Global LEAP Solar E-Waste Challenge

Program Overview and Call for Proposals

Introduction

Off-grid solar technologies provide life-changing access to modern energy services for people and communities currently living without electricity. The global market for these products is nascent but growing quickly. In 2017, the off-grid solar sector provided new or enhanced access to energy for an estimated 73 million households – over 360 million people – with significant year-over-year growth expected into the future. [1]

Most of the off-grid solar products sold to date have not yet reached their end of life. Investment now in responsible end-of-life management will ensure the industry's growth is sustainable over the long term and further enhance the sector's reputation as a leader in environmental responsibility. The Global LEAP Solar E-Waste Challenge ("Challenge") will provide grant funding to companies with innovative approaches to managing solar lanterns, solar home systems (SHSs), and solar-powered appliances ("solar products") at their end of life ("solar e-waste").

The Challenge is an initiative of the Efficiency for Access Coalition supported by the U.S. Agency for International Development (USAID) as part of its commitment to the Scaling Off-Grid Energy (SOGE) Grand Challenge for Development. SOGE is a global partnership founded by the U.S. Agency for International Development, Power Africa, the U.K. Department for International Development, the African Development Bank, and the independent charity Shell Foundation. By optimizing the collective resources and expertise of its partners, SOGE accelerates the growth of a dynamic, commercial off-grid energy market to provide clean, modern, and affordable energy access to the millions of households and businesses beyond the grid in sub-Saharan Africa.

The specific objectives of the Challenge are to provide funding for pilot and early-stage projects that:

1. Fill critical information and data gaps on corporate end-of-life product management that will inform longer-term deployment of public funds to address solar e-waste at a systemic level.
2. Address key logistical challenges faced by solar distributors and service providers related to take-back and collection of solar e-waste.
3. Improve and strengthen operational processes at e-waste processing facilities to increase solar e-waste recycling capacity across sub-Saharan Africa.

The Challenge will allocate up to $1,000,000 to fund a portfolio of projects to be implemented over the course of one year that each address one or more of these objectives. Individual awards will range from $50,000-$200,000.

CLASP serves as the Operating Agent and Administrator ("Administrator") of the Challenge.

[1] Off Grid Solar Market Trends Report 2018. Lighting Global, GOGLA, ESMAP.

Background

Sustainable management of solar e-waste is an emerging priority for the off-grid solar sector. Many industry leaders have explored potential e-waste management solutions such as product repair initiatives and preventive maintenance, but these efforts remain nascent and under-resourced.

A nascent body of research exists on the topic of solar e-waste, and several industry initiatives have increased awareness around the issue. For example, Lighting Global published several Eco Design Notes on topics relevant to solar e-waste including Battery Toxicity (in 2012), Restriction of Hazardous Substances (in 2013), and Product Repair (in 2017). While additional research is needed to elaborate and quantify the impact that existing disposal practices have on the health of individuals, communities, and the environment, the off-grid solar industry has identified environmental and social protection, brand risk, customer retention, investor pressure, and regulatory risk as key drivers for business action on e-waste.

Barriers to effective management of solar e-waste occur include the following:

1. **Take-back and collection**: Off-grid solar companies struggle to maintain visibility on the location of products after sale to end users, which presents a barrier to product take-back and collection. This is a particularly significant challenge for unbranded or non-quality-verified products and cash sale products, where manufacturers and retailers have less incentive and/or capacity to track products. However, companies with the capacity and incentive to track their products (e.g., vertically integrated pay-as-you-go (PAYGO) SHS companies) struggle with the costs and administrative effort required to do so with their dispersed, rural customer bases. In addition to challenges related to product tracking, costs associated with the subsequent transport and storage of waste products in a centralized location present another major barrier to deployment of large-scale take-back and collection schemes.

