



The Office of the First Lady and MECS team. Image Credit: Agnes Kalyonge

Report of the Engagement between ARIN and the Office of the First Lady's (OFL) Environment and Climate Action Team

AFRICA RESEARCH AND IMPACT NETWORK (ARIN)

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Executive Summary

Collaboration is key if project objectives are to be realized within the set time frames. It permits organizations with the same goal to come together and work towards realizing a common objective. Given that different institutions have different abilities and influence, coming together will enable them to achieve the objectives of a particular project effectively and within the shortest time possible. It is on that basis that the MECS Kenya team led by the Africa Research and Impact Network (ARIN), Kenya Power, and Gamos East Africa held a demonstration meeting with the Environment and Climate Action team from the Office of the First Lady (OFL) to bring them up to speed with the recent developments on electric cooking. The meeting which was held on the 19th of January 2023 at the Pika na Power Demonstration Center, Electricity House, was successful and was meant to identify areas of synergy between MECS and the OFL.

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1. Background

Climate change is a global problem that disproportionately affects different social groups, sectors, and regions. [According to an EPA report](#), vulnerable communities will be greatly affected by the impacts of climate change, most of whom are ill-prepared to adjust to the changes, especially those in Sub-Saharan Africa (SSA) and Asia. Among the factors contributing to global warming is the use of inefficient cookstoves and fuels that contribute significantly to greenhouse gas (GHG) emissions while also contributing to the reduction of forest cover and thus reduction of the carbon sequestration sinks. Clean cooking, therefore, offers a great opportunity to not only advance climate change mitigation but also adaptation actions.

[Approximately one-third of the world's](#) population depends on the use of biomass fuels for their cooking needs despite the adverse effects they have on the environment. The use of biomass fuel is responsible for the [emission of 25%](#) of all reported black carbon in the atmosphere globally. In Kenya, for example, the use of biomass fuels by households for cooking accounts for 22 to 35 million tonnes of carbon dioxide discharged annually, which is an equivalent of approximately 35% of the total greenhouse gas emitted in the country. The problem is worsened by the [high demand for solid biomass](#) which leads to the excessive degradation of forests to meet the demand for charcoal and firewood cooking fuels. This in turn results in ecosystem imbalance as the amount of carbon dioxide being produced through combustion cannot be absorbed by the remaining forest cover.

While cooking energy is central to human existence in every society, the choice of cooking energy to embrace may jeopardize both human and environmental health. The use of biomass fuel for cooking is widely common in Africa and Kenya and is associated with negative human health effects such as respiratory illnesses and eye conditions, which are usually attributed to exposure to Household Air Pollution (HAP). [The World Health Organization reports](#) that nearly 7 million untimely deaths throughout the globe are attributed to air pollution, both internal and external. Out of the figure, over 60% of the deaths, 4.3 million, are associated with HAP. [In Kenya, HAP](#) is responsible for the deaths of about 21,560 people every year.

2. About the Modern Energy Cooking Services (MECS) Programme

In Kenya, the Modern Energy Cooking services program has initiated an integrated and inclusive system approach to enhance electric cooking uptake. The approach followed a series of research and practical pilots and the recently published eCooking landscape analysis in the [eCooking opportunities Techno policy report](#). The program has established regional electric cooking hubs in [Kitui](#), [Makueni](#), [Nakuru](#), and [Kisumu](#) Counties in partnership with the Kenya Power and Lighting Company and the Clean Cooking Association of Kenya to help catalyse the adoption of eCooking. Some of the impact and success stories of the eCooking champions in the mentioned regions have been documented in the recently published [electric cooking impact stories in Kenya Booklet](#). The existing opportunity to explore eCooking in Kenya exists and the Ministry of Energy is currently championing the development of the national eCooking and National clean cooking strategy. The strategies will offer a national guideline to enhance the adoption of electric cooking in Kenya towards the achievement of universal clean cooking energy access by 2028. [By reducing the dependency on biomass cooking fuels](#), electric cooking will help reduce the emission of GHGs and thus the realization of the national emissions reduction targets as stipulated in the Second Nationally determined contributions (NDC) submitted in 2020.

