

HopSol

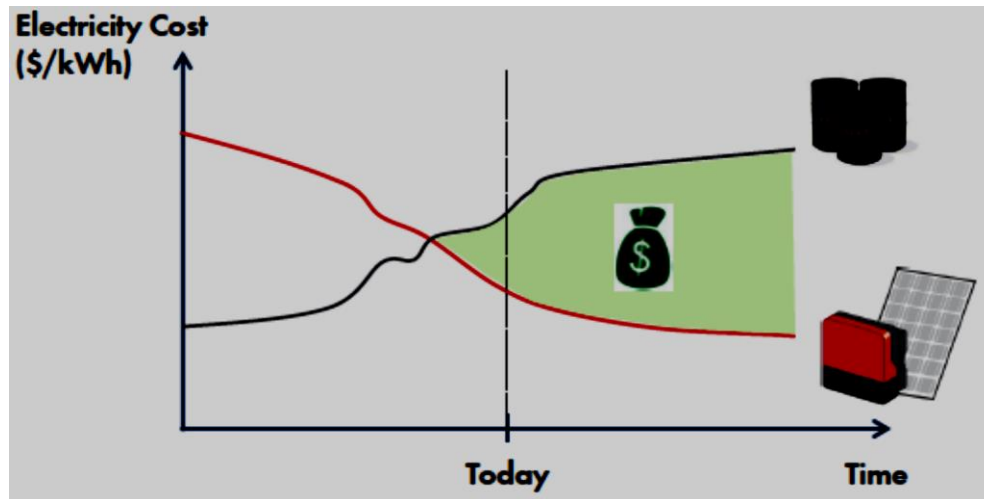
**SOLAR – DIESEL – HYBRID
SOLUTIONS**

(INDUSTRIAL APPLICATIONS)

- lucrative and competitive renewable energy -

Use the sun for your profit !

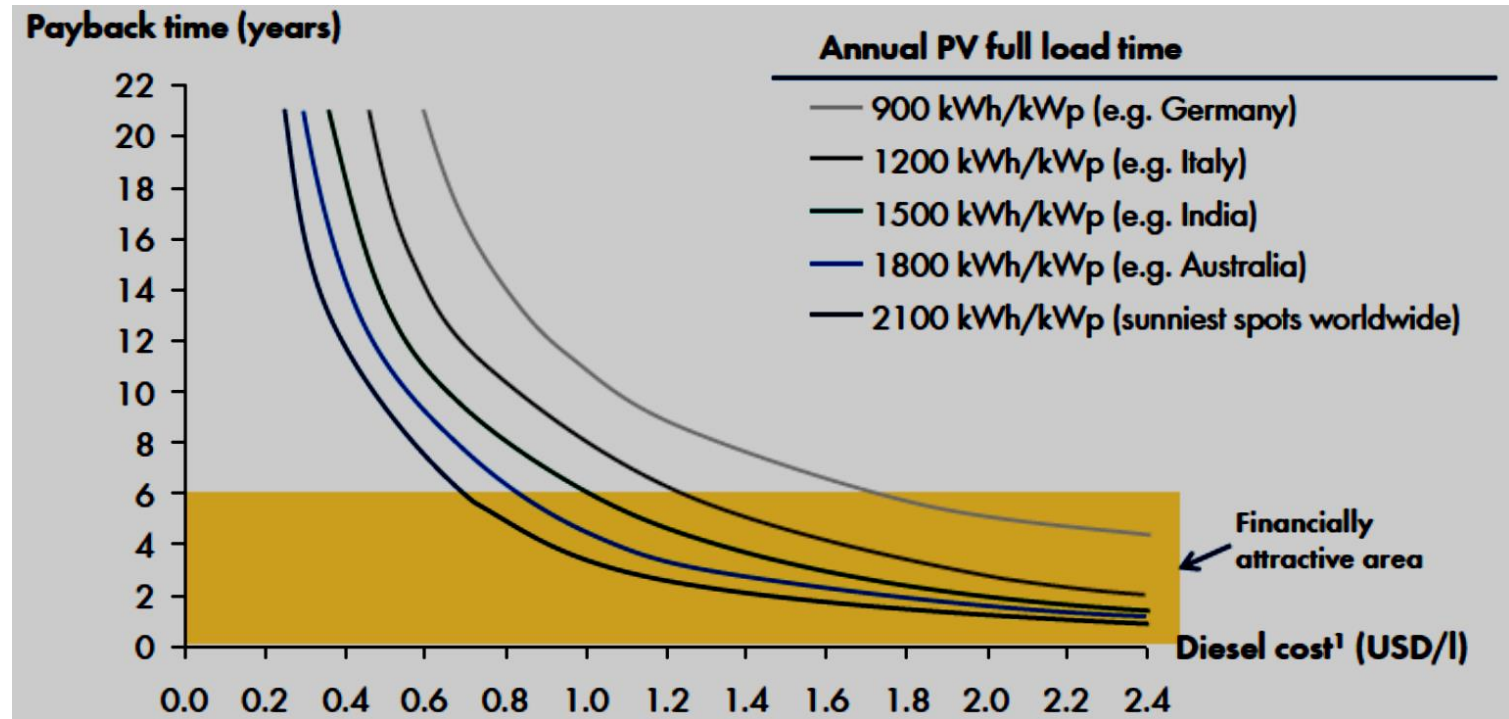
WHY it makes sense to combine Diesel Gensets with PV Solar



