Request for Proposals

Off- and weak-grid appliance impact assessment framework

Introduction

The UK aid funded Low Energy Inclusive Appliances programme (LEIA) aims to accelerate the availability, affordability, efficiency, and performance of a range of low energy inclusive appliances particularly suited to developing country contexts. LEIA was designed with extensive industry consultation regarding the specific challenges and opportunities of the off-grid clean energy access appliance market.

The LEIA programme will be delivered through an international Efficiency for Access Coalition convened by UK aid and Power Africa, involving a range of co-funders. The Efficiency for Access Coalition is coordinated by CLASP, the leading international voice and resource for appliance energy efficiency policies and market acceleration initiatives, working alongside the UK's Energy Saving Trust, which specializes in energy efficiency product verification, data and insight, advice and research.

The Efficiency for Access coalition is now scaling up and bringing together a range of support mechanisms to accelerate energy efficiency in clean energy access efforts, driving markets for super-efficient technologies, supporting innovation, and improving sector coordination.

Background

There is a growing need to consistently and robustly capture the socio-economic impact of end-use appliances on households and businesses to prove and accelerate the market technologies designed for for off- and weak-grid consumers. Additionally with the projected growth of this market the sector must consider early any wider positive or adverse environmental impacts. Currently little exists in the way of an impact framework and associated metrics that are suitable for application with these appliances. Much of the work done to date covers impact of access to clean energy through distributed energy (solar home systems (SHS) & mini grids) [1] and doesn't not always consider access to energy services through associated appliances or the relative impact of gaining access to different appliances.

Companies, impact investors and other industry stakeholders are seeking ways to efficiently measure and report impact from appliance use in an off- and weak-grid context. There was an overwhelming call for an impact framework from participants at the Efficiency for Access Research Round Table in June 2019. LEIA has also carried out stakeholder interviews that confirm the need for a framework through various research projects and solar water pump and refrigeration technical working groups. As a result, the LEIA program will develop a holistic impact assessment framework for four appliances (TVs, fans, refrigerators and solar water pumps) that will be used by donors, investors, companies, academics, and other stakeholders working in the energy access sector.

The Efficiency for Access (EforA) Coalition secretariat (CLASP and EST) is seeking a consultant to work closely with to develop an impact framework for off-and weak grid appropriate appliances. This effort will include developing the following:

[1] Link GOGLA impact metrics, IRIS and GIIN

1. To develop suggested metrics for industry use to report impact (henceforth, impact metrics). These metrics will enable consolidation and reporting on sector level impacts. A close example of this type of an effort are the GOGLA Impact Metrics for reporting impact of solar lanterns and solar home systems. This work will also develop indicators that link the impacts of appliances to other Sustainable Development Goals (SDGs). The SDGs include goals for achieving affordable and clean energy, but also other goals that improved access to appliances can help achieve (e.g. Zero Hunger and No Poverty). Where possible, the impacts framework will also explore links to broader global climate goals and agreements (e.g. Paris and Kigali Agreements) and investigate any negative impacts or unintended consequences that an intervention (to help scale off- and weak-grid appliances)[2] done in isolation can have, and document these as avoidable negative impacts. That said, impact metrics can only include metrics that the industry will find uncomplicated to report on given the types of data accessible to them, the effort required to develop and report these, and by their willingness for adoption of certain metrics.
2. Develop and make available formulae for impact indicators that the industry may be unable to report on but are nevertheless important to develop to provide a framework that could capture holistic impact. Developing these indicators may require collecting data directly from beneficiaries or from a source other than upstream stakeholders. It is expected that most of these metrics will include impacts linked to broader SDGs, beyond the ones the energy access community has traditionally reported that are based on number of products sold, and greenhouse gas emissions reduced based on displacing dirty fuels with cleaner and modern energy, and efficient use of appliances.

Objectives 1 & 2 are referenced as the *impact assessment framework* in this RFP

3. To understand and document the data gaps. The consultant will develop a data gaps document that will inform the LEIA program's research prioritization. The data gaps document will consolidate and prioritize data that needs to be collected to make the impact framework more robust.

