

Renewable Energy Jobs & Access

A SERIES OF CASE STUDIES

Sub-Saharan Africa Solar

PROJECT PROFILE

The Rural Energy Foundation (REF) is a non-profit organisation founded in 2003 based in the Netherlands and a member of the Alliance for Rural Electrification (ARE). In 2010 REF won the EU Sustainable Energy Europe Award and the International Ashden Award.

By strengthening entrepreneurship and the supply chain, REF hopes to increase the use of solar energy in rural Africa. Currently REF carries out operations in nine Sub-Saharan African countries – Burkina Faso, Ethiopia, Ghana, Mali, Mozambique, Senegal, Tanzania, Uganda, and Zambia.

REF started its SolarNow programme in 2007, an initiative to identify and support suitable local retailers and distributors, technicians and sales personnel; training them in solar energy technology, marketing, sales and business administration; and helping them start up and expand businesses selling solar energy products.

Since 2007, REF has sold over 57 000 solar home systems (SHS) (cost: USD 250-630 each) and 36 000 solar lanterns (cost: USD 25-90).

The initial objective was to provide access to affordable solar energy to 110 000 households and small businesses. As of late 2011, the number of people in the program had already reached 492 000 – indicating greater than expected success.

Marketing campaigns, such as village demonstrations, newsletters and radio shows, play a crucial role in stimulating awareness and demand for solar technologies.

JOBS AND TRAINING

REF seeks to develop a sustainable supply chain, providing employment and income opportunities to local people and increasing their skills. Product quality, reputation, and clients' trust (buffered by after-sales service and warranties) are key to this effort. It has proved more efficient to work with local staff than to rely on regional managers and volunteers (as was initially planned).

Local entrepreneurs who adhere to REF's quality requirements and complete the offered training are allowed to use the SolarNow brand name, and become part of its supply chain.

As of late 2011, there were 200 SolarNow retailers working in the nine African countries. The expansion of local retail networks has created jobs and provided skills-training for about 200 technicians.

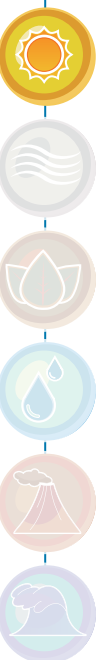
There are no fixed prices for the solar products. Local SolarNow retailers are encouraged to study and understand the market and what customers can afford. The capacity of the retail network is constantly being improved through trainings, coaching sessions, and after-sales visits to local retailers.

SUPPLY CHAIN

Upstream Linkages

The photovoltaic modules and charge controllers for the products sold by SolarNow are manufactured in China, the United States, and Europe. But the batteries are often manufactured domestically.

Solar systems are assembled and installed by local technicians trained by REF. A four day training course focuses on technologies, marketing, and sales. REF staffs often visit the technicians on-site, which facilitates problem solving as well as the opportunity to demonstrate new products.





PROJECT SNAPSHOT

Through its SolarNow program, the Rural Energy Foundation, a non-profit organisation based in the Netherlands and a member of the Alliance for Rural Electrification (ARE), is working to increase the use of solar energy (solar home systems and solar lanterns) in rural Africa. It is currently active in nine countries.

» Technology

Solar PV

» Employment

200 retailers in the nine countries. Expansion has provided jobs for about 200 technicians, or 1 per retailer on average

*The data from the case study was provided by the Alliance for Rural Electrification. Population and GDP data are from the World Bank Indicators (<http://data.worldbank.org/indicator>). Energy access data from United Nations Development Programme and World Health Organization (2009) report, *The Energy Access Situation in Developing Countries: A Review Focusing on the Least Developed Countries and Sub-Saharan Africa*.*

** Modern fuels refer to electricity, liquid fuels, and gaseous fuels such as LPG, natural gas and kerosene.*

Downstream Benefits

The cost of electricity for local communities decreases significantly with the use of solar technologies. In REF's experience, a SHS system pays for itself in one to three years through savings in kerosene and batteries. REF estimates that an average household saves about 30% on its energy expenses.

These savings mean that less money flows out of the local community and instead can be used for other purposes and income-generating activities.

FINANCING

Customers pay full price for SHS and solar lanterns, normally in cash. However, the initial investment is still a huge burden for many households. In response, REF developed several financial models to help solve the issue. It started working with microfinance institutions in 2008, providing local retailers and clients with cheaper loan options. Encouraging results of a 2010 pilot with "hire purchase" in Uganda prompted REF to replicate the model in other countries.



COUNTRY INFORMATION

	Population (Millions)	GDP/Capita (USD)	Electrification Rate (%)			Modern Fuels Access* (%)
			Average	Rural	Urban	
Burkina Faso	16.5	536	10.0	6.3	25.0	6.8
Ethiopia	82.9	358	15.3	2.0	80.0	4.2
Ghana	24.4	1 238	54.0	23.0	85.0	11.1
Mali	15.4	602	17.4	3.7	48.7	0.2
Mozambique	23.4	410	11.7	6.3	21.0	2.7
Senegal	12.4	1 042	42.0	18.0	74.7	41.1
Tanzania	44.8	527	11.5	2.0	39.0	2.8
Uganda	33.4	509	9.0	4.0	42.5	0.4
Zambia	12.9	1 253	18.8	3.3	47.0	15.8

The Policy Advice and Capacity Building Directorate (PACB) welcomes your comments and feedback at pcb@irena.org.

These local case studies were prepared by IRENA in cooperation with the organisations described. They intend to explore the employment dimension of renewable energy development and deployment in rural areas in the developing world. For a more detailed version of this case study, please see IRENA (2012), *Renewable Energy Jobs and Access*, which is available at:

http://www.irena.org/DocumentDownloads/Publications/Renewable_Energy_Jobs_and_Access.pdf.

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