

SOLAR FOR SCHOOLS COMMUNITY PROJECT

IGBEAGU, EBONYI STATE



PROJECT REPORT

Project Background

Inadequate infrastructure in rural areas and constant power outages in grid-connected areas prevent students from learning in optimal conditions. Further, students lack access to modern information technology which is crucial for educational and economic empowerment. Solar energy has the potential to power the education system in rural areas by providing adequate electricity as well as access to education. It helps in improving the living standards of rural households through solar energy-based interventions and learning facilities in the underserved community.

Access to solar electricity for a rural school will enable them to meet their electricity needs such as Lighting, powering office equipment, ventilation etc.

Our Solution

To solve this, we created the Solar for Schools Community Project under our Solar UP Nigeria (SUN) Program to provide solar power to rural offgrid schools and power productive learning e.g., computer center, skills center and library. For the third Project in this series, we installed a 3KW solar PV system to power the computer room and library of St. Monich Model Academy, Igbeagu, izzi Local Government Area of Ebonyi State and promote awareness amongst students and school teachers on solar energy and sustainability ultimately supporting rural electrification and encouraging student interest in STEM.

Project Objectives

1. To provide electricity that will power computer centers of public schools by designing and installing Solar PV System including solar panels, batteries, inverters and a charge controlling system to enable night time study and encourage more student participation in STEM subjects.

2. Educating 100 students and 15 teachers on the Basics of Solar Electricity; how solar panels generates electricity and the installation of a solar panel.

Project Activities

- 1) Design and installation of Solar PV System including solar panels, batteries, inverters and a charge controlling system to power St. Monich model Academy I, Alibaru, izzi Local Government Area of Ebonyi State to provide electricity to power the school's computer center and library, enable night time study and encourage more student participation in STEM subjects.
- 2) Educating 100 students and 15 teachers on the Basics of Solar Electricity; how solar panels generates electricity.

Details of Project Activities

a. Description of Location

Alibaru community, here the Igbeagu village is situated is an agrarian settlement located in IZZI Local Government Area of Ebonyi State, Nigeria. It is about 14.7km away from Abakaliki Capital territory. Alibaru community is predominantly an agrarian community with a population of about 20,000.

b. Stakeholders Interface between Project team and the leadership of Igbeagu Community.

The project team on arrival at Igbeagu community held a meeting with the leadership of Igbeagu community and the Management of St. Monich Model Academy Igbeagu. The meeting afforded the project team the opportunity to better understand the challenges posed by the non-availability of the stable electric supply in the school and the resultant impact it has on learning processes and outcomes in the school.

The leadership of the community and the Management of the school were delighted that their community school was selected to benefit from the "Solar for School" project. According to them, the project will be a great relief for them as their problem of electric power supply for the school will be permanently fixed. The

leadership of the community also pledged their commitment to ensure that the installed solar PV systems will be adequately safe guarded.

c. Installation of Solar PV system at St. Monich model academy Igbeagu, Ebonyi State.

A Solar PV system was installed at the St. Monich Model Academy, Prior to the installation, the school didn't have access to electricity. Powering the computers at the school was a huge challenge for the School's management because of the huge cost associated with the hire of generators and the purchase of fuel and diesel. It was also practically impossible for the students to study at night as there was no light to facilitate night time study. The installed solar PV system has the capacity to power 20 desktop computers and provide power for 30 light points and about 16 fans. Students of the school were part of the installation process. They were afforded the opportunity to learn solar system installation from scratch to finish.

Project Commissioning

The Solar PV system installed at St Monich Model Academy Igbeagu was formally commissioned and handed over to the community on Wednesday 16th of July 2022. The commissioning was witnessed by the commissioner's representative of the State, members of the community, representatives of the community's town union, members of the Parents Teachers Association of the school, teachers and well-wishers. The guests at the commissioning were taken round the installed facility and they were excited about the development.

Other key stakeholders at the commissioning also took turns to speak on the project.



Student participating during solar installation at rooftop

Outcomes

1. Massive turnout of stakeholders at the commissioning ceremony which included the commissioner for Education of the Ebonyi State, leadership of Igbeagu town union, leadership of the Parents Teachers Association, teachers and students.
2. The attention of stakeholders at the commissioning was also drawn to other challenges which the community school was facing.
3. The commissioning provided an opportunity to enlighten guest on Solar and renewable energy.
4. The leadership of the community pledged their commitment to putting in place adequate security arrangements and construction of a burglary proof to protect the solar PV system from theft.

5. Excitingly, the Igbeagu town union hosted us specially by providing their local dance team to come dance for us. They provided their local dance team to thank us for the project.



The commissioner's representative cutting the tape at the commissioning ceremony

2. **Training the School's Students on Solar Power Design and Installation**

This project trained some students of St. Monich model Academy on basic concept of solar technology. The training introduced students to the fundamentals of solar power as it applies to solar panel system installations. They learnt how solar panels, or photovoltaics (PV for short), converts sunlight to electricity. The training also highlighted the basic components needed in a basic photovoltaic (solar panel) system and how to calculate the electrical demand of a building. The training also had a practical aspect where students participated in the installation of a solar PV system.

Outcomes

- i. The students had a good understanding of the basic concept of solar energy.
- ii. Students could identify basic components needed in a basic photovoltaic (solar panel) system and could explain the function of each.
- iii. Students at the training could calculate the electrical demand of a building.
- iv. The students also demonstrated a good competency in the installation of a solar PV system.

