

Organizing Partner



Host Utilities



## DISTRIBUTION UTILITY MEET DUM2022

**SESSION – 7: NEW AND EMERGING TECHNOLOGIES FOR ELECTRIC UTILITIES**  
**18 NOVEMBER 2022 | 16:00 ~ 17:30 (IST)**

***Emerging Opportunity for Utility – Electric Cooking (eCooking)***

Vimal Kumar

**Modern Energy Cooking Services (MECS) Programme in India**

# Modern Energy Cooking Services (MECS) Prog

ACCELERATING ACCESS  
TO ELECTRIC COOKING



Modern Energy Cooking Services is a UK Aid (FCDO) funded research programme running from 2018 to 2026.



In seeking to spark a new approach to clean cooking, the programme researches the socio-economic realities of a transition from polluting fuels to a range of **modern fuels**.

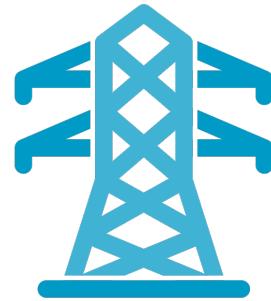
Whilst the research covers several clean fuels, the evidence is pointing to the viability, cost-effectiveness, and user satisfaction that energy-efficient **electric cooking devices** provide

**Finovista is In Country Partner for the MECS Programme** in India.  
It is an Indian consulting firm working in areas of  
**In-Country Representation, Project Management Consulting,  
Technology Transfer and Capacity Building**

# MECS Research globally shows.....

Significant progress has been made in access to electricity in the last decade

There has been significant investment in infrastructure for electricity access.



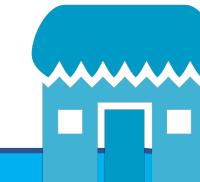
There is an urgent need to decarbonise



There have been significant gains in the energy efficiencies of cooking devices



Cooking with electricity is cost effective in many contexts and saves the household money



Cooking with electricity is also cost effective for small business food processing, institutions, and humanitarian contexts

