

ENERGY FOR LIFE - BEST PRACTICE AWARD 2011

System / Location

Village Goes Solar – Economical Solar Plant / Tanzania



The aim of this project is to provide villages not connected to the grid with exemplary Solar Home Systems as objects of demonstration. The electricity produced is used for charging the mobile phones in the village and lighting the house of the person offering his roof for the installation and for keeping the installation in good condition. This person must necessarily be a Local Technician (LT), a technician for solar energy who has been capacitated by ZASEA previously (ZASEA has educated more than 50 LT so far). Additionally to managing the solar system in the village, the LT works as a bridge between ZASEA and the villagers, who can advise them on solar equipment or service any installation in the village. The Technician receives a service fee from the villagers, from which he/she has to save up a certain amount of money for replacing parts that may break down.

Planning/Installation

Zanzibar Solar Energy Association

Donation/Support

Rotary Club Hamburg-Bergedorf

Operator

Zanzibar Solar Energy Association

PROJECT DATA SHEET

Year the installation started operating	2011
Type of system	Solar
Type of energy produced	Electricity
Geographical position	5°56"S 39°20"E
Location	Kandwi, North Unguja, Zanzibar, Tanzania
Size of installation	2 m ²
Thermal Power of installation	85 Wp
Use of energy produced	Lighting, Mobile Phone Charging
Quantity of energy produced per day	app. 500 Wh
Type of financing	Grant
Source of financing	Rotary Club Hamburg-Bergedorf
System investment cost	1,700 US-\$
System cost per watt	20 US-\$
Income generated from installation	300 - 700 US-\$ from sale of energy and 110 US-\$ from saving kerosene (per year)
Maintenance cost per year	130 US-\$
Fossil fuel savings per year	100 lit kerosene
CO2 reduction per year	276 kg
Number of beneficiaries	all inhabitants of the Kandwi village region: 500
Presence of renewable energy country programme	no



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LEGAL FRAMEWORK

This project assists the government's efforts to electrify the rural areas of Zanzibar, since it is not possible to electrify each village at one time. We try to create a balance between the least connected areas and the less remote ones by choosing villages that would have to wait a very long for another energy solution. As our project ensures environmental sustainability and reverses loss of environmental resources, it corresponds to the 7th Millennium Development Goal. More particularly, it complies with the Tanzania Energy Policy to provide "modern energy services in rural areas". However, there are no government grants or initiatives supported for the project.

FEASIBILITY, SUSTAINABILITY AND REPLICABILITY

This project does have a tangible impact on its target groups, since it makes people in the village aware of the chances of using the sun for electricity, opens the chance for charging mobile phones in the villages thus avoiding long travels, and provides access to solar equipment for the village population.

Up to now, we have installed only one such system, but we intend to enlarge the project. Furthermore, we expect that some private systems will be purchased as a direct consequence to the exemplary system in the village. The project can easily be copied by other organisations in other regions, as long as some expert nearby can take care of the system.

The project design focuses on sustainability: It is absolutely mandatory that the LT should save money for replacements, because it is inevitable that parts of the system break down from ageing. Since the LT is a village member we are sure of the approval of the village population, and since he/she is a member of the Zanzibar Solar Energy Association as well, we need not be afraid that there are any misunderstandings between ZASEA and the operator of the system.

SOCIAL IMPACTS

The solar home system improves both its operators' and the village people's social position, as it offers electricity for the most basic needs. If the LT is eager to draw customers, he/she can also use the system as a source of income: except for the set rates he/she has to pay, the service fees are established by the LT. Additionally he/she saves the money he/she had to pay for kerosene lighting previously, and additionally helps to preserve the environment. Before the installation, the village population had no possibility to charge their phones, since there was no electricity available. For people in remote rural areas, this is even more difficult because it is very troublesome to travel on lowly frequented roads; they cannot easily make home visits instead of talking by mobile phone. Now there is enough energy for charging phones.

FINANCING AND FINANCIAL IMPACT

The whole project was financed by the Rotary Club Hamburg-Bergedorf. Indirectly, the beneficiaries are involved in the financing, though: the fees for charging phones that are used to pay for the maintenance costs. The LT does not have to buy the system, but it is not given to him for free, either: He/she has to pay a fee to his/her Local Technician Unit (the whole group of 50 LTs is divided in five regional Units, which are part of ZASEA and are able to work independently from the headquarters in Zanzibar Town). This money benefits the Unit of Local Technicians. We find the ratio between the investment costs and the results very satisfactory.

ADDED VALUE

The project does contain a specific added-value element: it is implemented in one of the most remote areas of the Zanzibar Islands. It therefore benefits those who are not subject to projects of bigger size than this, and which are implemented in areas where there are more people who can be listed as beneficiaries.