3. Institutional Descriptions

3.1 The African Research and Impact Network (ARIN)

ARIN is currently the Kenyan Partner of the MECS program. The Africa Research and Impact Network (ARIN) is a leading research-impact platform of over 200 researchers and policymakers with national focal points across 36 African countries. ARIN also draws from a database of over 3000 stakeholders from universities, think tanks, the private sector, and governments. ARIN's mission is to promote research excellence and dialogue on best research and impact practices, by providing platforms for science-policy interface in Africa, building on evidence. ARIN recognizes that Africa is endowed with diverse researchers, innovation, and best policy practices that are not in the public domain yet are invaluable in the research and the development agenda of the continent. ARIN therefore provides a peer review platform where best research and impact practices from different African contexts are shared, profiled, and leveraged to inform transformative policy action. Among the areas that ARIN has pioneered path-breaking research are climate change and energy, knowledge management, science technology and innovation. The network currently convenes research and policy platforms on climate action, drawing from the perspective of researchers on adaptation, science and technology and innovation status in Africa. Through the same approach, ARIN assesses opportunities for science-policy interface, through contextual projects on research commercialization, innovation, knowledge translation and practice.

Under the climate change and energy thematic area, ARIN through the Modern Energy Cooking Services has worked with counties and national governments to promote electric cooking so far in the counties of Makueni, Kisumu, Nakuru, Kitui and Nairobi. The project is undertaken in collaboration with Kenya Power, the Clean Cooking Alliance of Kenya, and Gamos East Africa. Some of the projects/reports that ARIN has been involved in include:

- Techno-policy analysis showing the technology and policy opportunities for eCooking
- Stakeholder Engagement Strategy – showing the roles of various stakeholders in clean cooking and opportunities for engaging them
- E-cooking Hubs in five counties
- Supporting weekly 'Pika na Power' demonstration program
- Supporting the development of county energy plans
- Supporting National e-cooking strategy, clean cooking strategy and Integrated Energy Plans
- Monthly policy dialogues and several policy briefs

3.2 KPLC's Pika na Power campaign

Kenya Power's Pika na Power (Cook with Electricity) campaign was launched in 2017 with the aim of increasing revenue per customer by stimulating demand for electricity and increasing the social impact of electricity access. The campaign aims to educate customers about the range of modern energy-efficient electric cooking appliances now available (in contrast to the traditional hotplates) and tackle common misconceptions, such as electricity being seen as unsafe, or 'too expensive for cooking' (a claim which MECS research has demonstrated is absolutely not the case). ESMAP's (2020) case studies in Kenya showed that whilst, as suggested above, the cost of cooking with electricity is often lower than existing expenditures on cooking fuels, especially in urban areas and for lower income households who have to purchase in small quantities due to low liquidity, the upfront cost of energy-efficient appliances often a major barrier, especially for lower income HHs as is a lack of access to

credit, advice on how to use the new appliances and after sales service and repair and maintenance. The Pika na Power campaign aims to tackle the common misconception that electricity is ‘too expensive for cooking’ by showing people just how little it really costs to cook with electricity through live demonstrations, social media content and multimedia outreach.

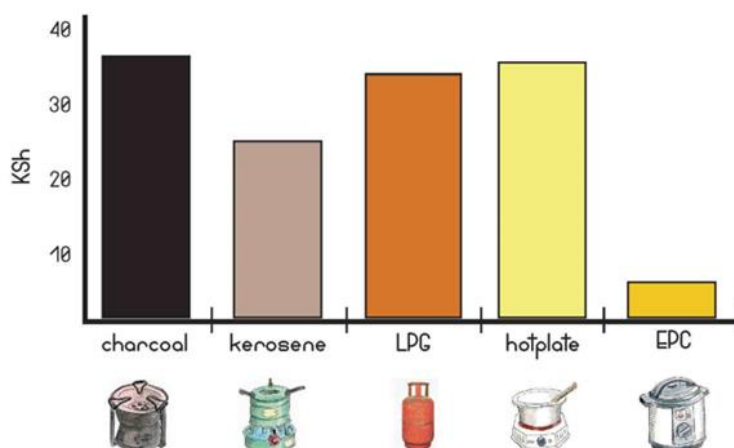


Figure 1: Illustration from the Kenya eCookBook (2019) showing the dramatic reduction in the cost of cooking ‘heavy foods’ such as beans with an Electric Pressure Cooker (EPC).

To date, activity has included a prime-time TV show, bi-weekly cooking classes at a modern demonstration kitchen in Electricity House, showcasing at events and brokering strategic partnerships with appliance manufacturers/distributors and financiers. Building on this, work is just beginning on eCAP (e-cooking Capacity Building & Market Development), a broad programme of activities funded by UK PACT (UK Partnerships for Accelerating Climate Transitions) and MECS (Modern Energy Cooking Services) and implemented in partnership with Kenya Power that is designed to further build capacity and develop the market for e-cooking by building upon the foundation laid by Pika na Power.

