

## Profile: Mobisol

*Bringing Solar Power to Off-Grid Homes in East Africa*



### Challenge

Just 9 percent of the rural population of Sub-Saharan Africa has access to electricity (Public Private Partnership in Infrastructure Resource Center n.d). The rest use kerosene lamps and other fossil fuel sources, which are inefficient, unhealthy, harmful to the environment, and very costly.

### Innovation

Mobisol ([www.plugintheworld.com/mobisol/](http://www.plugintheworld.com/mobisol/)) offers high-quality solar home systems (SHS)

and direct current (DC) appliances to rural customers in Rwanda and Tanzania, financed through an innovative payment scheme. The pay-as-you-go installment method circumvents initial investment hurdles for customers who could previously not afford a high-quality SHS.



Mobisol systems are available in four sizes: 30, 80, 120 and 200 watts. The smallest version can light two rooms and charge four mobile phones a day. The largest version powers multiple lights as well as consumer appliances, such as laptops, TVs, and refrigerators; it can also charge up to 10 mobile phones simultaneously. Mobisol also designs business kits for entrepreneurs. Such systems can power multiple phone chargers or a barber's hair clipper.

The company offers a 20-year warranty on the solar panel and a 3-year warranty on the battery and lighting equipment. While the product is under warranty, the company provides free maintenance and repair. Using a global system for mobile communications modem allows the company to both address maintenance problems swiftly and lock the system if payments are not made.

To buy the smallest system, customers make a USD 27 down payment and agree to pay USD 9 a month for 36 months. They then transport the SHS to their homes themselves; a Mobisol technician comes to the customer's home the next day to install the system. Payments are made via mobile phones. After customers complete the 36-month installment plan, Mobisol electronically unlocks the SHS, which can then be used free of charge.

In 2014 the company established the Mobisol Academy to train local entrepreneurs to service customers and represent Mobisol as a leader in the sustainable energy industry in East Africa. After three weeks of theoretical and practical training, the entrepreneurs start providing customer services.

### Impact

Since its establishment, in 2010, Mobisol has installed over 70,000 SHSs reaching more than 300,000 people in Rwanda and Tanzania and reducing CO<sub>2</sub> emissions by approximately 30,000 tons a year. The systems have increased the number of hours of light in the evenings, allowing children to study and families to spend more time together. One-third of Mobisol customers become at least part-time entrepreneurs, using the additional electricity they generate to offer services to their communities.

### Scaling Up

Connecting the rural areas in which Mobisol operates to the grid is not financially viable; even government electrification strategies have started looking at decentralized energy solutions like SHS. There is thus high demand for off-grid electricity supply and Mobisol has been experiencing triple digit growth to respond to the demand. The company operates in Rwanda, Tanzania and more recently Kenya, with plans to go into Ethiopia and other countries. In Rwanda the company is coordinating its expansion strategy closely with the government, which invited Mobisol to complement its national electrification strategy and provides Mobisol with contacts at the village level.

Scaling up the program depends critically on the presence of mobile networks and mobile money services. Both are already widespread in East Africa, and penetration is increasing.

Two main factors constrain expansion. The first is finance, as systems are paid for overtime rather than upfront and this requires financing. The second is the lack of DC appliances. Mobisol's systems work only with DC appliances, which are more energy efficient and require less maintenance than alternating current (AC) appliances. In the countries where Mobisol is operating, no sales infrastructure for DC appliances exists; Mobisol therefore has to supply users with these products, which often need to be imported and can face foreign exchange restrictions.

### Reference

Public Private Partnership in Infrastructure Resource Center. n.d. *Rural Electrification Funds: Sample Operational Documents and Resources*. <http://ppp.worldbank.org/public-private-partnership/sector/energy/laws-regulations/rural-electrification-funds>