



**By 2030 eThekweni will be Africa's most caring and liveable city**



**Energy Office Solar (EOS) Project**

## **Durban Climate Change Strategy**

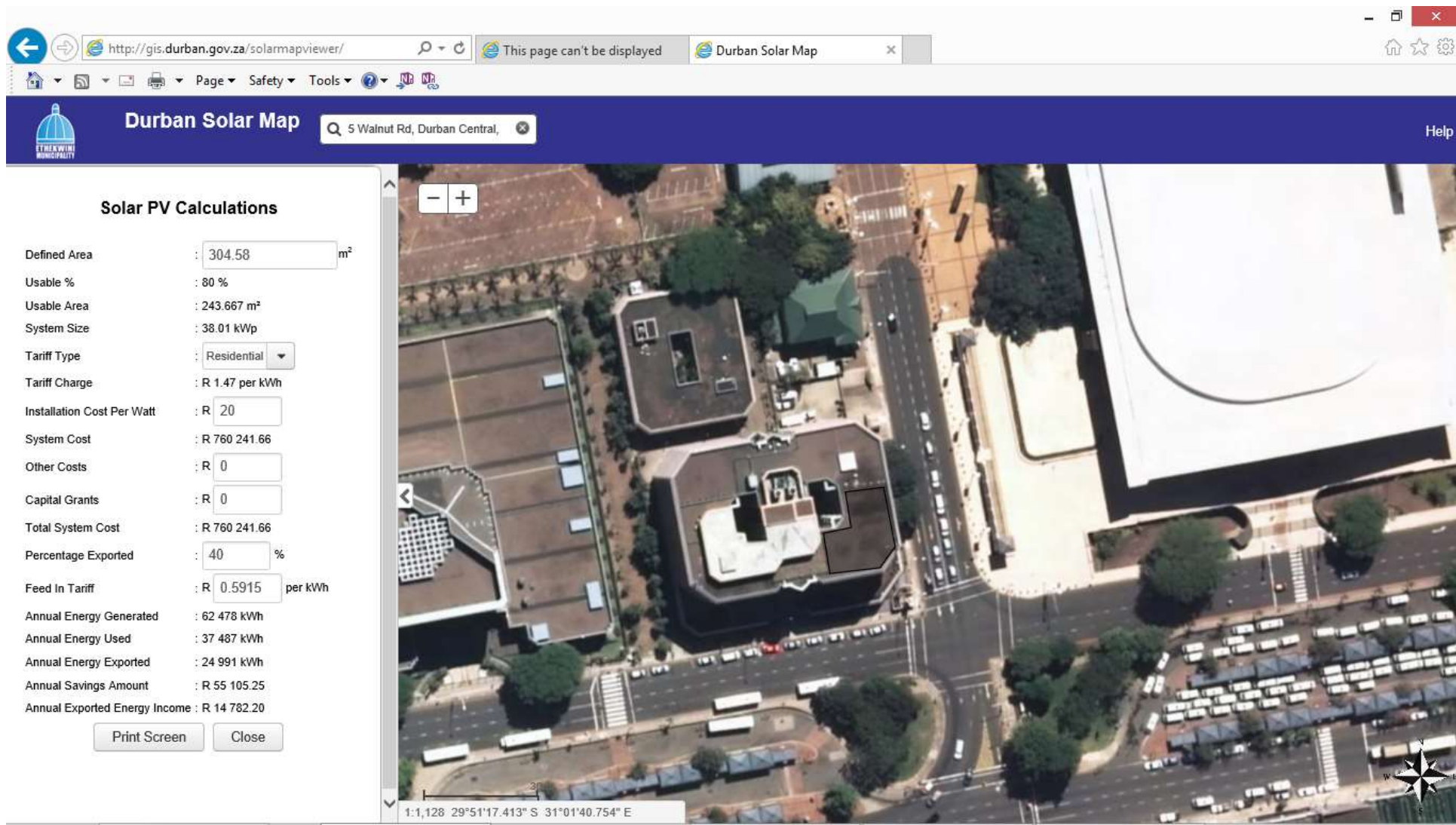
“Objective F.1: 40% of Durban’s electricity consumption is supplied from renewable energy by 2030 in line with the national long term mitigation targets.”

“F.1.2 Implement viable small-scale renewable energy generation such as micro-hydropower, rooftop solar photovoltaic and anaerobic digesters within municipal assets.”

