

**REPORT TO:ENERGY**

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**1. ITEM NUMBER    EN 09/09/24**

**SUBJECT**

**ELECTRICITY GENERATION AND DISTRIBUTION:  
PERFORMANCE MONITORING REPORT: JULY 2024**

**ELEKTRISITEITSGENERERING EN -VERSPREIDING:  
VERSLAG OOR PRESTASIEMONITERING: JULIE 2024**

**ENGUNDLUNKULU ENGOKUVELISWA NOKUNIKEZELWA KOMBANE: INGXELO  
EMALUNGA NOBEK'ILISO KWINDLELA YOKUSEBENZA  
EYEKHALA 2024**

**LSU REF NO: G0261**

**3. DELEGATED AUTHORITY**

In terms of delegation

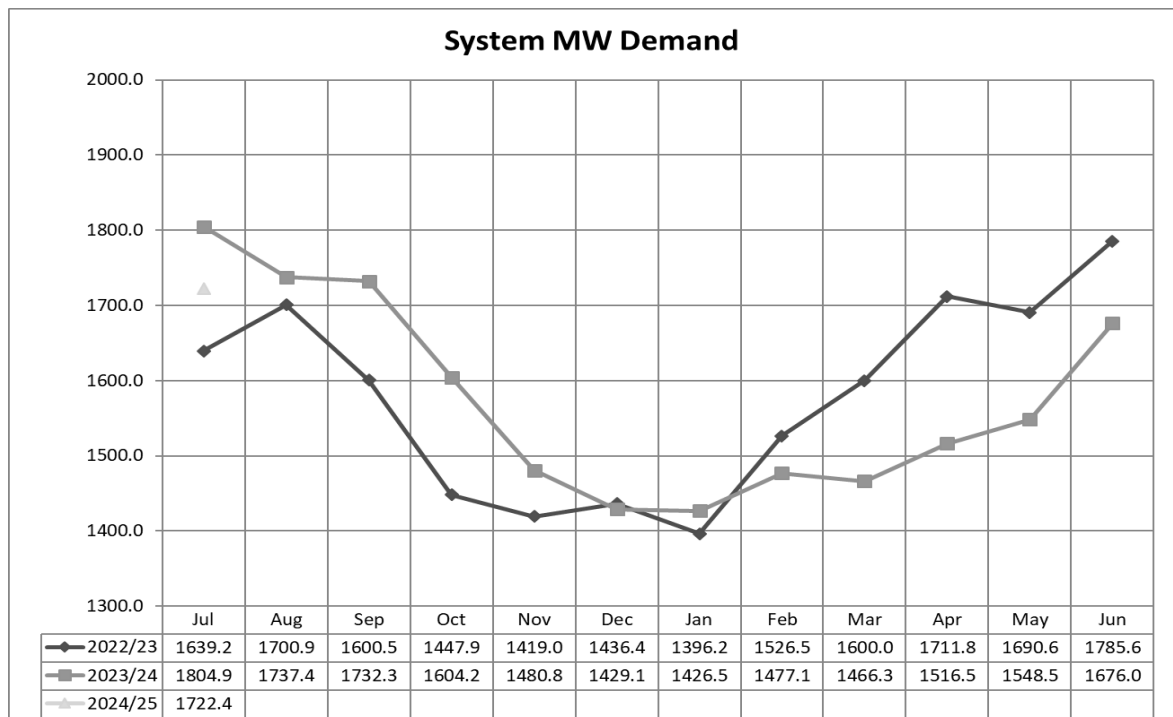
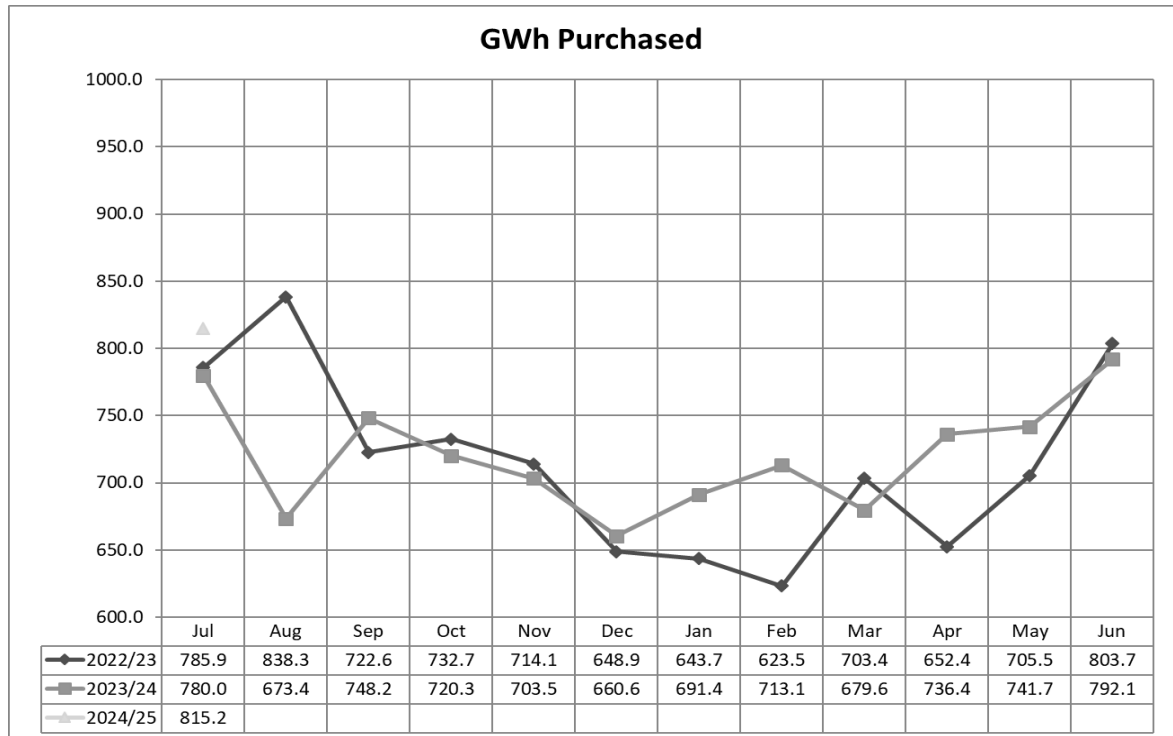
This report is FOR NOTING BY

- Committee name** : Energy
- The Executive Mayor together with the Mayoral Committee (MAYCO)
- Council

## 4. DISCUSSION

### Energy Purchases

This indicator expresses the bulk purchases from Eskom in GWh and MW for the financial year to date compared to previous financial years.