- Solar PV costs steadily decreased over last years.
- Fuel costs for Diesel Gensets steadily increase.
- **Solar-Diesel-Hybrid Systems provide significant savings!**

Example Southern Africa

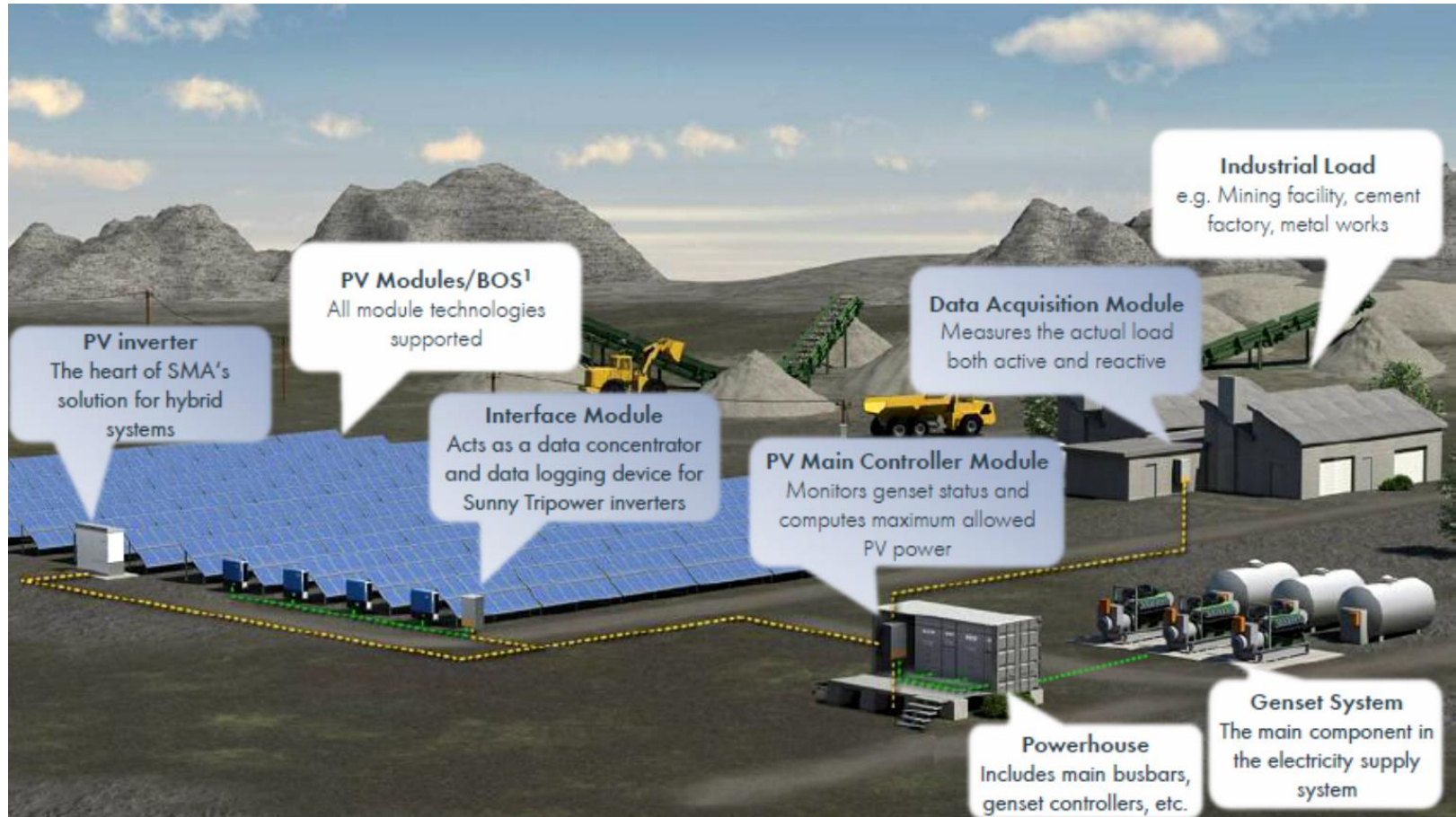
Gensets:	2 x 800 kVA
Grid Connection:	500 kVA
Solar:	1MWp
Annual PV Production:	1.8 GWh
Annual Savings:	450.000 liter Diesel



