



AMR SYSTEM

Emalahleni Local Municipality

Municipal Energy Management Workshop

Cape Town 11th - 12th July



mineral resources
& energy
Department:
Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA

Municipal Overview

Location:

- The Emalahleni Local Municipality is located within the Mpumalanga Province and is situated in the jurisdictional area of the Nkangala District Municipality.

Size of Municipal:

- . It covers an area of about 2677.67 km² in extent.

Population:

- According to Statistics South Africa (Community Survey 2016), Emalahleni's population has increased from 395 466 people recorded in the Census of 2011 to 455 228 people recorded in 2016.

Annual internal energy consumption

- 31 736 452 kWh

Municipal Staff that will be involved in the MEMS Programme:

- Lead by Deputy Director : Technical Services, Representative Unit (Billing, Metering, Protection, Water, Mechanical, Revenue Protection)

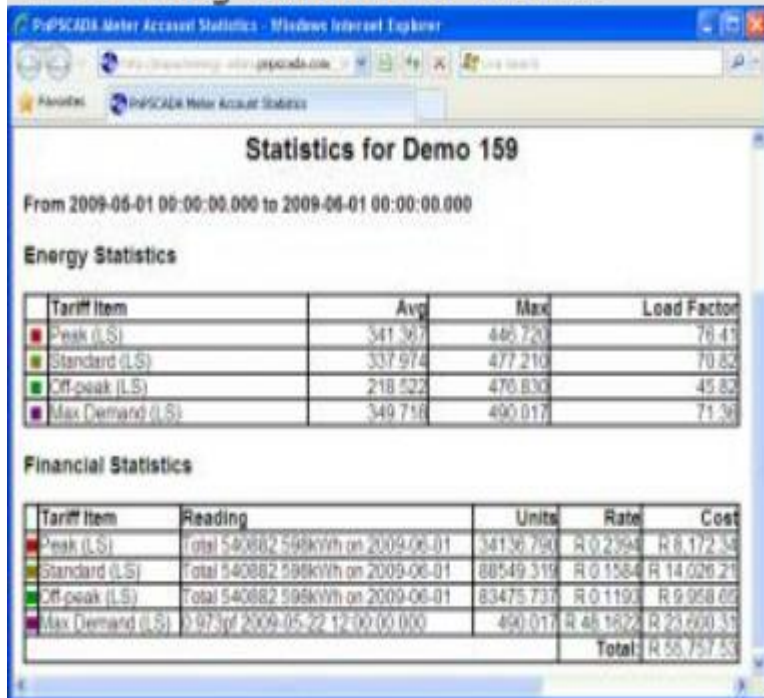
CHALLENGES

- *Inaccurate data due to manual meter readings*
- *Reliance on external service providers compared to internal expertise*
- *Aging infrastructure, theft and vandalism*
- *Bypassing of meters by consumers - illegal connections*
- *Non compliant meters resulting in disputes*
- *Electricity going above notified maximum demand (NMD)*
- *Eskom price increase*
- *Loss of revenue*

ELM PROCURED PNPSKADA TO OVERCOME THE CHALLENGES

Read Meters

- Read a wide range of meters
- Growing number of meters

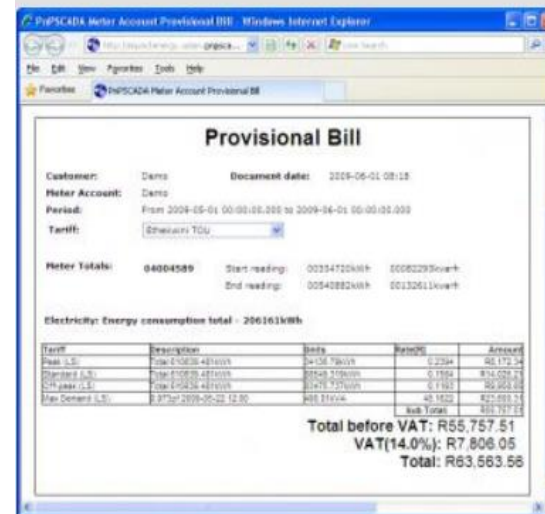


Remote Backups

- Daily remote backups
- Restored in as little as 2 hours

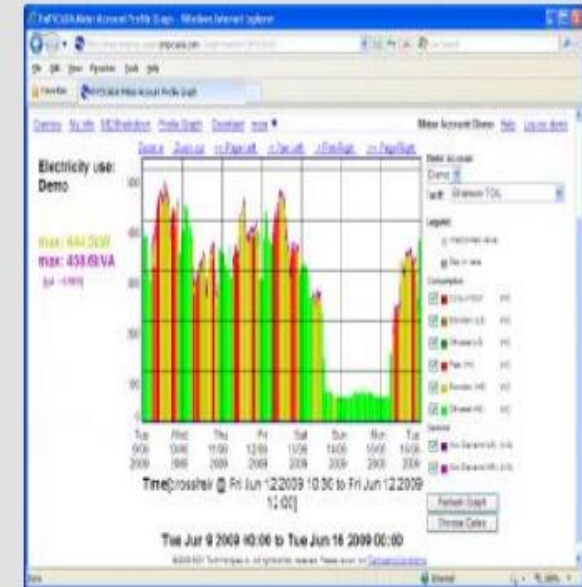
Billing

- Powerful billing engine
- Provide a billing service to your clients using PNPSCADA
- Export bills as PDF
- Export bills into other financial systems using csv
- Advanced trouble shooting
- Seamlessly bill your clients
- Provisional bills ? bill based on usage to date



Graphs

- Energy and demand used every half hour becomes visible to the customer in a simple, colourful and powerful TOU sensitive graphic display, fully zoom- and pan-able.



