



GLOW INITIATIVE FOR ECONOMIC EMPOWERMENT

P R E S E N T S



Solar Panel Installations Skills

TRAINING PROGRAM

FOR 50 YOUTHS IN ALIBAHURU COMMUNITY
INSTALLATION OF SOLAR FLOODLIGHTS FOR ALIBAHURU NIGHT
MARKET

PROJECT REPORT

Project Background

Investment into the Nigerian solar power sector has recently increased. Globally, investments into the solar power sector hit a peak of 330BN dollars and much of the attention has been in Africa with 600M people who have no access to electricity. In Nigeria, there are 93 Million people without access. In addition to this, climate change impacts has been ravaging our nation with extreme drought and desertification observed in the north and increased rainfall leading to flooding noticed in the south. Solar power which is considered clean electricity can play a role for both the problem of electricity and to combat climate change. Therefore a new opportunity has emerged to train and mentor new solar entrepreneurs and engineers who will build on these opportunities solving electricity problems and making an income.

Our Solution

Training young Nigerians on skills in the solar energy value chain -such as solar panel designers, installation engineers, assemblage assistants, project managers, repair / maintenance professionals, marketing and sales agents goes a long way to increase access to electricity, combat climate change and advance sustainability in Nigeria as these persons go on to work as competent workforce for solar companies or create their own businesses promoting rural electrification. The Solar Skills Empowerment Program will train 50 young Nigerians on the Design and Installation of Solar Panels to provide electricity as a practical aspect, they will learn the installation of a Solar floodlight on poles to provide electricity to a

rural market. This training will prepare them as solar entrepreneurs ready to tackle electricity and climate challenges in Nigeria. Their skill will additionally enable them be employed in a solar company.

Project Goal

To solve Nigeria's electricity challenges and environmental problems resulting from the use of unsustainable energy.

Project Objective

- To train 50 young people Alibahuru community on Solar PV design, Installation and Entrepreneurship.

ACTIVITIES

1. Intensive one week training and hands-on practical (on Solar PV design, Installation and Entrepreneurship) for 50 young people from ALIBAHURU COMMUNITY IN Ebonyi State.
2. Hands on practical Installation of solar floodlights in Alibahuru Night market.

Details of Project Activities

a. Workshop Methodology

The Solar Skills Empowerment Program featured well-structured courses on solar entrepreneurship and solar PV systems. The trainings were facilitated by seasoned solar technologists and solar energy experts. The training which was both theoretical and practical lasted for five days.

b. Overview of training

The “Solar Skills Training Program” exposed participants to basic concept of solar entrepreneurship and solar photovoltaic systems including solar system operation, designs, and installation. The training also covered the fundamentals of PV, such as how voltage, current, power and energy interrelate.

Participants were exposed to the various components of solar installations such as inverters, solar panels, charge controllers, batteries, etc. They were also taught calculation of energy demand (energy audit and energy efficiency implementation techniques).

Participants then went through a practical installation of 5 solar streetlights. The learnt how to install the pole, connect

Training Course Objectives

1. To reduce unemployment in Nigeria by raising and grooming solar energy and energy efficiency professionals who will then be qualified for jobs in the sector.

2. Create competent solar installers across the nation with international standards
3. Provide manpower for small and large scale solar installations across the nation
4. To groom Solar Entrepreneurs

Solar Training learning Objectives;

- Recognize the various types of solar photovoltaic systems and components currently in use.
- Demonstrate safe working practices.
- Properly design and size solar photovoltaic power systems.
- Assist in the planning and installation of solar photovoltaic arrays and components.
- Understand the types of codes and standards that apply to the proper installation of solar
photovoltaic systems.
- Understand the types of permits, warranties, and the customer relations required for
completion of the overall solar project.
- Assist in the maintenance of common solar photovoltaic systems.

- Improve technical know-how and the quality of solar photovoltaic installations in the
- country.

