

ENERGY FOR LIFE - BEST PRACTICE AWARD 2011

System / Location

Improving education and communication in a secondary school / Tanzania



The Oldonyosambu secondary school (about 1200 students) is an isolated school located in a rural area of north Tanzania. In 2010 a photovoltaic system of 840 Wp was implemented in the school to run a computer room of 13 laptops, 1 printer and internet LAN connection. Training for students and teachers (also from neighbouring schools) gave them the skills to use computer and internet facilities improving the quality of education, source of information and giving a quick connection to the rest of the world! For the first time, students had the possibility to sit for the computer part of the final national examination, which will increase their future job opportunities. The students also created a blog, *oldonyosambusecondaryschool.blogspot.com*, with the aim of creating contacts with other Tanzanian schools as well as foreign ones. The project's sustainability was set together with school and the local governmental institutions to take care of the management and maintenance aspects.

Planning/Installation

Istituto Oikos, Oikos East Africa
www.istituto-oikos.org
www.best-ray.com

Donation/Support

European Union

Operator

Istituto Oikos, Oikos East Africa
www.istituto-oikos.org
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PROJECT DATA SHEET

Year the installation started operating	2010
Type of system	Solar photovoltaic
Type of energy produced	Electricity
Location	Tanzania, Arusha region, Aumeru district, Oldonyosambu ward, Lemongo village
Geographical position	3° 9'12.01"S, 36°40'44.66"E
Size of installation	6 m ²
Power of installation	840 Wp (6 x 140 Wp)
Use of energy produced	Lighting, computer, printing, internet, mobile charge.
Quantity of energy produced per day	3360 Wh per day
Type of financing	Grant
Source of financing	European Union, 9th European Development Fund
system investment cost	6700 USD
System cost per watt	7,9 USD per Wp
Income generated from installation	6000 USD (savings on diesel for generator)
Maintenance cost per year	350 USD
Fossil fuel savings per year	4500L (diesel)
CO2 reduction per year	Approx. 12t of CO2 per year
Number of beneficiaries	1300 students, teachers & staff directly benefiting
Presence of renewable energy country programme	No



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LEGAL FRAMEWORK

This project is part of the BEST RAY (Bringing Energy Services to Tanzanian Rural Areas) project which aims to provide energy services through renewable/efficient technologies (solar, biogas, improved stoves, etc.) in an isolated rural area of north Tanzania. One of the main project objectives is to implement those energy systems in the local institutions (schools, hospitals, dispensaries, community centres). In particular, all the primary schools were provided with a PV system for lighting. During the project implementation, appeared a need for computer technology as an easy mean to link isolated community to the rest of the country and to the world, getting information, news, etc., or for printing services. Thus, the Oldonyosambu secondary school (about 1200 students), was provided with a larger PV solar system and a computer room with laptops, printer and internet connection, through the use of renewable energy (solar) in coherence with the main objective of the project.

FEASIBILITY, SUSTAINABILITY AND REPLICABILITY

The computer room project had already shown a positive impact as all the students are using it together with teachers of this school and also those from the neighbour primary schools. Now students and teachers can easily get information and improve the quality of education services. The teachers are also able to prepare and print school documents (before they had to go in Arusha, the nearest town – about 35kms !). Also they can use the computers as a new tool for teaching. The neighbour schools react very positively to this action and they already applied to have computers also in their schools. The room is well managed by the school itself, which has already organized class schedules in order to give the possibility to all the students (about 1200) to use the computers. The sustainability was set together with the school and the local governmental institutions, as to take care of the management and maintenance aspects.

SOCIAL IMPACTS

The target community (3 villages and about 20000 people), which is served by only this secondary school, is totally electrically isolated from the town, thus also having very poor communication. The introduction of the computer and internet has brought a big change on the communication/information aspect, which now can be done quickly and easily. This is now evident only in a small part of the community (students, young in general, teachers, village leaders) but soon it will likely spread more. After the school the students with computer knowledge, will have more opportunities to find jobs and/or to establish a local business (e.g. computer and printing services). Also they can improve other skills by themselves just learning and searching information through internet. The computer room created a new job position in the school: a new skilled computer teacher was hired by the government for the school. It could happen in the future also in the other schools that will also receive computers.

FINANCING AND FINANCIAL IMPACT

The solar system, lightning, the computers, printer and internet connection was totally donated and installed by the Best Ray project while the school was providing the building, the room facilities (furniture, doors and windows for security) and all the support needed during the installation and the afterward management. The financial management is ensured by the school assisted by the local governmental institutions, especially for important maintenance costs. A plan was proposed to use this system to generate profit for the school by charging mobiles, printing and computer services for the community to set a particular fund for the maintenance costs. This has still not been implemented but it might be activated. The investment cost gives as a result an important change for the community: the targeted young students and teachers using these new skills and tools will contribute to the social and economic community development.

ADDED VALUE

The project together with the school has always tried to target both gender students equally while organizing training on computer and internet use; the school had this attitude in its teaching activity even before the project. While teaching computer, we tried to also combine awareness and information activities on renewable energies and environmental issue, e.g. organizing competitions between students on the preparation of writing documents or presentations using computer and internet about these arguments; in some cases we also gave to the best students prizes such as small solar torches.

