Despite significant technological advancements, ~2.6 billion people worldwide still lack access to clean cooking solutions. This not only costs trillions of dollars in damage to the climate and local economies but also results in ~4 million premature deaths annually. In this context, India has taken various initiatives to promote clean cooking that operate at the intersection of 10 Sustainable Development Goals (SDGs) - including SDG 3: Good Health & Well-being, SDG 5: Gender Equality, and SDG 7: Affordable and Clean Energy.

The Solar-based Induction Cooking Solutions (S-ICS) are increasingly being preferred over the traditional biomass-based cooking systems to transform the way people cook and for its wider impact on improving health, saving lives, enhancing livelihoods, empowering women and protecting environment. Multiple country governments, global philanthropic organizations, impact investors and private players have shown interest in the solutions and have launched various initiatives.

Over the years, the Government of India has also launched several initiatives aimed at promoting clean cooking and sustainable energy sources through various agencies. Under the Central Government’s flagship programme, Ujjwala 2016, access to free liquefied petroleum gas (LPG) connections for women has increased significantly. The proportion of rural households using LPG as the primary fuel increased from 11% in 2011 in rural India to 49% in 2020-21. However, low-income households continue to rely on polluting fuels as they are unable to afford monthly operating cost of LPG cylinders. Therefore, they do not refill LPG cylinders and instead rely on freely available traditional fuels.

The Ministry of New and Renewable Energy (MNRE) aims to introduce a comprehensive scheme through Energy Efficiency Services Limited (EESL) for scaling up the S-ICS across the country by leveraging the benefits of carbon financing, making it a ground-breaking effort to address climate change concerns. The large carbon credit accumulation envisaged under the scheme would also help spur the compliance carbon credit market, recently introduced in an Amendment to the Energy Conservation Act in 2022. Implementation of this scheme will help spur the compliance carbon credit market, recently introduced in an Amendment to the Energy Conservation Act in 2022. Implementation of this scheme will

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AMBITION: DEPLOYMENT OF SOLAR-BASED INDUCTION COOKING SOLUTION (S-ICS)

As a first step to scale up the S-ICS across the country, the EESL has envisaged a first-of-its-kind pilot-cum-demonstration project to initiate market-based interventions for the deployment of at least 100 S-ICS (grid-connected solutions) in Indian households (using cooking fuels like firewood or cowdung) to gather practical learnings which can be leveraged during mass scale roll out. This note substantiates the contours of the pilot that EESL intends to perform in partnership with a willing partner agency (i.e. philanthropic organizations, multi-lateral and bi-lateral donor agencies, impact funds etc).

- **Pilot phase**: At least 100 S-ICS to be deployed
- **Implementation Phase 1**: 1 lakh S-ICS to be installed in actual implementation during FY2024.
- **Implementation Phase 2 / Scale-up**: 2 crore S-ICS to be installed in a phased manner by FY2028.
- Most of the intended beneficiaries to get the S-ICS practically at no cost.
- Combination of demand aggregation, carbon financing and Govt. subsidy to fund the actual program implementation.
- The systems installed during both pilot and rollout phases will be continuously monitored by relevant authorities to ensure proper usage, safety of equipment and analysis.

**Target End-users:**
Rural Indian households who are currently primarily dependent on traditional biomass for cooking. Further, the beneficiaries will also be required to provide the following documents:

- Copy of Government authorized ID proof
- Beneficiary certificate of PMAY Scheme (if applicable)
- For BPL Consumer – Copy of the BPL Certificate
- Proof of house ownership/Residence

**Grid-Connected: ~INR 80,000**

- **1kWp Solar Panel**
- **Inverter**
- **Net-Meter**
- **AC Induction Stove 1200W**
- **Utensils**

In this phase financial support is required for the following:

1) Baseline data collection for ~4,000 households to monitor and evaluate the project outcomes and carbon credit benefits

2) Install at least 100 S-ICS systems at target beneficiaries’ residence

**Target Partner Agencies:**
Philanthropic organizations | Multi-lateral and Bi-lateral donor agencies | Impact funds working on various SDGs

**GO GREEN, GO SOLAR, REDUCE YOUR CARBON FOOTPRINT**

**EESL’s Responsibilities**
- Program design
- Procurement of Equipment’s
- Program implementation

**Partner’s Responsibilities**
- Upright grant to EESL for System Integration, Commissioning, Maintenance and M&V
- Estimation of Carbon credits

**Equipment Flow:**
Solar PV & Accessories → AC Induction Cook Stove

**Cash Flow:**
Supplier(s) → Partner Agencies → End User
Proof of Concept
Closely monitored the pilot phase installations to understand:

- Suitability of the technical configuration
- Field level implementation constraints
- User experience
- Quantum of carbon credit generated
- Changes required in project plan for successful implementation

Actual Program Implementation
Putting the strategic national level implementation plan (i.e. phase 1 and phase 2 implementation) into action to ensure it meets the program objectives.

Way Forward
Join the movement to create a better and sustainable future for our planet by funding the initial at least 100 S-ICS for pilot implementation. Reach out to solarics@eesl.co.in or +91-851 001 1851 earliest by 21 July 2023 to get involved or seek further details.

Notes:
1. World Health Organization (WHO), 2020
2. Multiple Indicator Survey in India, NSSO 78th Round, 2020-21
3. Electric stoves as a solution for household air pollution: Evidence from rural India, ISD-Delhi, 2022
4. Household contributions to and impacts from air pollution in India, Nature Sustainability, 2021
5. WHO, 2019