

ENERGY FOR LIFE - BEST PRACTICE AWARD 2011

System / Location

PV and Lighting for Usalama House - PV & LED lighting / Tanzania



Usalama House was instigated and is run by a UK registered charity, Faraja Support (number 1125285). It provides a safe productive living environment for seven otherwise underprivileged children near Arusha in Northern Tanzania. The installation of a 125 Wp photovoltaic solar system and LED lighting was achieved through successful collaboration between Faraja Support, the Tanzanian Renewable Energies Association (TAREA) and Kakute from Tanzania. The new facilities, which cost \$2,000, will facilitate household activities such as doing homework after sunset without the need for kerosene lamps, which are damaging to their health and is expensive to operate. They will also enable the charging of mobile phones and the use of a laptop that was donated by friends of Faraja Support organization. The collaborative approach adopted, whereby immediate priority needs were addressed, can readily be extended or reproduced in other similar environments, regardless of location. Kakute and Faraja Support now have further renewable projects they wish to develop.

Planning/Installation

Faraja Support
www.farajasupport.org.uk
 Kakute Ltd. (Arusha, Tanzania)
www.kakute.org

Donation/Support

Donations from Michael Ross (Faraja Support Trustee) & Faraja Support.
 Help from TAREA (Tanzanian Renewable Energy Association) www.taesa-tz.org

Operator

Local Faraja Support staff at Usalama House, Arusha, Tanzania, with assistance from Kakute Ltd.

PROJECT DATA SHEET

Year the installation started operating	2011
Type of system	Solar
Type of energy produced	Electricity and LED lighting
Location	Oloirowa, near Sanawari, Arusha, Tanzania
Geographical position	Northern Tanzania
Size of installation	1.0 m ²
Thermal Power of installation	125 Watts
Use of energy produced	Lighting, laptop and mobile phone charging
Quantity of energy produced per day	360 watt hours (depends on time of year)
Type of financing	Own money
Source of financing	Own money
system investment cost	\$2,000
System cost per watt	16 \$ per watt
Income generated from installation	\$500 per year
Maintenance cost per year	\$50
Fossil fuel savings per year	50 litres kerosene
CO2 reduction per year	150 kg per year
Number of beneficiaries	12 persons
Presence of renewable energy country programme	Yes



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LEGAL FRAMEWORK

This was a small scale project that was not linked to any laws, guidelines or operational programmes in the district. It was not supported by any grants or initiatives other than fundraising by the UK registered charity, Faraja Support.

FEASIBILITY, SUSTAINABILITY AND REPLICABILITY

The impact on the target group (10 children and two care givers) was immediate and significant. They now have light in the evenings to enable activities, such as homework to continue after sunset. They no longer suffer health risks and danger of fire from kerosene lamps. They have a charging point for mobile phones and they can use a laptop for educational, recreational and communication purposes.

As funds become available, the partnership of Faraja Support and Kakute, now initiated, plan to extend the project to solar PV and water heating for off-grid locations. The existing PV installation is simple and cost free for the House Mother to use. The installers, Kakute, are close-by to solve any problems, should they arise. When batteries need replacing they will be paid for by Faraja Support, using money saved from lower house running costs. Follow-up projects will aim to encourage local entrepreneurs by providing microfinance schemes and training where necessary.

SOCIAL IMPACTS

Usalama house is integrated into local village life and is becoming a model for others in the area. The children are doing well at local private schools (near or at the top of the class), which promises well for their future social positions and earning capacities. The completed project is intended to be the first step towards sustainable living, i.e. reduction or elimination of the use of kerosene, gas or charcoal. Other members of the village have expressed interest in following our lead.

The target group, viz. 7 children, were either orphans or living in dire circumstances before joining Usalama house. They, together with the House Mother and her assistant and 3 House Mother's children are now well looked after. The solar project has significantly enhanced their environment by providing safe light after dark and access to a laptop for further learning opportunities.

FINANCING AND FINANCIAL IMPACT

The project was a private venture. In addition to its immediate value, it was intended to show what can be done and thereby attract funding for more extensive projects. This financing has been rewarded by immediate improvements for the Usalama House children. Moreover, collaboration with Kakute and TAREA has been initiated, which raised new possibilities and applications for further funding.

So far the beneficiaries at Usalama House have not been involved in the financing but the children will be encouraged to earn money by selling the mobile phone charging service to other members of the village. As a start-up project the ratio of investment costs to results are considered very satisfactory.

ADDED VALUE

The project signposted a way for the use of renewable energy on a small scale and thereby brings rapid benefit to rural areas in Tanzania. It furthermore employed the use of very efficient LED lighting, which, although currently expensive, promises to reduce dramatically in cost as it becomes more widely adopted.

The results not only enhanced the environment for the children in Usalama House but, in itself, improved their educational opportunities (e.g. ability to study after sunset) and to start learning about business (selling the service of mobile phones charging). There were benefits also for the installation team, which comprised Faraja Support, Kakute and two German volunteers. Groundwork has been laid for further collaborations.

