



**Report of Installation Activity
(First Phase)**

**“Access to Electricity in Odighi Community
in Edo State using Photo Voltaic”**



Community Research and Development Centre

September, 2011

Report on the Installation Activity (First Phase) for the Project

***“Access to Electricity in Odighi Community in
Edo State Using Photo Voltaic”***

This took place in Odighi Community of Ovia North-East Local
Government Area of Edo State, Nigeria
7th-12th September, 2011

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Programme, Global Environment Facility Small Grant Programme, Global Green
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Sustainable Energy Europe Campaign*



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Acknowledgement

Our Profound gratitude goes to the Almighty God for giving us good health and strength to embark on the installation activity (First Phase) of this Project. The Community Research and Development Centre deeply appreciate the support of the United Nations Development Programme (UNDP), Global Environment Facility Small Grant Programme (GEF SGP) and the Global Green Grants Fund. We also appreciate the support of the Environmental Rights Action/Friends of the Earth Nigeria (ERA/FoEN) and Sustainable Energy Europe Campaign. Special thanks go to the Odionwere (Community Head) of Odighi Community, Pa R.O Amanyo for his support during the installation of the first twenty (20) photo voltaic systems. The chairman of the Community Youth Development Association and other members of the elder's council are appreciated as well.

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Acronyms

CREDC **Community Research and Development Centre**

ERA/FoEN **Environmental Rights Action/Friends of the Earth Nigeria**

GEF **Global Environmental Facilities**

LED **Led Emitting Diode**

PREEN **Promoting Renewable Energy and Energy Efficiency in Nigeria**

PV **Photovoltaic**

RETs **Renewable Energy Technologies**

UNDP/SGF **United Nation Development Program/Small Grant Fund**

Background

Access to energy is essential for socio-economic development and for poverty alleviation. Nigeria is the most populous country in Sub-Saharan Africa, nearly one quarter of Sub-Saharan Africa's population. Despite the huge resources from oil, the country is facing formidable economic, social and human development challenges. One of these challenges is seen in the power sector. Report has shown that about 60% of Nigeria's population (the entire Nigerian population is estimated at 150 million people) is excluded from the national electricity grid. A large portion of these people are located in rural areas. Even places that are connected to the grid are plagued by frequent power outages that last for several hours daily. Furthermore, the grid electricity is generated from unsustainable sources (large hydro power stations and a growing number of thermal gas stations) which are contributing to the emission of greenhouse gases leading to climate change. Renewable energy technologies and energy efficiency are promising solutions to this energy crisis.

Renewable energies, apart from being sustainable and inexhaustible in supply, can be set up in small units and is therefore suitable for community management and ownership. Hence renewable energy technologies can be used in a decentralized energy system. To address the environmental and socio-economic challenges posed by the crisis in the electricity sector in Nigeria, the Community Research and Development Centre (CREDC), in 2006, conceptualized, designed and commenced the project titled "Promoting Renewable Energy and Energy Efficiency in Nigeria (PREEEN)". The goal of the PREEEN Project is to increase Nigerian's access to electricity and modern energy services using renewable energy facilities and to promote energy efficiency. Environmentally, the PREEEN Project will help to reduce the dependency on the burning of fossil fuel for energy generation, thereby helping to mitigate climate change. The project is promising to create a big market for renewable energy systems and also to attract investors in the sector. The PREEEN project will also help to reduce electricity demand to minimize the adverse environmental impacts of energy generation through the promotion of energy efficiency policies and practices. The CREDC has organized several conferences and workshops in different regions of Nigeria and a national dialogue in Abuja in 2008 as part of the advocacy component of the PREEEN Project. The current project "**Access to Electricity in Odighi Community in Edo State Using Photo Voltaic**" is part of the PREEEN Project.

The project is being implemented in Odighi Community in Ovia North East Local Government Area of Edo State, Southern Nigeria. The objectives of the project are to increase access to electricity in Odighi Community using solar generators (photo voltaic); to build capacity in the community to install and maintain solar systems and; to create awareness in Edo State on the potential for renewable energy technologies (RETs) to address the energy crisis in Nigeria and mitigate the emission of greenhouse gases. In the project, a total of 40 households would be provided with electricity using photo voltaic systems and 50 youths from the community would be trained on installation and maintenance of solar systems. The project has been endorsed by the European Commission's Sustainable Energy Europe Campaign as an Official Partner. The installation activity which began with the installation of photo voltaic for the first 20 households in Odighi community was held from 7th-12th September, 2011. The objective was to provide access to lighting in the Community using RETs.

Executive Summary

The project “Access to Electricity in Odighi Community in Edo State Using Photo Voltaic” is being implemented by the Community Research and Development Centre (CREDC) as part of the PREEEN Project. The implementation is made possible with supports from the Edo State Government, the United Nations Development Programme (UNDP), the Global Environment Facility Small Grant Programme (GEF SGP), Global Green Grants Fund (GGF), Environmental Rights Action/Friends of the Earth Nigeria (FoEN) and the Sustainable Energy Europe Campaign.