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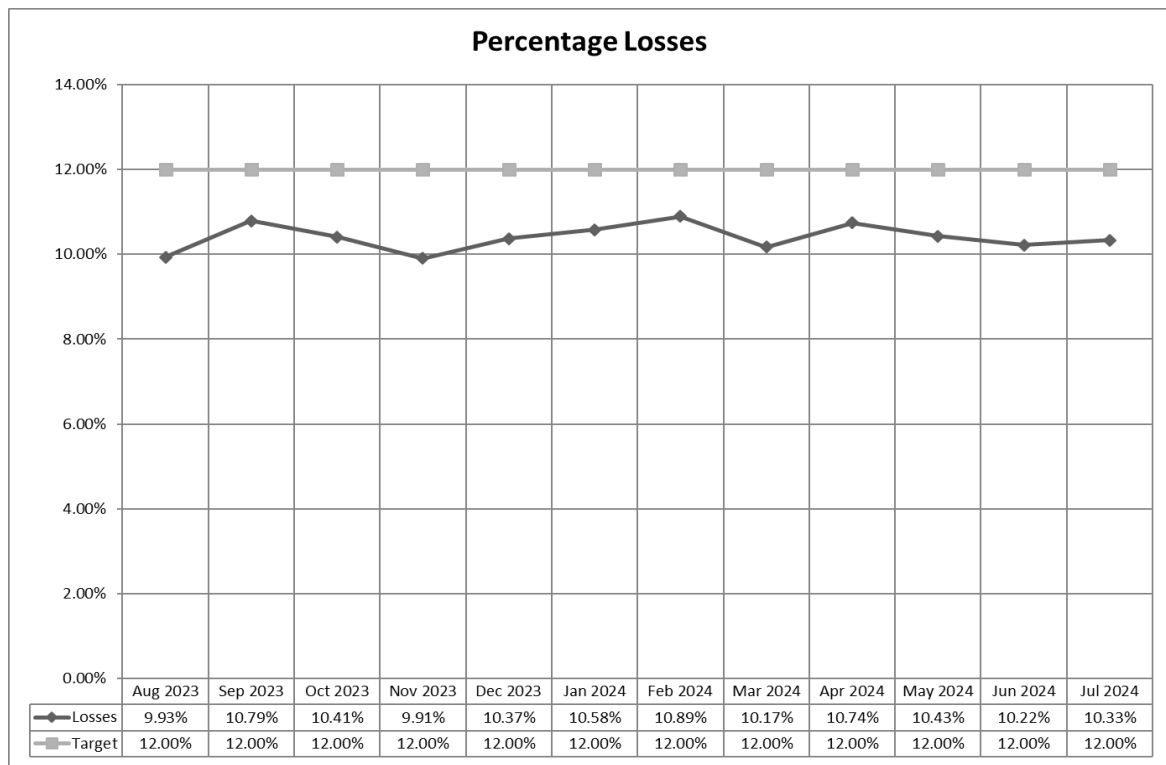
## Losses

This indicator shows the losses in electricity for a rolling 12-month period expressed as a percentage of total energy sent to system (purchases plus net own generation).

Losses are measured by comparing the energy sent to system (purchases plus net own generation) with the energy sold (billed on credit meters and purchases by prepaid customers) and expressing this ratio as a percentage. It is typically measured over a rolling 12-month period in order to compensate for timing differences in the various measurement periods.

It is worth noting that losses are made up of two primary components, technical losses which are inherent in every distribution system and are relatively constant and unavoidable, and non-technical losses which are made up of theft (through by-passed connections or illegal connections) and administrative losses (billing issues including incorrect accounts, unbilled accounts, timing delays in the issuing of accounts, or simply unaccounted for usage within the network). Losses will also be impacted by “habit” buying of prepaid electricity (where customers buy the same Rand-value on the same day of every month, irrespective of whether or not they need to), that is then not used for one or other reason (such as load-shedding).

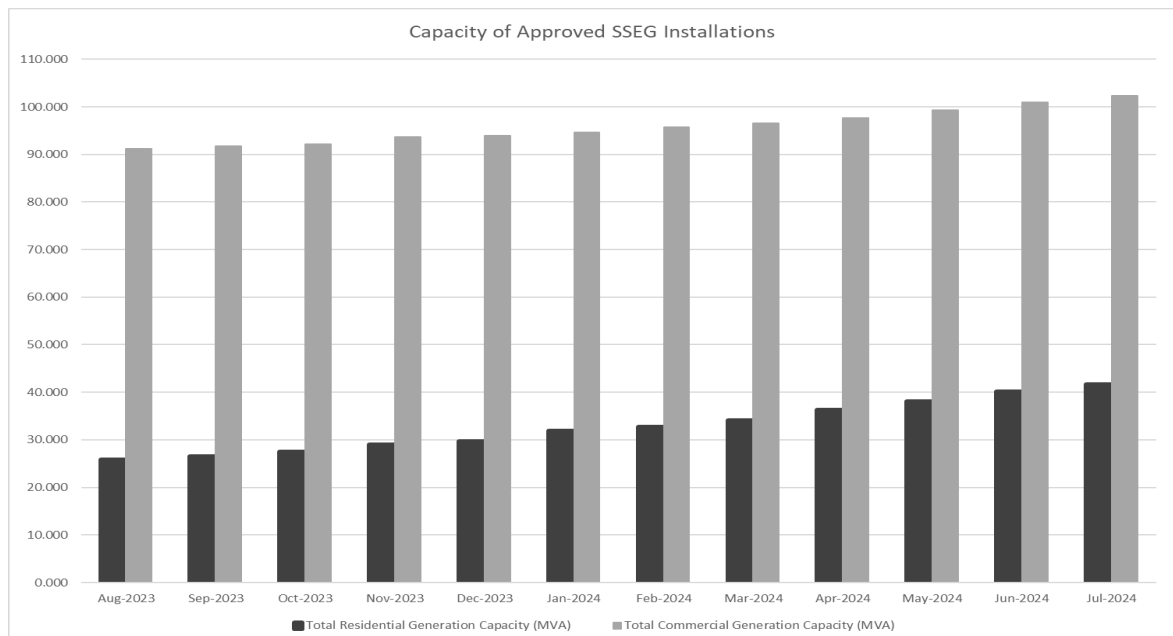
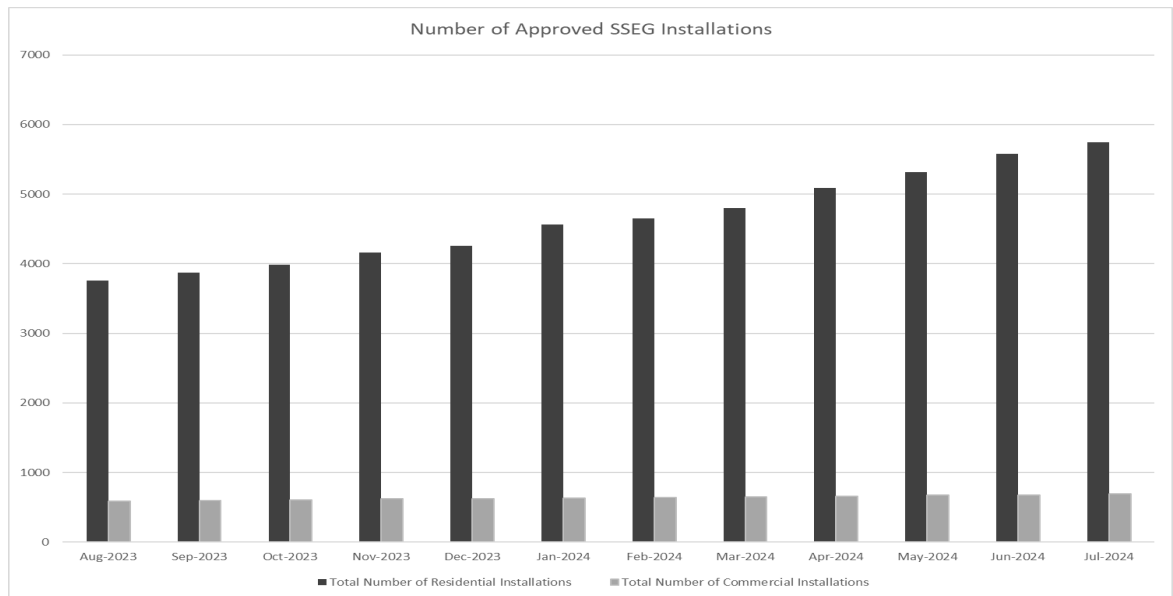
Also note that the drop in losses from August is as a result of a change to the billing period for the Eskom accounts. It is expected to return to normal levels in time.



