

Solar Power for Refugees in Bidibidi, Uganda

1. Introduction

The certainty of the viability of the project – “SOLAR POWER FOR HEALTH, EDUCATION AND BUSINESS IN BIDIBIDI REFUGEE SETTLEMENT” – is anchored on the innovative bold response to the power challenge faced by the health and education institutions and business hubs in Bidibidi settlement. The bold response to the power challenge in Bidibidi settlement are clearly articulated below – under the following themes and subthemes – Problem – lack of critical infrastructure, Project objective, Bold and Innovative Solution, Project Activities, Expected Results, Measurable Indicators, Timelines, Monitoring and Evaluation, Risk Assessment, and Sustainability.

2. Problem – Lack of Critical Infrastructure

Bidibidi refugee settlement in Uganda is located in a hard-to-reach place where the national electric power grid has not reached. This has greatly affected the optimal performance of critical infrastructures in health, education and business sector. While the 4 Health Centres in Bidibidi settlement are compelled to run electric generators and small solar units to maintain the most basic health services most of the schools have little or no sources of electricity thereby frustrating any computer skill acquisition for the pupils. Similarly, small scale-businesses in the refugee settlements are always constrained due to lack of constant and affordable electricity. From thence was born this bold idea to intervene decisively in the problem of lack of electricity to run critical infrastructure in the Settlement as a pilot project. The 4 Level III Health Centres have small solar units providing minimal lighting, refrigeration, and charging. The ultra sound machines cannot be used to that effect. Each Health Centre has presently a little bit above 1.5 kilowatts from solar. Optimal functioning of these health centres requires 5.5 kilowatts of solar energy. The 12 Primary schools and 1 Secondary school in the settlement are constrained by insufficient lighting, lack of computer training facility and internet. The small-scale businesses are run on small electric generators which are unreliable and not cost effective due to the high cost of fuel and maintenance. For effective economic and social activities in this settlement there is need for 5.5 kilowatts of solar energy systems in each of the identified 4 business hubs/centres.

3. Project Objective

In general, the objective is to enhance the performance of the health sector, the education sector and the business sector through the installation of Solar Energy at 4 Health Centres, 4 Schools and 4 Business Hubs and the Construction and Equipping of 4 Schools with ICT.

4. Bold and Innovative Solution

Innovative Concept

The use of solar energy for health, education, and small-scale businesses has not been prioritised in the refugee settlements. With solar energy critical health interventions which has hitherto been handled by referrals will be carried out at the health centres, the pupils will not be digitally disadvantaged as is usually the situation with refugee pupils schooling in a hard-to-reach place where the refugee settlements are located, and finally, constant and affordable solar energy in the business centres within the settlement will boost businesses for the refugees and improve their livelihood.

Critical Intervention and concrete deliverables

This project focuses on 3 critical social services that are essential for a stable and smooth running of a community – health, education and business. The peculiarity of this project is fundamentally anchored in improving the life of the refugees by reducing cost and improving – health care, access to quality education and business. At the successful completion of this project the following changes are envisaged:

- Inaccessible health services due to lack of energy will be available at the health centres.
- More pupils will acquire computer know-how, access information through the internet, and have lighting for remedial studies.
- Existing small-scale businesses at the settlement boosted and new ones springs up.

5. Project Activities

A. Benchmarking

1. Baseline survey

B. Solar Energy

1. Site survey

2. Purchases of materials – solar panels, charge controls, batteries, etc.

3. Transportation

4. Installation

5. Training of Site overseers

C. ICT Centre

1. Site survey

2. Construction of 4 mini-halls

3. Furnishing of the mini-halls

4. Purchase and Installation of computers

5. Installation of Internet

6. Training of 8 teachers as computer instructors

D. Establishment of management committees

1. 3 Stakeholders meeting – (schools, health centres, businesses)

2. Formation of Committees

3. Formation of 4 Saccos at the Business Centres.

6. Expected Results

I. During the lifetime of the project:

1. Solar energy units installed in 4 health centres, 4 schools and 4 market centres.

2. 24 Technical overseers trained.

