

July 21, 2016

## Energy Access Practitioner Network call summary – Off-Grid Appliances & the Future of Energy Access

### Background

By enhancing and diversifying the benefits of off-grid energy, and by lowering the costs of energy service that off-grid consumers face by [as much as 50%](#), super-efficient off-grid appliances present a huge opportunity for sustainable development. They also present a huge commercial opportunity: [a 2016 study](#) projected that, with the right support, the global market for off-grid televisions, fans, and refrigerators could be as large as \$4.7 billion per year by 2020.

### Special briefing: the role of appliance efficiency for energy access in the context of Global LEAP activities

*Dr. Rose Mutiso, International Policy Fellow, U.S. Department of Energy, [rose.mutiso@hq.doe.gov](mailto:rose.mutiso@hq.doe.gov)*

- The Global Lighting and Energy Access Partnership ([Global LEAP](#)) is the Clean Energy Ministerial ([CEM](#))’s energy access initiative led by the U.S. Department of Energy. Global LEAP was launched as a commitment to Sustainable Energy for All ([SEforALL](#)), and its programs and initiatives support the growth of sustainable commercial clean energy access markets throughout the developing world. [CLASP](#) is the primary implementer of the Global LEAP programs.
- At the [CEM7](#) meeting in San Francisco (June 1-2, 2016) energy access was reiterated as an important issue, showcasing growing interest from energy ministers in the sector.
- Global LEAP works with partners like [DfID](#), [Power Africa](#), [World Bank](#), [IFC](#) and others to link private sector practitioners around three major areas of work:
  - [Quality assurance](#) – including the [Lighting Global](#) technical framework as well as mini-grids
  - [Partnerships](#) – convenings around policy recommendations and advocacy
  - [Nexus of energy efficiency and energy access](#) – which Global LEAP initiated in the sector a few years ago to look at the role of energy efficiency around end-use technology potential for off-grid energy supply.
- An “off-grid appliance” is characterized as any end-use technology or appliance that can be used in off-, mini- and weak-grid conditions. Considering the limited supply of energy in these situations, energy efficiency is a critical driver for the increased pressure on energy consumption, and maximizing services for less cost – energy access is not about electrons, but the services it brings.
- Global LEAP activities are not a top-down approach but rather designed and driven with practitioners working with end users around their aspirations for energy use, including TVs, fans, and more recently refrigerators, now getting into the productive use/ income-generating appliances sphere.
- Many stakeholders are engaged in the processes for complimentary end-use technologies to become mature in parallel with advancements in off-grid services. Those interested to provide input can contact Rose directly.
- At COP21, SEforALL and others announced the Energy for Access Coalition ([E4A](#)), which designated 2016 as the Year for Action until COP22 in November. The coalition seeks to identify



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gaps in getting innovation in the space and ensuring the necessary ecosystem conditions for scale are met. To join, please visit the E4A website.

