

LIGHTING AFRICA

N E W S L E T T E R

IN FOCUS

Nuru – Beyond Solar



The Nuru Light is pedal-powered © John Briggs

There is more to modern off-grid lighting than solar lamps. While most (19) of Lighting Africa supported products are solar portable lanterns, one new product has just joined the program and introduced an innovative dynamo powered technology.

The Nuru Light is a modular light, which is pedal-powered – in other words, charged by cycling. Customers who purchase a Nuru Light for 4-6 USD come to charge it weekly at their local shop, where the retailer will charge them around 0.20 USD for 20 minutes of gentle pedaling. This is enough for a full charge and approximately 28 hours of quality light.

This new technology and business model opens new avenues for Lighting Africa to make quality, affordable light accessible to low income households and SMEs in Africa.

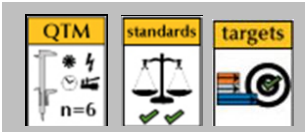
The Nuru Light was designed specifically for base of the pyramid (BoP) markets in rural Africa. Nuru spent a year in the field in Rwanda surveying over 600 households, most of whom were using kerosene for lighting. They found out that over 90% of their potential customers work in agriculture, earn less than 2 USD a day, and are unable to meet the upfront costs of renewable energy products.

Nuru then developed a low up-front cost product, requiring small recurring payments for charging – just as telecom companies sell low cost phones and then

LIGHTING AFRICA NEWS

Lighting Africa clears the path for Carbon Finance

The **United Nations Clean Development Mechanism (CDM)** Executive Board just approved an update to the methodology for crediting emissions reductions from clean off-grid lighting, bringing it into close alignment with Lighting Africa’s quality assurance framework.



Under the updated framework, products that meet Lighting Africa Minimum Quality Standards and Recommended Performance Targets based on test results from the Lighting Africa Quality Test Method (LA-QTM) **will likely also be qualified for CDM projects.**

Testing through the LA-QTM affords manufacturers an easy path to entry for accessing carbon financing.

Originally approved in Cancún a year ago, the methodology—officially called AMS.III-AR—provides requirements for product quality, performance, and project accounting to ensure the validity of carbon credits. This year’s update follows months of engagement by Lighting Africa personnel.

The official documentation for the methodology can be difficult to decipher, so the following is a quick summary of the key requirements and how they compare with Lighting Africa’s Quality Assurance framework:

Product Performance: Requires the same brightness levels (20 lumens or 25 lux over 1,000 cm²) and similar run time as Lighting Africa. The run time requirements in AMS.III-AR are less stringent: 3.5 hours per day of solar charging and 7 hours from a full battery if the product is charged by the grid (compared to 4 hours and 8 hours for Lighting Africa).

Product Quality: Requires the same levels of water exposure and physical ingress protection (depends on produce form factor), and similar levels of lumen maintenance and warranty protection as Lighting Africa. The lumen maintenance requirement is more stringent, at 80% or 85% maintenance of original brightness after 2,000 hours of operation—depending on the crediting period (compared to 70% for Lighting Africa). The warranty requirements are also more stringent at one year (compared to six months for Lighting Africa).

Testing Requirements: LA-QTM is the main reference for product test procedures, among other allowable procedures (most of which are less affordable and not tailored for the off-grid lighting market). The test results from LA-QTM are sufficient to complete the Project Design Document for CDM.

The new method, available at the following link, is valid beginning Dec 09, 2011:
<http://cdm.unfccc.int/methodologies/DB/1ERDOJQX62OD2BH65G74XM28Z2CL53>

New energy policy in the making in Kenya (cont. on p 2)

Lighting Africa facilitated the **Kenya Renewable Energy Association (KEREAA)** stakeholder deliberations on the Kenyan draft National Energy Policy, on 29 November in Nairobi. Key stakeholders in the energy sector, such as KEREAA, the Energy Regulatory Commission, the Kenyan

airtime. Consumers, who would previously spend around 0.20 USD a day on dangerous, polluting and expensive kerosene, can now recoup the cost of a 4-6 USD lamp and its weekly charging in four to five weeks.



The Nuru Light © Michelle Ewing

Cost was not the only aspect that Nuru took into account when developing the light system: consumer preferences also informed the design. Each LED light can be used individually in a variety of ways, such as a headlamp, worn around the neck, hung from the ceiling, resting on a flat surface of bottle mounted, or be combined with other Nuru LED units.