2. **Repair:** Many brands of solar products are designed in a way that makes it impossible for third-party electrical or electronic shops to repair them, and off-grid solar companies often lack the resources to adequately resource repair programs in-house. Spare parts are expensive and often not available, which presents a challenge for companies that do want to partner or contract with third-party electrical and electronic repair shops. In addition, spare parts may be subject to special taxes, further increasing the cost of product repair.

3. **Recycling**: Little reliable data is available on past, current and future volumes (by weight) of solar e-waste. This presents a major barrier to development of partnerships between off-grid solar companies and e-waste companies, as such data is a critical input to contracting and revenue projections. This lack of data is compounded by low revenues from solar e-waste when sold on as materials: solar modules are difficult to recycle, lithium-based batteries have a negative recycling value, and the other materials that make up solar e-waste streams often have negligible market value (e.g., low-grade printed circuit boards). These challenges are

compounded by a lack of local processing facilities across sub-Saharan Africa and an absence of government support.

Most off-grid solar companies lack the resources to develop and implement in-house e-waste management initiatives and are reluctant to incur costs that may increase retail prices while making it harder to compete with low-cost/low-quality product distributors. Recyclers that process e-waste from other sectors often lack the resources to build partnerships with off-grid solar companies and/or incorporate solar e-waste into their existing operations. To date, limited donor funding has been available to provide these resources. The Challenge aims to address this gap and catalyze development of sustainable approaches to solar e-waste management.

Eligibility

1. Organizations

Participation in the Challenge is limited to the following types of organizations:

(1) Recycling and e-waste management companies ("E-Waste Companies") that serve the off-grid solar industry. This can include waste collectors, haulers, and processing facilities.

(2) Off-grid solar companies ("Solar Companies") with operations in sub-Saharan Africa. This can include any type of company that distributes solar products.

(3) Other specialized service providers ("Service Companies") with operations that are directly relevant to responsible solar e-waste management.

Collectively, E-Waste Companies, Solar Companies, and Service Companies participating in the Challenge are sometimes referred to hereinafter as "Participants."

Joint proposals by two or more Participants are welcome. Participants may also submit proposals that include individual consultants, non-profit organizations, and industry associations as implementing partners. In all such instances, a single Participant must serve as the lead applicant.

2. **Geography**

All proposed activities must take place in sub-Saharan Africa.

3. Use of Funds

Grants are intended to support the following:

- **Technical assistance**: Support provided to Participants by external experts relevant to the planning, design, and implementation of e-waste management activities and operations.
- **Research and analysis**: Staff time or consultants dedicated to desk and/or field research necessary for the planning, design, and implementation of e-waste management activities and operations.

- **Equipment purchases**: Purchase of materials and equipment required to implement e-waste management activities. Note that this does *not* include purchase of commercial property, facilities, or vehicles.
- **Operational support**: Staff time and other costs associated with general implementation of e-waste management activities. Note that this does *not* include direct subsidy of solar e-waste processing fees or subsidy of pre-existing operations.

Note that grants are intended to support the development and implementation of business models and operations that address the objectives listed in the Introduction above. This does *not* include R&D focused on battery technology. The Administrator, SOGE, and EforA anticipate that a future round of the Challenge will focus explicitly on this.

Proposal Requirements

All proposed activities must take place within one year from the receipt of an award. Proposals must describe the following project elements:

- **Product focus**: Will the project focus on pico PV products, SHS kits, and/or component-based systems[2]? What is the expected battery chemistry? Will some/all products have Lighting Global Quality Verification[3]?
- **Distribution channel(s)**: Will the project target products sold through PAYGO distribution channels, cash sale products, or both?
- **Engagement with informal sector**: Will the project include any direct engagement with elements of the informal e-waste recycling sector?
- **Solution type**: Will the project focus on product repair, refurbishment, take-back, and/or recycling[4]?

