(b) Interrupt supply to the *customer* to effect repairs to the *Distribution System*.

(2) Subsequent to clause 18.4 (1), the *Distributor* shall make arrangements to keep customers informed about the expected duration and other details following unplanned interruptions.

18.5 Refusal/Cancellation of Outages

(1) No *participant* may unreasonably refuse an outage request. No *participant* may unreasonably postpone or cancel a previously accepted outage.
(2) The direct costs related to the cancellation/postponement of an outage shall be borne by the respective asset owners.

18.6 Planned Interruptions or Outages

(1) For planned interruptions or outages the *Distributor* shall act in accordance with *NRS047* and provide the affected *Customers* with information relating to the expected date of the outage, time and duration of the outage and shall established reasonable means of communication to the *Customers* for outage related enquiries.

19. Telecontrol

(1) Where Telecontrol facilities are shared between the *Distributor* and other *participants*, the *Distributor* shall ensure that operating procedures are established in consultation with the *participants*.