ENERGY EFFICIENCY SERVICES LIMITED
A JV of PSUs under the Ministry of Power

EXPRESSION OF INTEREST FOR PROPOSAL ON SOLAR-BASED INDUCTION COOKING SOLUTIONS FOR INDIAN COOKING APPLICATIONS THROUGH CARBON FINANCING.

INTRODUCTION

Energy Efficiency Services Limited (EESL) has been implementing the world's largest energy efficiency portfolio across sectors like lighting, buildings, industry electric mobility, smart metering, agriculture, etc. at an enormous scale. EESL's energy efficiency solutions have saved India over 47 billion kWh energy annually, while reducing 36.5 million tons of carbon emission. These interventions have so far avoided 12 GW of Generation Capacity in the market. EESL and her subsidiary CESL focus on solution-driven innovations to provide public value at scale and operates with the intent of creating and opening markets which have the capacity to exist but have not been able to take-off due to various constraints, a few examples being LED Bulbs, Street lights, Smart meters, Feeder level solarization, and Electric busses.

SOLAR BASED INDUCTION COOKING SOLUTION

Approximately one-third of the world's population today – 2.6 billion people – still lack access to clean cooking solutions, costing trillions of dollars in damage to the climate and local economies and contributing up to 4 million premature deaths each year. In her efforts to promote clean cooking, reduction of drudgery, and improvement of general health, India has taken several initiatives to promote clean cooking. Such measures operate at the intersection of several SDG[1] goals panning across health, Gender and access to clean cooking domains. EESL plans to initiate market-based interventions for Solar based Induction

[1] SDG3: Ensure healthy lives and promote well-being for all at all ages, SDG5: Achieve gender equality and empower all women and girls, SDG7: Ensure access to affordable, reliable, sustainable and modern energy for all, SDG8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all, SDG11: Make cities and human settlements inclusive, safe, resilient and sustainable and SDG13: Take urgent action to combat climate change and its impacts

cooking solutions by leveraging Carbon financing for a financially and environmentally sustainable market model.

INTENDED BENEFICIARIES

Rural and Urban Indian consumers shall be the intended beneficiaries. The overall objective of the project would be to provide a market based Solar based cooking solution to all beneficiaries along with basic induction-based cookware practically **at no cost** by leveraging Carbon financing.

THIS EOI

Through this EOI, EESL intends to (i) Seek public consultations on the proposed model of implementation of large scale solar based electric cooking interventions, including on Carbon financing; (ii) Technical specifications; (iii) Alternate models of implementation, if any; and, (iv) a design of a suitable M&V device to facilitate an easy validation and verification for Carbon financing. Some portions of this EOI specifically seek comments/suggestions from Stakeholders, which may please be noted.

A meeting with all Stakeholders on the subject matter in the third week of March 2023.

PROPOSED MODEL OF IMPLEMENTATION

A solar based induction cooking solution for Rural and Urban households in India for **Indian cooking practices** shall involve the following broad-based elements in the business model

(i) Separate Bulk procurement of (a) 1,000 Wp Solar Panel; (b) Controller and Battery (With Minimum 3 Hrs back up) with M&V; (c) DC Induction Cook Stove 1200W (Single burner) or 1200 W + 500W (Double Burner); (d) Basic Utensils for Indian Cooking – Pan for Frying, Wok (Kadhai), Griddle (Tawa), Pot (Pateela) suitable for induction cooking.

(ii) Auction of Services for Investment, Installation, and commissioning of such equipment to Rural and Urban Households against supply of equipment by EESL under (i) above, and upfront payment to EESL against the delivery of such equipment to the service providers.

(iii) Selection of suppliers against (i) above shall be done on L1 basis on individual bulk procurement.

(iv) Selection of Service providers against (ii) above shall be on H1 basis, with a minimum price pegged at the cost of all products provided to such a bidder along with an added percentage of procurement PMC charges of EESL.

(v) Benefits of subsidies, if any, including Solar Rooftop could be leveraged in the business model to reduce the costs. 100% benefits of Carbon Credit ownership shall be passed on to the Service providers under (ii) above. The selected providers shall maintain the equipment installed at individual households for a period of 7/10 years [*to be decided*; *Stakeholders may comment*] to ensure verification and validation of the Carbon Credits during the entire lifetime of the project.

PROPOSED TECHNICAL SPECIFICATIONS

The Clean cooking solution shall be DC based and shall operate in the following sequence (i) Solar (ii) Battery (iii) Grid (when battery and Solar capacity is not available).

The broad based proposed technical specifications are as under:

SOLAR PANEL

2X500/ 3X 335 Watt (Peak) Mono Crystalline Solar Panel along with standard mounting structure, cables and accessories. [*Comments may please be provided whether 3X335 Watt or 2X500 Watt would be suitable from cost and technical perspectives*]

SOLAR CHARGE CONTROLLER AND BATTERY

48V 30A PWM solar charge controller suitable for 2 hours backup {*Comments may be provided whether a higher capacity may be required*]

Battery Pack: 48V 50Ah Lithium Iron Phosphate Battery and having cycle life >2000 ,16S 30 A BMS along with Enclosure

In addition to the above, the Controller would have a suitable inbuilt Measurement and Verification device attached to enable an easy Carbon credit verification and validation mechanism [*Stakeholders may propose details/concept of such a mechanism duly accounting for trade-off between ease of usage for Carbon credit verification & validation and Costs*]

INDUCTION COOK STOVE

48 V 1200 W Induction Cookstove (DC cookstove, preferably with efficiency parameters in the range of 5 star labeled BEE rating for induction hob). [*Comments from Stakeholders solicited whether the Induction Cookstove should be of a single or a double Hob*]

UTENSILS

Suggestions for basic Induction based cooking utensils to be provided along with the solar solution in line with the content in the "This EOI" section of this document are also invited.

RESPONSE TO THIS EOI

Investors, Technology providers, Start-ups, Carbon Finance Experts, International Organizations, NGOs/ Not for Profit organizations/ Philanthropic organizations/Carbon Market Companies and other Stakeholders may submit this expression of interest along with concrete ideas/comments/proposals on email solarics@eesl.co.in by March 12th, 2023.

A Stakeholders consultative meeting shall be called in the third week of March 2023.

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