## Small Scale Embedded Generation Installations

This indicates the cumulative number of approved grid-tied small scale embedded generation installations commissioned for both Residential and Commercial installations, and the generating capacity in MVA of these. Growth in these installations is customer driven. As from July 2019 this number now also includes legalised connections.

From the graphs it can be seen that while there are many more Residential systems installed and commissioned than Commercial systems, the installed capacity of these Residential systems are considerably smaller as a general rule.



## Quality of supply

### *ASIFI (Average system interruption frequency index)*

This indicates how often the average customer connected would experience a sustained interruption per annum.

Mathematically expressed as:

$$\text{ASIFI} = \frac{\text{Total MVA of interruptions p.a.}}{\text{Total system MVA}}$$

### *ASIDI (Average system interruption duration index)*

This indicates the length of time the average customer connected would experience a sustained interruption per annum.

Mathematically expressed as:

$$\text{ASIDI} = \frac{\text{Total system hours (MVAh) of interruptions p.a.}}{\text{Total MVA served}}$$

### *CAIDI (Customer average interruption duration index)*

This indicates the length of time any given customer connected would experience a sustained interruption per annum

Mathematically expressed as:

$$\text{CAIDI} = \frac{\text{ASIDI}}{\text{ASIFI}}$$

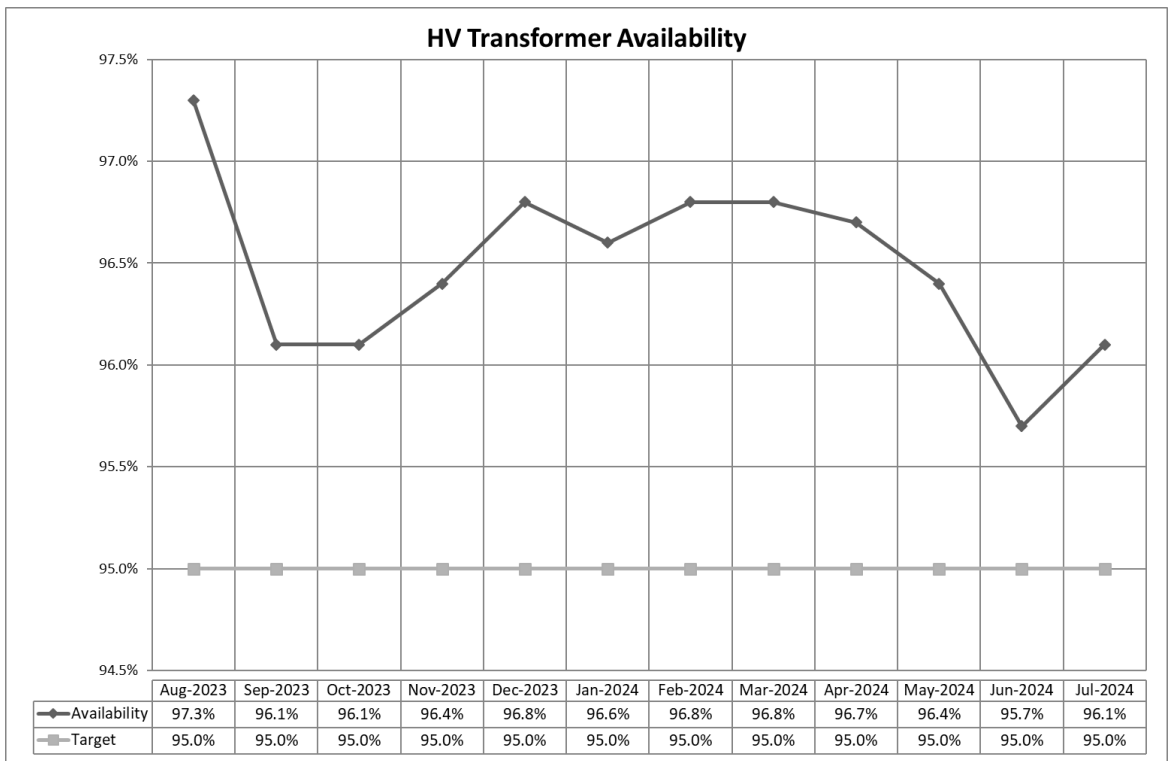
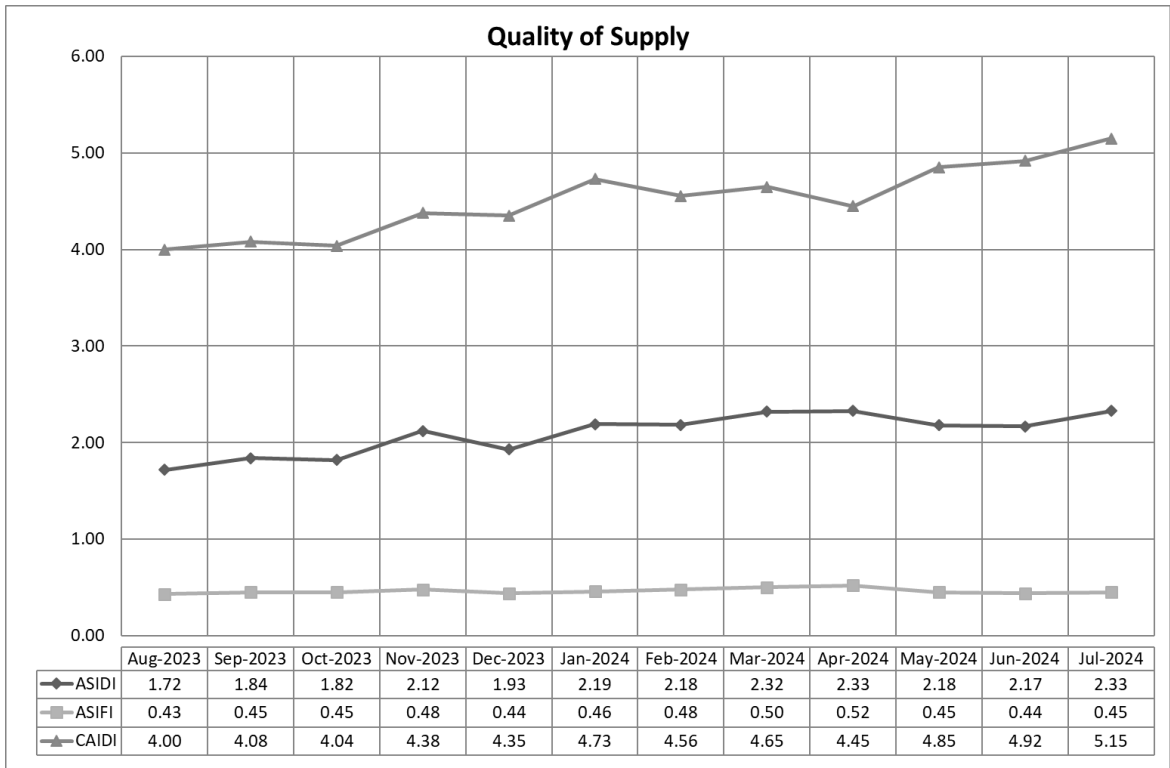
### *Percentage power transformer availability*