Similar to most of the Lighting Africa supported products, the Nuru Light System can also be used to charge a cell phone, and even a radio.

This new technology for clean off-grid lighting also requires a different business model from the solar lanterns that Lighting Africa is supporting. Consumers do not charge the Nuru Light themselves at home (as they might with solar charged lamps), but instead customers go to a local retailer ("entrepreneur") to recharge their lights. In this business model, Nuru is distributing its lamps through a network of village level entrepreneurs who operate microfranchises.

These entrepreneurs sell the lamps and recharge them, using the NuruPOWERCycle. Nuru recruits these entrepreneurs from local cooperatives and trains them in using the POWERCycle, then provides them with a loan of lights from one of their microfinance partners. In addition to creating the world's first commercially available pedal generator, Nuru has also developed POWERGrid, a plug-in charging system for those with grid-connections, and POWERSolar, a solar panel that can charge up to five lights at once.

The Nuru Light is already in use in several districts of Rwanda; it is coming soon to Kenya, Uganda, and Tanzania.

Learn more about the Nuru Light's product performance:

<http://www.lightingafrika.org/specs/nuru-lighting-system-.html>

Visit Nuru's website: <http://nurulight.com/>

New energy policy in the making in Kenya (cont. from p 1)

Investment Authority, GIZ, Carbon Africa, UNIDO and the Independent Power Producers met to make comments on the draft for the government's consideration.

The KERA and its members are advocating for a great role for decentralized renewable energy technologies in the new national energy policy, to increase energy access in the rural areas in Kenya.

The draft energy policy reviews the energy sector framework to align it with the new Constitution that was adopted in August 2010. The energy policy seeks to ensure adequate, reliable, quality, equitable, sustainable and cost effective supply of energy to meet national and county development needs, while protecting and conserving the environment. The deliberations are part of a six months consultation process between the Kenyan government and civil society on the energy policy.

Visit the Kenya Renewable Energy Association (KERA) website: <http://keraa.org/>

REMINDER: 2012 Outstanding Product Awards Application deadline: December 20, 2011



Lighting Global seeks to recognize outstanding off-grid lighting products that are available for purchase by people without electricity access in countries like Senegal, Kenya or India. Nominated products will be judged on quality, performance, design and affordability. The awards will be presented at the Lighting Africa 2012 International Business Conference and Trade Fair in Dakar, Senegal, October 2012.

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Outstanding Product Awards 2012 Deadlines

20 December 2011 - Submit application form online:

www.lightingafrika.org/awards

06 January 2012 - Deliver three samples for initial screening round to Lighting Africa Team

27 January 2012: Wire transfer of fee payment must be received

01 March 2012 - Finalist products must be available for warehouse sampling

15 August 2012 - Lighting Africa Quality Test Method results must be available

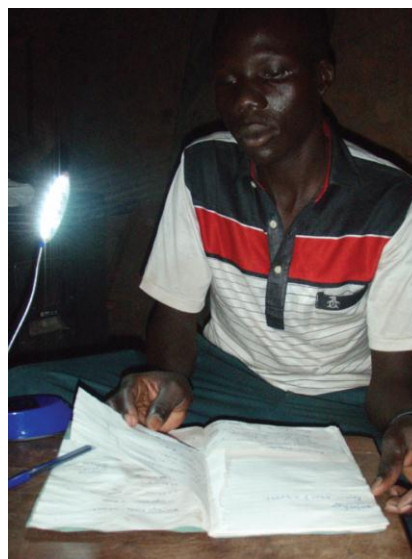
Full eligibility requirements, terms and conditions, forms, and details on the awards process at: www.lightingafrika.org/awards

For specific inquiries, please contact:

productawards@lightingafrika.org

STORIES FROM THE FIELD

Uganda student uses off-grid lighting for phone charging business, boasting earnings and higher marks in school



"There is now reason to pass my exams." –Bakole

Bakole Joel reading for his future © Barefoot Power

Story adapted with the permission of Barefoot Power

Bakole is a Primary seven pupil at the Ojuku Primary school, in the Maracha-terego District of Aii-Vuu Sub-County, Uganda. With the help of his Village Savings and Loan Association (VSLA), Bakole was able to purchase a Barefoot Power Firefly™ 12 Mobile lamp. He uses the lamp to run a business charging mobile phones and to study at night, both of which have dramatically changed his life for the better.

