

Continental Divide

Are African Energy Investments On Target?

by Terri Hathaway

Across Africa, millions of businesses and residential consumers have been hit by costly energy blackouts – an ongoing problem now exacerbated by a major energy shortage in South Africa. Poor planning, decades of under-investment, a slowness to adopt energy efficiency measures and renewable energy sources, and stalled large supply projects are all to blame.

But because of the continent's huge "electricity divide" – only one in four is plugged into the grid – the electricity crisis affects just a sliver of all Africans. Away from the grid, lighting, cooking and other "modern energy services" have largely been neglected. According to the 2006 World Energy Outlook, in Africa, "large electricity generation, transmission and distribution projects primarily benefit industry and urban populations, while most rural and poor people depend on biomass [e.g. wood cooking fuels]. Effective, comprehensive policies need to include the forms of energy used by the poor – for cooking, lighting, productive appliances and transport – rather than concentrate on provision of electricity alone as an end in itself."

Anne Wheldon, chair of the judges for the UK-based Ashden Awards for Sustainable Energy, is concerned that emphasis on electrification has hindered other technologies by diverting potential investments. She believes it also raises expectations unreasonably. "I was quite shocked recently to find that senior staff in a development organization assumed that increasing access to grid electricity would significantly decrease fuelwood use. Many people continue to cook with wood or charcoal even when they have electricity," she notes. Wheldon argues that the biggest added-value for energy investments comes from improved stoves and fuels. According to the World Health Organization, more people die annually from indoor air pollution related to cooking than from malaria. Africa has a quarter of the annual 1.5 million deaths worldwide from indoor air pollution, most of whom are women and children.

The following stories begin an ongoing exploration of the complexities behind Africa's energy divide, and steps being taken to solve it.

Lighting Homes in Tanzania

If you mention Zara Solar around northern Tanzania, you'll likely get more than a few smiles. Like most of sub-Saharan Africa, Tanzania suffers from low rates of access to energy: only 2% of rural Tanzanians have access to electricity. Since 2005, Zara Solar has sold over 10,000 solar photovoltaic (PV) systems, making it the leading provider in the region and helping up to 300 new families plug in every month. The company employs five full-time technicians and contracts with another 25 technicians.

Mohamedrafik Parpia could not have imagined the success that would come his

way from providing solar energy in northern Tanzania. "In 1998 we opened a family business which was dealing with sales of electrical items and household appliances. Customers were inquiring on solar panels and we began to order a few systems from Kenya. In 2000, a researcher from the Netherlands walked into the shop and explained to me all about solar and how I could do business better. She connected me to various institutions which supported me and today I am in business."

Parpia says there wasn't much of a local market when he started selling systems in 2000. "A UNDP-GEF pilot project in Mwanza region helped open the market up." Zara Solar received a US\$50,000 startup loan from US-based E+Co. "The challenge for us now is getting finance from local banks to cope with the growth."

Kerosene in the area costs US\$1.25 per litre in more urbanized areas, but it can be double that in remote areas with poor road access. For a typical family using 6-9 liters a month, this represents a monthly cost of up to \$11.25, a substantial burden in a region where the minimum employed wage is only \$43 a month. Zara Solar's systems typically require an up-front cost equivalent to two years of kerosene. Zara Solar has established a micro-financing system to help new customers overcome the barrier of capital costs.

"There is an orphanage far from the grid that was trying to get a connection from Tanesco. They were informed it would cost \$25,000. They decided to have a solar sys-

tem instead, at a cost of \$1,000. Today they are happy using the system for lighting and TV. Initially they were using a generator, which was expensive."

Some customers would be easily accessible by the grid, but long lag times for connections help turn them to Zara Solar. One new customer lived near the university in Mwanza, an area already served by the national utility. The utility said it would take 18 months to connect her residence. She opted to buy a solar system from Zara Solar.

"Some people complain that the costs of a PV system are on the higher side. They worry whether they are buying good products and the systems will work," says Parpia. Zara Solar has jumped these hurdles by creating a financing program for customers, educating them on how to spot poor quality PV systems, and providing reputable technicians.

Parpia has found the Tanzanian government very supportive of the solar industry, especially in its effort to remove all import duties and VAT on all solar products.

In 2007, Zara Solar received a prestigious Ashden Award for Sustainable Energy. "I became famous overnight with so many opportunities on my doorstep." Within eight months, business had doubled. In April 2008, Zara Solar also won a highly competitive grant from the World Bank's Lighting Africa program. With continued hard work, creativity, and support, Parpia has no doubt that Zara Solar will continue to thrive. ●



Solar-powered TV (with a system supplied by Zara Solar) keeps these street children entertained. Photo: Ashden Awards