

Fortsig ground mount PV training system with battery back-up functionality

Hybrid PV system installed on the premises of CoT's electricity depot in Fortsig. The electricity produced will mainly be used to supply the Fortsig facilities. Excess energy will be fed into the city's network. Design and installation of the PV system was executed by Southern Cross Renewable Energy Technologies PTY Ltd. As part of the quality assurance the PV system was issued a PV GreenCard.

Location		20 van der Hoff Road extension, Boekenhoutkloof, Pretoria
Orientation	Direction	North
	Tilt angle	20°
Irradiance (global, horizontal)		2035 kWh/m ² a
Capacity (DC)		3.24 kW _p
Modules	Manufacturer	IBC Solar AG
	Type	PolySol 270 GX4
	Technology	Poly-crystalline silicon standard module
	Quantity	12
	Power	270 W _p
	Efficiency	16.5 %
	Product Warranty	10 years
	Power Warranty	linear 25 year (0.7 %/a initial value 97.5%)
Inverters	Manufacturer	Viktron Energy B.V.
	Type	MultiGrid 3000VA
	Technology	Bi-directional AC-DC converter with charge control function and external Viktron MPP Tracker
	Quantity	1
	Power	power output: 3 kW
	Efficiency	max. 95 %
	Product Warranty	5 years



Ground mount PV module array; Photographer Manyatsa Monyamane, © GIZ

Mounting system	Manufacturer	Lumax Energy (Pty) Ltd
	Type	N-Structure
	Installation type	Ground mount
	Material	Concrete slab foundations and Aluminium
Batteries	Manufacturer	BMZ GmbH
	Type	Energy Storag System 7.0
	Technology	Lithium-Ion
	Storage Capacity	6.8 kWh
Monitoring	Viktron CCGX for onsite control + VRM portal and app for remote monitoring	
Expected yield (over the expected lifetime of 25 years)	127 MWh	
Avoided CO ₂ emissions (over the expected lifetime of 25 years)	122108 t of CO ₂	



Inverter and accessories;
Photographer Manyatsa Monyamane, © GIZ



Lithium ion battery storage system;
Photographer Manyatsa Monyamane, © GIZ

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