Summated Accounts

- flexibility to generate Summated Accounts for multiple meters
- These summated accounts correctly diversify demand by calculating the simultaneous maximum demand for a number of metering points
- is also used for Check Metering

CONTIN.....

Unique Web Address

- Clients can give each site it own unique web address
- Each site can also have its own unique banner image

EMALAHLENI
LOCAL MUNICIPALITY

Welcome, Please enter your Login Name and Password below.

Login Name:

Password:

Note: This site uses Cookies, JavaScript and Popups, and won't function properly without them. If you have them turned off, please turn them on to continue.
By logging in to this site you agree to all [terms and conditions](#).

If you have lost your password, click [here](#).

Tariff Analysis

- Find the best tariff for your clients
- yearly savings on tariffs are in some cases enough to cover the cost of the full smart metering implementation

Load Control

- Real time maximum demand prediction
- Switch off excessive loads

Meter	Serial Number	Active Energy	Reactive Energy	Demand of Meter	Power Factor	Status
Meter: Wab: Fender	02P00877	12248.080 kWh	142.580 kWh	24483.478 kVA	0.968	ok
Meter: Wab: Fender	02P00872	7541.250 kWh	5556.250 kWh	15600.307 kVA	0.978	ok
Block Drop: 10274	02P00866	80.750 kWh	0.000 kWh	187.830 kVA	1.000	ok
Meter: 1028-1: P549	02P00554	4169.625 kWh	3827.000 kWh	11310.712 kVA	0.738	ok
Meter: 1028-1: P545	02P00291	4211.250 kWh	4108.250 kWh	11782.330 kVA	0.717	ok
Meter: 1028-1: P5-	04P00138	0.000 kWh	0.000 kWh	0.000 kVA	N/A	ok
Meter: 1028-1: P5-	04P00136	0.000 kWh	0.000 kWh	0.000 kVA	N/A	ok
Meter: 1028-1: P5P	02P00442	27.750 kWh	77.700 kWh	249.088 kVA	0.762	ok
Meter: 1028-1: P5P	02P00448	112.500 kWh	112.500 kWh	318.188 kVA	0.707	ok
Meter: 1028-1: P5P	02P00451	1718.750 kWh	3521.250 kWh	4603.332 kVA	0.744	ok
Meter: 1028-1: P5P	04P00127	5069.750 kWh	0.000 kWh	11017.500 kVA	1.000	ok

Energy saving solution

- Manage energy saving solutions from creating a baseline to getting readings for the final energy savings report.
- Carbon footprint analysis
- Calculate carbon usage per product or unit

Time Zones

- Manage your clients and organizations over a variety of territories and time zones
- Can give a different time zone to each meter or to each organization

RESULTS

- *Reduction of meter readers and consultant fees (R50 000 pm)*
- *Internal and external consumption can be quantified*
- *Capacitation of Municipal staff*
- *Data comparisons with Eskom ensuring accurate bulk billing*
- *Easy detection of illegal connections and bypassing of meters*
- *Guaranteed revenue income*
- *Real time energy monitoring and billing*
- *Load monitoring and balancing during peak times*
- *Consumption analysis (EEDSM project)*
- *Retrofit 1000 Streetlight and 35 High-mast*
- *Impressive result on EPC certificate*

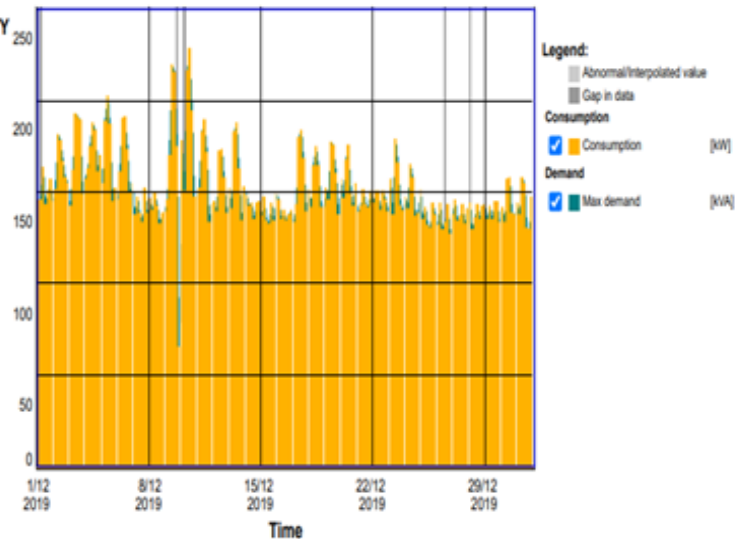
ELM MAIN BUILDING RETROFITTED 6965 FLORESCENT LIGHT (36W) TO LED (18W) WHICH YIELDED A MASSIVE REDUCTION IN CONSUMPTION FROM 227KVA TO 179KVA