## **Support mechanisms**

- Electrical embedding process
- Minor Building Works application
- Residential feed-in tariff

## Durban Solar Map



Browser address bar: <http://gis.durban.gov.za/solarmapviewer/>

Search bar: 5 Walnut Rd, Durban Central

### Solar PV Calculations

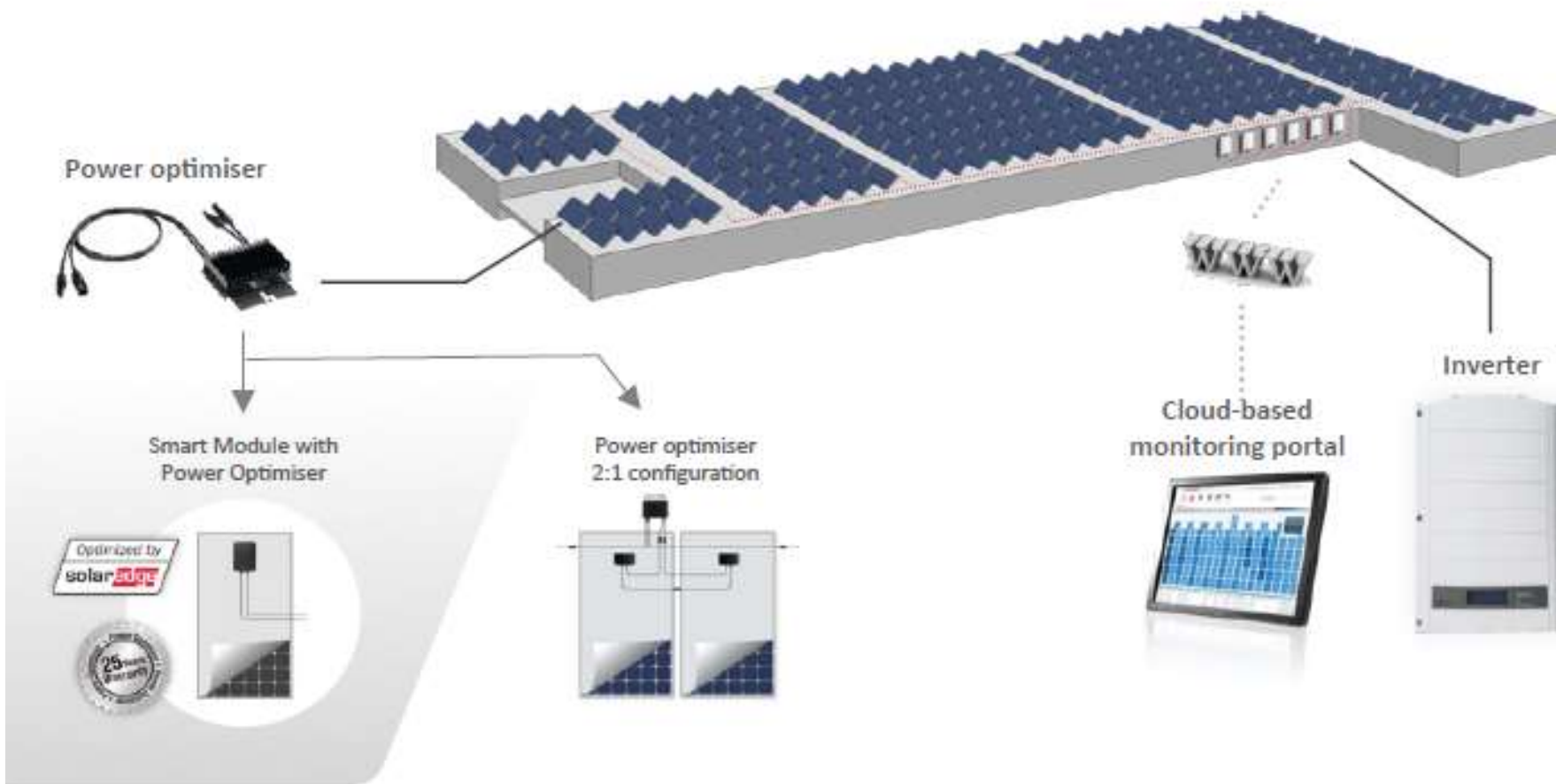
Defined Area	: 304.58	m <sup>2</sup>
Usable %	: 80 %	
Usable Area	: 243.667	m <sup>2</sup>
System Size	: 38.01	kWp
Tariff Type	: Residential	
Tariff Charge	: R 1.47	per kWh
Installation Cost Per Watt	: R 20	
System Cost	: R 760 241.66	
Other Costs	: R 0	
Capital Grants	: R 0	
Total System Cost	: R 760 241.66	
Percentage Exported	: 40	%
Feed In Tariff	: R 0.5915	per kWh
Annual Energy Generated	: 62 478	kWh
Annual Energy Used	: 37 487	kWh
Annual Energy Exported	: 24 991	kWh
Annual Savings Amount	: R 55 105.25	
Annual Exported Energy Income	: R 14 782.20	

