

Providing access to Electricity in Rural Communities using Photovoltaic systems

(A case study of Odighi Community, Southern Nigeria)

By

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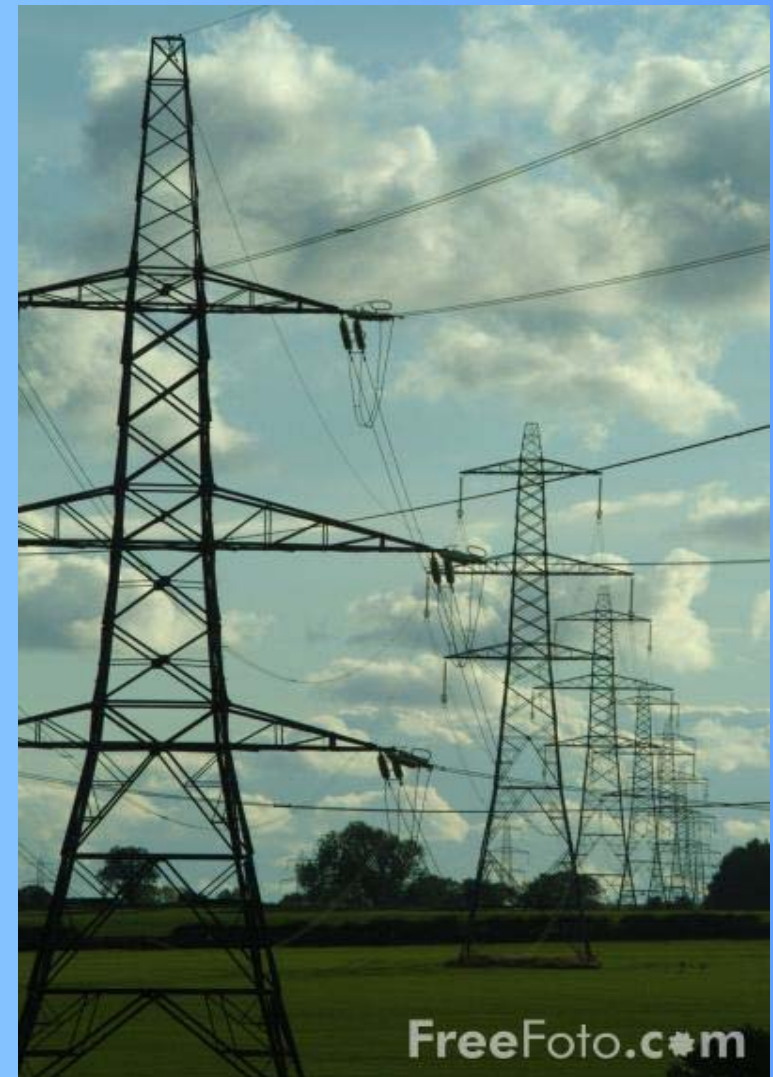
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Introduction: Energy situation in Nigeria

- Nigeria with over 150 million person currently generates between 3,500 - 4,000MW of electricity.
- 60-70% of Nigerians presently do not have access to electricity and majority of them live in rural communities.
- Even those connected to the grid are plagued by power outages which last for several hours a day.



Introduction Contd.

- Nigeria's average electric power consumption per capita is 127 KWh. (*The World Bank*)