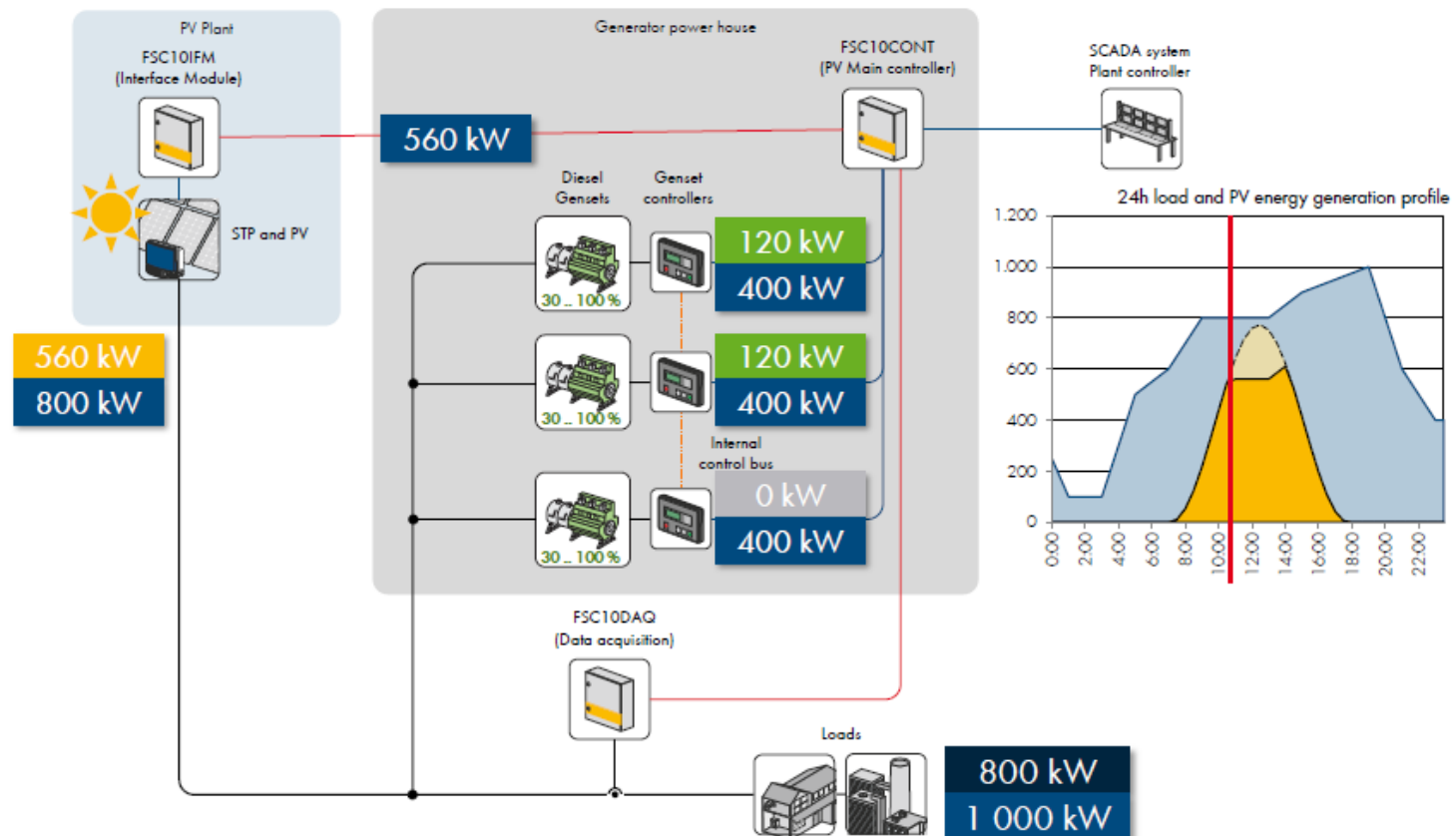
➔ Because of the very high radiation in Namibia (upto 2400 kWh/kWp/year) a Payback Time of 3-4 years is achievable !