The first phase of installation activity was held at Odighi Community from 7th - 12th September, 2011. The installation activity fulfills the Project objectives- to increase access to modern energy services in the community using solar generators (Photovoltaic Systems). This will enhance access to information, boost educational activities, reduce the incidence of respiratory diseases and discourage the use of traditional energy sources (kerosene lanterns, local paraffin lamps, diesel and petrol generator) causing the emission of Greenhouse Gases leading to Climate Change.

Prior the installation activity, a reminder visit was paid to the Odionwere (Community Head) and members of Odighi Community. The visit availed the CREDC team the opportunity to reassure the community of their commitment to the implementation of the project. The fear of abandonment as a result of delay in implementation (occasioned by some logistic hitches), was also cleared.

Beneficiaries of the first phase of installation were educated on how to use the facilities to ensure maximum efficiency. Twenty (20) photo voltaic systems were installed by the community youths who had earlier been trained on installation and maintenance of the systems. This was done under the supervision of the CREDC team. Each unit of photo voltaic (complete home system) comprised of a 90 LED lamp, a 12 volts battery (backup unit), a 10watt solar panel, solar panel support, connecting cables and screws.

Installation Phase

The Project, 'Access to Electricity in Odighi Community using Photovoltaic Systems' has three Implementing activities which includes: inception workshop, training workshop for some youths of the community and the installation of solar systems for 40 households. The installation activities of photo voltaic for lighting, for the first 20 households comprised of two phases. The 1st phase started on 2nd September, 2011 and was rounded off on 12th September, 2011. Activities for this phase include: reminder (pre-installation) visit to Odighi community, PV systems' user training and PV installation activity.

Session One: Pre-Installation Visit to the Odionwere of Odighi Community

The CREDC team led by Mr. Etiosa Uyigue, the executive director paid a reminder visit to the Odionwere (Community Head) of Odighi Community on the 2nd of September 2011. Other members of the team who made the trip include: Mr. Ogbemudia O. Godfrey (Programme Manager), Mr. Paul Uyigue (Technical Director) and Miss Tosin Obiuevbi. The purpose of the visit was to reassure the Odionwere, the community council of elders and other members of the entire community of the desire and unwavering commitment of CREDC to complete the project.

Reception of the CREDC Team at the Odionwere's Residence

At the house of the Odionwere of Odighi Community, the CREDC Team was received by the Odionwere, Pa Amanyo and some elders of the community. Also present at the Odionwere's house was the Youth Development Association representative Mr. Oguns. After a brief introduction of the CREDC team, the executive director Mr. Etiosa Uyigue told the Community Head and others present at the Odionwere's house that CREDC was there to inform them of the commencement of the third stage of the project which is the installation of photo voltaic systems.



Elders of Odighi Community at the Odionwere's House during CREDC's visit

Mr. Etiosa Uyigue apologized on behalf of CREDC to the community for failing to meet up with the date that was earlier chosen for the first phase of installation which was actually scheduled for April 2011. According to him, the reason for the lapses was due to delay in release of funds by the funding partner agency (GEF-UNDP/SGF), who gave the grant for the installation in August 2011. He promised them that the project would kick off without further delay and that the new date for the installation in the first twenty houses would be 7th – 12th September, 2011.

In his response, the Odionwere (Community Head) Pa Amanyo thanked the CREDC team for their visit and initiative. He also thanked them for empowering some youths of the community during the inception/training workshop (on installation and maintenance of photo voltaic systems) of the project, which came up in March 2011. Pa Amanyo expressed disappointment in the long delay of the installation phase after the completion of the inception/training workshop. According to him, the community was almost losing faith in the realization of the project. However, he pledged the support of the community for the completion of the project and later handed the list of the first twenty beneficiaries to the CREDC Executive Director, Mr. Etiosa Uyigue.

Session Two: Photovoltaic Systems' (PVs) User Training

On the 7th of September 2011, the CREDC Programme Manager, Mr. Ogbemudia O. Godfrey, in company of Engr. Valentine Eku (Project Officer), Orewole wasiu (Intern) and Uyi Lincoln (Intern), held a meeting with the elders of Odighi Community, the first 20 beneficiaries and the 15 youths who had earlier been trained on installation and maintenance of photo voltaic systems. The purpose of the meeting was to educate beneficiaries on how the photo voltaic systems work, precautions to be taken and its maintenance.



Engr. Valentine Eku (Project Officer) educating trainees and beneficiaries at Odighi Community about the Photo Voltaic Systems.