Map coordinates: 1:1,128 29°51'17.413" S 31°01'40.754" E

## Processes at Inception stage

- Site visits for building assessment
- Load profile generation
- Conceptual and detailed designs
- Minor Building Works applications
- AMAFA application for heritage sites
- Electricity Department for grid code applications
- Architecture Department for approval of structural and other building-related designs from Consulting Engineers

## System Technology Selection



## **System Technology Selection**

PV Panel Technology recommended for EOS

- Polycrystalline

Longer proven track record than thin-film

More cost-effective than monocrystalline

Inverter Technology recommended for EOS

- Solar Edge

98% maximum efficiency

Built-in communication hardware

## **System Technology Selection**

- Use of power optimisers for safety and optimal power output
- ABB Technology recommended for the People's Park Restaurant to compare the technology with SolarEdge for future projects.



## Energy Savings

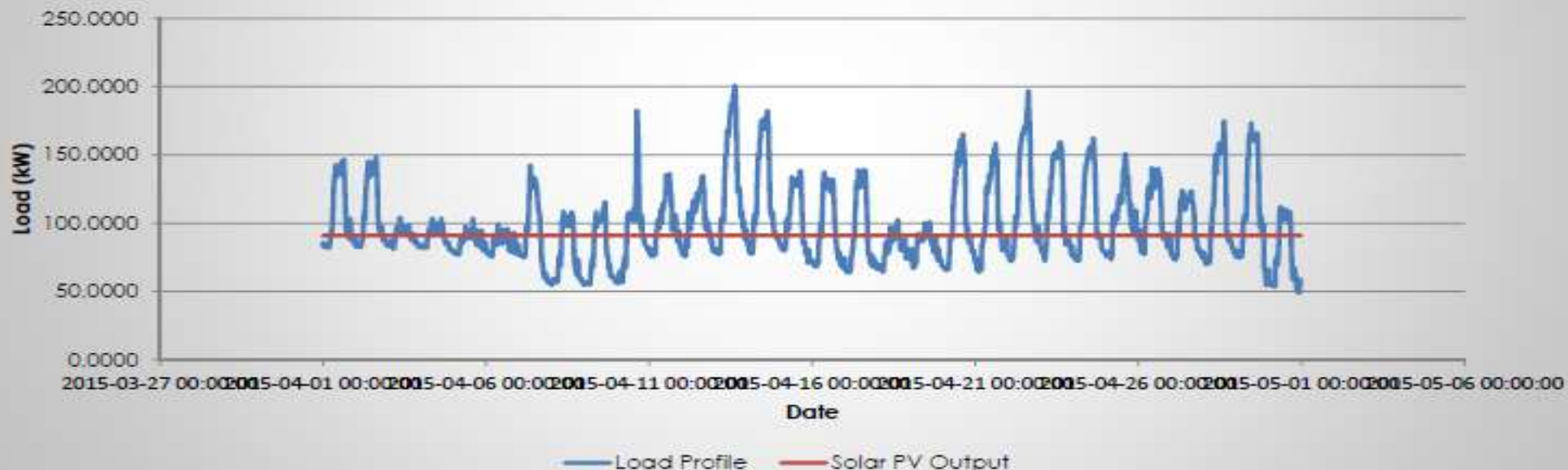
Building	Usage	Energy saved due to PV	Building energy saved	Projected Rands savings per 1 <sup>st</sup> year
	MWh/Year	MWh/Year	%	ZAR
<b>Metro Police</b>	890.17	137.40	15.44%	R105 000.00
<b>Sky Car</b>	4869.31	6.84	00.14%	R12 000.00
<b>People's Park</b>	255.69	40.43	15.81%	R65 000.00
<b>Ushaka Marine</b>	25150.96	165.40	00.66%	R120 000.00
<b>Water &amp; Sanitation</b>	1657.42	76.68	04.63%	R60 000.00

## Load Profile Analysis

# Metro Police HQ [Load Profile]

Output: 91 kWp

Metro Police HQ  
Load Profile: April 2015



## **SYSTEM PERFORMANCE**

### Plant Performance

- Solar Edge : [https://monitoringpublic.solaredge.com/solaredge-web/p/kiosk?guid=4d95fd3e-52a4-48a4-bc5e-35179f3b594d&locale=en\\_US](https://monitoringpublic.solaredge.com/solaredge-web/p/kiosk?guid=4d95fd3e-52a4-48a4-bc5e-35179f3b594d&locale=en_US)
- ABB : <https://easyview.auroravision.net/easyview/?entityId=10766601&lang=en>



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**END**

**Thank you**