In the past, Bakole's only source of income was to sell tobacco that he grew. Tobacco is the main cash crop in the area and, while Bakole recognized it was not an ecologically sustainable business, it was his only option for generating cash.

Still, this business was not enough for him to earn enough savings for his family. He had dreamed of being able to help take the burden off his elderly father, Muzee Erina Albino, from having to pay for his educational materials — books, pens, uniforms, etc.

Then he had a brilliant idea. There was only one location for **cont. p 3**

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phone charging in his village — a video hall that had a generator and offered charging services, but only operated at night, making it difficult for people to get to the charging center. If he could borrow 25,000 Ugandan Shillings (UGX) (~US \$12.50) from the Village Savings and Loan Association and save up enough from his tobacco sales to match that amount, he could purchase a Barefoot Power Firefly™ 12 Mobile lamp. Then, he could both use it for personal use, to study at night, and as a means to make money from offering phone charging services at times that are more convenient for the community.

His idea worked. Bakole's name became associated with a successful commercial phone charging point in the village and people prefer his place to the generator at the video hall because it is more convenient. Today Bakole boasts earnings of about 2,500 shillings (\$1.25) daily from his phone charging business alone, and is seeing increasing demand, with many people asking for bigger systems that can charge multiple phones simultaneously. He believes his savings will only continue to increase from here.

"I had bought this system [Firefly 12 Mobile] for my personal use given that waiting at night for charging was very disturbing for me." —Bakole

"My system has been more convenient for the community and I have attracted more customers." —Bakole

Bakole confirms the benefit of reaching out to his community's VSLA and his excitement over his Firefly 12 Mobile. Because of his lamp, his hope of helping his father by contributing to his school materials is becoming a reality. Furthermore, with a stable source of light for reading at night, Bakole believes that his academic performance is improving. Being able to acquire a consistent source of income from his Firefly 12 Mobile phone charging business has proved to be able to both increase his savings capacity and help him meet his scholastic needs.

Barefoot Power is an Associate of Lighting Africa, and has three products which meet Lighting Africa's minimum quality standards and pass its recommended performance targets.

Learn more about the Firefly 12 Mobile's product performance:
<http://www.lightingafrica.org/specs.html>

Visit Barefoot Power's website: www.barefootpower.com

Learn more about BASE technologies: call or text 0716 781212, 0776 781212, 0756 781212. e-mail: info@basetechnologies.us

ASSOCIATE NEWS

d.light founder Wins National Peace Corps' 2011 Shriver Award

Sam Goldman, founder of d.light Design, won this year's National Peace Corps Association (NPCA) Sargent Shriver Award for Distinguished Humanitarian Service, including a \$1,000 award at the Promise of the Peace Corps Gala held on September 24, 2011 in Washington, DC.

The Sargent Shriver Award for Distinguished Humanitarian Service is awarded by the National Peace Corps Association to a Returned Peace Corps Volunteer who continues to make a sustained and distinguished contribution to humanitarian causes at home or abroad or is an innovative social entrepreneur whose actions will bring about significant long-term change. Sargent Shriver was the first Peace Corps Director and Founder.

Sam Goldman was nominated for his success and innovation as a social entrepreneur who is changing the world through his start-up, d.light design (www.dlightdesign.com), which aims to improve the quality of life of 50 million people by 2015 and 100 million people by 2020, by replacing every kerosene lantern with a clean, safe, and bright light. d.light works "to enable households without reliable electricity to attain the same quality of life as those with electricity."



Sam Goldman (center) accepting his award at the National Peace Corps Association's The Promise of the Peace Corps Gala, surrounded by journalist Christ Matthews (Swaziland '68-'70) and NPCA President Kevin Quigley (Thailand '76-'79) © NPCA

The idea for d.light design spawned from an unfortunate experience Sam witnessed while serving as a Peace Corps volunteer ('01-'05) in Guinagourou, Benin, when the son of a neighbor was badly burned by a kerosene lamp. It was enough to convince Sam to dedicate himself to finding ways to help people in the developing world get safer and improved lighting. After finishing his service and becoming a student at Stanford's Business School, d.light was created.

"The traits which brought Sam Goldman to the forefront were great ingenuity and a true global perspective," said David Schweidenback, one of this year's judges and a previous Shriver Award winner.

