Off Grid Electricity supply to low cost shelters, based on a sustainability concept.

Current issues and the future opportunities
Presenter: Dewald le Grange

- Electronic Engineer from profession, CEO of Liberté Software, active in the export market of ICT Software and Services to Nigeria.
- Currently reading for a M-Degree in Renewable and sustainable energies (MEng RSE) at the University of Stellenbosch.
- New venture setup - 2012 in RE Space
The scramble is on.......
Several entities are looking into Renewable Energies.

Politicians
Industry
Business
General public
You and Me
But Where is the Focus?

- Countries
- Industries
- Big Businesses

But what about the forgotten generations, slumps, rural and informal settlements?
Enkanini - Stellenbosch

- More than 10,000 people call it home
Project *I-Shack* (Improved *Shack*)

- Driven by the Sustainability Institute based at the Lynedoch Eco Village near Stellenbosch, with Post Graduate students.
- Introducing sustainable building materials to create a more liveable and IMPROVED Shack.
- Delivering basic Electricity to a shelter
- Creating sustainable businesses to support the initiatives.
Shelter & Insolation

U-Beam wood frame structure
Corrugated Iron walls
Card Board Insolation on the inside
1 high meter COB* Wall inside shelter

* Cob is a building material consisting of clay, sand, straw, water, and earth, (based on the adobe brick principles)
I-Shack

* Overhang in front to deliver shade (North facing)
* Gutter at the back to catch rain water.
* Weather station for study purposes only
View of COB wall inside the shack- for thermal storage. Also notice the cardboard insulation on the inside walls and roof.
Solar PV Installation

• 25 Watt Solar PV Panel

• 3 x 3 watt LED Lights

• 12V – 7AH Battery
  Can power the 3 lights for 7-9 hours

• Cellphone Charger point

• Charge Controller with fuses.
View of 25 Watt Solar PV Panel
View of one of the three, 3 Watt LED lights
Weather Station – with logger
Controller Version II
Job Creation

• Every 100 shelters will have a Solar technician that will install and maintain the units

• Technician will be fully trained
Project Status

• Currently, 4 Solar Power units installed at Enkanini and 4 units installed at Siyahlala.

• The group is in the process of installing another 20 Solar Power units funded by the National Research Foundation (NRF)

• Should Funding be granted from the Gates Foundation, another 2000 PV units will be installed. 500 each at Enkanini, Siyahlala as well as Dar Es Salaam in Tanzania and in Accra in Ghana.

(new units will have a 50 Watt T plug as well)
Future Developments

One of the focus areas of my thesis for the MEng Degree is looking into new storage technologies.

One of the weak links in any battery operated process is the batteries. The world of renewable energies is going to change that space forever.

The study will look into opportunities in new Storage Technologies that can be successfully used to assist rural electrification like the I-Shack
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QUESTIONS ??

The cartoon shows a conversation with a sun in the background. One character says, "There must be a source of energy down there."