Improving Quality of Off-grid Products
Building Lab Capacity and Providing Training Infrastructure

A variety of modern off-grid electric lighting and energy technologies have emerged as potential solutions for areas not connected to the electric grid, in the last decade. However, many of these solar products are not of good quality. Consumers who use these products are often dissatisfied with their performance. A strong quality assurance and testing program is essential to build consumer confidence in solar energy systems for off-grid applications. The Lighting Asia/India program has brought the internationally established Lighting Global quality assurance framework to India and is making it relevant to the Indian context. The program has commissioned research aimed at understanding end-user preferences in rural India with regard to the quality and performance of off-grid lighting products.

The Lighting Asia/India program has partnered with The Energy and Resources Institute (TERI), New Delhi, to build capacity and lab infrastructure for testing off-grid lighting products in India. The program is also providing training and skills to laboratory staff in testing these products.

Building Lab Capacity

IFC’s Lighting Asia/India program has supported TERI in the upgrade and expansion of its solar lighting laboratory by:
- designing it in line with international best practices
- equipping the lab with the latest technology and equipment
- increasing the number of testing benches

The laboratory can test products in accordance with methods specified in the International Electrotechnical Commission’s (IEC) framework for evaluating off-grid lighting products. These test methods were jointly developed by IFC and the World Bank prior to adoption by the International Electrotechnical Commission under IEC Technical Specifications 62257-9-5.
Strengthening Training Infrastructure

The program is providing training, and technical support to the staff at the TERI Solar Lighting Laboratory. A week long workshop was conducted in March 2013 to provide in-depth training on the test methods and technical support for equipment set-up. For maximum impact, these were delivered as a combination of classroom sessions and hands-on lab training sessions.

The lab will emerge as a testing hub for the South Asia region and become one of the handful of labs worldwide designed to test products in line with the process laid down by the International Electrotechnical Committee (IEC). Initially, the laboratory will conduct tests according to the IEC’s Initial Screening Method and Market Check Test Methods. After it has gained experience, TERI will test products according to the IEC’s Quality Test Method.

Indian Market Contextualization

A critical part of the quality assurance work for IFC is to ensure that Lighting Global quality assurance framework is appropriate to the off-grid lighting market in India. As part of this effort, the program is conducting consumer-oriented field research to collect information about preferences for off-grid lighting products from a cross section of users in rural India. The results will be used to inform the Lighting Global Quality Assurance framework. The knowledge gained through the study will also be relevant to manufacturers, distributors and other stakeholders. In related initiatives, the program held a number of outreach sessions to highlight the relevance of internationally accepted quality assurance methods. This includes outreach to microfinance institutions and engagement with the government’s Bureau of Indian Standards to align Indian standards with the international testing approach.

With the launch of the testing laboratory in India and the introduction of the international quality standards, the Lighting Asia/India program is helping scale up the use of quality assured, off-grid lighting products in the Indian sub-continent.

“Once fully developed, the lab will be among the few in Asia that will be accredited to test solar lighting products according to global benchmarks, taking forward our work of developing quality and long-performing solar lighting systems.”

Dr. R K Pachauri, Director-General, TERI, in his address at the Clean Energy Ministerial 2013, New Delhi where the lab initiative was showcased.

CONTACTS
Anjai Garg | AGarg1@ifc.org
Chandrasekar Govindarajalu | CGovindarajalu@ifc.org

About IFC
IFC, a member of the World Bank Group, is the largest global development institution focused exclusively on the private sector. Working with private enterprises in more than 100 countries, we use our capital, expertise, and influence to help eliminate extreme poverty and promote shared prosperity. IFC leverages the power of the private sector to create jobs and tackle the world’s most pressing development challenges.
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About Lighting Asia/India
Lighting Asia/India is a market-transforming program with the objective of promoting the value and presence of modern off-grid lighting amongst two million people in rural India. Modern off-grid lighting includes solar lighting appliances, home systems and connections to renewable energy mini-grids. The program is designed as a series of interventions to alter market behavior, reach two million people and displace at least 64,000 tons of CO₂ by the end of 2015.
For more information, visit www.lightingasia.org

In partnership with

About Lighting Global
IFC supports the development of the global off-grid lighting market through its Lighting Global platform. Under Lighting Global, IFC manages the product quality assurance framework, including product testing, verification, and standard-setting. IFC’s partnerships with key global stakeholders are undertaken through Lighting Global. This includes IFC’s support for the Global Off-Grid Lighting Association, and the World Bank Group’s sponsorship of the biannual off-grid lighting industry meeting.