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LIGHTING AFRICA
Catalyzing Markets for Modern Lighting

AN INNOVATION OF IFC International Finance Corporation World Bank Group
THE WORLD BANK

LIGHTING AFRICA NEWSLETTER

IN FOCUS

Consumer Education Campaign Scoops Kenya Marketing Award

Lighting Africa's *Songa Mbele na Solar* (get ahead with solar) campaign last year won the 2012 MSK Award for best experiential campaign in the NGO/Government category.

The Marketing Society of Kenya (MSK) Award recognizes creativity, innovation and utilization of marketing best practice.

It considered quality of materials, activities undertaken, strategy and its execution, results, and usefulness to the targeted audiences.

Lighting Africa started consumer education in in Kenya 2010 to raise awareness on quality solar lamps available on the market that could be used to replace polluting kerosene lamps.

Kerosene is the most widespread lighting fuel in Kenya: 75% of homes interviewed for the 2005/06 Kenya Integrated Household Budget Survey stated that their main lighting fuel was kerosene, then electricity and third, firewood.

"Good products alone cannot achieve desired behavioral change," says Mr Nana Nuamoah Asamoah-Manu, Lighting Africa's program manager for Kenya. "Behavior change must also be fostered through sustained consumer awareness and education."

By December, the campaign had run more than 1,100 community forums and 190 road shows across Kenya reaching more than 260,000 people in 2012.

Apology for Web Interruptions

We experienced a lot of down time on our website from mid-November to end January due to new web hosting arrangements.

We sincerely apologize for inconveniences caused as you tried to access various resources on our website.

Should you experience any more problems, please contact us through bwalter@ifc.org.

LIGHTING AFRICA NEWS

About Seven Million Using Solar Lights in Africa

About seven million people without electricity in Africa are enjoying access to high quality, clean lighting as a result of the joint efforts of Lighting Africa, and its partners.

A Senegalese woman cherishes the prospect of clean solar light, and being able to charge her phone using her solar lamp © Bruno Demeocq/Lighting Africa

Results just in show the program's partner companies sold more than 600,000 lanterns in the six months to December 2012.

Cumulatively, the sales of quality-assured solar lights in 2012 grew by 120%, over 2011volumes.

"This continued bullish growth in sales volumes bespeaks a massive unmet need for clean lighting in rural unelectrified Africa, and represents a vast business opportunity for investors and entrepreneurs," says Lighting Africa's IFC Program Manager, Itotia Njagi.

Between 35% and 40% of people in Africa are connected to national electricity grids, the rest relying on expensive, polluting fuels such as kerosene for their lighting needs.

According to Lighting Africa's soon-to-be published Africa Market Study, the Africa off-grid lighting market has been recording a doubling of sales of quality-assured solar lighting products every year for the last three years.

The Lighting Africa program, which develops markets for modern solar lights, has also developed a quality assurance framework for modern off-grid lights which includes test methods and quality standards. The framework is designed to encourage truth-in-advertising and enhance product quality while allowing for innovation.

Over the past three years, an increasing number of companies have submitted products for testing. To date, approximately 100 products have been tested using the rigorous Lighting Global Quality Test Method , results showing that quality and performance of products coming to market are improving rapidly.

"This is an indication that the program's quality guidelines and specifications are gradually gaining acceptance in design of the new products entering the market, and providing consumers a wide choice across an equally wide price range," says Mr Itotia.

As part of its market development activities, Lighting Africa undertakes a variety of research studies on the technical aspects of producing high quality lights for rural areas without electricity, studies that address product sustainability concerns, and market surveys to provide investors, distributors and other stakeholders with pertinent market intelligence. The study findings are readily available resources on our website.

d.light Wins Zayed Future Energy Prize

d.light CEO Donn Tice receives the Zayed Future Energy Prize Award © d.light design

d.light design has been awarded the Zayed Future Energy Prize, Small and Medium-sized Enterprise (SME) category.

The prize is given by the government of Abu Dhabi in honor of the environmental conservation legacy of Sheikh Zayed bin Sultan Al Nahyan, Abu Dhabi's late ruler and Founder, UAE.

It recognizes innovative initiatives to conserve energy, cut greenhouse gas emissions, increase production and use of clean, renewable energy.

"We are very honored to win the Zayed Future Energy Prize," said d.light Chairman and CEO Donn Tice. "d.light represents an essential part of the future of energy: small-scale, distributed energy solutions at the community, household and individual level. Winning this prize will enable us to transform millions more lives that we would not otherwise reach as quickly."