This indicator provides a measure of the reliability of the High Voltage electricity network.

The aim of these indicators is to provide the Committee and other regulatory authorities with a measure to assess the reliability and availability of electricity supplied. The Department is currently performing well in this area.

Target for ASIDI is less than 3.0 hours, for ASIFI is less than 1.3 occasions per annum, for CAIDI is less than 2.3 hours, and for percentage power transformer availability is more than 95%.

Note that external factors such as vandalism and the impact of load-shedding events on the grid will result in variations to the outcome of these calculations, and will continue to do so for the remainder of the rolling 12 month period over which they are measured.

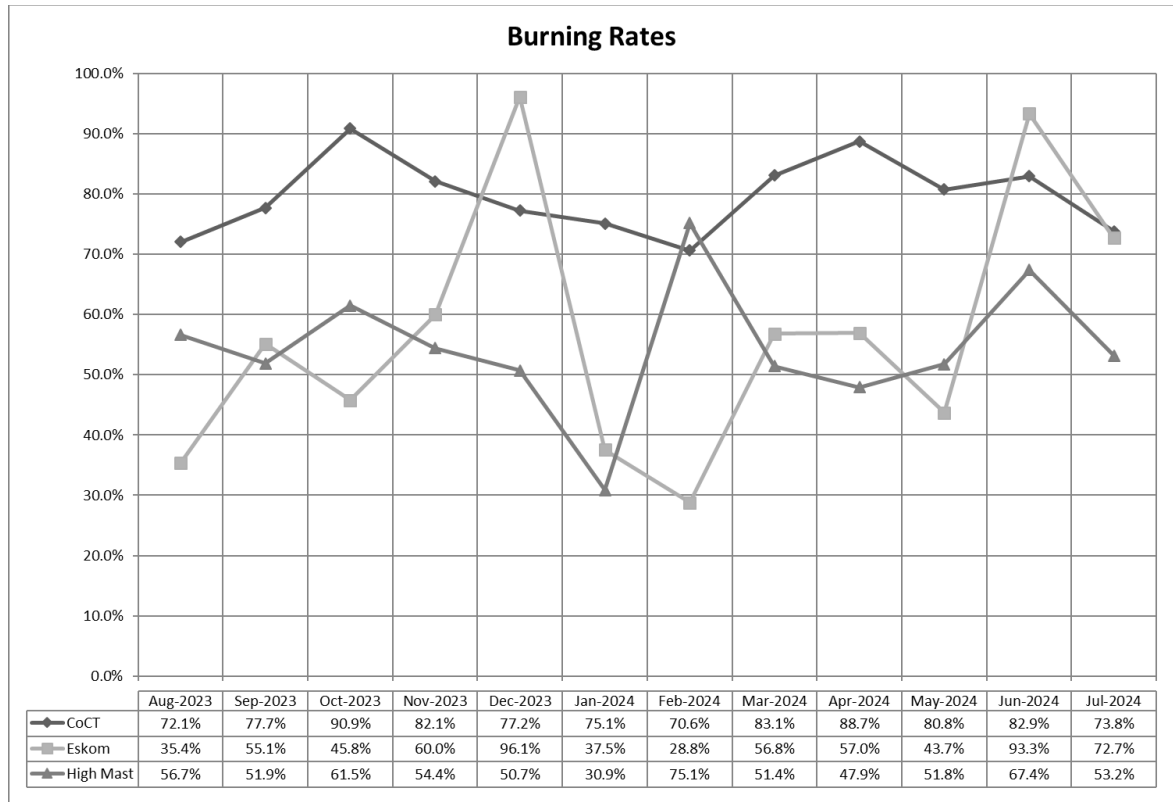


Large events (loss of installed capacity) for the period 2023-02-01 to 2024-01-31 excluding loadshedding							
Description	Tx/Dx	Date	Lost MVAh	Hrs	Main Stn Area	Cause	Equipment
Bisschop MS Contantia Swtn Stn 1 11kV Earth fault alarm received & bus zone & main protection alarm received	Dx	09 August 2023	185.33	1.98	Bisschop Road 2	Equipment failure Cable (excl. contr.)	66kV oil
Mouille Point Main Station After load shedding trip Orkney Road, Marais Road & Rocklands CB's trip after load shedding	Dx	05 September 2023	130.59	4.35	Mouille point 1	Overload General/other	Other
ASANDA 2 CHRIS NISSEN Late restoration after load shedding due high loads	Dx	12 September 2023	197.10	24.40	STRAND	Overload Cable (excl. contr.)	11kV XLPE
Mtchp Main Station Swstn 2 11kV earth fault alarm: SAR Housing - Caldecott: Feeder faulty	Dx	17 September 2023	197.42	15.65	Mitchells Plain 1	Equipment failure Cable (excl. contr.)	11kV paper
Newlands Main Station Highwick Avenue 11kV earth fault alarm received. Highwick Ave - Wytham Ave: CB found open	Dx	27 September 2023	355.92	74.15	Newlands 2	Equipment failure Cable (excl. contr.)	11kV XLPE
Newlands Main Station Highwick Avenue 11kV earth fault alarm received. Highwick Ave - Wytham Ave: CB found open		27 September 2023	355.92		Newlands 2	Dielectric brkdn.	
Newfields Main Station Line differential trip alarm Newfields - Lansport Road: CB open indication received	Dx	18 October 2023	112.64	7.03	Newfields 1	Equipment failure Cable (excl. contr.)	11kV XLPE
Spine Road Main Station Esln Swstn 2 11kV earth fault alarm received: Spine Road MS - The Cedars / MP Sewage CB open indication received	Dx	12 November 2023	155.99	4.20	Spine Road 2	Equipment failure Cable (excl. contr.)	11kV XLPE
Kirstenhof Sea Breeze Road 11kV earth fault alarm received. CB found open on EF protection	Dx	25 November 2023	135.15	8.93	Steenberg 2	Equipment failure Cable (excl. contr.)	11kV XLPE
Klipfontein Road Marivy Street Panel vandalised	Dx	09 December 2023	435.14	117.70	Jan Smuts 1	Theft and Vandalism Switchgear	11 kV
Weltevreden Valley MS Mtchp Swstn 1 11kV earth fault alarm received. Westgate - Brocsands CB found open	Dx	29 December 2023	134.22	24.57	Weltevreden Valley 1	Equipment failure Overhead	11kV