How does the System work I

HopSol



How does the System work II



- The Fuel Save Controller measures Loads & Genset and controls PV.
- Gensets operate between 30% - 100% (Spinning Reserve).
- PV Penetration levels up to 60% are possible.

Innovative Photovoltaic Generator for Extreme Climatic Regions

HopSol

For extreme climatic regions
the selection of the right technology is decisive
in order to ensure an outstanding economic performance
of investments in solar power plants.

We want to provide our clients with the most economical
solar energy solutions.

Therefore we trust in Thinfilm Technology!



- **Ideal product for extreme climatic conditions** because of low temperature coefficient – Thinfilm modules handle higher temperatures significantly better than crystalline modules.
- Thinfilm modules **produce more electricity** in kWh per installed capacity (kWp) compared to mono- and polycrystalline modules.
- Excellent low light efficiency. Thinfilm modules **perform even when it's foggy** – important for coastal regions.
- These advantages of Thinfilm modules result in an **up to 15% higher electrical output** (kWh) over lifetime compared to mono- and polycrystalline solar modules !!!
- Very good **salt mist resistance**.
- **High Quality Brand (First Solar is Atlas25 certified) with 25 years linear performance warranty.**
- **First Solar is the most bankable supplier in the solar panel industry.**

**YOU GET
MORE ELECTRICITY (kWh)
FOR LESS MONEY !!!**



Tests of alternative technologies under the extrem climatic conditions in desert regions show significant advantages of Thinfilm Solar Modules!



