MECS Modern Energy Cooking Services

UK International Development
Partnership | Progress | Prosperity

MECS and the Scaling of Electric Cooking

ESMAP Webinar:
Operationalizing and Scaling Electric Cooking Interventions

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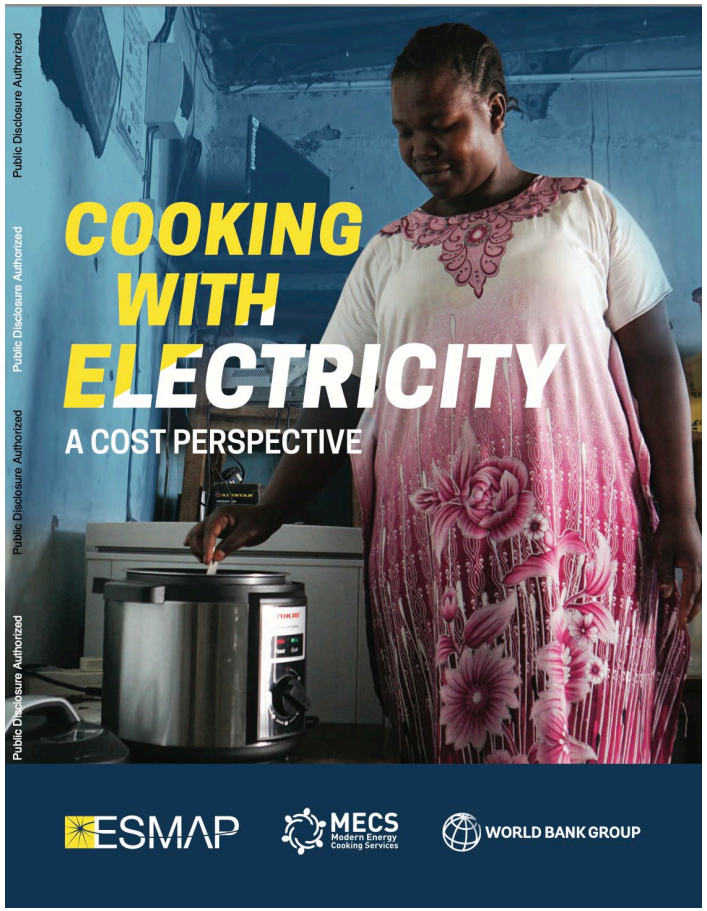
Loughborough University

The **Modern Energy Cooking Services** MECS programme aims to **break out of the "business-as-usual"** cycle of developments on cooking by investigating how to rapidly accelerate a transition from biomass to genuinely 'clean' cooking (i.e. with electric or gas).

- **Began work in 2018**
- **Evidence, research and insights** into the drivers and pathways for economies to transition to modern energy cooking services.
- Strong focus on the **Feasibility/Affordability** of Electric Cooking
  - **New more efficient appliances**
  - **Economic modelling of affordability**
  - **Ground-truthing – consumer focus.**
  - **Innovative finance**
  - **Carbon Methodology Innovations**
  - **Country Programmes demonstrating sustained uptake and job creation**



Growing Global Momentum

Formation of Global Electric Cooking Coalition at COP in 2023 – 36 members and growing rapidly.

Increasing amounts of dedicated finance for electric cooking. African Development Bank announced over $15 million in funding for eCooking initiatives in East Africa last year.

A number of large **carbon deals** being announced – taking advantage of the high integrity of eCooking credits (eg Ghana Article 6, WB Bond).

Local manufacture in India started, for export to Africa, plus first movers within African continent too.

National eCooking strategies being developed in a number of countries with strong political leadership

Low Hanging Fruit: Grid-Connected eCooking

- Growing number of Utilities convinced of **the role of eCooking in Demand creation** amongst existing customers.
- M300 gives a great **additional opportunity** to embed eCooking as a key component in growing consumer demand as part of last mile connectivity.
- **Multi-Faceted National Strategies** (eg Uganda, Tanzania, Kenya, Sierra Leone) beginning to be put in place to take advantage of these opportunities.