**Jeff Stottlemeyer, Senior Associate, CLASP, [jstottlemeyer@clasp.ngo](mailto:jstottlemeyer@clasp.ngo)**

- CLASP is a non-profit organization that has been working for 15 years on improving the environmental and energy performance of appliances and related systems.
- CLASP's energy access team looks at how energy efficiency can be used to increase energy access and achieve community-wide benefits in off-grid settings, where the customers do not necessarily want the energy itself but what the energy can do for them.
- In 2015, Global LEAP conducted a [market survey](#), in collaboration with the UN Foundation and Lighting Global, to determine what appliances drive demand and development benefits, with entertainment, cooling and refrigeration coming on top.
- The survey also showed that needs vary by region, and underlined the need for more research specifically concerning the end-users directly to gain more insight into appliance market potentials across different regions.
- Based on the results of the survey, Global LEAP conducted additional market research to determine size of the commercial opportunity of the off-grid appliance market at a global level. The resulting [State of the Off-Grid Appliance Market Report](#) found that the global off-grid appliance market could be worth \$4.7B annually by 2020, if best-in-class off-grid appliances are more widely available.
- In order to achieve its full potential, the off-grid appliance market will require new entrants but also a significant scale-up of existing players, overcoming existing barriers such as manufacturers having limited understanding of off-grid requirements, investors having limited knowledge of relevant due diligence procedures, and policy makers lacking market data to implement effective measures.
- Global LEAP leads programs address some of these barriers, including:
  1. **The Global Leap Awards**: an international competition designed to identify the best off-grid appliances available, to send an objective signal about quality and help companies start their search for suitable appliances.
    - ✓ In 2014 the Awards focused on TVs; in 2016 on TVs and fans, with more information available via the [2016 Global Leap Award Buyers Guide](#); with support from Power Africa, the next round in 2017 will focus on TVs, fans and refrigerators, for the first time ever.
    - ✓ The 2016-17 Global LEAP Awards will include competitions again for TVs and fans, and will feature the first-ever off-grid refrigeration competition. The refrigeration competition will also include innovation cash prizes for products that demonstrate advancement in key performance criteria. Companies and organizations that want to provide input on the competition are invited to do so by a) [commenting on the full RFI](#), and b) [answering a technical survey](#). Visit [www.scalingoffgrid.org](http://www.scalingoffgrid.org) for more information, or contact [info@globalleap.org](mailto:info@globalleap.org) with any questions.
  2. **The Global LEAP off-grid appliance procurement incentives program**: a results-based financing endeavor to move appliances into the market at scale and encourage distribution of large amounts of Global LEAP Award winning products in key markets. Incentivizing bulk purchases at wholesale FOB pricing reduces buyer risk and encourages more market activity.

- ✓ The program is implemented through [Energising Development](#) (EnDev), a partnership of donors (including the United Kingdom, Germany, the Netherlands, Norway, Switzerland, Sweden, and Australia) that promotes sustainable access to modern energy services.
- ✓ Additional support from Power Africa will enable the second round of incentives to be expanded to East Africa in 2017.

## Practitioner presentations on their current work energy efficient off-grid appliances

***Christopher Baker-Brian, BBOXX, [c.baker-brian@bboxx.co.uk](mailto:c.baker-brian@bboxx.co.uk)***

- BBOXX works across the entire supply chain, from design to financing distribution, and has been in operation for 6 years and has distributed 70,000 units across East Africa.
- For appliances, power consumption is the biggest consideration when choosing a product, even above the price – willingness to pay more for a more efficient product which will reduce consumption significantly over time.
- Efficiency allows producers to reduce the overall system sizing, which increases the customer’s ability to use and afford the system. For long-term financing, less power consumption means reduced stress on systems, resulting in lower maintenance costs. BBOXX has been able to reduce 10W/day consumption from the customer’s energy budget without reducing performance, and has seen \$20 saved per system for maintenance cost, which adds up considering the amount of systems they have deployed.

***Dr. Huashan Wang, President, [Omnivoltaic Energy Solutions Co.](#), [contact](#)***

- Omnivoltaic is a Hong Kong based company with offices and manufacturing factories based in China. It views its role as ensuring different appliances can be powered effectively in order to bring down the cost of ownership.
- Omnivoltaic is a product company, with a focus on technology product development, manufacturing and working with supply chain partners across the South Asian and African markets.
- As an off-grid company solutions provider Omnivoltaic is focused on making sure that all appliances are high quality and powered effectively, with continuous consultations with distributors regarding where each market is headed and what needs to be adjusted based on customer feedback.
- There are still data gaps regarding market size and what products might sell well in what geographies, since different markets represent different requirements as well as preferences.
- Power suppliers and appliance manufacturers need to work together to create a framework to balance the supply and demand sides, and reduce the cost of ownership.
- Internet of things: system-wide efficiency in multi-appliance frameworks, allowing the coordination of demands of different appliances and power supplies.

## Moderated Discussion and Q & A

**Jeff Stottlemeyer:** looking into the future, especially regarding your business planning, how do you see appliances relating to energy access and the work you are striving to achieve?

- **Christopher Baker-Brian:** Standardization is increasing, and with more appliance players entering the off-grid market there needs to be more work to develop the coordination of a more

standardized supply chain for operations. BBOX is happy to work with suppliers, manufactures, and others to optimize opportunities.