Developing such a framework has potential to move the market by 1) allowing the industry and companies to track and report consistently on impact and providing the evidence base for further investment; 2) enabling impact investors to hasten the due diligence processes for investment; 3) allowing donors and energy access programmes to understand impacts of and make targeted interventions; 4) allowing governments and policy makers to understand developmental potential of off- and weak grid appliances thus improving the enabling environment of these sectors.

Impact Indicators to be included in the Framework – See Annex A for more details
The framework aims to develop indicators for the impact categories described below, recognizing that there is some overlap. The consultant, in close coordination with the EforA Secretariat and GOGLA will lead the development of these indicators (refer to section on roles and responsibilities below).

- **Appliance and Energy Access –** includes the number of people who have access to appliances, disaggregated by income and gender, and the level of energy service unlocked—linking whenever possible to the SE4All Multi-tier Framework for energy access.
- **Durability and Performance –** will demonstrate how gaining access to appliances that meet minimum durability and performance thresholds will impact the overall quality of energy service. This may include the ability of appliances to operate under low power conditions, ease of maintenance and reparability, ability to operate under high ambient temperatures, etc.

[2] Such interventions include but not limited to research efforts, promotion of business models, developing standards, enabling consumer awareness and market linkages, R&D efforts related to off- and weak grid appliances.

- **Economic Impact** – these indicators relate to productivity, income generation, and household savings. For example, income generated through a business that relies on appliance usage or savings from reduced life cycle cost of solar vs. diesel powered appliances.
- **Social Impact** – these indicators cover other socioeconomic impacts not covered in the indicators above. For example, gender and disability inclusion, health, education, etc.
- **Environmental Sustainability** – these indicators link to impacts on air pollution, climate change, circular economy, water sustainability, and other issues that relate to environmental resources.

Scope of Work

Development of the framework will be principally undertaken by the consultant in collaboration with CLASP, EST and other partners (e.g. GOGLA). The consultant will function as a member of the core team (see organigram in figure 1) with primary responsibility and accountability for delivering the principal outputs of this project. The impact framework should include: The objective (based on the EforA theory of change), the conditions that need to change to achieve the objectives (reference the LEIA log frame), the theory linking the objective to the conditions, metrics and a data strategy.

This project is divided in 3 work areas:

Work Area 1: Impact Measurement Framework Approach

The consultant will undertake the following tasks.

Task 1: Produce an inception report/ presentation with the draft framework outline and path to completion

Task 2: Leverage existing surveys, census, past, current and proposed LEIA research to inform the impact assessment framework. Align the framework as far as feasible with existing industry impact reporting metrics such as those proposed by IRIS+ by GIIN. In addition, the EforA Secretariat and GOGLA collaborate to collect appliance sales data from key off-grid appliance companies using a semi-annual online survey format. The consultant will review the types of data collected via this mechanism to make recommendations on what types of additional data could be collected, to help inform the impact framework. Rank impact areas and corresponding metrics by the feasibility of collecting the data needed to quantify these impacts.

Task 3: Iterate on the framework after completion of work areas 1 and 2

Task 4: Periodic (monthly) presentation of the evolving framework to the EforA Secretariat for review and comments

Task 5: Produce a final impact assessment framework for the 4 appliances identified in this scope of work and make recommendations on how to evolve and expand the framework, route to adoption by industry and remaining data gaps.

Task 6: Participate in dissemination activities by conducting presentation/ webinars and or events as directed by the secretariat.

Work Area 2: Development of Impact Assessment Framework for Fans and TVs

GOGLA will lead the development of the impact metrics for TVs and fans along with the EforA Secretariat (objective 1 outlined under section 'Background' above). The consultant will support this process by providing input and helping bring an independent perspective and academic rigor to the process. In parallel, the consultant will develop a broader impact framework[3] for TVs and fans in close coordination with the EforA Secretariat and consultation with the relevant partner groups involved in the stakeholder consultation process (see sub-section 'Sector validation and review' above and organigram in Figure 1). This framework will cover all impact areas described in Annex A. The consultant will seek alignment on metrics with relevant partners and assist the EforA Secretariat in promoting its adoption through communications and advocacy.