"Sam Goldman and his colleagues at d.light exemplify the spirit of Sargent Shriver," says president of the National Peace Corps Association, Kevin Quigley. "They are practical idealists, marrying a big goal with an even larger vision: a world with safe, clean and affordable lighting for all."

d.light is a Lighting Africa Associate. Its "S250" solar-powered lantern passes Lighting Africa's minimum standards and meets its recommended performance targets. To learn more and to download the d.light S250's standardized specification sheet, visit: <http://www.lightingafrica.org/specs.html>

Go to d.light's website:

http://www.dlightdesign.com/home_global.php

Learn more about past Shriver Award Recipients:

<http://www.peacecorpsconnect.org/about/awards/the-sargent-shriver-award/>

Story adapted from: <http://www.peacecorpsconnect.org/2011/10/social-entrepreneur-sam-goldman-wins-the-shriver-award/>

Putting household energy on the climate change agenda

The African Energy Ministers Conference, “*Road to Durban: Promoting Sustainable Energy Access in Africa*,” that took place in Johannesburg on September 15-16, 2011, recognized the potential of low-cost household energy solutions, such as solar LED lighting, in advancing its access for energy agenda.

Lighting Africa and the Global Alliance for Clean Cookstoves organized a side event on household energy during the Ministerial conference, to present clean lighting and cooking solutions to energy policymakers from around Africa. Lighting Africa’s presentation highlighted the role that modern off-grid lighting technologies can play in helping African governments meet their ambitious energy access targets.

The side event, together with a Green Household Energy Solutions Expo sponsored by the World Bank, demonstrated that new technologies, opportunities for partnerships and climate financing make it possible to improve access to energy for low income households in Africa. At the Expo, local and international innovators showcased the new generation of off-grid lighting products and improved cooking technologies that directly address the household energy needs in Africa.

The event informed the final “Johannesburg Declaration” adopted by the Ministers, which acknowledges the contribution of low-cost technologies, such as LED lighting, and of clean cooking solutions to meeting the energy access challenge. The Declaration calls for developing markets for such products. The Declaration also places more emphasis on energy access in the climate change agenda.

The event was an opportunity to integrate household energy into broader discussions on energy and climate change strategies that are occurring as part of the COP17 Climate Conference in Durban, South Africa in December.

Visit the Global Alliance for Clean Cookstoves website:

<http://cleancookstoves.org/>

Learn more about the Johannesburg

Declaration: http://www.unido.org/fileadmin/user_media/News/2011/JOHANNESBURG_Declaration.pdf

Tell the stories of energy poverty – and get rewarded

Peter DiCampo’s [Life Without Lights](#) photography in Northern Ghana, Kurdistan in Northern Iraq and New Mexico, USA, reveals how energy poverty affects people’s lives and hampers development. His work will be exhibited as part of the UN-Energy exhibitions in the Rio+20 United Nations Conference on Sustainable Development (UNCSD), which is taking place June 20-22, 2012 in Brazil – and you now have an opportunity to join him in telling the stories of energy poverty to policy and decision makers.

You can make a donation to fund the next chapters of Life Without Lights and have your company named as a project sponsor at UN exhibitions in Rio+20 and other policy meetings that will be marking 2012- the International Year of Sustainable Energy for All.



Using modern lights to read © Peter DiCampo

“During the two years I lived and volunteered in remote northern Ghana, I discovered how deeply the lack of electricity affected the lives of my neighbors,” says Peter. “Having it, they explained, would allow them light to study and cook with, machinery, refrigeration, and a standard of living that would attract teachers, nurses, and other civil service workers from the city. My photos share their stories.”

By making a contribution to the project, you contribute to bringing these stories to the highest policy level.

More information:

www.lifewithoutlights.com

To donate:

<http://www.kickstarter.com/projects/peterdicampo/life-without-lights>

Phone Charging Micro-businesses in Tanzania and Uganda

GVEP (Global Village Energy Partnership; “GVEP”), a non-profit organization that works to increase access to modern energy and reduce poverty in developing countries, published a report in September on phone charging businesses in Tanzania and Uganda. The report looked at local micro-entrepreneurs trained in establishing and running phone charging services using solar PV panels and providing a much needed service to mobile customers in rural areas who would otherwise have to travel long distances to charge their phones. Over the last two years GVEP has been providing technical and business training and helping the solar phone charging entrepreneurs secure micro-finance loans.