- **Dr. Huashan Wang:** It is challenging to work with a supplier base that is not geared toward off-grid efficiency, but the silver lining is that efficiency is a goal everyone seeks across the globe, in both developing and developed countries. We need to try to understand where the commonalities lie, and tap into the mainstream as much as possible. Government bodies will also help play a role in influencing suppliers that goes beyond market size to motivate manufacturers.

**Reid Detchon, UN Foundation:** SEforALL has a [Global Energy Efficiency Accelerator Platform](#) with sub-groups on lighting, appliances and equipment, among others. There would be value in working with SEforALL and Global LEAP to facilitate a dialogue about matching manufacturers with the social need and economic demand – though as **Dr. Rose Mutiso** pointed out, there is a need to figure out how to work together due to the on-grid/off-grid divergence.

**Jeff Stottlemyer:** What type of appliances are you looking to bring into your companies' services moving forward?

- **Christopher Baker-Brian:** Entertainment services, smart TVs with internet access, content for TVs, and small business appliances, such as shavers.
- **Dr. Huashan Wang:** TVs, remote access, AC units, small refrigerators, possibly mills or food processing units – anything with a motor that can be powered on the same platform.

**Emanuel Chibesakunda, Munich Advisors Group:** We are working with a client who is bringing online hybrid mini-grid systems with pay-as-you-go technology – which solutions would be suitable?

- **Dr. Huashan Wang:** The demand-supply situation on larger scale products cannot be met on an individual household scale. Eventually household systems will act as a buffer for future mini-grids/ larger scale systems brought to the communities.
- **To connect with more stakeholders working on mini-/micro-grids,** please see the Practitioner Network's [Membership Directory](#) and SEforALL's [Clean Energy Mini-grids High Impact Opportunity](#).

**Timothy Barker, DIYNGO:** How can level of demand be used as a potential indicator in markets where consumers are not aware of the options available?

- **Christopher Baker-Brian:** Service providers need to provide customers with basic education on what is available and possible – consumer awareness is a big factor and we have not seen this to be a problem in our interest markets.

## Announcements

[The 2016 Energy Access Practitioner Network survey](#) now open for submissions until August 18

This is the fifth consecutive year that the Practitioner Network has surveyed practitioners to collect real-time impact and barrier data pertinent to the energy access sector. Being the largest membership-based network focusing on decentralized energy solutions, with a broad-based membership spanning 170 countries, the results of Practitioner Network surveys have a significant role in identifying remaining challenges in the sector, as well as making the case for collective success and scale.



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In an effort to leverage our diverse membership and minimize time commitments, we have designed a “branched” survey that will take each member through questions that are pertinent to your areas of expertise. The portion of the survey spanning finance and investment has been jointly prepared with [Sustainable Energy for All](#) (SEforALL). SEforALL will use responses to the survey to inform their support to leaders so they can drive forward innovations that unlock the right types of capital at the right time for centralized and decentralized approaches to energy access. This includes support to deliver financing approaches that support access for the poorest and most marginalized people.

*Please access the survey via <http://svy.mk/29754hf> and take a moment to respond. To maximize the amount learned from this survey, we encourage respondents to make their responses as complete as possible, and request that responses be limited to one per organization. All information submitted through the survey will be anonymous and used only for the purposes of aggregating statistics/information.*

If you have any questions or concerns, please contact us via [info@energyaccess.org](mailto:info@energyaccess.org).

**Ling Ng, ARE, [l.ng@ruralelec.org](mailto:l.ng@ruralelec.org)**

- The [3<sup>rd</sup> edition of the International Off-grid Renewable Energy Conference and Exhibition \(IOREC\)](#) will take place in Nairobi, Kenya from 30 September to 1 October, 2016. The conference will be organized by IRENA, in partnership with the Kenya Ministry of Energy and Petroleum and the Alliance for Rural Electrification (ARE).
- Participation is free-of-costs and attendees should register via [www.iorec.org](http://www.iorec.org)
- In parallel with the conference, ARE will organize an exhibition to give the private sector an opportunity to showcase products/projects, and offer participants networking opportunities. To book a stand or become a sponsor, please contact Ling.
- ARE is also organizing an off-grid matchmaking event the day before the conference. Expressions of Interest can be made through the [event page](#).