Delivering his technical advice, the Project Officer Engr. Valentine Eku told the 20 beneficiaries and the 15 trained youths that the Solar Powered LED Home Lighting System (Photo Voltaic Systems) can provide lighting for 8 hours everyday. According to him, the Solar panel has a lifespan of 10years, the battery's lifespan 3years and the LED lamp, more than 20years. He advised them to use it for a period of about 3hours per day when there is constant rainfall and less sunshine. This he said is to ensure at least 3 hours of lighting for additional three days at a stretch without sunshine to power the panel (during bad weather). A demonstration of how the system works was then carried out by the project officer.

After the training session, an inspection of the twenty benefitting households' roof tops on which the solar panels would be installed was carried out. This became necessary due to the different roof configurations of the benefitting households. The process afforded CREDC the opportunity to determine the direction of the "South Pole" for every household to which each of the solar panels would be oriented to ensure maximum year round energy production .

Session Three: Photovoltaic Systems Installation Activity

The installation of the photo voltaic systems by CREDC started on the 8th September, 2011. Mr. Ogbemudia O. Godfrey (Programme Manager), Engr. Valentine Eku (Project Officer), Orewole Wasiu and Uyi Lincoln arrived at Odighi Community at about 8:00am local time for work. The installation activity was coordinated by the project officer, Engr. Valentine Eku.



Engr. Valentine Eku (Project Officer) and Mr. Ogbemudia O. Godfrey (Programme Manager) during the Installation at Odighi Community

The first day (8th September 2011) witnessed the installation of Nine (9) photo voltaic systems. The complete solar systems which were supplied by Schneider Electric, one of the world leading Energy Management companies comprised of a 90 LED lamp, a 12 volts battery (backup unit), a 10watt solar panel, connecting cables and screws.

A special solar panel support was designed by CREDC's team of engineers to ensure that the panels were all oriented southward and tilted at angles between 5-15 degrees in order to ensure maximum year round energy production. Some of the panels were mounted on roof tops while for houses with weak roofs, the solar panels were mounted on vertically erected solid poles.



Trained community youths coupling the fabricated solar panel support

The first installation was carried out on the roof top to the Odionwere (Community Head) of Odighi, Pa R.O Amanyo at about 9:45am, after which other households were provided with the facilities. The choice of households that benefitted from the gesture was determined by the leadership of the community, on the basis of hierarchy and need. The installation for the first twenty households was completed on the 12th of September, 2011.



A female community trainee mounting a solar panel on the roof top in Odighi Community



Some trained youths of Odighi Community carrying out installation activity at the Odionwere's sitting room

Reactions from Beneficiaries:

Reacting to the successful installation of the first system at the Odionwere's house, the Community head, Pa R.O. Amanyo commended the CREDC team and the trained community youths for a job well done. He described the solar LED lamp as bright as the sun and prayed for God's continued blessings on the Executive Director of CREDC, and his entire staff as well as the funding partner agencies, which made the dream, a reality.



Pa R.O Amanyo (Odionwere of Odighi Community)

Beneficiaries of the first nine (9) photo voltaic systems which were installed on Thursday 8th September, 2011 could not hide their joy when they saw the CREDC team in the community on Monday, 12th September 2011 as they arrived for the installation of the remaining eleven (11) photo voltaic systems.

According to some of them, they had never seen anything as bright as the solar systems. Other members of the community people who were initially skeptical about the efficiency of the solar systems became very interested and wanted to be part of the next phase.



A community elder commending a staff of CREDC for the newly installed photo voltaic system



A community member poses with CREDC staff as the photo voltaic system is switched on at Odighi Community

Appendix 1

(The Names of the First Twenty (20) Beneficiaries of the Photo Voltaic systems installed at Odighi Community, Ovia North East, Edo State)

S/N	Names of Beneficiaries
1	Prince Godwin Akenzua
2	Pa. R.O Amanyo
3	Pa Esere
4	U.S.A
5	Mr. Osazuwa
6	Osadolor Erobor
7	P.Olaye
8	L Imafidon
9	G.I Uwughiaren
10	Brown Osayande
11	Erhabor Agbons
12	Mr Ojo
13	E.P Omozusi
14	Imaria
15	Olaye Samson
16	J Ekhorse
17	Mr. Amadasun
18	Ammom Eghianruwa
19	Olaye
20	Sunday Osasuyi

Appendix 2

(Photos of Installation Activity at Odighi Community by CREDC)



A solar panel mounted on a roof at Odighi Community



A solar panel been wired by a youth of the community and a CREDC staff



Engineer Wasiu (CREDC Intern) installing a photo voltaic system



**Some community youths been supervised
by Engineer Valetine (CREDC Project Officer)**



Trained youths of Odighi Community waiting for instructions on installations from the CREDC Project Officer



Engineer Valetine (Project officer) and Engineer Uyi sorting out the fabricated supports for the photo voltaic systems.



An area view of a mounted solar panel on one of the roof tops at Odighi Community



Engineer Valetine bolting the fabricated support to a Solar Panel



A bright ray of light from a 90 LED lamp