The consultant will be required to:

Task 7: Join and attend (remotely) all GOGLA Impact working group meetings at which appliance impact metrics are being discussed

Task 8: Support the secretariat on formulation of impact metrics through technical input and/or formulation methodology advisory

Task 9: Consolidate all suggested metrics and integrate them into the first iteration of the impact assessment framework.

Task 10: Develop a prioritized data gaps document for holistic impact assessment for fans and televisions

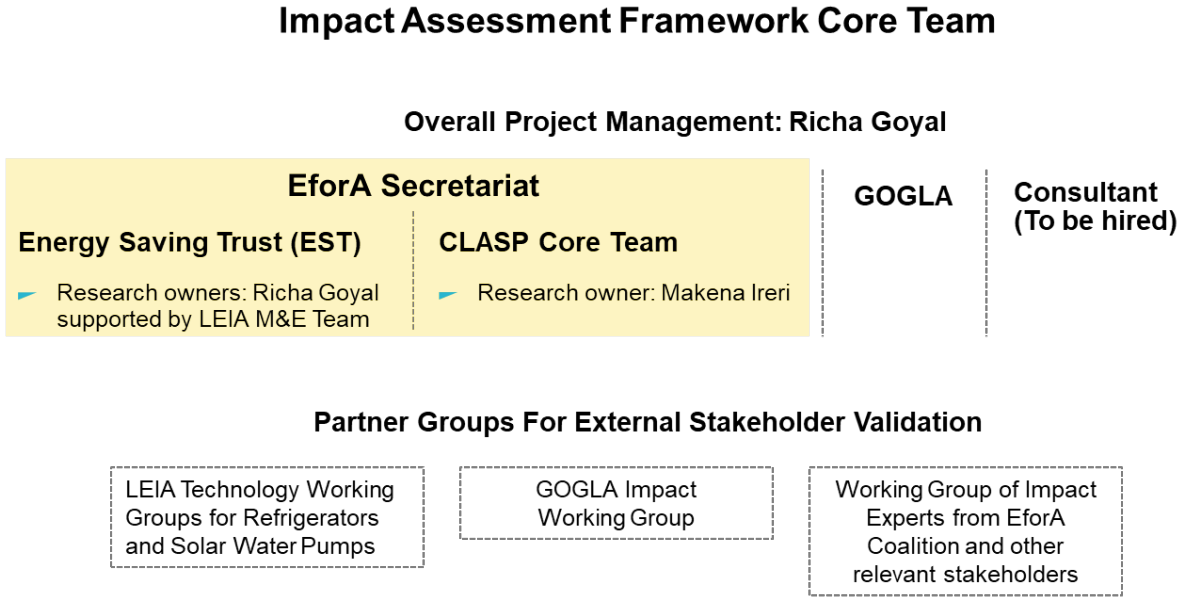

Figure 1: Impact Assessment Framework Core Team Organigram

[3] The impact assessment framework is a combination of objectives 1. and 2. outlined under section 'Background'.

Work Area 3: Development of Impact Assessment Framework for Refrigerators and Solar Water Pumps (SWPs) - Lead by Consultant with the EforA Secretariat's support.

LEIA will lead the research to identify impact areas. The consultant will extend this process and take the lead in translating the impact areas into an appropriate framework detailing formulae and assumptions for the various impact indicators in consultation with the EforA Secretariat and the relevant technical working group. GOGLA will lead on alignment of the metrics with relevant partners and foster adoption through existing advocacy activities.