Horizontal Single Axis Trackers Provide Highest Yields

HopSol

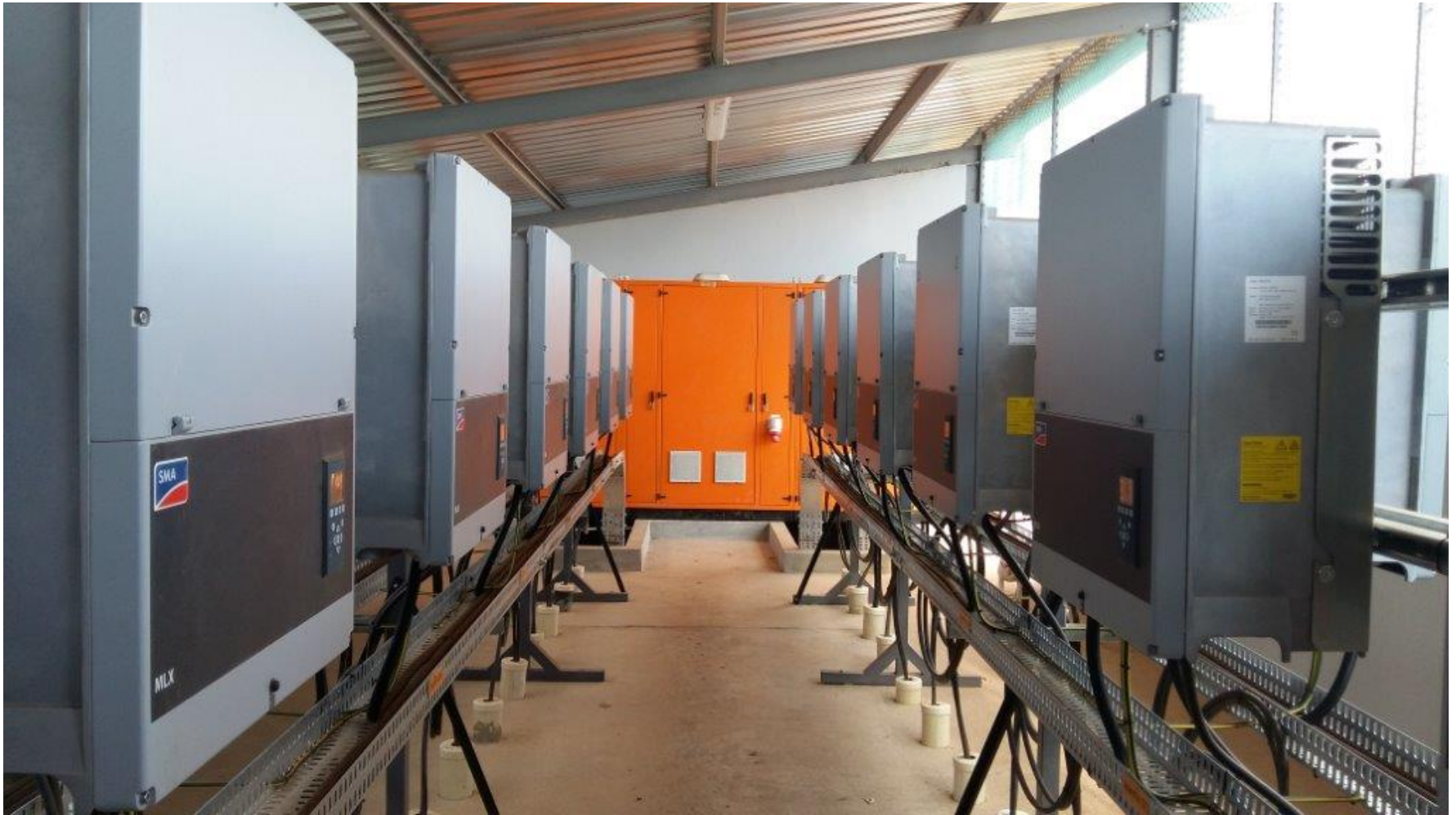


Dr. R. Hopperdietzel
2016

„Power Houses“ in Center of Solar Park

HopSol









HopSol

Otjiwarongo PV Park

- Dashboard
- Power Trends
- Control
- Inverters
- Power Meters**
- Alarms
- Energy Production