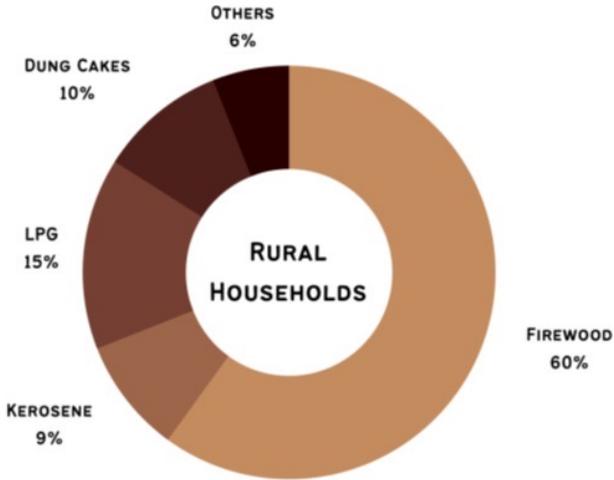


Match between electric cooking and tasty food

Open to other research and approaches that include other fuels

# India's transition towards clean cooking

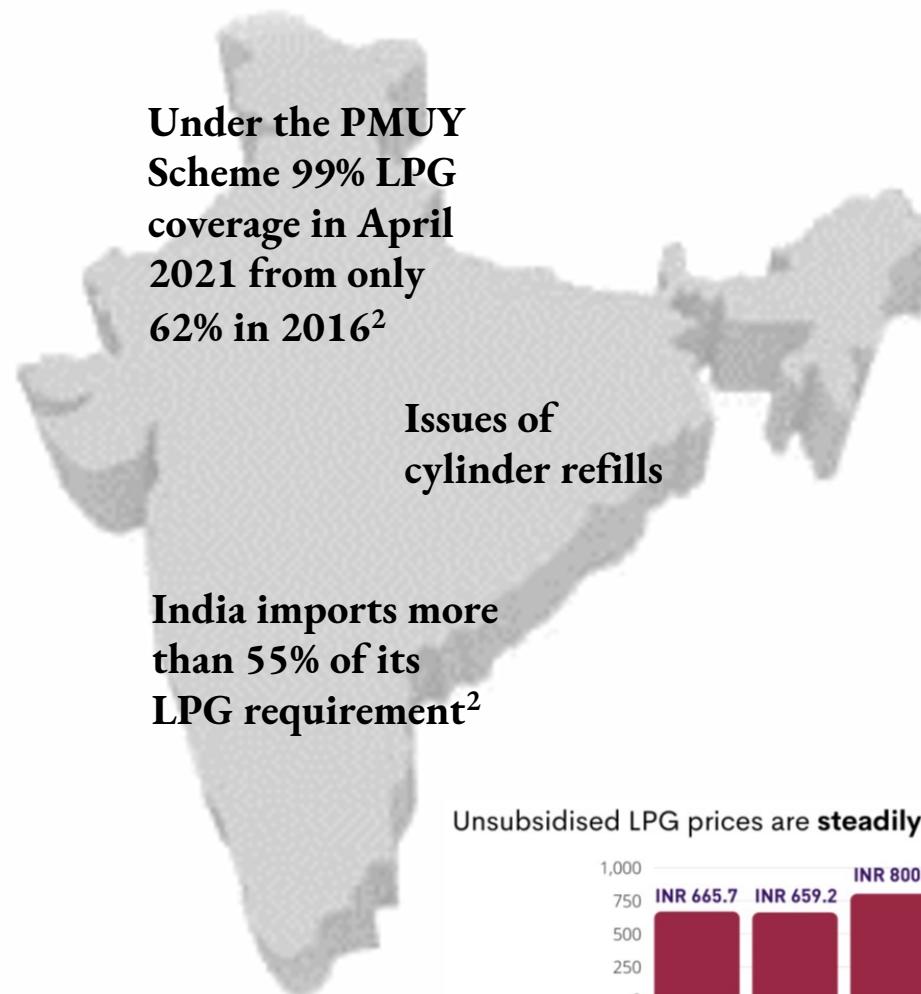
## Cooking with Traditional Fuels



- Leads to poor air quality and 4% of India's greenhouse gas emissions
- Increased respiratory infections and premature deaths
- Causing 0.48 M premature deaths



## India's Shift to Clean Cooking



## Switch to Modern Fuels for Cooking

- Total installed capacity of power in India – 402 GW (41% is from renewable energy)
- GO ELECTRIC Campaign
- 5% penetration of e-cooking devices in Indian households<sup>8</sup>



# Opportunity

**India has 300 million electricity consumers**

*3kW connections needed to support eCooking*

*Source: ISGF White Paper on Urgent Need for Standardisation of Electricity Distribution Grid in India, November 2022*

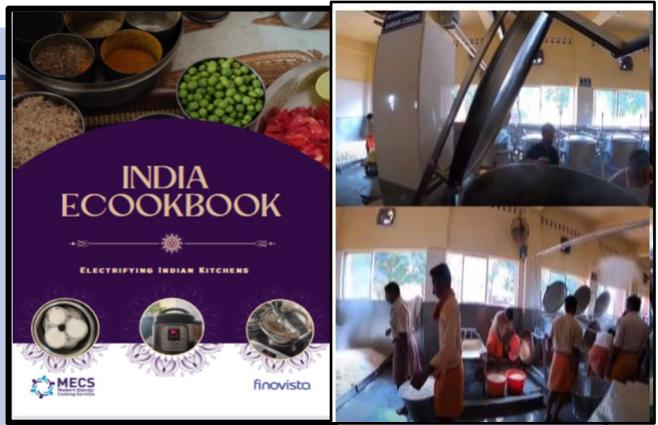
# Indian Consumer willingness to pay for Cooking Fuel

Monthly Income of INR 5,000, 74% of rural household ready to pay INR 391 pm

Monthly Income of INR 2,500, 59% of rural household ready to pay

- Irrespective of income level, over 80% of households did not use LPG as high recurring costs as a barrier.
  - Of the households not using LPG in 2018, 83 per cent expressed interest in getting it.
  - Over 60 per cent of these interested households are willing to spend INR 300 or more a month (INR 450 or more in six weeks) to use LPG for all cooking needs

# Impact in India



Building evidence for eCooking

A composite image. On the left is a purple illustration for the 'ENTREPRENEURSHIP DEVELOPMENT PROGRAMME IN CLEAN COOKING'. On the right are three video call frames showing different people participating in a virtual meeting.