Klipfontein Road Marivy Street Panel vandalised		09 December 2023	435.14		Jan Smuts 2	Vandalism	
Weltevreden Valley Main Station 11kV Earth earth fault alarm Westgate - Brocsands: CB found open on EF protection	Dx	09 January 2024	112.64	10.67	Weltevreden Valley 1	Equipment failure Overhead	11kV
Tydskrifte Gareth James Termination ruptured. 11kV earth fault alarm received	Dx	19 January 2024	205.91	29.58	Minerton 1	Equipment failure Cable (excl. contr.)	11kV XLPE
Westgate Brocsands 11kV earth fault alarm received. CB found open on OC protection	Dx	26 January 2024	110.45	13.20	Weltevreden Valley 1	Equipment failure Overhead	11kV
Cncty MS CB trip indication received, no protection operated. No fault found, returned to service.	Tx	10 February 2024	181.03	1.85	Century City 1	Equipment failure Pilot/protection	Main
Ikapa Ikapa Mini E/F trip alarm received. CB found open E/F protection	Dx	16 February 2024	116.64	22.00	Gugulethu 1	Equipment failure Cable (excl. contr.)	11kV XLPE
Dsnbg 132 (Eskom) Atlns / Dsnbg 33 Loss of supply from Dsnbg 132 (Eskom) due to vandalsm. Repairs completed, returned to service.	Tx	19 February 2024	431.85	2.52	Sampson 1	Theft and Vandalism Bulk supply	Major Eskom fault
Econoheat Consumer RMU vandalised 11kV earth fault alarm received	Dx	09 March 2024	342.71	27.42	Rosmead Avenue 1	Theft and Vandalism RMU	Internal Mechanical Failure
Mouille Point Orkney Road OC/EF alarm received - Orkney Rd, Rocklands, 3 Anchor Bay & Marais Road. Loading	Dx	14 March 2024	167.51	5.58	Mouille point 1	Overload General/other	Other
Phumelela Prime Industrial Phumelela Loss of power - CB found open on Solkor protection	Dx	21 March 2024	245.05	16.12	Minerton 1	Equipment failure Cable (excl. contr.)	11kV XLPE
Smrst 66 Eskom 1 and 2 Tripped on OC/EF Protection. Line 2 left out of service for fault location and repairs. Supply restored via Line 1	Tx	07 April 2024	191.22	1.62	SOMERSET WEST	Natural event Bulk supply	Major Eskom fault
NEWFIELDS MS SWSTN 2 Newfields SWSTN 2 E/F trip alarm		18 May 2024	606.93		Newfields MS	Dielectric brkdn. (Cable brkdn)	
Gugulethu Main Station Negative GL alarms received Gglu - NY1 & Fezeka 1: Negative GL alarms received	Dx	03 July 2024	111.07	16.33	Weltevreden Valley 2	Equipment failure Cable (contractors)	11kV XLPE
Sherwood School M.R.H Holdings Gugulethu MS - Fezeka - NY One: Negative GL alarm received	Dx	10 July 2024	116.05	17.07	Weltevreden Valley 2	Overload Pilot/protection	Prot Relay
Airport S/S Vandalised Loss of supply due to vandalism. Protest in the area	Dx	18 July 2024	496.90	82.82	Kensington 2	Theft and Vandalism Cable (excl. contr.)	11kV XLPE

## Burning rate of public lighting

This indicates the percentage of public, street and high mast lighting in both the City and Eskom supply areas that are functioning based on a sample extracted. Vandalism has been a particular challenge in this area.

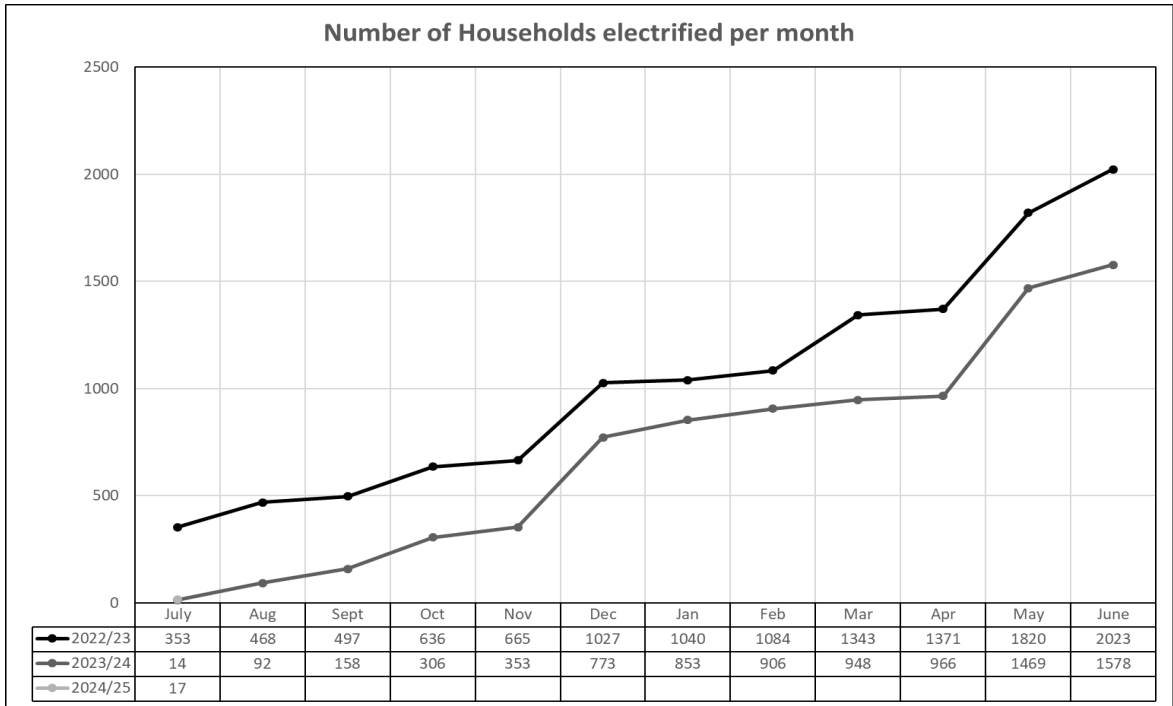
Target in all instances is 90%.



