

ACCELERATING ACCESS TO ELECTRIC COOKING

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

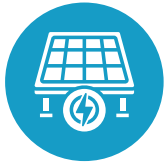


In seeking to spark a new approach to clean cooking, the programme researches the socio-economic realities of a transition from polluting fuels to a range of modern fuels. Whilst the research covers several clean fuels, the evidence is pointing to the viability, cost effectiveness, and user satisfaction that energy efficient electric cooking devices provide.



Significant progress has been made in access to electricity in the last decade, but these gains are sometimes disconnected from the enduring problem of clean cooking. Now is a moment when the gains of the last decade in electricity access can be used to make significant gains in clean cooking.

There has been significant investment in infrastructure for electricity access. Every cent invested in a strong electrical grid is also potentially useful for clean cooking. In the past 4 years USD100 m annually was invested in clean cooking in low- and middle-income countries, but this is dwarfed by sums invested in maintaining, strengthening, and expanding electrical grids in sub-Saharan Africa – USD24 bn, USD32 bn in developing Asia, and USD54 bn in India. In many countries where MECS is active, the supply of electricity exceeds demand. A pivot to eCooking (cooking with electricity) can leverage the investments made in infrastructure improvements.



There is an urgent need to decarbonise and mitigate the devastating consequences of the climate crisis. All our research seeks to harmonise with a changing global scene that seeks to decarbonise¹. There is significant global political commitment to shift electrical systems away from fossil fuels and we are researching how best to leverage these global changes to reach the billions of people who still struggle with polluting cooking fuels.

1. The programme is part of the Ayrton Fund, which is a coordinated commitment from the UK to make funding available to scientists and global innovators to tackle climate change.

Esther trialled cooking with the electric pressure cooker as part of a study by MECS country partner the Centre for Research in Energy and Energy Conservation (CREEC) to understand the feasibility, people's beliefs and opinions around cooking with electricity in Uganda.



© Jimmy Agibal (CREEC)



Potential customers cooking and trying food on an electric grill, Cambodia. These kinds of interactive community cooking events hosted at local restaurants with local chefs proved effective at triggering sales.

We work with both grid and off-grid systems. Systems are being decentralised and users are also becoming producers. Mini-grids and solar home systems are already forming part of the solution to increasing access. Introducing electricity-based cooking on mini-grids and home systems is possible, and we continue to research how to make the addition of cooking profitable for mini-grid developers and affordable for those purchasing home systems.

Our research has shown the match between electric cooking and tasty food. There are many cultures of food and it is important that whatever changes are made to cooking processes, foods retain those familiar tastes. Our research, working with households and 'everyday' cooks, has shown in 12 countries so far that local foods and menus can be cooked with electric devices and enjoyed as usual.

There have been significant gains in the energy efficiencies of cooking devices. Energy consumption in kitchens of developed economies has halved since 1980. New understanding on energy efficiencies in cooking is informing new devices; e.g. the use of insulation for long duration cooking (such as beans), the role of air circulation for oven-based cooking (as used in fan ovens and air fryers), the time and energy savings created by pressure cooking, and the increased control of induction cooking. Our technical research combines both lab-based and field research.



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

The world is increasingly urbanising and the cost of cooking fuels to urban households has risen significantly over the last 10 years. Deforestation rates tend to be higher around centres of high population and tackling the continued use of charcoal and wood in urban centres can make a difference. MECS has research from many countries that shows the use of electric cooking in an energy efficient device for long duration cooking such as beans could save 80% of fuel costs (compared to charcoal). Research with households regularly shows a 50% saving on overall costs of fuels.



Maama Maria prepares posho (maize flour porridge) wrapped in matooke (banana leaves) using the electric pressure cooker, Uganda.

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

Our research in these areas helps us spark change in the whole socio-economic system. There are strong opportunities for job creation, business creation, and family supporting actions such as schools feeding programmes.

Political commitments to solve the enduring problem of clean cooking are growing

and we engage at the highest levels of government to share our research and create an enabling environment. That includes leveraging existing and future investments in modern energy to the maximum effect and working with national governments to ensure policies, tax systems, and standards are appropriate to the transition proposed.

We remain open to other research and approaches that include other fuels such as ethanol, bioLPG or hydrogen.

Our priority is for households to have a genuine clean cooking experience – clean in terms of air quality, clean in terms of the environment, and clean in terms of lifestyle.



www.mecs.org.uk

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