Cooking Devices – Manufacturing Hub



eCooking Promotion



Enhanced collaboration

A composite image. On the left is the 'MODERN ENERGY COOKING FORUM 2022 INDIA' banner. On the right is a photograph of a conference room set up for the forum.

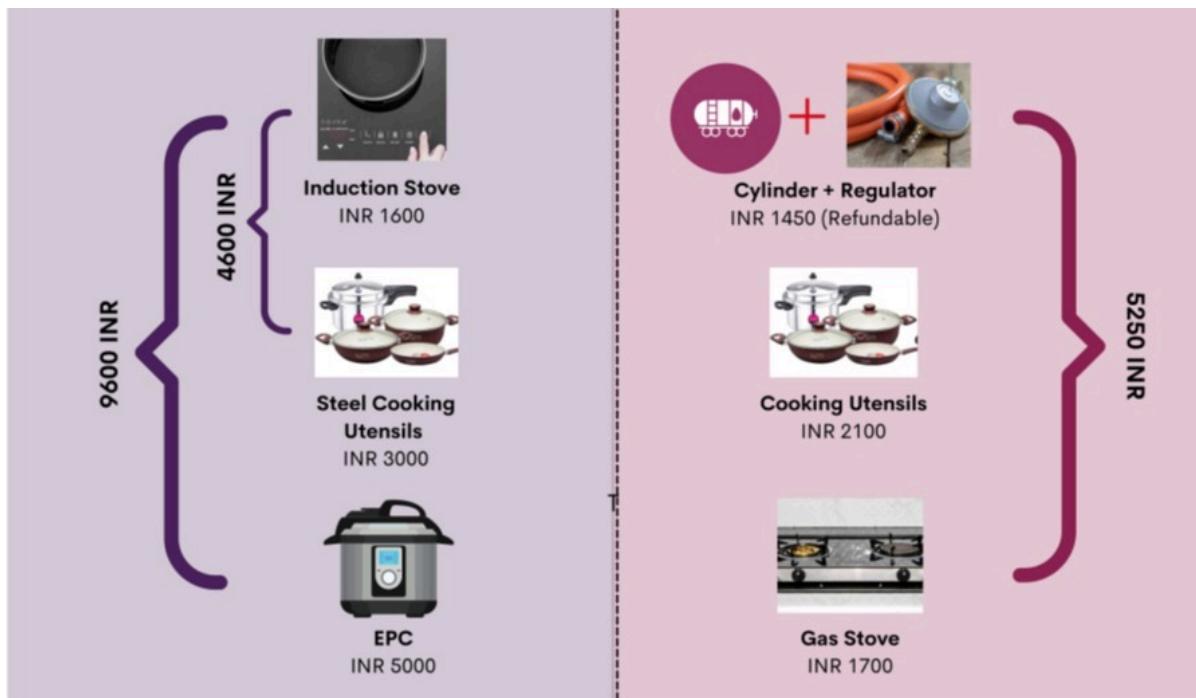
Platforms for collaboration

A composite image. On the left is a circular video frame showing a person. On the right is the 'GLOBAL LEAP AWARDS' logo and a photograph of a 'Aufla 5L model' electric pressure cooker.

Innovation & Start-up Support

# Key Initiative - INDIA ECOOKBOOK

- Cooking Culture Study – India
- Feasibility of cooking a wide range of Indian staples and popular dishes on an Electric Pressure Cooker (EPCs)
- Potential savings that a household can achieve by cooking with efficient devices like EPCs
- Time, energy and cost consumption comparison with popular alternatives i.e. LPG and Induction cookstoves.



Most everyday Indian dishes can be cooked using an EPC

around

**85%**

of typical weekly menu can be cooked with an EPC

savings on pressure cooked, steamed & boiled dishes of up to:

**40%**

vs. subsidised LPG + pressure cooker

**60%**

vs. induction + pressure cooker

Indian households could make substantial cost savings

EPCs are extremely convenient allowing multi-tasking

- fully automated
- pre-set menus
- can be left unattended

EPCs can achieve superior texture and flavour blends with dal

"Rajma Masala flavours blended well and the gravy had a thick consistent texture"

# Key Initiative - Talk series – Phase I and .....

A global virtual platform that brings together the key stakeholders to initiate discussions on aspects that are critical to enabling the Shift to Modern Energy based solutions for clean cooking