The consultant will be required to:

Task 12: Lead the development of impact assessment framework for refrigerators and SWPs

Task 13: Attend and present (if required) in the SWP and refrigeration technical working groups where the impact assessment framework will be discussed for feedback

Task 14: Develop a prioritized data gaps document for SWPs and refrigerators

Sector validation and review

The development of the impact measurement framework will be reinforced by stakeholder validation throughout the process to test its efficacy and to understand the challenges in measurement for fine tuning.

a. *EforA Technology working groups and the GOGLA impact metrics working group:*
   LEIA has helped organize two technology working groups, one each for refrigerators and solar water pumps which will be leveraged for industry validation and feedback for these appliances. The EforA Secretariat will lead the validation with these two working groups for refrigerators and solar water pumps along with the consultant. The GOGLA impact metrics working group will be leveraged for the industry validation for the development of the impact framework for fans and TVs. GOGLA will lead the engagement process with this working group for fans and TVs along with the EforA Secretariat. This may also require having one on one conversations with certain stakeholders as deemed feasible and appropriate.

b. ***Impact experts from the EforA coalition members & other organizations like Energia:***
   Simultaneous to the review process by technology and impact working groups, the framework development process will seek feedback from individuals within the EforA coalition and beyond. This process will involve coordination with Energia to ensure that gender relevant impact is captured in the framework and other important stakeholders as necessary. The EforA Secretariat will lead this stakeholder engagement process.

Milestones/ Deliverables

Tasks	Milestones & Deliverable	Dates
1	a. Inception report with draft framework outline	April 2020
	b. Develop environmental metrics as part of the impact metrics for TVs and fans	May 2020
8,9,10	c. Consolidate suggested Impact metrics into a first draft Impact assessment framework for TVs and fans	June 2020

3	d. Collect feedback and reviews from stakeholders for the TV& fan frameworks	June – Aug 2020
9,10	e. Final report for impact assessment framework for TVs and fans with internalized feedback from stakeholders	Oct 2020
12	f. Impact assessment framework and data gaps document for refrigerators and solar water pumps first draft	Feb 2021
13	g. Collect and consolidate feedback and reviews from stakeholders and technical working groups for the Fridges and SWP frameworks	Feb-April
5	h. Final consolidated report for all 4 appliances with internalized feedback from stakeholders	June 2021
6	i. Participation in at least 2 dissemination events to industry, donor though a webinar or presentation	From June 2021

Submittal

Individuals that wish to respond to this RFP must complete the LEIA prequalification questionnaire. This is a requirement for all sub-recipients of UK DFID funding. Companies or individual consultants must also register as a CLASP Implementing Partner. Registration is easy, and must be completed via the CLASP website before final submittal.

Interested parties are required to submit two separate proposals: A Technical Proposal and a Financial Proposal. The files should be named as per the following example: "[Contractor Name] _ [Technical/Financial] Proposal_RFP [Name].

The Technical Proposal should not exceed 15 pages in length and must include the following elements:

- A detailed approach and methodology for implementation and management of the project. Include a description of the role of each team member if applicable. [2 to 5 pages]
- A summary of qualifications of key personnel that will be engaged in the assignment. Technical knowledge in one or all of the key appliances for this projects (TV, Fans, refrigerators or Solar Water Pumps) is an advantage as well as academic research qualification e.g. PhD/MRes (Master of Research). [2 to 5 pages]
- A summary of impact related experience, in appliances, and related experiences of developing a framework of this nature and in this context, including any experience in energy access for in off-and weak grid communities. [2 to 4 pages]

The Financial Proposal must include the following elements:

- Detailed budget estimate (in US Dollars) outlining fees and expected expenses for the duration of the project. Detailed budget should include all direct and indirect cost estimates for executing the project, detail specifically:
    - a breakdown (in days) of the level of effort associated with the activities and a daily rate.

A committee comprised of CLASP and EST will evaluate proposals received from respondents. Selection of the candidate will be based upon the following criteria:

- Robustness of methodology
- Relevant qualifications, including working knowledge of the off-grid energy sector, experience in monitoring and evaluation and impact assessment, and broad technical knowledge in mechanical/electrical engineering.
- Experience in managing and working with diverse stakeholder groups to achieve consensus

- Total cost and value for money.