## Electrification

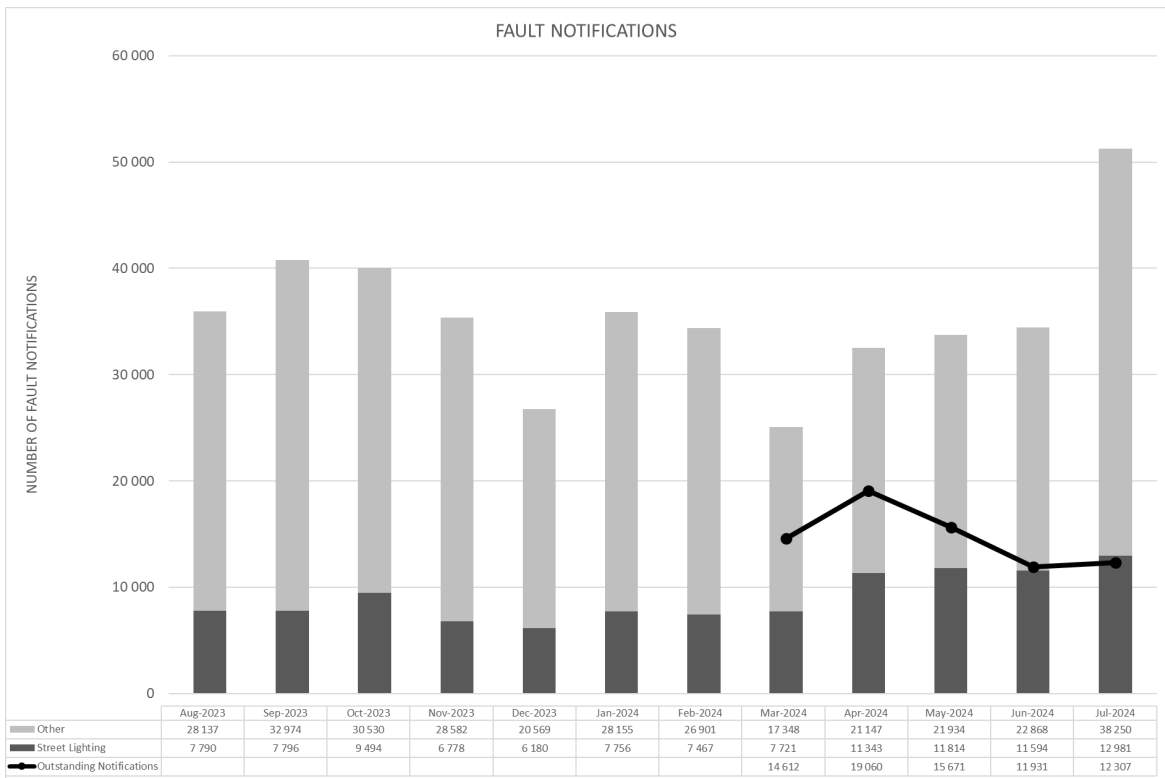
This indicates the number of formal and informal households that are connected to the network in a given month in the City area of supply through subsidised connections.





### C3 Fault Notification Statistics

The breakdown of faults that is reported is based on the number of notifications created on SAP (split between Street Lighting and Other). This indicator has been extended to include the number of outstanding notifications (as from March 2024).



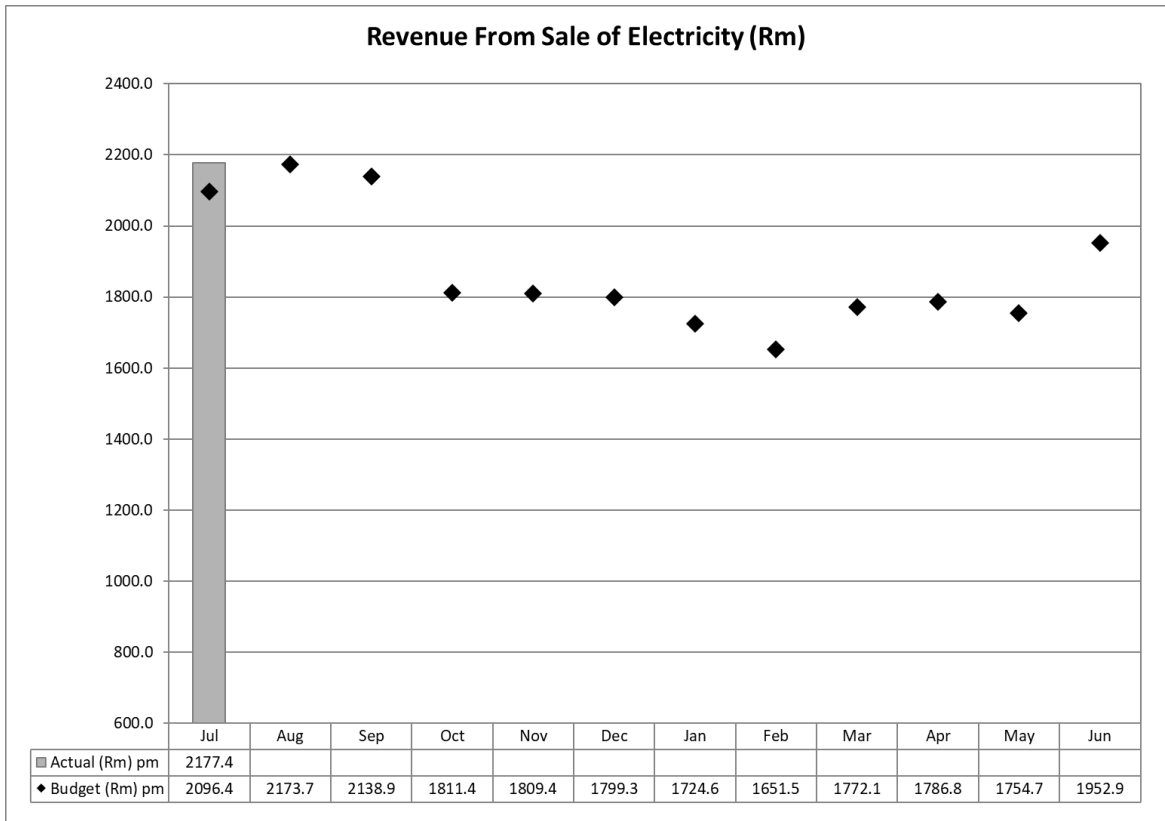
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**All Faults Breakdown**