Winners were selected from 579 applicants from 88 countries. Siemens emerged winner in the Large Corporation category receiving a non-monetary award; Ceres bagged the US$1.5m NGO prize. Dr. Jose Goldemberg, a physicist at Brazil's Institute of Electro-technics and Energy was awarded the Lifetime Achievement Award worth US$500,000.

A new Global High School Prize worth $500,000 was introduced this year, the prize money being shared equally among 5 regions (Africa, Asia, Americas, Oceania, and Europe).

Dr. Sultan Ahmed Al Jaber, Director General of the Prize, said: "Our finalists represent the future of the renewable energy and sustainability landscape and have demonstrated capacity to embody the spirit of the Prize."

d.light, a for-profit social enterprise, operates in more than 40 countries around the world, with four regional hubs, 10 sales offices and 6,000 outlets. Started in 2007, d.light has empowered over 12 million lives with clean lighting.

More Solar Lanterns Pass Lighting Global's Rigorous Quality Tests

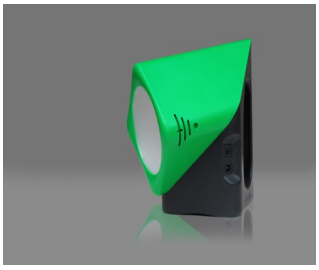
Three new solar charged off-grid lighting products passed Lighting Global Minimum Quality Standards, increasing product choice at various pricing levels.

One is the BrightBox 2, a multi-room solar lighting system from One Degree Solar, a for-profit social enterprise that manufactures and distributes micro-solar products aimed at improving access to clean energy. This product can charge mobile phones, radios and other devices with USB ports, and comes with two replaceable LED bulbs.

The Bright Box 2

The second is the ECCODiva 118, a versatile lantern with four brightness settings from ECCO Electronics Pvt. Ltd, an Indian company committed to develop affordable, environmentally friendly products.

The ECCODiva 118 is a portable light with mobile phone charging capacity that can be used as a task light, a desk or reading light, or can be mounted on a wall or hung from a ceiling to provide room lighting.



The ECCODiva 118

The third product is the Little Sun, a small light with an in-built solar module for charging.

This light can be used as a hand-held task light, or hang with a cord to provide room lighting. It is developed by Little Sun, a social business working to provide sustainable lighting to off-grid communities.

To date, a total of 49 modern off-grid lights have undergone quality-testing and passed, and available to families and communities without access to electricity.

The Little Sun

Solar Manufacturer Recognized for Excellence in Business Management

South African solar lights manufacturer, Bettalights, has been recognized for good business management in the country's 2012 Technology Top 100 Awards, where it competed in the "Small Enterprise" category.

Bettalights which manufactures the quality-assured BettaOne and BettaTwo lanterns for unelectrified homes, took home the Award for Excellence in the Management of Technology, and made it to the finals in three other categories - the Management of Systems, Innovation and Research.

The TT100 Business Awards Program was launched in 1991 by the South African Engineering Association to foster a culture of technological innovation and excellence.

The program celebrates South African companies for their business prowess in the management of technology, innovation, people, systems, research and sustainability. The focus of last year's Business Awards was innovation and commercialization.

"The TT100 program has a thorough national and international adjudication process, and the metrics to identify organizations that meet the Award's requirements. Top 100 qualifying organization. As such, a number of organizations were rejected for not meeting the required criteria," said Carol Varga, the Program Administrator when releasing the results in December.

As a TT100 finalist and winner, Bettalights is entitled to use the Technology Top 100 Seal of Recognition, for a period of one year, on its advertising materials and website.

Bettalights, whose two solar lanterns have passed Lighting Global's Minimum Quality Standards and Product Performance Targets, was also nominated as one of the top three finalists in a couple of the Africa Energy Awards in 2011.

ASSOCIATE NEWS

Solar Enterprises Take to 'Crowd-funding' to Boost Lantern Supply

Solar lantern manufacturers and distributors have taken to 'crowd-sourcing' to raise funds to build their supply of lights destined for rural communities across Africa.

Nuru Energy, for example, has partnered with Kiva, an innovative online 'crowd-funding' platform that connects lenders to entrepreneurs in developing countries, to finance village entrepreneurs in Rwanda who make a living selling and charging Nuru's portable LED lights.

The funds will be used to equip village based entrepreneurs with Nuru Lights to sell, and a pedal-powered charging device, the POWERCycle, which is used to recharge the lights.

