

3.6 Lighting Africa Clinic

Overview Session Objective

By 2030, over half of the world's projected 1.3 billion people without access to electricity will be in SSA, as population growth exceeds the pace of rural electrification. The majority of the rural population in SSA still uses kerosene, wood fuel and candles for lighting, damaging both individual health and the environment. This session presented the latest developments in off-grid lighting and microenergy technologies, including how they can complement rural electrification programs. The session also introduced the Lighting Africa (LA) and GIZ EnDev programs in Ghana, Kenya, and Rwanda, which are dedicated to the rural electrification product market scale up. The session was designed to create a discussion between REAs and the private sector on strategies for long-term sustainability of the off-grid lighting effort.

Key Issues and Challenges

- Market intelligence shows that there is an unmet demand for LED products in the region but suppliers are having difficulty securing credit to import the LED goods and lack rural distribution infrastructure.
- LED product manufacturers struggle to find business partners due to high market barriers; they perceive Africa as a high risk market with little or poor regulation and policy.
- When are subsidies appropriate and not? What is the best role for the public sector?

Case Study | Lighting Africa

LA is an energy access program designed to move the market toward cleaner lighting with diverse off-grid lighting products designed to satisfy “base-of-the-pyramid” consumer needs in Africa and Asia. LA includes five components: (i) quality assurance; (ii) market intelligence; (iii) consumer education; (iv) business support and access to finance; and (5) policy and public sector operations.

The program operates along the market development curve from quality assurance and market intelligence to catalyzing venture and mainstream financing. Quality assurance is a key component of the program's activities, with strict testing methods for system and component performance and manufacturing quality/durability.

LA's pilot projects in Ghana and Kenya have demonstrated that government policy and strategy have a significant impact on the private sector's ability to advance in these markets. Strong demand has also been a key to success in these countries. LA program expansion countries are Ethiopia, Mali, Senegal, and Tanzania.

Case Study | Rwanda

In Rwanda, GIZ has implemented a variety of results-based financing (RBF), as temporary interventions to create revenues from markets more lucrative and/or more certain than the base case, to accelerate investment. The main characteristics of the program are private sector delivery and innovation along with private sector leveraging of public funding for capital investment. RBF allows market players to overcome market barriers such as high capital costs. Three markets are targeted: LED lanterns, biogas digesters, and renewable energy powered community grids.

The benefits of an LED market would include financial and health benefits for households and small businesses, as well as the avoided dispersion of 31,000 tons of CO₂ into the environment. The presentation highlighted the various channels through which lamps were distributed in the survey countries to allow households to test products over a few nights; lending to particularly poor households; and collaboration with large local companies.

GIZ found that consumer preference changed upon familiarity with the products, and handling of newly introduced products revealed the need for more robust systems. Systems with poor quality, dim light, and/or short life spans replace much less than one kerosene lantern per household; high-quality systems can replace more than one kerosene lantern. An additional conclusion was that the weak point of most lamps was the charge controller. Further investigation into overall household needs and long-term field tests are needed to truly understand product performance.

Discussion Sessions

The first discussion session was dedicated to the private sector and service providers; the panelists represented Barefoot Power, Sun Transfer, Solaid Kenya, and Solar Sister Uganda. During this session, the participants discussed access to finance and competition with low-cost, low-quality products.

Some of the participants thought a focus on high quality was warranted, and others said the focus should be on marketing and sensitization, which helps people make an informed choice, and financing strategies, which make high-quality products accessible. Some experiences indicate that consumers sometimes start with the cheapest product, and after a bad experience may upgrade to a better performer.

The role of government and the importance of standards were also discussed during the session. Private sector stakeholders highlighted barriers encountered in customs clearing and the lack of global standards for off-grid lighting. Subsidies can also interfere with private sector activities: directly subsidizing enduser prices of small products can severely hamper market growth. Alternative assistance methods are needed, such as debt financing for containers and technical assistance.

The group also covered distribution models for reaching households at “the last mile.” These households have been successfully reached through microfinance institutions (MFIs), women’s groups, local technicians and NGOs, depending on the setup. Dedicated micro-entrepreneurship programs and public sector initiatives such as school campaigns have also been reaching these households.

A second discussion followed among the REAs of Senegal, Tanzania, and Mali. The REAs outlined how they are working with the private sector to nurture markets for off-grid lighting through feasibility studies and regulatory frameworks.

Key Findings

Some of the key messages emerging from this session include:

- Suitably designed dealer financing and RBF schemes may allow suppliers to overcome SSA market barriers and to accumulate the necessary capital to achieve sufficient margins to self-finance product import shipments. The issue of costly rural distribution might be alleviated through smart distribution chains cofinanced by MFIs, microfranchise enterprises, and by involving community groups, including youth groups and women, and/or by combining social infrastructure subsidies with fully commercial markets for small systems.
- It is probably possible for high-quality off-grid lighting to compete with inexpensive, low-quality products if sufficient attention is given to consumer outreach, advertising, creating an image for high-quality solar, and advertising (and possibly supporting) service delivery such as warranties.
- Virtually all private enterprises strongly argue that direct subsidies are counterproductive in the case of small lighting products such as solar lanterns and small SHSs. Furthermore, they are not needed for market growth in this segment because it will grow fast by itself. The private sector believes that government efforts in this segment of rural electrification should be centered on consumer education (on quality), access to finance, training of skilled local retailers, and creation of an enabling environment. In this line of argument, direct subsidies should only be provided for social infrastructure such as schools, clinics, and street lights.

Presentations and Speakers

"Lighting Africa: Catalyzing Markets for Modern Lighting," Leo Blyth, Energy Specialist, World Bank.

"Results-Based Financing: LED lanterns in Rwanda," Benjamin Attigah, Programme Manager, EnDev, Rwanda.