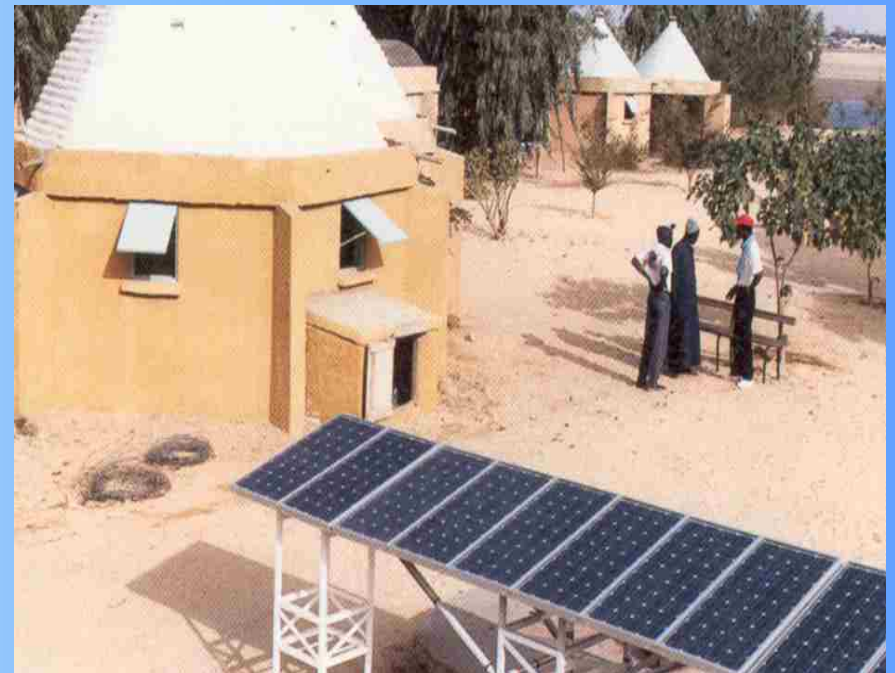


It cost the Nigerian government 1million dollars to generate one megawatt of electricity

Potentials of photovoltaic applications in Nigeria

- Annual average solar radiation in Nigeria varies from (3.5kwh/m²/day) in the southern Region to (7.0kwh/m²/day) in the Northern Region of Nigeria.

- PV has a remarkable potential as a cost effective option for low-power electrical energy supply to the rural communities in Nigeria.



NCERD (Nsuka). 2002. A cost comparison of the photovoltaic, diesel/gasoline generator and grid utility options.

Odighi Community at a Glance

- A farming community in Edo state southern Nigeria with an estimated population of about 2,000 persons both men , women and children.
- The community is at ***present partially*** connected to the national grid.
- Children in the community read with kerosene lamps and women cook late meals with bush lamps.
- Women of the community travel several kilometers to the city to get kerosene.
- Small business close shops before night falls due to poor lighting.

Objectives of the project

- To increase access to modern energy services (electricity) in Odighi Community using solar generators (Photovoltaic systems).
- To build capacity in the community to install and maintain photovoltaic system.
- To create awareness on the potential for renewable energy technologies (RETs) to address the energy crisis in Nigeria and at the same time mitigate the emission of greenhouse gases.

Project Implementation Activities

- Inception workshop held on the 22nd of march, 2011.
- Training workshop for 20 youths of the community on installation and maintenance of PV systems.
- Installation activities broken into two phases; 20 households for each phase.

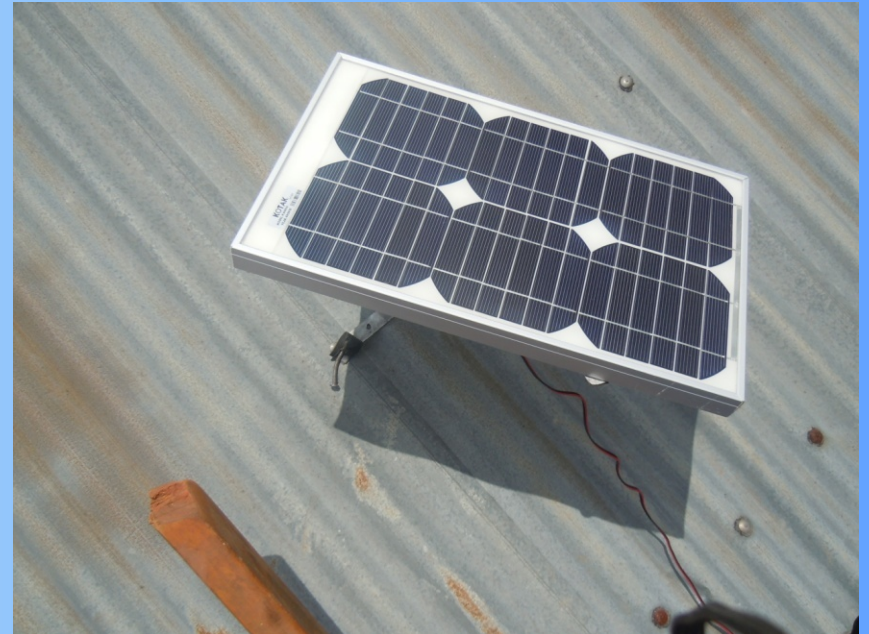


Details of home lighting system used

- A 90 LED lamp
- A 12 volts battery (backup unit)
- A 10watt solar panel
- Solar panel has a lifespan of 10years
- The battery's lifespan is 3years
- The LED lamp, more than 20years.
- Provides lighting for 8 hours everyday



Photos





THANK YOU

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