12 Module  
Talks  
sessions

700+ Global  
Registrations

500+  
Attended



## Impact

- Growing community leveraging the platform to get access to critical research findings, resources, and opportunities
- Stakeholders leverage the platform to build connect for key projects

# Key Initiative – Modern Energy Cooking Forum 2022



## Exhibition on Modern Energy based Cooking Technologies/Solutions



1'st of it's kind  
globally

Discussion on future  
of clean cooking  
energy

Discussion on how to  
enable modern  
energy based clean  
cooking

Exhibition on modern  
energy cooking  
technology/solutions

# AVAILABILITY OF ELECTRIC COOKING DEVICES



Induction cooktops



Air Fryers



Electric Pressure Cooker



Microwave Oven



Dosa Maker



Auto-Roti Maker



Multi-cook kettle

- ❖ Today, E-cooking devices are most commonly available in India- Electric Kettle, Electric Microwave, Electric Induction cooktops, Electric Rice Cooker, Electric Bread Toaster, Electric Air Fryer, etc.

## Some devices with function description

### Rice Cookers

- Low utility just boil or steam rice
- Used for steaming rice
- Easily Available
- 1Lt to 5Lt, starting from 400Watt to 800Watt

### Electric Pressure Cooker

- High Utility, multiple functions, No additional cookware required
- Average price is INR 5,000
- Available in 3ltr to 8ltr capacity. 60 Ltr is under-trial

### Induction Cookstove

- High Utility
- Requires investment in cookware
- Easily available
- High watt consumption
- Average price/unit is INR 1200

### Microwave Oven

- Mostly used for re-heating, baking and grilling
- Very low utility, with no staple food being cooked
- Easily available
- High Watt Usage
- Require specific Cookware

# EMERGING TECHNOLOGIES



Solar PV Based cooking using battery (thermal) storage



Solar Hybrid cooker



SuryaNutan

Solar Cooking Using Flexible Solar Panels and Regenerated Battery



# KEY RECOMMENDATIONS

13

- Differential Power Tariff for Domestic Consumer
- Electric Cooking with Battery
- Consolidation of subsidy and sifting for eCooking
- Labeling and Standardization for eCooking devices
- Innovative Financing for eCooking to promote early adopters
- Strengthening and Improving the Power Quality with enhanced load to support eCooking

# Clients & Partners



**MECS**  
Modern Energy  
Cooking Services



Loughborough  
University

**ESMAP**  
Energy Sector Management Assistance Program

**UKaid**  
from the British people

**giz**  
Deutsche Gesellschaft  
für Internationale  
Zusammenarbeit (GIZ) GmbH

British  
High Commission  
New Delhi

UK Science  
& Innovation  
Network

Department for  
International Trade

**Innovate**  
UK

**ktn** | Global  
Alliance

C.E.M.C.A.

**switchasia**  
Funded by the  
European Union

**CBS**

Office of the Principal Scientific Adviser  
to the Government of India

माला, लघु एवं मध्यम उद्योग  
प्रमाणित प्रणाली  
मिशन  
Micro Small & Medium Enterprises

PPDC

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

**ISA** INTERNATIONAL  
SOLAR  
ALLIANCE

संस्कृतिक तथा औद्योगिक अनुसंधान परिषद, भारत  
CSIR INDIA

**sidbi**

TCOE India®  
Driving Telecom Innovation

**t-hub**

**tsdsi**  
India's Telecom SDO

**MSME**  
Foundation for MSME Clusters (FMC)

7+

Sectors Mapped

8

Innovation Challenges &  
Entrepreneurship  
Development  
Programmes, Investor  
Pitching

>25

Projects Executed

>50

Workshops/Webinars/  
Policy Discussions/Round  
Tables

>27,000

Organizations/Stakeholde  
rs Mapped Globally

**Finovista**



THANK YOU

**Mr Vimal Kumar**

In Country Partner, MECS Programme  
Programme Lead – India,

+91 88025 00027 | [vimal@finovista.com](mailto:vimal@finovista.com)

**Dr Nick Rousseau**

International Liaison Manager, MECS  
Programme

+44 7932 768 462 | [N.Rousseau@lboro.ac.uk](mailto:N.Rousseau@lboro.ac.uk)