Electricity use:
EMALAHLENI LOCAL MUNICIPALITY

Account ID: 697

kW
kVA



Sun Dec 01 2019 00:00 to Wed Jan 01 2020 00:00

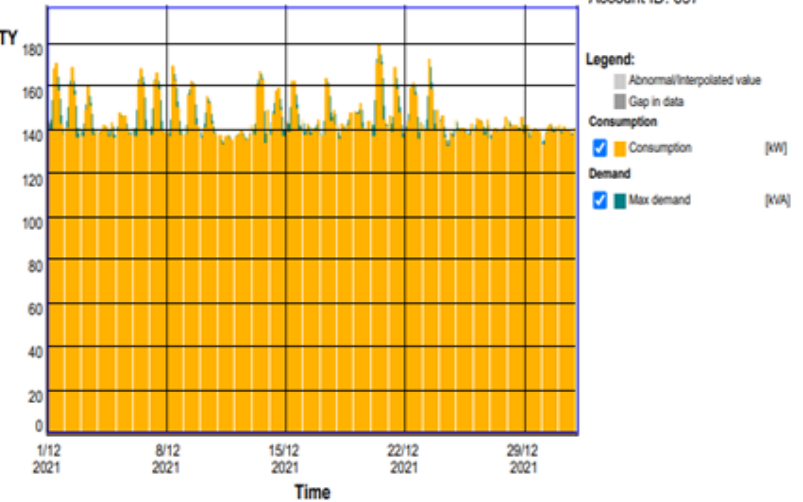
104551.489 kWh. 227.9 kVA. pf=1.0 @ 2019-12-10 12:00. LoadFactor(kVA)=61%. LoadFactor(kWh)=61%.



Electricity use:
EMALAHLENI LOCAL MUNICIPALITY

Account ID: 697

kW
kVA




Wed Dec 01 2021 00:00 to Sat Jan 01 2022 00:00

102903.84 kWh. 179.13 kVA. pf=1.0 @ 2021-12-20 11:30. LoadFactor(kVA)=77%. LoadFactor(kWh)=77%.

STREETLIGHT, HIGH-MAST AND EPC RESULT





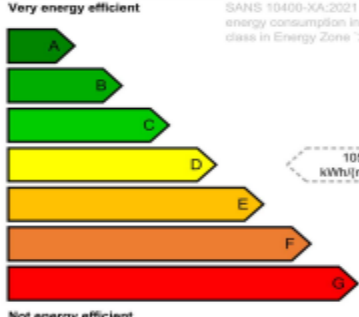
Energy Performance Certificate for Buildings

Emalahleni Local Municipality Civic Centre_Witbank
29 Mandela Street
Emalahleni
Mpumalanga
1035

Certificate Number: EPC-SA 00464-2023


This certificate is issued in terms of SANS 1544:2014, Energy performance certificates for buildings, and indicates how much energy is being used to operate this building. The energy performance of the building is based on measured energy performance and is compared to the maximum energy consumption provided for in SANS 10400 XA:2021.

Energy Performance Certificate



SANS 10400-XA:2021 maximum energy consumption in occupancy class in Energy Zone 2

Energy performance of your building




61 kWh/(m².a)

Energy weighted (based on net floor area) 4 kWh/(m².a)


Building Information:
 Owner: Emalahleni Local Municipality
 Occupancy class(es): G1
 Number of floors: 5
 Net floor area: 29870
 Year of construction: Not Available
 Building plan approval: Not Available
 Occupancy certificate: Not Available
 Year of last major renovation: Not Available
 Energy zone: 2
 Cadastral information: 20000048560000000000

Administrative Information:
 Accredited body: Remote Metering Solutions (Pty) Ltd
 Accreditation nr: EPC0009
 Assessor name: Ewald Tajaard
 Date of issue: 2023-03-29
 Valid until: 2028-03-28
 Record nr: RMS_REC_7.4c_Final Certificate (NN)_v06r00_Emalahleni Local Municipality Civic Centre_Witbank


Carrier	Type	From (date)	To (date)	Energy [kWh]	Net Floor Area	Performance [kWh/m²]	Exclusions Performance [kWh/m²]
Electricity	Grid	2021-08-31	2022-08-30	1 939 398	29 870	60	4
Liquid Fuel	Diesel	2021-08-31	2022-08-30	16 716	29 870	1	



Technical Signatory: Nkholi Ndlelo



Nkholi Ndlelo (Mar 21, 2023 10:29 GMT+2)



THANK YOU