	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24
<b>Created</b>	35 927	40 770	40 024	35 360	26 749	35 911	34 368	25 069	32 490	33 748	34 462	51 231
<b>Completed</b>	37 802	37 989	40 441	35 915	27 610	33 153	38 315	20 322	25 541	28 008	29 868	45 670
<b>Outstanding</b>	26 974	30 096	31 277	32 818	34 299	34 187	33 203	14 612	19 060	15 671	11 931	12 307

**Electricity Sales**

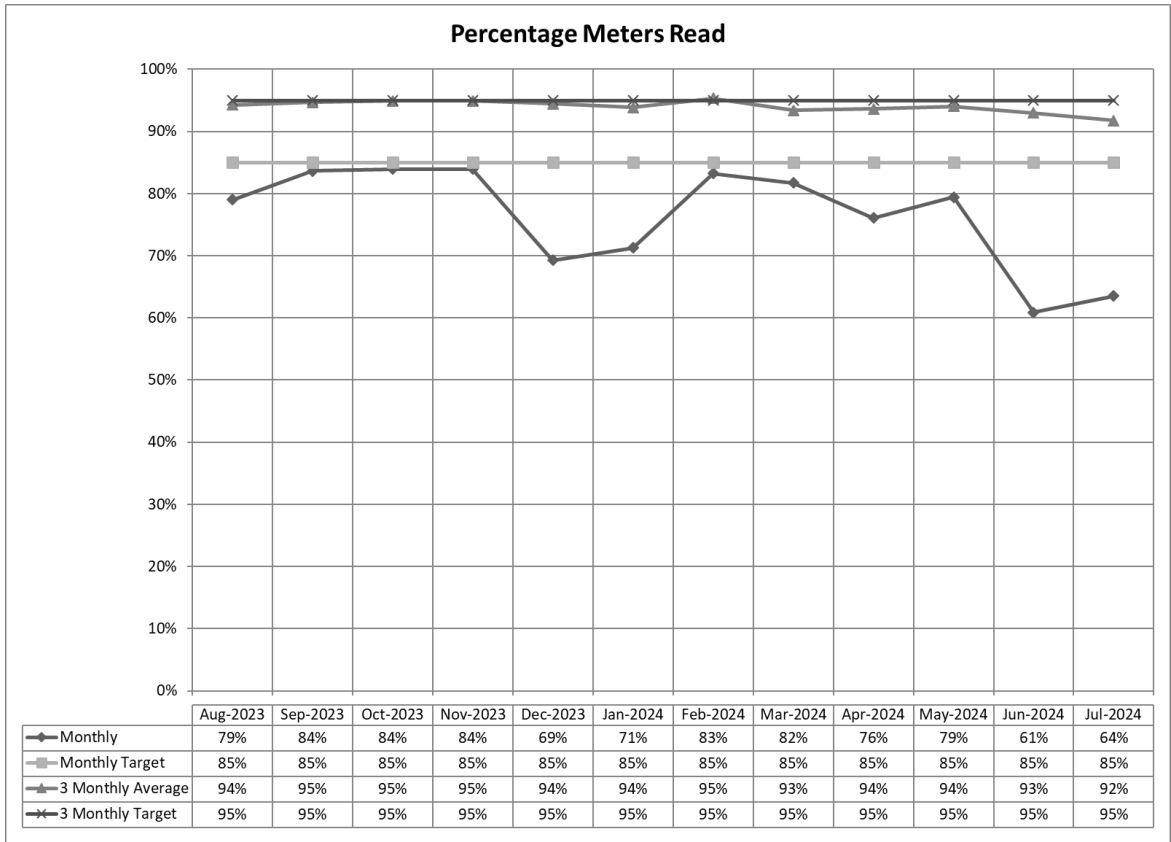
This indicator expresses the revenue from sale of electricity for the financial year compared to the budgeted revenue for each month during the period.



**Metering Efficiency**

This indicates the percentage of credit meters that are read on a monthly basis as well as the 3-month averages, along with the reasons for estimation of electricity accounts in the month under review.

The dip in performance in the meter reading seen in June/July 2024 is a result of the new meter reading tender starting on 1 July, and the 3 month set up period included in this. The dip occurs specifically in the Cape Town region, where a first time tenderer was appointed.



	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24
<b>Reason</b>												
Access problems( no reply at door/gate,dogs)	6999	7434	7111	6458	5434	7043	7169	7799	6592	6169	6118	3619
Technical data problems ( SAP data incorrect)	1088	1255	1068	895	559	622	749	596	440	458	484	366
Staff reason ( staff on leave /sick leave)	5	2	86	3	278	5254	2	5	1239	42	20	836
Maintenance problems ( faulty locks , doors)	670	769	700	740	529	667	776	636	564	545	505	348
No report code	8289	3711	3796	4021	17417	8944	4358	5068	94.67	8419	9403	22054
<b>Total</b>	17051	13171	12761	12117	24217	22530	13054	14104	18302	15633	16530	27223
Percentage of total meters	21%	16%	16%	15%	31%	29%	17%	18%	24%	21%	22%	37%

- Financial Implications     None     Opex     Capex
- Capex: New Projects
- Capex: Existing projects requiring additional funding
- Capex: Existing projects with no additional funding requirements

Policy and Strategy  Yes  No

Legislative Vetting  Yes  No

Legal Implications  Yes  No

Staff Implications  Yes  No

Risk Implications  Yes The risks for approving and/or not approving the recommendations are listed below:

No Report is for decision and has no risk implications.

No Report is for noting only and has no risk implications.

POPIA Compliance  Yes It is confirmed that this report and the content of the annexures have been checked and considered for POPIA compliance.

## 5. RECOMMENDATIONS

It is recommended that the performance monitoring report BE NOTED.

Kundululwe ukuba MAKUQWALASELWE ingxelo engokubek'iliso kwindlela yokusebenza.

Daar word aanbeveel dat daar van die prestasiemoniteringsverslag KENNIS GENEEM WORD.