The Nuru Energy POWERCycle and portable Nuru lights

In December, Kiva members quickly raised funds that bought Nuru lights for ten village level entrepreneurs within two hours.

Nuru is now working at raising funds for 750 entrepreneurs.

SolarAid, a distributor of solar lanterns, also launched a 'crowd-funding' initiative in December in a bid to supply solar lights to 2,000 people in rural Zambia, and by January had raised adequate resources.

The money enabled them to buy solar lanterns in bulk from China and ship them to Zambia, and supply customers in the Chadiza and Copperbelt districts with d.light and Sun King Pro lanterns.

"Without the loan, it would not have been possible to bring so many lights into Zambia. Purchasing in bulk also helps us keep costs down and transfer this benefit to the final customer," says Mr John Keane, Managing Director of SunnyMoney.

Likewise, One Degree Solar also 'crowd-funded' to provide solar lanterns to rural communities in Kenya in December, raising enough money for their first project from 230 online supporters within hours.

Says Sameer Hajee, Nuru Energy's CEO and co-founder: "The Kiva partnership is important to us as it allows us to further expand our base of village entrepreneurs, which means increased penetration of Nuru Lights in Rwanda. Specifically, our entrepreneurs gain access to working capital they need for their micro-franchises."

In addition to selling its lights to through traditional distributors, Nuru Energy also sells its lights through networks of village-based entrepreneurs. Nuru Energy has over 1000 entrepreneurs serving over 30,000 families in East Africa, including over 800 entrepreneurs in Rwanda, most small business owners or farmers.

Its POWERCycle charges up to five Nuru LED lights at one go, each of which can then provide lighting for up to 10 nights in households without electricity.

According to the company, each POWERCycle can service more than 200 lights, providing 100 families with improved lighting and saving them between $17,500 and $47,500 in lighting costs over a period of five years.

The company also says switching from Kerosene to their Nuru lights slashes green-house gas emissions by 80 tons over a five year period.

"Altogether, this means that each POWERCycle can help 300 children study at night and spare 500 people from inhaling noxious fumes from kerosene lights every month," says Mr Hajee.

Since its founding in 2005, Kiva has worked with microfinance institutions (MFIs) to provide loans to people without access to traditional banking systems. In 2012, Kiva also started to finance non-MFI partners such Nuru Energy, SolarAid and One Degree Solar.

To date, the Kiva platform has mobilized about 880, 000 lenders who have given about $400,000 in loans most targeted at poverty alleviation activities such as improving access to clean, renewable energy.

RESOURCES

LED Lights and Eye Safety

Lighting Global has published the second issue of the new Eco Design Notes titled "LED Lights and Eye Safety".

The Note focuses on eye safety issues related to Light Emitting Diodes (LEDs) which are now widely used in many lighting products.

The Note answers questions such as: Are LED lights bright enough to pose a risk to adults or children who use them? Can reading in the dim light of some LED lights be harmful for children doing homework? Does the bluish light from many such lights cause harm, or disturb the sleeping patterns of users?

The Note strives to answer these questions using findings from independent tests of a variety of modern, off-grid lighting products.

The Lighting Global Eco Design Notes series focuses on health and safety issues, and is for a general audience including consumers.

The first Note in published last September looked at battery toxicity and its implications for designers of sustainable off-grid lights.

Lighting Global is committed to addressing the relevant consumer and industry concerns. You may suggest topics at any time by emailing: research@lighitngafrica.org.

Measuring Solar Module Performance Using the I-V Curve

A new Technical Briefing Note titled "Understanding Solar Modules Specs and Testing" is now available to help manufacturers and buyers check performance of solar modules at a low cost.

"To maximize performance and provide good value to consumers, solar photo-voltaic modules must perform as advertised and be properly matched to electronic circuits or batteries they are powering," say authors of this technical guidance note.

The Note discusses how solar module performance relates to off-grid lighting systems, and how best to cost-effectively assess module performance using the current-voltage (I-V) performance curve.

It presents best practices for using I-V curves to appropriately size PV modules, to understand how solar powered products work, and make low-cost measurements of solar modules.

It draws from several decades of combined experience of testing solar modules by members of the Lighting Global Quality Assurance team, and is designed supplement the test procedures presented in the Lighting Global Quality Test Method.

This is the 11th of the Lighting Global Technical Briefing Notes. All are available online.

ENERGY DECADE

Shape the Future of Energy!

The United Nations has declared 2014 – 2024 the Decade of Sustainable Energy for All in order to spur governments and all other stakeholders to improve energy efficiency, increase their use of renewable energy, and cleaner, energy-efficient technologies.

