



**MECS**  
Modern Energy  
Cooking Services

# Sparking a revolution

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# 1.8

billion people  
have access to  
electricity but  
still cook with  
biomass.

## The Problem

Load shedding, weak grids, affordability of electricity, accessibility of liquid petroleum gas (LPG), tradition, perceptions, and a lack of suitable cooking appliances all act as barriers to scaling up the use of electricity or gas for cooking – clean cooking.

We already know that increasing access through renewable energy generation is becoming more affordable and opening new windows of opportunity. New business models and smart monitoring are improving the reliability of LPG distribution, appliances can be made more energy efficient but still cook favourite foods so they taste right, and cooking with electricity is becoming increasingly affordable with issues of reliability and sustainability being overcome.

We want to build on these opportunities and the new knowledge emerging from the MECS programme to break out of business-as-usual approaches and rapidly accelerate the transition from biomass to clean cooking on a global scale.

The MECS programme will focus on; understanding why we are not making more progress in the transition to modern energy cooking services; taking advantage of new technological developments, relative price movements and new knowledge; generating new knowledge on how to scale the transitions and transformations, putting these into practice in collaboration with private sector partners and on strengthening the monitoring of global progress in order to influence the policy environment.



Judy, one of the stars of our eCookBook, deep fries mandazis (triangular donuts) in Nairobi on the hotplate she received during the cooking diaries study.

## Working in Partnership

The MECS partnership draws on the knowledge and experience of partners from around the world. ESMAP (the Energy Sector Management Assistance Program) is a multi-donor global trust fund programme managed by the World Bank Group. Their mandate is to help low and middle-income countries reduce poverty and boost growth, through environmentally sustainable energy solutions. Under the MECS programme, ESMAP will provide the evidence for understanding how and when modern energy cooking service transitions can happen. They will develop indicators and measurement capacity for the international monitoring of modern energy cooking services and will look for opportunities to scale up new approaches, business models and technologies developed through the MECS programme.

The MECS partnership also includes research partners from across the UK, with extensive experience across a broad range of key research themes that will support our transition away from a business as usual approach. The research focuses on;

- developing genuinely clean, efficient cooking technologies and energy storage options;
- providing full life cycle analysis that captures and defines costs and the characteristics of the supply side, including second-life or end of life use, recycling or safe disposal of electrical appliances;
- understanding consumer culture - understanding consumer culture, demand and the social drivers for modern energy cooking services choices;
- building local capability to absorb ongoing innovations and adapt the new knowledge to different contexts and needs;
- generating evidence on other drivers for transition including understanding and optimisation of multi-fuel use;
- establishing the evidence base to support policy environments that can underpin a pathway to scale and support well understood markets and enterprises.

## Supporting innovation

Aimed at early stage research on innovations and adaptations, the Challenge Fund will support innovators from around the world to respond to the challenges of rapid acceleration of clean cooking, particularly in Sub-Saharan Africa and Asia. In addition to the technological innovations of cooking appliances the Challenge Fund will tackle issues of energy storage, grid and infrastructure adaptability, alternative fuels and business models.

Cooking is a deeply cultural activity and the way people cook changes from place to place. The MECS programme will support innovators, in specific contexts to develop adaptive responses to emerging challenges in those contexts. Rapidly growing urban centres where people already pay for fuels are the target populations.

## Going to scale

Sustainable Development Goal 7 calls for access to affordable modern reliable sustainable energy for all, including for cooking, but current monitoring approaches are limited to primary fuel use and stove type. ESMAP's work under the MECS programme will include the development of a multi-tier framework that can be embedded into national data monitoring approaches. This framework will provide greater insights into the use of fuels, the impact on households, and the opportunities available for alternatives. Through this work and in conjunction with direct engagement of high-level government decision makers and funding from International Development Association programmes, MECS will work with governments to test approaches developed through MECS at scale, understand government plans and priorities, and identify how the inclusion of modern energy cooking services could enhance their economies.

# 3.8 million

deaths every year as a result of household exposure to smoke from dirty cookstoves and fuels

(World Health Organisation, 2019)

## Leaving no-one behind

As the burden of cooking and managing fuels is usually part of the un-paid burden of women and young girls they will be at the centre of any changes in the way cooking happens in households. Intra-household decision making on cooking, technologies and fuels is a key area of research for the programme. MECS research and approaches will also consider the challenges of cooking for people with limited physical abilities, limitations on mobility, age related impairments and safety for the very young. The initial focus for MECS is in more stable economies, however, consideration to the use of MECS innovations and approaches in fragile and conflict settings will be explored.



U Aung Myint of REAM discusses the compatibility of various electric cooking appliances with Burmese cuisine as the lights flicker with the unstable voltage at Mawgyun in Myanmar's Ayerwaddy Delta.



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MECS is funded by UK Aid through the Department of International Development. It is a partnership between researchers, innovators, policy makers, and ESMAP drawing on their expertise and relevant work from around the world to co-construct new knowledge with practitioners and the private sector. It is led by Loughborough University, UK.

Cover image: Esther cooks wali nazi (coconut rice) on her LPG stove in Dar es Salaam. After participating in the cooking diaries study, she has become a local champion for modern electric cooking solutions. Back cover image: Esther demonstrates cooking ndizi nyama (meat & banana stew) in the electric pressure cooker at a training session organised by our Tanzanian partner, TaTEDO.