



Renewable Energy Jobs & Access

A SERIES OF CASE STUDIES

Tanzania (A) Solar

PROJECT PROFILE

Solar Company A, an E+Co portfolio company, installs, maintains solar photovoltaic (PV) systems (20-500 Watts for households; up to 3 000 Watts for health centres) in both rural and urban areas of Tanzania. The company is headquartered in Dar es Salaam, Tanzania's capital with 2.5 million inhabitants. The office serves as the overall hub of operations.

An office in Arusha handles sales and maintenance activities in the northern rural areas of Tanzania. Karatu is one of the five districts in the Arusha Region of Tanzania being served by the company. It has a population of 178 434 (2002 census) out of Arusha's total 1.3 million people.

The company has sold more than 1 000 PV systems since it was established in 2002, and expects 15-20% sales growth in the next five years. About 80% of its business consists of contracts with institutions in rural areas such as health centres and schools, whilst the remainder includes commercial enterprises and households.

Solar PV is experiencing fast growth in Tanzania. This is driven by the difficulties in providing and extending reliable electricity services and the rising demand for power (urban industries and communications). The small diesel generators that are prevalent in remote rural areas are becoming more expensive to run due to increases in fuel costs.

The Tanzanian government has aggressively promoted the reliability, usefulness and safety of solar PV systems. It facilitates a nationwide solar PV awareness campaign on radio and television. These factors have also contributed to the growing demand for solar products in rural areas.

JOBS AND TRAINING

Company A currently has 14 staff — including four managers, an accountant, a driver, administrative staff/secretaries, three technicians and three sales officers. All employees are Tanzanian nationals.

Salaries range from USD 150-200 per month for Technicians and Sales Officers, and USD 70-100 per month for other staff. Information regarding managers' salaries is not available.

The company has 20 technical contractors and two drivers on call. It provides health insurance to its full time employees, as well as housing and transport allowances and a professional education fund for staff.

The company, along with others in Tanzania, has benefited from numerous technical training programs offered by UNDP/GEF (United Nations Development Programme/Global Environment Facility) and other development aid groups. These training programs have created a well-trained pool of technicians available to meet the demands of growing solar companies.

Solar battery recycling remains a challenge in Tanzania. Some outlets sell used batteries, but a reliable recycling infrastructure remains to be built. This could become the source of additional jobs.

SUPPLY CHAIN

Upstream Linkages

The company imports its inventory from manufacturers and distributors in the United States, China, India and Germany. The products imported include: solar panels, solar batteries, regulators, inverters and solar lights.





PROJECT SNAPSHOT

Solar Company A sells, installs and maintains solar photovoltaic systems in the capital of Dar es Salaam and rural areas around Arusha. Among its customers are households, institutions, and businesses.

- » **Technology**
Solar PV
- » **Employment**
14 employees; 20 technical contractors and 2 drivers

COUNTRY INFORMATION

- » **Population**
44.8 million people
- » **GDP/capita**
USD 527
- » **Electrification rate**
11.5% average
2% rural
39% urban
- » **Access to modern fuels***
2.8%

*The data from the case study was provided by E+Co. 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..*

African Energy, a U.S.-based distributor, supplies over 80% of the company's inventory. The company sources its DC lights from Phocos in Germany and solar lanterns from D.Light (India and China). The company itself does not produce equipment, but adds value by installing solar PV systems and training customers to maintain these systems.

Downstream Benefits

The most typical type of business created with the help of small-scale solar PV systems are barber/hair cutting shops; mobile charging stations; and small enterprises such as inns and bars. PV systems used for lighting also help rural entrepreneurs extend service hours. This increases the flow of income to business owners and improves services to the customers. The cost of a 135 Watt PV system used for a mobile phone-charging business can be earned back within seven months or less.

A rural family in Africa uses about 60 litres of kerosene a year—the second-largest expenditure after food. PV systems allow substantial savings of kerosene, candles, or wood and offer considerable health benefits.

FINANCING

The company secured debt financing from E+Co to procure its inventory in 2006 and in 2011. This allowed the company both to compete for larger government tenders and to purchase and install the products before payment was received.

The company sells to small clients paying cash, as well as to larger institutional clients on a contract basis. This multi-customer approach allows the enterprise to diversify its product offerings and revenue sources, and therefore to mitigate risks.

For future growth, the company will identify microfinance partners to facilitate credit sales. It will pilot its first credit project in early 2012.



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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