Grid-Connected eCooking: Policy Components

- On-Bill financing (Tanzania)
- Dedicated eCooking tariffs (Uganda) or innovative use of time of day tariffs
- Institutional eCooking (eg as part of national school feeding initiatives)
- Bulk Purchasing facilities (utility, ESCOs etc.)
- Co-ordinated Carbon Strategy
- National Appliance Standards
- Repair and maintenance system development
- National awareness raising
- Future demand sensitive energy system modelling

- Introduced 9th October 2025, the programme targets newly connected electricity customers, offering them an eCooking appliance such as an EPC or an induction hob on credit.
- Instead of paying the full cost upfront, customers repay gradually through their electricity bills, with 25% of every prepaid electricity purchase automatically allocated toward appliance repayment. *So, if a customer makes an electricity purchase worth TZS 10,000, the money is automatically split between buying units (TZS 7,500) and making a repayment to their loan (TZS 2,500).*
- Phase 1 targets households on the normal domestic tariff. During this phase TANESCO will be assessing performance and customer response and feedback, before scaling up. As the programme scales, TANESCO plans to expand to other tariffs, e.g. the lifeline tariff, largely for those in rural areas.
- We sometimes hear concern that eCooking might contribute to rural households using more than the lifeline tariff limit (75 units per month). But cooking with eCooking appliances is incredibly efficient. If a family transferred around half of their cooking to eCooking (makande, beans, rice- the food most well suited to an electric pressure cooker, for example), they are likely to use only around 1 unit a day.

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Leave No One Behind – The DRE Context

