

# Renewable Energy Jobs & Access

A SERIES OF CASE STUDIES

## Tanzania (B) Solar

### PROJECT PROFILE

Solar Company B, an E+Co portfolio company, installs, maintains solar home systems (SHS; 14-80 Watts) for residential (40% of sales) and institutional customers (60%). It is headquartered in Mbinga, a peri-urban town in the Ruvuma region in southwestern Tanzania which is home to about 1.1 million people. The company estimates that 10% of households in the region can afford a SHS.

The company has sold close to 300 photovoltaic (PV) systems since it was established in 2006, and expects 10-15% sales growth in the next five years.

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 solar PV awareness campaign via radio and TV. These factors have also contributed to the growing demand for solar products in rural areas.

### JOBS AND TRAINING

Company B currently has nine employees — including one manager, two technicians/shopkeepers, one part-time support staff, and five sales representatives. Only one staff member, a technician/shopkeeper, is female.

Salaries for technicians range from USD 100-150 per month. Support staff earns USD 50-70. Salaries for the manager and sales representatives are not available. The company does not provide health insurance.

Technical training programs offered by development aid agencies have created a well-trained pool of technicians for solar companies. The company's sales technicians were trained by a SIDA/MEM (Swedish International Development Agency/The Ministry of Energy and Minerals) program and a wholesaler.

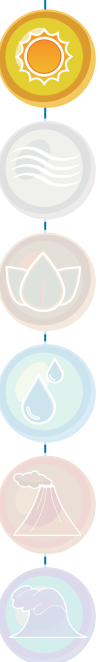
Solar battery recycling remains a challenge in Tanzania. Some outlets sell used batteries, but a reliable recycling infrastructure remains to be built. This could become the source of additional jobs.

### SUPPLY CHAIN

#### Upstream Linkages

There are six large wholesalers of solar PV panels and accessories in Dar es Salaam: Solatek, Chloride Exide, BP Solar, Rex Investments, Zara Solar and Umeme Jua Limited (UJL). UJL supplies the company with complete systems of the following brands: Free Energy Europe, GE Energy and Steca (complete with a ten year manufacturer's guarantee). Batteries are purchased from Chloride Exide and Victron (one and three year warranties, respectively). Sundaya, an Indonesia company, is the supplier of solar lights. Rex Investment and Zara Solar specialises in solar PV panels and accessories for 50 Watt peak and higher capacities, which are obtained from NAPs, GE Energy and Steca.

Given that all equipment is manufactured abroad, the economic benefit to Tanzania is limited to the wholesaling mark-up, as well as local retailing and installations.





## PROJECT SNAPSHOT

Solar Company B sells and installs solar home systems in southwestern Tanzania, bordering Mozambique. Access to electricity in the Ruvuma region is currently limited to 2% of the population.

- » **Technology**  
Solar PV
- » **Employment**  
9 employees

## 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..*

## Downstream Benefits

The most typical type of business created with the help of small-scale solar PV systems are barber/hair cutting shops (four new shops resulted from PV systems sold by Company B); mobile charging stations; and small enterprises such as inns and bars. PV systems used for lighting also help rural entrepreneurs extend service hours and thus an increased flow of income.

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 substantial health benefits. Patients at rural health clinics benefit from improved quality of services (e.g. night deliveries of babies; refrigeration of medicines).

## FINANCING

In 2007, E+Co provided a USD 50 000 loan to the company to purchase its inventory. The company was unable to secure local financing.

The company sells on a cash basis to residential and institutional customers. Sales are made directly to customers through a shop. Retail prices range from USD 225 to USD 650 for household SHS, and USD 1 400 for institutional systems.

Partnership with a local microfinance institution and building a track record of government contracts would be required to scale up the company's household market.



The Policy Advice and Capacity Building Directorate (PACB) welcomes your comments and feedback at [pcb@irena.org](mailto: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](http://www.irena.org/DocumentDownloads/Publications/Renewable_Energy_Jobs_and_Access.pdf). The views expressed in this publication are those of the author(s) and do not necessarily represent those of IRENA or its Member States.