Project Challenges and Lessons Learnt

1. The location of St. Monich Model Academy Alibaruhi posed a big challenge to the project team. The road leading there was not very good. It took time and resources to commute to the project location for the one week duration.
2. The school has about 30 old and outdated energy consuming desktop computers, which made it a difficult task to use the light in the library and computer room at the same time, they have to manage the electricity by shuttling between the two respectively and interchangeably using a power change over system which actually helps them preserve and manage the electricity.
3. There was also concerns of land dispute in the past between the neighborhood as the school is close to the state boundary with cross River State, which kept the project team apprehensive throughout the duration of the project.

Conclusion

Electricity remains a vital tool in powering education. Without electricity it will be impossible to operate educational resources like computers, desktops, projectors, and printers; it will also be difficult for students to study at night. The implementation of the Solar for Schools Community project in Igbeagu community was a step in the right direction towards helping students of St. Monich Model Academy get unhindered access to online educational resources through the use of their school computers. The students will also find the use of the school library more convenient with the availability of solar power to operate the fans at the library. One other highpoint of this project is that it guarantees a 24hour power supply for the benefitting school.

Students who undertook the solar technology training can also develop their skills around solar technology and become economically self-reliant.

Solar for Schools Community project is laudable and needs to be replicated across other energy deprived public schools in Nigeria.

CHEC Support

1. CHEC support covered expert designs for our IECs and publicity materials.
2. The support enabled the purchase of all the components used for the installation of the Solar PV System at the recipient school.
3. CHEC's support covered the travel, incidentals, accommodation and stipend for project team
4. CHEC support enabled us to provide access to electricity for 256 students
5. CHEC support has provided access to digital education for 256 students to learn computer and study at night in the library

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 youths to become renewable energy entrepreneurs through 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.

PHOTO GALLERY

Some pictures are attached below. But complete project pictures and videos can be found in the link below:

<https://drive.google.com/drive/folders/1aJXE1jBlyu3Hr5mfmTi8mqBWuUwzFHZA>

PICTURES



Students excitedly open their computers after the solar light powered the computer center



Project team pose with school proprietor, principal and teachers



Students in active participation during the installation



Students pose with placards



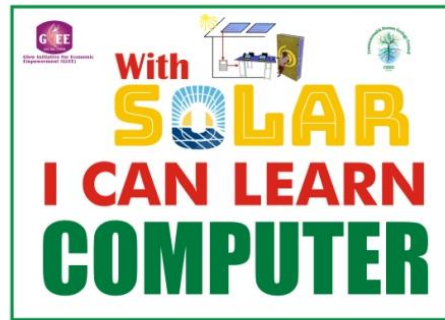
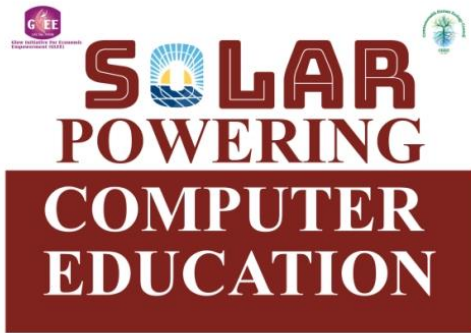
Project team at work getting set for installations



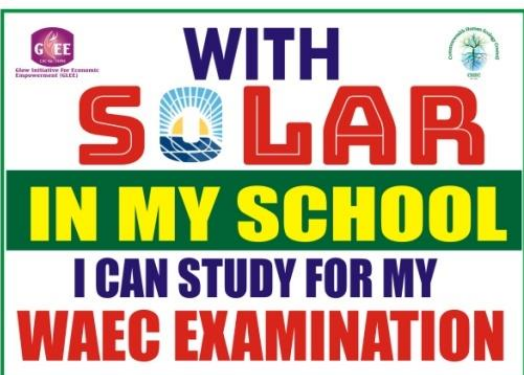
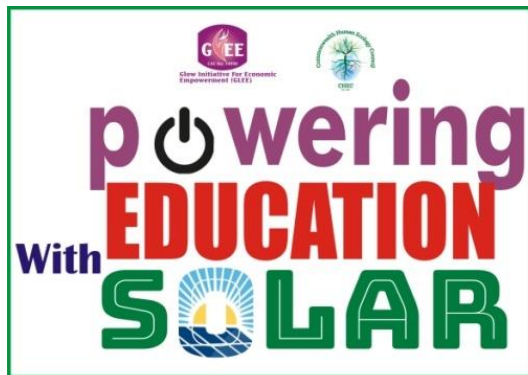
Arrival at Ebonyi State Capital



IEC MATERIALS



Placards used






GLOW INITIATIVE FOR ECONOMIC EMPOWERMENT

Presents



SOLAR FOR SCHOOLS COMMUNITY PROJECT

Powering Education in Ebonyi State



Roll-up flex banner used for the project



Sponsored by



SOLAR FOR SCHOOLS COMMUNITY PROJECT



SOLAR
INSTALLATION
FOR SCHOOL
LIBRARY

**POWERING
EDUCATION**



SOLAR
INSTALLATION FOR
SCHOOL
COMPUTER
CENTER

St. Monich Academy, Ibeagu Ebonyi State

Flyer used for awareness