5.1 MW

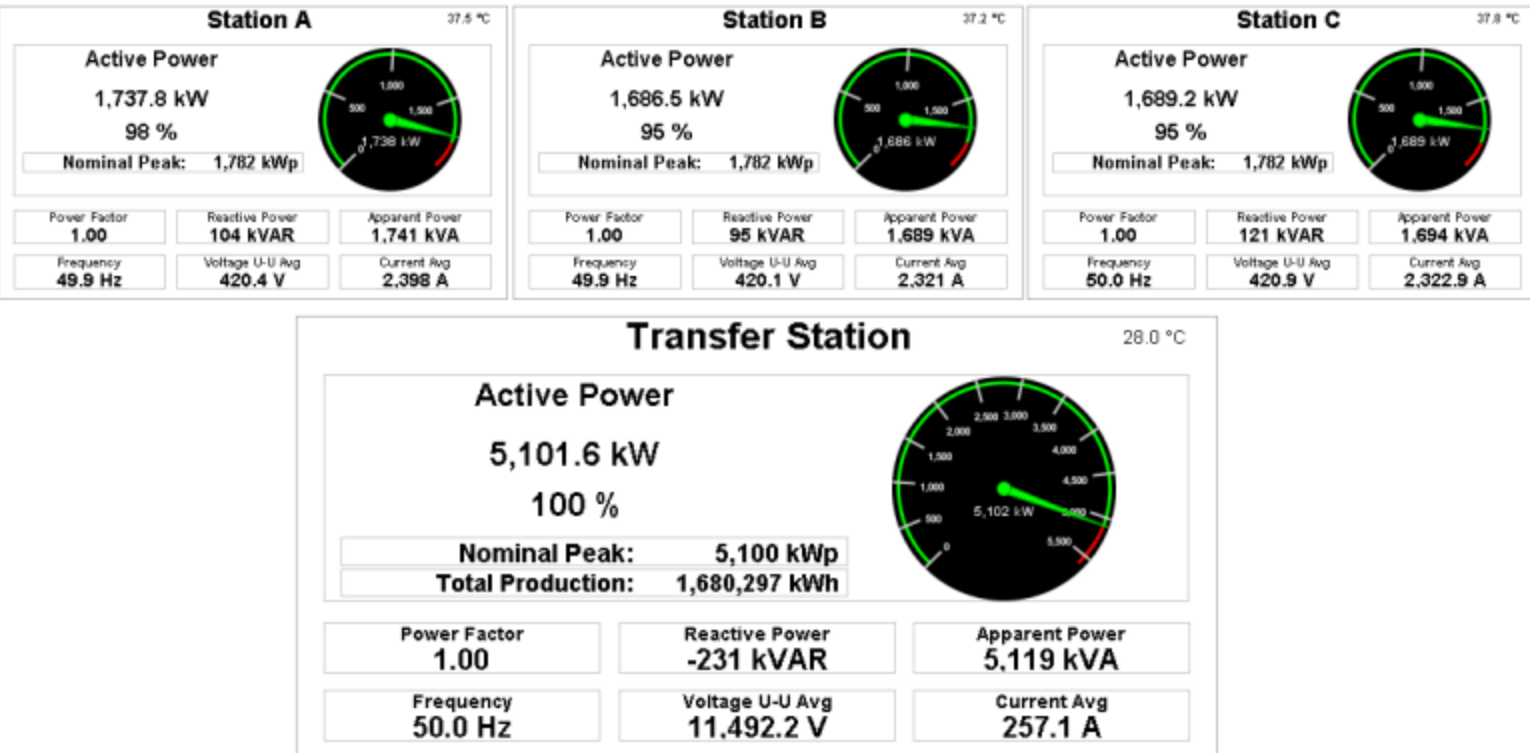
Current Time:
01/10/2016 03:15 PM

0 Alarms

Logged In:
admin

- Lock Screen
- Switch User
- Logout

Power Meters Overview







Namibia's biggest Offgrid Solar Power Plant (Gam)

HopSol



Example: Gam Solar PV Plant by HopSol

- **1.600 People**
- **200 kW**
- **24/7**



Namibia's biggest grid-tie Solar Power Plant (Otjiwarongo)

HopSol



**Solar Diesel Hybrid Systems
Provide excellent Savings Potential
Payback Time of 3 – 4 years possible (Namibia)
Looking forward to our successful cooperation !**



Europe

Africa

South America

HopSol AG

Dr. Bruno Reihl

Eggirain 22

Wilten / Switzerland

+41 44 687 4277

bruno.reihl@
hopsol.com

HopSol Africa (Pty) Ltd

Dipl.-Ing. Björn Wilschke

5 Von Braun Street

Windhoek / Namibia

+264 61 255 947

bjoern.wilschke@hopsol.com

HopSol SA (Pty) Ltd

Eysha Ellary

52 Forssman Close

Johannesburg / RSA

+27 81 7699 333

eysha.ellary@hopsol.com

HopSol Zambia Ltd

Dr. R Hopperdietzel

893 Mosi O Tunya Road

Lusaka / Zambia

+260 975 399 079

robert.hopperdietzel@
hopsol.com

HopSol do Brasil Ltda.

Dipl.-Ing. Lothar Zimmermann

Estr. da Capuava 1700, Cotia

Sao Paulo / Brazil

+5511 99200 5481

lothar.zimmermann@
hopsol.com

www.HopSol.com