3. 4 ICT centres constructed and equipped in 4 schools.

4. 4 ICT instructors trained.

5. 12 Project committees formed.

6. 60 small-scale businesses powered with solar energy.

7. 4 Solar Energy Consumers SACCOS formed in 4 business centres.

II. At the End of the Project:

1. 4 Health Centres powered with Solar Energy.

2. 24 Solar Energy Technical overseers skilled.

3. 1 Secondary and 3 Primary Schools powered with solar energy.
4. Computer literacy undertaken in 1 Secondary School and 3 Primary Schools.
5. 4 ICT instructors conducting computer literacy 1 Secondary School and 3 Primary Schools.
6. 60 small-scale businesses running on sufficient and reliable solar energy.
7. 4 Solar Energy Consumers SACCOS managing the solar installations in 4 business Centres.

III. Over 3-5 Years:

1. Improved health services in 4 Health Centres.
2. 24 Solar Energy Technical overseers maintaining the solar energy installations.
3. Improved performance in 1 Secondary School and 3 Primary Schools.
4. Improved computer literacy in 1 Secondary School and 3 Primary Schools.
5. Improved 60 small-scale businesses with reliable solar energy.
7. Increased income of 60 small-scale business owners.
8. Improved welfare of the 60 small-scale business owners.

7. Measurable indicators

Insufficient and unreliable energy which is affecting social services and business is the source for the measurable data that will change with the intervention.

This intervention will be assessed to be cheaper and better by evaluating the services which were not available before the intervention and later available after the intervention.

In the health services, the quality of services can be established by asking the beneficiaries on the state of the services before the intervention and after. The management can provide the data on the number of services provided before and after the intervention.

In the education sector, quality of education can be assessed by comparing the performance of the pupils before and after the intervention.

In the business sector, the innovation can be assessed to be cheaper by comparing the number of businesses using the installed solar energy with the number of successful businesses before and after the intervention. The project impact can also be assessed by interviewing the beneficiaries (small business owners) on the cost of power on their businesses before the intervention and after the intervention.

8. Timelines

In terms of timelines, baseline survey, site surveys, purchase of materials and transportation of materials, construction of the mini-hall will be executed in the first quarter of the project. The installation (solar energy), furnishing of the mini-halls, purchase and installation of computers and internet will be done in the 2nd quarter. Training of the site overseers and training of teachers as computer instructors will be done in the 3rd quarter. The next 8 months will be used by the management to consolidate the responsibilities of the various stakeholders to ensure ownership. Apart from the periodic and the midterm evaluation, the last 1 month will be used to conduct an evaluation of the whole project.

9. Monitoring and Evaluation

In the 18 months, first 9 months will be for establishment of the project, namely - benchmarking the project, installation of the solar energy, construction and equipping of the ICT centre and training of technical personnel. The monitoring of the project will be done throughout the life cycle of the project. Monitoring tools will be designed by an M&E consultant to ensure that the project remains on track. The lessons learnt during the monitoring activities will be used to adjust the activities to ensure effectiveness and

efficiency. Midterm evaluation will be done in the 10th month and an end of project evaluation will be done in the 18th month.

10. Sustainability

The sustainability of this project is anchored in the relevance of the project to the local community, the galvanising of the local community to take ownership and subsequent management of the project and the incorporation of the private sector in the provision of solar infrastructure. This project proposal is relevant to the refugee community because sufficient energy will improve access to critical social amenities in the settlement. This creates the buzz of enthusiasm by the local community to ensure that the project is sustained. The community and service providers has been engaged in terms of need assessment in the health centres, schools and business hubs to ensure ownership and successful implementation of the project. The Office of the Prime Minister is already engaged in compliance with the refugee policy in working with refugees in Uganda. **SolarNow** – a solar energy company in Uganda – has also been engaged for the provision of the cheaper source of energy to run the essential services in a refugee setting and to improve small scale businesses.