Work has also just begun on Kenya’s National e-cooking Strategy, the first of its kind on the African continent. Whilst clean cooking and electrification policy in Kenya has historically been disconnected, the Ministry of Energy is now taking an integrated approach to energy planning. This includes the development of the dedicated e-cooking Strategy, which will feed into an overarching Clean Cooking Strategy, as well as connecting to the National Electrification Strategy and associated policy instruments from the electrification sector.

4. Key Entry Points for Accelerating the Uptake of Electric Cooking in Kenya

- The need to package all the energy-efficient electric appliances and attach a price value to them, which can then be discounted. This may help appeal to people who totally want to transition to e-cooking.
- Stima loans may help consumers purchase e-cooking appliances and pay over a certain period of time with the savings made from cooking with electricity.
- Lobby the government through the Kenya Women Parliamentary Association (KEWOPA) with the aim of reducing the taxation rates of electric cooking appliances to facilitate uptake. This can either be achieved by imposing a waiver on all the energy efficient electric cooking

appliances for a period of 2-5 years or through complete knock down (CKD) where electric cooking appliances are imported in parts. This apart from guaranteeing that the cost of the assembled products will be lower, will also work to create job opportunities to the youths in line with the country's vision 2030.

- The need to design a carbon project that may help lower the prices of electric cooking appliances and hence accelerate uptake.
- For counties, the CDF and Governors funding can be used to plug into institutional EPCs.

5. OFL Areas of Synergy

The Office of the First Lady's (OFL) Environment and Climate Action team has adopted three strategies that may be leveraged on to help accelerate the adoption of e-cooking in the country.

5.1 Women Economic Empowerment

The OFL is part of the Joyful Women Organization that strives to economically empower Kenyan women through the table banking model. By addressing aspects of table banking, financial inclusion and health, it will be easier for women to be involved in sustainable livelihood projects that will work to increase their financial security. With money, their purchasing power will be increased and the opportunity could be seized to inform them about electric cooking. Electric cooking will not only help address health issues associated with the use of biomass but also free up much of their time thus giving them the opportunity to venture into more economic activities and better the livelihoods of their families. The women can also be used as agents of trade to help in the distribution of e-cooking appliances.

5.2 Faith Diplomacy

It focuses on two aspects, family values and mercy works. Mercy works entail extending compassion to the country through school feeding programs. The OFL has partnered with the Rockefeller Foundation to feed marginalized schools, especially those in ASAL areas. E-cooking can thus be plugged into such school programs and used as an opportunity to support the schools to cook with clean, fast, and more efficient cooking appliances. The benefactors of the feeding program can also be encouraged to plant fruit trees to supplement the food they are partaking. This can be done within the school compounds and can easily be linked to the 15 billion trees that are to be planted by 2032.

5.3 Environment and Climate Action

The environment and climate action has two departments, the green economy and health and wellness departments. The green economy launched a national tree program restoration campaign aimed at increasing the tree cover by 30% by 2032. The health and wellness department aims to transition the communities to cleaner lighting services and cooking technologies. As such, by adopting e-cooking, it will be easier for the departments to achieve their goals since pressure on forests will be reduced thus making it easier to realize the 2032 goal and the health and well-being of households will be improved since they will no longer have to inhale dirty air attributed to indoor air pollution. To also meet the ambitious target of planting 15 billion trees, the department through the various ARIN e-cooking hubs can embark on conducting a continuous tree planting exercise anytime there is a demonstration.

6. MECS Areas of synergy

MECS in collaboration with ARIN, ACTS, and partners instituted 4 regional e-cooking Hubs in Nakuru, Kisumu, Kitui, and Makueni. Local community members from the regions were identified and trained as e-cooking champions to spearhead the clean cooking agenda within their respective counties given that biomass use is prevalent in rural areas. As such, partnering with the OFL through the women's economic empowerment docket can help train local women on financial literacy which will better position them to invest in electric cooking appliances.

MECS has partnered with the World Food Programme (WFP) to support the cooking energy component of its school feeding programme. Larger scale e-cooking appliances are now available and have been tested by institutions in Lesotho and Tanzania, as well as in Turkana County. They will soon be tested by KPLC at the Pika na Power Demonstration Centre and the Institute for Energy Studies and Research. A pilot has been designed to trial these larger cooking appliances with schools supported by the WFP's school feeding programme in Nairobi and Isiolo. The pilot aims to reduce the consumption of firewood at these schools, resulting in net cost savings for the schools, as well as creating a healthier working environment for the cooks and decreasing the impact on the environment. Collaboration with the OFL could catalyse this project by raising its profile and facilitating its replication in other schools across the country.