[LSU Ref No: H5973]

**ANNEXURES**

**ANNEXURE A: BURNING RATES OF PUBLIC LIGHTING**

**FOR FURTHER DETAILS CONTACT**

NAME	Donovan Leeuwendaal	CONTACT NUMBER	021 444 8501
E-MAIL ADDRESS	Donovan.Leeuwendaal@capetown.gov.za		
DIRECTORATE	Energy	FILE REF NO	526400

# Approval Form

Supported for inclusion on the agenda



## EGD Performance Monitoring Report - July 2024

**Report Reference:** 526400  
**Meeting:** Section 79 Portfolio Committee - Energy  
**Meeting Date:** 04.09.2024  
**Meeting Venue:** Committee Room D

**Contact Person:** Donovan Leeuwendaal  
**Contact Telephone:** 0214448501  
**Contact Email:** DONOVAN.LEEUWENDAAL@CAPETOWN.GOV.ZA

Item	Section	Approver	Approval	Approved Date	Approver Comments
01	Author	Donovan Leeuwendaal	Approved	20.08.2024 15:47:42	in order.
02	Director/Directorate Support Manager/Chief	Leslie Rencontre	Approved	21.08.2024 13:14:40	
03	Executive Director	Kadri Middlekoop Nassiep	Approved	21.08.2024 17:18:40	Approved for submission
04	Legal Compliance	Joan Mari Holt	Approved with Comments	22.08.2024 13:14:21	For information

**ECS Officer:**

<b>MAJOR ROUTES BURNING RATE PERFORMANCE AUDIT</b>
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Area East			
Route Description	Total number of lights in route	Number of lights in route out.	Burning rate
<b>Goodwood/Monte Vista/Edgemead/Elsies River/Platteklouf</b>			
Vasco Blvd/Rothchild Rd: Voortrekker Rd to Platteklouf Rd	192	5	
Edgemead Drive: Monte Vista Blvd to Bosmansdam Road	60	6	
Milton Road: Jakes Gerwel Drive to Giel Basson Drive	89	12	
Hugo Road : Voortrekker Road to Frans Conradie Drive	62	2	
Mcintyre Road : N1 To Voortrekker Road	85	2	
Giel Basson Drive: Voortrekker Road to Rothschild Blvd	171	3	
Frans Conradie Drive: Giel Basson to Jakes Gerwel Drive	176	17	
Platteklouf Road : Vryburger Road to N1	240	5	
De La Rey Rd :Voortrekker to Robert Sobukwe Rd	189	60	
35th Ave : Voortreker to Francie Van Zijl Rd	83	74	
Francie Van Zijl Rd : Halt Rd to Mike Pienaar Rd	282	87	
Frans Conradie Drive: Giel Basson to Tierberg Rd	107	5	
Tierberg Road : Voortrekker Rd to Frans Conradie Drive	64	0	
Voortrekker Road : Jakes Gerwel Drive To Mike Pienaar	352	37	
Epping Ave : Halt Road to 35th Ave	43	10	
Halt Road : Voortrekker Rd to Epping Ave	42	4	
<b>De La Rey Rd : network vandalised</b>			
<b>35th Ave : network extensively vandalised</b>			
<b>Repairs and maintenance to be scheduled</b>			
<i>Total</i>	2237	329	
<i>Average burning rate</i>			85.29%

Area North			
Route Description:	Total number of lights in route	Number of lights in route out.	Burning rate (%)
<b>Lansdowne/Manenberg/Hanover Park/Athlone/Pinelands/Mowbray</b>			
Turfhall Road: Railway Line to Duinefontein Road	186	102	
Duinefontein Road: N2 to Govan Mbeki Road	269	154	
Govan Mbeki/Lansdowne Rd: Duinefontein Rd to Railway Line	278	35	
Hanover Park Avenue: Govan Mbeki Road to Repulse Road	78	5	
Jan Smuts Drive: Govan Mbeki Street to Sunrise Circle	440	236	
Berkley Road: Sunrise Circle to M5	76	9	
Forest Drive: Jan Smuts Drive to Klipfontein Road	132	26	
Alexandra Road: Berkley Road to Forest Drive	58	1	
<b>Turfhall Road: network vandalised</b>			
<b>Duinefontein Road: network vandalised; cables removed due to construction work</b>			
<b>Jan Smuts Drive: network vandalised Govan Mbeki - Turfhall</b>			
<i>Total</i>	1517	568	
<i>Average burning rate</i>			62.56%

Area South			
Route Description: Mitchell`s Plain	Total number of lights in route	Number of lights in route out.	Burning rate
AZ Berman Drive: Highlands Drive to Langeberg Street	236	92	
Highlands Drive: Swartklip Road to Jakes Gerwel Drive	113	25	
Jakes Gerwel Drive: Spine Road to Govan Mbeki Road	389	189	
Morgenster Road: Jakes Gerwel Drive to Swartklip Road	237	35	
AZ Berman Drive: network affected by BRT construction			
Jakes Gerwel Drive: repairs and maintenance to be scheduled			
<i>Total</i>	975	341	
<i>Average burning rate</i>			65.03%

Eskom Area			
Route Description Blackheath / Eerste River / Bluedowns	Total number of lights in route	Number of lights in route out.	Burning rate
R102: Stellenbosch Arterial to Firgrove	345	165	
Hindle Road: Symphony Way to Eersriv Way	158	24	
Stellenbosch Arterial: Delft Main Road to R102	105	17	
Nooiensfontein Drive: Hindle Road to R102	63	13	
Eersriv Way: Old Faure Road to Buttskop Road	126	4	
Buttskop Road: R102 to Wimbledon Road	34	1	
Wimbledon Road: Buttskop Road to Range Way	36	10	
Range Way: Stellenbosch Arterial to Buttskop Road	31	11	
R102: network affected by road construction			
<i>Total</i>	898	245	
<i>Average burning rate</i>			72.72%



Highmasts			
Route Description :	Total number of lights per mast	Number of lights out per mast.	Burning rate (%)
<b>Khayelitsha - Khayelitsha Section</b>			
<u>Khayelitsha Section</u>			
KHA 029 Crane required	6	4	
KHA 030	6	0	
KHA 031 Crane required	6	6	
KHA 032	6	0	
KHA 033 Crane required	6	6	
KHA 034	6	0	
KHA 035	6	0	
KHA 036	6	0	
KHA 037	6	0	
KHA 038 Eskom supply vandalised	6	6	
KHA 039 Eskom supply vandalised	6	6	
KHA 040 Eskom supply vandalised	6	6	
KHA 041 Crane required	6	6	
KHA 042	6	0	
KHA 043	6	0	
KHA 044	6	0	
KHA 045	6	0	
KHA 046	6	0	
KHA 047	6	0	
KHA 048 Crane required	6	6	
KHA 049 Crane required	6	6	
KHA 124 Crane required	6	6	
KHA 138 Crane required	6	3	
KHA 142	6	0	
KHA 143 Crane required	6	6	
KHA 144 Eskom supply vandalised	6	6	
<i>Total</i>	156	73	
<i>Average burning rate</i>			53.21%

Average			
Area	Total number of lights in route	Number of lights in route out.	Burning rate
East	2237	329	
North	1517	568	
South	975	341	
Total	4729	1238	
Average burning rate - CoCT Supply			73.82%
Eskom	898	245	72.72%
Highmasts	156	73	53.21%
<b>Metrowide</b>	<b>5783</b>	<b>1556</b>	<b>73.09%</b>