Download the report:

http://www.gvepinternational.org/sites/default/files/phone_charging_businesses_report_with_gsma_final_for_web_0.pdf

Go to GVEP International’s website: <http://www.gvepinternational.org/>

LINKS & RESOURCES

L’éclairage solaire pour la base de la pyramide – panorama d’un marché émergent

Lighting Africa just released the French version of Solar Lighting for the Base of the Pyramid – Overview of an Emerging Market ([L’éclairage solaire pour la base de la pyramide – panorama d’un marché émergent](#)). The report, which was published in English in late 2010, provides a snapshot and projects trends in the solar portable lighting market in Africa, where millions still rely on expensive, often ineffective, and sometimes dangerous fuel-based lighting, such as kerosene lamps.

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The report found that the market potential in Africa for solar portable lights is enormous and ripe for investment. The findings indicate a 40 to 50 percent compounded annual growth rate in sales volume – or a total of 13 million solar portable lights – by 2015. Current market penetration is only at 0.5 percent of the under-electrified and under-electrified African population.

Technological advancements and innovative products and business models have vastly improved the quality of solar portable lights over the past five years, making them more affordable to low-income buyers and better suited to consumer needs.

By converting from kerosene to clean energy, millions of consumers can improve their health, reduce their spending on expensive fuels, and, ultimately, benefit from better illumination and more productive time in their homes, schools and businesses.

The Lighting Africa report gathered input from a broad range of industry experts, manufacturers, distributors and civil society organizations in over ten African markets. It will become a bi-yearly publication.

Lighting Africa releases new Briefing Note: LED Electronic Control Circuits for Off-Grid Lighting Products

Briefing Notes Series

Issue 7

November 2011

LED Electronic Control Circuits for Off-Grid Lighting Products

Lighting Africa is pleased to release Issue 7 in its Technical Briefing Note series. This issue introduces basic concepts in electronic design for low power off-grid lighting products and suggests ways to improve electrical efficiency. It is intended to provide useful information to product manufacturers, distributors, engineers, and other interested stakeholders.

Download the Briefing Note: <http://www.lightingafrica.org/resources/briefing-notes.html>

Wishing you all a fruitful New Year!
May we all work to increase energy access for the poor in 2012, the "International Year of Energy for All"

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>

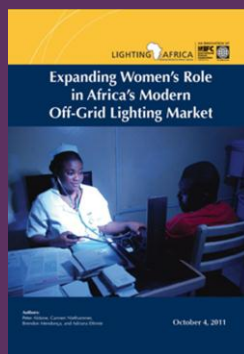
Lighting Africa is implemented in partnership with: The Africa Renewable Energy and Access Grants Program (AFREA) • The Asia Sustainable and Alternative Energy Program (ASTAE) • The Energy Sector Management Assistance Program (ESMAP) • The Global Environment Facility (GEF) • The Good Energies Inc. •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

Stay Connected



www.lightingafrica.org

New report: African Women Stand to Gain from Modern Off-Grid Lighting



A new report from the joint IFC/World Bank Lighting Africa Program finds that women in Africa are both important beneficiaries and key facilitators of the modern off-grid lighting revolution

The new report, *Expanding Women's Role in Africa's Modern off-Grid Lighting Market*, analyses women's role as both consumers and entrepreneurs and identifies women-specific opportunities in the expanding market for modern off-grid lighting.

Modern off-grid lighting products could be an immediate solution for African businesswomen who often run small retail businesses - exactly the type of businesses that benefit most from improved lighting and extended productive time.

In the household, women influence the decision 40% of the time in regards of when to buy a new lighting device and which one to get – a decision-making role that warrants attention from marketing and education campaigns.

Women and children are inordinately affected by the toxic smoke from fuel-based lamps. The research shows that people with awareness of the issue prefer to use solar lanterns.

The report compiles the findings of extensive Lighting Africa consumer studies focused on Ethiopia, Ghana, Kenya, Tanzania, and Zambia. Lighting Africa partnered with IFC's **Women in Business (WIN)** program to author the report.

For more information, visit: www.ifc.org/gender.
Download the report: <http://www.lightingafrica.org/new-report-african-women-stand-to-gain-from-modern-off-grid-lighting.html>



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 in the Lighting Africa network. Help us help you tell your story by sending us your articles!

Lighting Africa does not endorse the contents of the articles submitted by its members. To submit articles or for comments, questions, or suggestions, please contact our project team at: support@lightingafrica.org