MECS through UKPACT funding is also supporting 12 pieces of work on eCooking Capacity Building and Market Development (eCAP) and is working closely with KPLC, CCAK, ISSE, Powerpay, SCODE, Kisumbara, Nuvoni to implement these activities. The health and wellness department under the environment and climate action ministry could also tap on these 12 projects by supporting advocacy and sensitization of communities to upscale their transition to cleaner lighting services and cooking technologies and fuels.

The Clean Cooking Association of Kenya (CCAK) and the Ministry of Energy and Petroleum (MoEP) convened the 3rd Clean Cooking Week (CCW) in November/December 2022. The week brought together key stakeholders from the clean cooking sector to share experiences and build collaboration around the shared goal of enabling access to clean cooking. At the CCW, the MoEP officially launched the strategy development process for the Kenya National Clean Cooking Strategy (KNCCS) and the Kenya National eCooking Strategy (KNeCS). The KNCCS aims to map out the pathway for achieving the MoEP's target of universal access to clean cooking by 2028. The KNeCS aims to evaluate the contribution that electric cooking could make towards this goal and a roadmap for achieving it. Both of these national strategies are expected to be launched at the next CCW, which is expected to take place at the end of 2023. It would be of significance if the First Lady would attend and give her opening remarks at the next CCW. Considering her position and influence, there is no doubt that her convening power would greatly increase the impact of the event.

7. The Asks

1. What MECS intends to achieve in the short, medium, and long term with regards to electric cooking.

- **Short term** - increased awareness on e-cooking through public education and continuous demand stimulation.
- **Medium** - Develop EPC prototypes with bigger capacities that will be ideal for households with bigger families and commercial/institutional use.

- Develop e-cooking business models that will address the high upfront cost of electric appliances and thus facilitate uptake even among low income earners who mostly rely on polluting fuels.
- Develop a policy that will facilitate the uptake of electric cooking either through adopting cooking tariffs that will encourage cooking with electricity or/and having tax exemption on the wide range of energy-efficient cooking appliances in the market for a fixed period of time.
- **Long-term** - increase the rate of electrification in the country both through the grid and off-grid solutions as well as enhance its reliability considering that electricity is the main enabler to electric cooking that could significantly contribute to the realization of SDG7.

2. Areas where the OFL can collaborate with ARIN and KPLC under the MECS program to ensure that the technology is well publicized and embraced.

3. How the OFL can help support the E-cooking agenda

- Most educational institutions in Kenya significantly contribute to the emission of GHGs given that they are the bulk consumers of biomass for cooking. The OFL through the Environment and Climate Action department in partnership with the MECS program can spearhead and encourage a paradigm shift in the way cooking is done in such institutions. Only then can the 30% tree cover be achieved. Otherwise, the trees that are planted will end up being cut down to meet the demand for biomass.
- The OFL could support the Institutional eCooking pilot in Kakuma and other marginalized areas. There is an opportunity to merge this with the ongoing school feeding initiatives at the OFL and also link this to national tree growing restoration campaigns.
- The OFL, through the environment and climate action pillar can plug into the ECAP Project on eCooking in informal settlements to reach low income households with messaging and initiatives aimed at reducing household air pollution.
- Leveraging women groups as agents of change in the clean cooking transition. One of the activities under the strategic pillar on women economic empowerment at the OFL can be encouraging a shift in the use of clean cooking appliances by drawing from the resources that are obtained through table banking.
- The OFL could support the next Clean Cooking Week (Nov/Dec 2023), where the Kenya National Clean Cooking and e-cooking Strategies are expected to be launched. The First Lady could offer opening remarks, leveraging her convening power to catalyse engagement in the event and celebrate the publication of the national strategies.

8. Way-forward

Energy is a fundamental enabler of development. Over the last 5 years, the rate of electrification has exponentially increased in the country. Despite the progress, it is still not being utilized effectively. While it was meant to improve the lives of those who have been connected, this objective cannot be met if it is only used for lighting. As such, there is a need to extensively publicize electric cooking as a cheap and alternative clean cooking solution that can address a myriad of problems that are associated with the use of biomass. According to Julius Rotich, Director of Environment and Climate Action at the OFL, the biggest thing that needs to be done is not improving the infrastructure but

raising awareness. “We need to go big into letting people know what e-Cooking is all about.” To make this a reality, the two offices may need to:

1. Develop a big MECS plan that can be used to get targeted funding for different electric cooking campaigns.
2. Develop a joint carbon project proposal for funding that will help lower the prices of electric cooking appliances and hence accelerate uptake.
3. Engage other stakeholders in a proposal write-up for an e-cooking starter package that is attractive to first-time users of electric cooking equipment which can be promoted at the various demonstration centres.
4. ARIN and the OFL will explore joint programmes on climate change and environment.