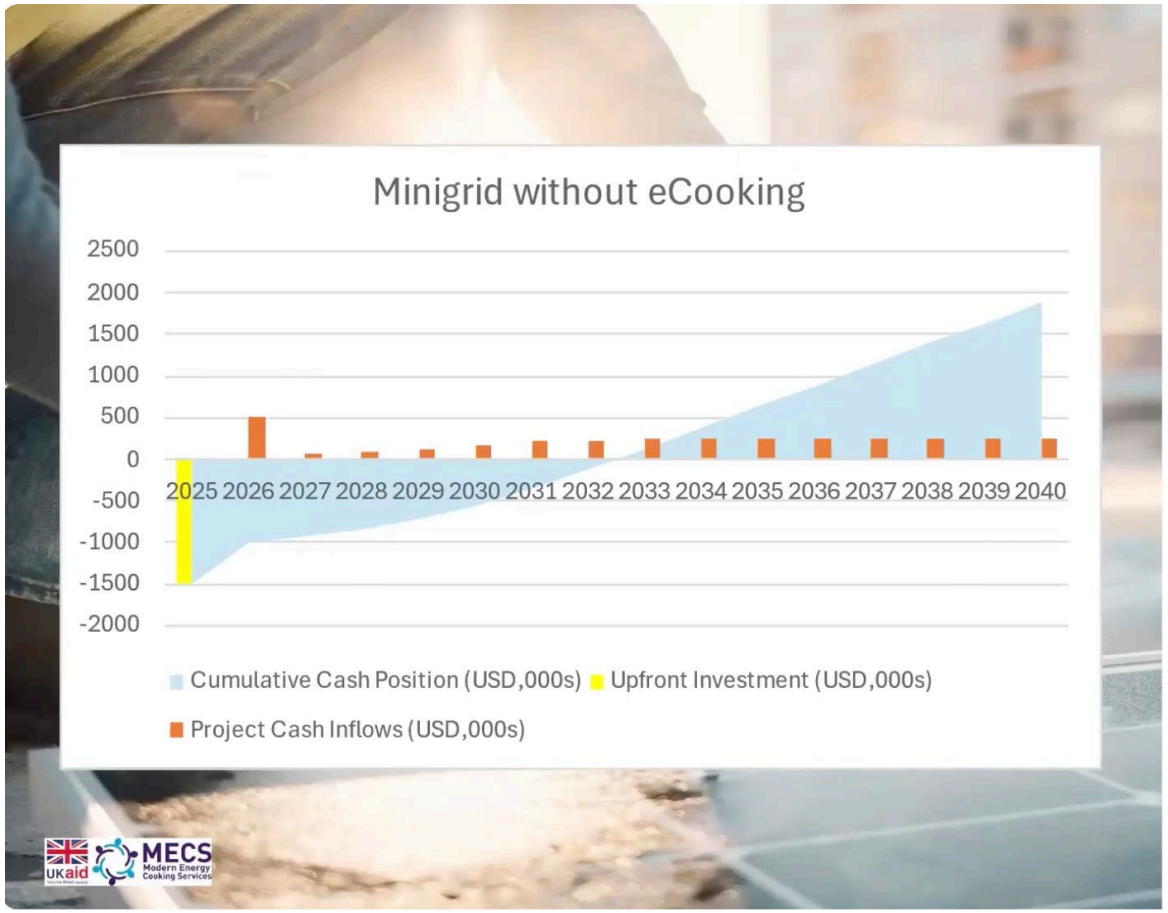
Photo Credit: Alex Smith, CREST

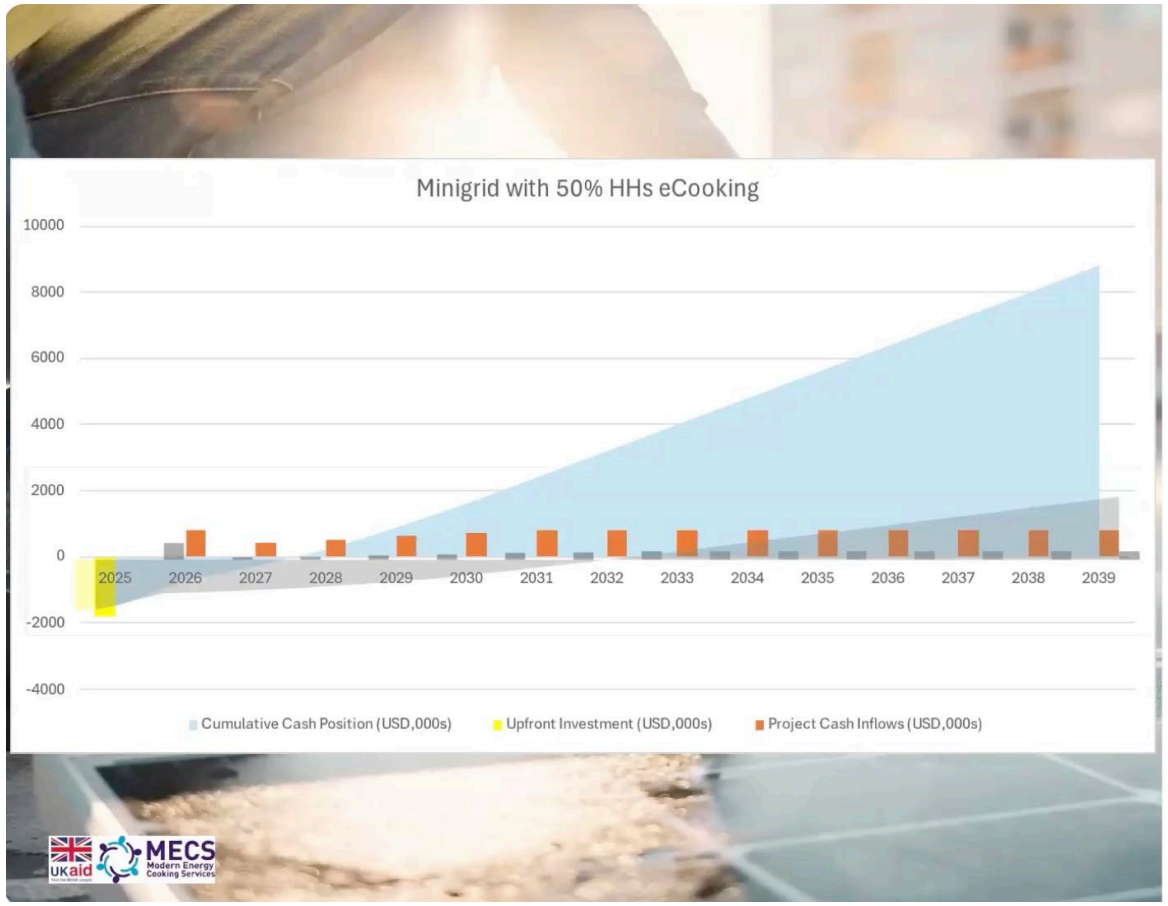
Our COSMO programme supported the development of business models for **minigrids incorporating eCooking loads**. Collaboration with AFD in Madagascar

We undertook early work on **solar PV generators for eCooking (CREST)**, now being followed through by private sector.

Our STARSS Programme focuses on market-ready stand alone and roof-top innovations

Solar shops run by women groups in Malawi, with **synergies between direct solar pumping and solar eCooking** (using DC EPC), alongside an upgrade option to Lithium Titanate batteries (which have greater lifespan than Lithium Iron Phosphate). Partner - Kachione.


Minigrid without eCooking
2500
2000
1500
1000
500
0
-500
-1000
-1500
-2000
2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040
Cumulative Cash Position (USD,000s)
Upfront Investment (USD,000s)
Project Cash Inflows (USD,000s)


Minigrid with 50% HHs eCooking
10000
8000
6000
4000
2000
0
-2000
-4000
2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039
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The key take away is that we should not be financing energy access initiatives without taking into account the opportunities for electric cooking to be a key component of consumption.

Modelling these opportunities has been a key component of our work with a growing number of partners (over to Matt).