Monitoring & Evaluation and Grant Disbursement

All Challenge winners will have one year to implement activities described in their proposals. The Administrator will oversee a monitoring and evaluation (M&E) process across the implementation period to 1) ensure that Participants use Challenge awards appropriately, 2) assess project performance, and 3) capture lessons learned to inform improved solar e-waste management broadly across the off-grid solar sector. The M&E process will include the following:

- Quarterly reports on overall progress and lessons learned.
- Ad hoc reports on progress toward key project milestones (as necessary).
- Up to two in-person site visits from the Administrator and/or a designated agent.

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[2] The program follows the Lighting Global categorization; pico PV = <10W, SHS kits = 10 – 350W plug and play.

[3] Please note that the Administrator, SOGE, and EforA actively promote Lighting Global product quality certification.

[4] *Repair* is when a customer receives their original product back; *refurbishment* is product take-back within a warranty claim process and provision to the customer of a repaired product that has passed internal quality testing; *take back* is the retrieval of a product at end-of-life outside of a warranty claim process; *recycling* entails material conversion.

Grants will be dispersed across the implementation period in no more than three tranches based on the completion of key milestones and provision of information on lessons learned. Disbursement schedules will be agreed upon by Participants and the Administrator prior to project initiation.

Information provided through the M&E process will inform a mid-term assessment of each project and a case study at the end of project implementation.

Evaluation Criteria

Proposals will be reviewed by a panel of expert judges ("Judges"), and will be evaluated based on the following criteria:

- **Relevance to program objectives**: The Judges will assess the degree to which the project aligns with one or more of the Challenge's objectives as listed above.
- **Viability**: The Judges will assess whether the proposed activities are realistic and achievable. This will include an evaluation of the overall project plan, proposed timeline and budget as well as other implementation risks such as whether relationships with key implementation partners already exist or not, regulatory risk, etc.
- **Potential impacts**: The Judges will assess the potential for projects to achieve long-term positive environmental, commercial, and/or consumer benefits *beyond* the life of the grant itself.
- **Scalability and/or replicability**: The judges will assess the potential for Participants to scale the project rapidly beyond the life of the grant and/or for other companies to replicate the project's approach and activities.
- **Cost effectiveness**: The judges will assess whether the project's budget is reasonable given the activities undertaken, intended outcomes of the project itself, and the potential impacts described above.
- **Capacity of applicant**: The Judges will assess the capacity of the Participant(s) to deliver the project based on prior experience and organizational capacity. This will include an assessment of capacity to comply with reporting requirements during project implementation.

Pending the number of proposals received, the review committee will prioritize diversity among the project elements listed in the Proposal Requirements section above when making awards.

Submission Process

Proposals should be submitted through the online application form. Participants that are unable to submit the required form online should contact the Administrator for an offline version. The Administrator can be contacted via email at e-waste@GlobalLEAPAwards.org.

The deadline for receipt of all proposals is 23:59:59 US EST on 15 May 2019.

Participants may submit questions to the Administrator via the email address listed above. All questions must be submitted by 23.59.59 US EST on 28 March 2019. The Administrator will consolidate all

questions and post answers to them publicly on the Challenge's website at www.GlobalLEAPAwards.org/e-waste.

Conditions of Entry

Participants in the Challenge may be added to Global LEAP, Efficiency for Access Coalition, USAID, and SOGE mailing lists and contact databases, and may receive information on relevant activities.

The Efficiency for Access Coalition, USAID, SOGE and the Administrator may use the information about winning proposals and lessons learned from project implementation for public information purposes and to promote the Challenge via such media as websites, brochures, and events.

All decisions rendered by the Challenge's Judges and/or Administrator are final.

The Administrator reserves the right to adjust, strike, or redefine any of the program's terms and conditions at any time and for any reason.

Timeline

Program Milestone	Date
Proposal submission window opens	7 March 2019
Proposal submission window closes	15 May 2019
Winners announced	June 2019
Project implementation begins	July 2019
Mid-term assessment	December 2019 - January 2020
Project implementation concludes	June 2020
Case studies published	July 2020