The deadline for application is **February 7, 2020**. Proposals must be submitted online via the CLASP website.

All questions may be addressed to Richa Goyal at Richa.Goyal@est.org.uk. The last date for submission of questions related to this RFP is January 23, 2020. We request all inquiries be made by e-mail and not by phone.

Annex A

Types of impact indicators

This framework should seek to develop indicators across the following five broad impact categories. These categories have some overlap between each. This overlap is explained where applicable below. The consultant in close coordination with the EforA Secretariat and GOGLA will lead the development of these indicators (refer section 'Roles and responsibilities' below).

a. Appliance access indicators

These set of indicators will determine the number of people for whom appliance access has been expanded and may be disaggregated by the level of energy service available across appliances. This framework will attempt to align these indicators as far as feasible and appropriate with the SE4All Multi-tier Framework for energy access. These indicators will also help to document impact related to enhanced appliance affordability and by virtue of that expansion in appliance ownership, by (energy efficient) technologies supported by LEIA and other programs like LEIA.

These impacts would also take into account the technology advancements including energy efficiency, battery innovation, and others, that can help achieve the energy access goals faster, and help report on possible scenarios of energy access based on different technology trajectories and energy access interventions. The technology trajectories considered for this analysis should include technologies that are designed to optimize inclusivity e.g. disabled and gender appropriate appliances.

This scope of work would seek to disaggregate reach of appliances as far as possible by income and gender groups as it is acknowledged that the penetration and access of appliances would be disproportionate across income and gender groups due to affordability and information access issues. As an example, the majority of water pumps for irrigation are owned by farmers with relatively larger landholdings, and not marginal farmers or women who may require pumps of a different scale especially for kitchen farms or for drinking water.

b. Durability and performance indicators

The qualifying criteria for appliances applicable to the impact assessment framework outlined above will also serve as one of the categories of impact indicators. Durability and performance metrics indicate how access to technologies that are in line with certain minimum performance standards and emphasize the role that LEIA-like programs make in enabling access to quality, off-grid appropriate technologies. Examples of such indicators could include ability to operate under low power conditions, ease of maintenance and repairability, being able to operate under harsh ambient temperatures, and others.

c. Economic indicators

These set of indicators will help determine productive impacts, the level of direct enhancement in economic activities and impact leading to household savings, e.g. the enhancement of the availability to grow the produce consumed by self or reducing the need to buy drinking water by access to water pump, etc. The computation of productive impacts will factor in increased appliance affordability and appliance life cycle costs.

d. Social impact indicators

These set of indicators help capture all impacts in relationship with how energy enables other SDGs that are already not captured by other indicator categories outlined here. Examples include, but are not limited to, inclusivity, both in terms of gender and disability as enabled by appliance energy access. Energy access initiatives can be gender-sensitive and women and men in developing countries usually have unequal access to information, freedom of expression and communication technologies. Similarly, women are usually involved in household tasks that involve higher levels of drudgery than men are.

This framework should seek to formalize indicators across M&E, impact metrics and broader impact and detail the types of data needed to disaggregate relevant impact and allied indicators by gender and disability, where feasible. Other types of examples to help clarify this impact category include: health impacts, impact on time use by increased mechanization of labor, increased time for leisure and reduced stress, alleviation of heat stress by access to cooling energy etc.

e. Environmental sustainability indicators

These set of indicators link to impacts affecting environmental resource allocation, circular economy, impact on environment and climate change. Examples include non-renewable fuel replacement, greenhouse gas emissions reductions including transport emissions, enhanced uptake of appliances that are environmentally friendly (or based on circular economy principles), reduced food wastage by enhanced cooling, and others. Social and environmental sustainability indicators mutually inform each other as some of these indicators, e.g. reduced food wastage, can equally sit under social but also environmental sustainability impact. This impact category also has implications for economic and income impact. Where feasible this framework will seek to recognize these mutually enforcing linkages between impact categories.