Ahead of the decade, a consultation on sustainable energy for the future has been launched to build a vision on global energy priorities beyond the 2015 Millennium Development Goals deadline.

"Sustainable Energy is essential for achieving our Millennium Development Goals and for opening up new opportunities for growth and prosperity in every country of the world," says Mr. Kandeh Yumkella, Director-General of UNIDO, and Chair of UN-Energy in a press statement.

You can take part in ongoing e-consultations at the World We Want 2015 platform upto 17 February. The consultations are aimed at determining global energy goals, targets and indicators, among other issues. A background Framing Paper on Energy is available online to inform and guide discussions.

The online consultations will be augmented by meetings with the various stakeholders in Africa, Asia and Latin America, and the findings collated into a final report expected by end of March 2013.

This report will be tabled at a high-level meeting in Oslo, in April, to inform a Declaration on key energy recommendations and the potential global energy objectives for the future.

Energy is one of 11 themes being addressed by the UN Development Group to define the global development agenda beyond 2015. Last year was marked as the Year for Sustainable Energy for All.

OFF-GRID NEWS

Kerosene-Lit Night Fishing Untapped Market for Clean Lights

Night fishermen in Tanzania spend up to half of their take-home income on kerosene for lighting, and maintaining their lamps, a new study has found. Yet they could catch as much fish using clean lights, such as solar lamps, and save 35-50% of their incomes.

The study, published this January by The Lumina Project, is titled *"Alternatives to fuel-based lighting for night fishing; Field tests of lake and ocean applications in Eastern Africa"*.

It was undertaken by scientists at the University of Bayreuth, Germany and Lawrence Berkeley National Laboratory, USA.

The study authors calculated that Tanzanian fishermen use as much lighting fuel as would about one million ordinary household lanterns.

"We identified significant market potential for the uptake of LED lighting by night fishermen, which could justify retooling and marketing investment by lighting manufacturers.

Fishermen use kerosene lamp to lure fish into their nets in night fishing © Lawrence Berkeley National Laboratory, The Lumina Project

We estimate an existing expenditure in the order of $70 million per year for fuel and lamps by fishermen across all of Lake Victoria, Lake Tanganyika, Zanzibar, and the ocean coastline on mainland Tanzania," they say.

Many of the 12 to 18 million artisanal fishermen in developing countries fish at night using kerosene lanterns to attract fish into their nets. In Tanzania, this activity involves more than 100,000 lanterns used in 17,000 boats.

"This market is particularly ripe for LED lighting alternatives," emphasizes the study. "Night fishermen have exceptionally high baseline costs for fuel, and lamp purchase and maintenance. While smaller in aggregate, the fishing market is in many ways easier to reach (being) ... more concentrated geographically (around lakes and shorelines)."

According to the study, the cumulative retail value of LED lights that is required to provide the same lighting service as kerosene lamps is $17 to 21 million, in addition to $6 to $7 million per year in replacement expenditures.

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The **Lighting Africa Newsletter** is a briefing on the latest developments in the Lighting Africa program and the off-grid lighting market.
It is provided to all organizations and individuals registered through the Lighting Africa website www.lightingafrica.org.
Lighting Africa does not endorse the contents of the articles submitted by its members.

Lighting Africa, a joint IFC and World Bank program, seeks to accelerate the development of commercial off-grid lighting markets in Sub-Saharan Africa as part of the World Bank Group's wider efforts to improve access to energy. Lighting Africa is helping mobilize the private sector to build sustainable markets to provide 2.5 million people with safe, affordable, and modern off-grid lighting by 2012. The longer-term goal is to eliminate market barriers for the private sector to reach 250 million people in Africa without electricity, and using fuel based lighting, by 2030. Improved lighting provides significant socio-economic, health and environmental benefits such as new income generation opportunities for small businesses. Lighting Africa is a key element of the global Solar and LED Energy Access (SLED) program, an initiative of the Clean Energy Ministerial.

For more information, please visit *http://www.lightingafrica.org*

Lighting Africa is implemented in partnership with: The Africa Renewable Energy and Access Grants Program (AFREA) • The Asia Sustainable and Alternative Energy Program (ASTAE) • The Energy Sector Management Assistance Program (ESMAP) • The Global Environment Facility (GEF) • The Good Energies Inc. • Italy • Luxembourg • The Netherlands • Norway • The Public-Private Infrastructure Advisory Facility (PPIAF) • The Renewable Energy and Energy Efficiency Partnership (REEEP) • The United States.

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