Solar Training Course Outline

- Introduction to Solar Energy.
- Basic Solar Terminologies.
- Introduction to Electricity.
- Energy Management and Energy Auditing

- Installation Tools and Safety Basics
- Solar Photovoltaic System Components
- PV Module Fundamentals
- PV Battery System Design
- PV Controller System Design
- PV Inverter System Design
- Solar Photovoltaic System Sizing
- Installation of Solar Photovoltaic Systems
- Solar Photovoltaic System Electrical

- Solar Photovoltaic Applications
- Maintenance and Analysis
- Practical
- Evaluation and Assessment

As a quick overview, the trainees were trained on the following broad areas which has sub-topics;

Day 1: Climate Change, Solar energy and PV Components

Day 2: Solar PV Entrepreneurship, Solar Systems Design

Day 3: Solar Site and Safety Practices, Installation, Assembling and Disassembling

Day 4: Solar PV Applications, products, Installation, Maintenance and troubleshooting

Day 5: Installation practicals of a solar floodlight in Alibahuru night market,

Outcomes

At the end of the training, participants showed a good understanding of

- i.** basic concepts the basic concepts of solar entrepreneurship and solar PV systems
- ii.** Solar systems design and size solar photovoltaic power systems.
- iii.** functions of different components of PV systems
- iv.** features of solar PV system configurations and applications.

- v. the relationship between: power, voltage, current, electric charge and energy
- vi. energy audits
- vii. Hands-on Installation of solar floodlights on poles
- viii. solar inverter integration with existing house wiring using an electric circuit simulation board

c. Participation/Involvement

50 young people drawn from Alibahuru community participated in the training. The participants at the training demonstrated a good level of commitment by turning up early for trainings, paying keen attention to lectures and diligently performing assigned tasks.

d. Conclusion

The training program was impactful as evaluation mechanisms suggested that participants demonstrated a good understanding and showed a high level of competency around the basic concepts of the training. Although most participants were new to solar technology, most participants show interest to venture into the solar industry and pledged to be frontiers in the electrification of their communities and advocacy for clean energy. This supports the goal of this project to solve Nigeria's electricity challenges and environmental problems resulting from the use of unsustainable energy.

PICTORIAL EXCERPTS

All Project Pictures can be found here:

https://drive.google.com/drive/folders/1--EEXXEZWWR1F7HQSxREUS21wM_-SHxR

Access Bank Support

1. Access Bank support covered expert designs for our IECs and publicity materials.
2. The support enabled the purchase of all the materials used for the training program.
3. Access Bank support covered facilitation fees for resource persons.
4. The support Covered training fees for 50 young Alibahuru indigenes
5. The support covered travel and incidentals for a 5 man project team
6. It also covered hotel, meals and stipend for project team

About Glow Initiative for Economic Empowerment and Climate Smart Nigeria

Glow Initiative for Economic Empowerment is a non-governmental organization set up to harness the economic potentials of communities by tackling problems like unemployment, poor electricity access and climate change through education and investments in renewable energy. We are focused on reducing unemployment and creating a sustainable society by supporting women and young people to become renewable energy entrepreneurs by helping them acquire solar technology, business and financial management skills to create and deploy solar solutions for individuals and companies in rural and urban areas. Our goal is to birth 10,000 renewable energy entrepreneurs in the next 5 years. Climate Smart Nigeria is the arm Of Glow Initiative which is set up to combat environmental problems like Climate change to improve the nation's power sector by spreading the awareness of

Climate Change to curb climate illiteracy and promoting the intervention of renewable energy. Through CSN, we use the tool of education to curb climate illiteracy. Our goal is to boost the economic development of Nigeria and attain a Climate Smart nation come 2026 through pioneering investments in renewable energy, Climate education and agriculture.

IEC MATERIALS



GLOW INITIATIVE *with support from* **ACCESS BANK**

Solar Installation Training Program



**Live Installation of Solar Street Light
and Solar Panel in a School
For youths in Ebonyi State**



GLOW INITIATIVE FOR ECONOMIC EMPOWERMENT



Solar Installation Skills TRAINING

SOLAR INSTALLATION ON ROOFTOP

SOLAR STREETLIGHT INSTALLATION FOR 50 YOUTHS IN ALIBAHURU EBONYI STATE





GLOW INITIATIVE FOR ECONOMIC EMPOWERMENT

Solar FLOOD LIGHT Installation FOR ALIBAHURU NIGHT MARKET

**KICK KEROSENE LANTERNS OUT
PROTECT MARKET WOMENS HEALTH**



Ebonyi STATE

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