



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 (OGS) 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 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 research & development proposals in e-waste reduction and management through product design and battery technology innovation for the off-grid solar sector in sub-Saharan Africa.

The Challenge is an initiative of the [Efficiency for Access Coalition](#) supported by the U.S. Agency for International Development (USAID) and the U.K. Department for International Development as part of their 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. Learn more at www.scalingoffgrid.org.

The objective of the Challenge is to **promote sustainable solar e-waste management by supporting research and development (R&D)** to achieve one or more of the following aims:

- a. Extend product and/or component lifespan
- b. Enhance product repairability and recyclability
- c. Facilitate more efficient refurbishment, reuse or repurposing
- d. Reduce rare metal and hazardous material composition

The Challenge's scope includes solar home systems (SHS) and battery technologies with solar home system applications. Research and development can target hardware, software or both. The Challenge will allocate up to \$1,200,000 from USAID to fund a portfolio of projects to be implemented over the course of eighteen months. Individual awards will range from \$50,000-\$300,000.

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

The Challenge is funded by USAID; CLASP serves as the Operating Agent and Administrator (“Administrator”) of the Challenge and the ResilientAfrica Network (RAN) will support proposal evaluations.

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 growing body of research exists on the topic of solar e-waste, and several industry initiatives have increased awareness around the issue. Lighting Global, for example, published several Eco Design Notes on relevant topics such as Battery Toxicity (2012), Restriction of Hazardous Substances (2013), and Product Repair (2017)². Similarly, in 2019, GOGLA released a series of Briefing Notes including one devoted to Design for the Reduction of E-Waste.

There are numerous ways that improved product design could reduce the e-waste generated by the off-grid solar sector and simultaneously present other economic opportunities. These include:

- **Extend product and/or component lifespan** – Ensuring a single product or component lasts longer increases value for the user, delays recycling costs for the company and benefits the environment by delaying the need for new resources or further manufacturing.
- **Enhance product repairability and recyclability** – Making component parts of a product or system easy to replace, particularly the battery, can limit the amount of materials that need to be disposed of when a product reaches its end-of-life. Repair, instead of disposal and replacement, also minimizes costs for users, offers a new income stream for companies, and supports jobs and livelihoods for those servicing or participating in spare part supply chains.
- **Facilitate more efficient refurbishment, reuse or repurposing** – Refurbishing or reusing parts and whole systems can lower the price of OGS products available and thus bring in new, lower income groups into the market. Repurposing meanwhile diverts used components from disposal and keeps economic benefits in-country rather than losing them abroad through recycling exports.
- **Reduce rare metal and hazardous material composition** – Designing products that do not contain hazardous materials could reduce the recycling charges incurred by solar companies at the same time as increasing the viability of e-waste recycling operations.

While battery technology has improved greatly, there is opportunity to further improve their design, manufacture and management to enhance longevity. Likewise, new and exciting second life battery technologies and business models represent an opportunity.

There are tradeoffs on product design in the off-grid solar sector such as keeping costs down so that products remain affordable or, in the case of PAYG products, making them tamper-proof as a way to ensure continued payments from users. The Challenge recognizes and welcomes the different

² Lighting Global. https://www.lightingglobal.org/resources/?fwp_resource_type=eco-design-notes.2019

approaches to design for reduction of e-waste e.g. design for durability or design for ease of maintenance and repair.

Eligibility

1. Organizations

The Lead participant in the Challenge is open to either:

- (1) Off-grid solar company (“Solar Companies”) supplying the market across sub-Saharan Africa.
- (2) Battery supplier or other component / technology service provider directly supporting the off-grid solar sector across sub-Saharan Africa.

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

2. Use of Funds

Grants are intended to support the following:

- **Operational Costs:** Staff time or consultants and other operational costs necessary for the planning, design, development and testing of the product, component or software. Note that testing can include early stage piloting.
- **Capital Costs:** Rent or purchase of materials and equipment required to design, develop and test the product, component or software. Note that this does *not* include purchase of commercial property, facilities or vehicles.

Intellectual Property

The Challenge will not seek claim to any of the Participants’ IP submitted in the proposals or generated through the grant projects. However, the Challenge has the right to generate and disseminate content to promote the outcomes of the Challenge.

Monitoring & Evaluation and Grant Disbursement

All Challenge winners will have eighteen months 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, and 2) assess project performance. The M&E process will include the following:

- Short update every quarter
- Detailed report every six months
- Ad hoc reports on progress toward key project milestones (as necessary).

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.

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 the Challenge’s objective 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/external validity:** 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. Proposed innovations that benefit the industry as a whole (as opposed to benefitting a single company within the sector) are highly encouraged.
- **Budget effectiveness** - Cost sharing by the applicant is not required but encouraged. Budgets should be reasonable and demonstrate value for money.
- **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 as defined by the four Challenge objectives 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@GlobalLEPAwards.org.

The deadline for receipt of all proposals is 23:59:59 US EST on 15 Dec 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 10 November 2019. The Administrator will consolidate all questions and post answers to them publicly on the Challenge’s website at www.GlobalLEPAwards.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	15 October 2019
Proposal submission window closes	15 December 2019
Winners announced	18 February 2020
Project implementation begins	March 2020
First- term assessment	September 2020
Second- term assessment	March 2021
Project implementation concludes	September 2021
Case studies published	December 2021