



Ministry of Energy & Petroleum  
(MoEP)



# CLEAN COOKING WEEK 2022 REPORT

28<sup>th</sup> November to 2<sup>nd</sup> December, 2022

***THEME: “Transforming the Enabling Environment to Achieve Universal Access to Clean Cooking by 2028”***

**PANARI HOTEL, NAIROBI**



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## INTRODUCTION

The Clean Cooking Week is an annual event hosted by the Clean Cooking Association of Kenya (CCAK) and the Ministry of Energy and Petroleum (MoEP) in collaboration with various development partners and stakeholders to catalyse action toward achieving the Government's ambitious target of ensuring universal access to clean cooking energy by 2028.

This year's event was the third and was held from 28th November to 2nd December 2022. The theme was "Transforming the Enabling Environment to Achieve Universal Access to Clean Cooking by 2028".

The five-day event involved a series of activities including exhibitions, content releases, virtual presentations, and a demonstration of innovative clean cooking technologies including eCooking. Other activities were the launch of the MoEP and CCAK USSD platform to facilitate linkages between improved clean stoves end users and suppliers, and the flagging of trucks that will be used to create awareness of clean cooking solutions.

Clean cooking is an important component of the government of Kenya's development agenda. Its key policy objective is to fulfill the national obligations to sustainable development goal (SDG) No. 7 of achieving universal access to clean cooking solutions by 2028. This is aligned with other global and local commitments contained in the Sustainable Energy for all (SEforAll) and nationally determined contributions (NDCs) that aim to accelerate actions in clean cooking to achieve the target.

## Monday- 28th November 2022

### OPEN KNCCS COORDINATION COMMITTEE MEETING

The first day of the Clean Cooking Week brought together key stakeholders across the clean cooking sector to engage in the ongoing strategy development process for the Kenya National Clean Cooking Strategy (KNCCS) in an Open Coordination Committee Meeting. Past Coordination Committee meetings have been limited to the select nominees to the Coordination Committee. This meeting provided a platform for a wider range of stakeholders to engage with the process of developing a Clean Cooking Strategy for Kenya.

During the session, MoEP, represented by Mr. Dan Marangu and Dr. Faith Wandera, gave an overview of the KNCCS process, highlighting the role that it will play in providing a roadmap to achieving universal access to clean cooking by 2028. MoEP highlighted the importance of collaborating with stakeholders in the development of the KNCCS and took participants through the ongoing and upcoming studies that are expected to feed into the KNCCS.

Development partners, MECS, AFD, and GIZ informed participants of the specific studies and projects that they are facilitating as part of the KNCCS development process. Updates were given on the status of studies on alternative fuels, consumer and enterprise financing, institutions and business access to clean cooking solutions, biogas, the cooking sector regulatory framework, the behavior change and communication strategy, knowledge management, and the LPG study. There were also updates on the overall status of the KNCCS overarching strategy, eCooking strategy, and financing for implementation.

From the detailed presentation that EED Advisory, the consultancy firm leading the development of the KNCCS, represented by Murefu Barasa, the majority of those in attendance were for the first time able to envision what an overarching clean cooking strategy would entail and the value that it could offer to the cooking sector as a whole. This was especially important at the beginning of the KNCCS process, where stakeholder input is able to influence on the strategy development process itself, not just to refine an

almost finished product in a validation workshop at the end of the process.

Murefu walked participants through the status of the cooking sector in Kenya currently, painting a picture of the negative impacts that result when the majority of households still use unclean cooking fuels. He then highlighted the various pathways to transition to improved clean fuels and technologies. A highlight of his presentation was a call to stakeholders to consider the viability of the 2028 target for achieving universal access to clean cooking. Further, Murefu highlighted the need to focus on truly transformational solutions rather than simply incremental changes if the sector was to achieve the universal access by 2028 target. He drew attention to contextual issues such as the fact that firewood, which is used by the majority of Kenyan households, is in many cases free to access. This poses a significant challenge to enacting widespread transition since households that needed to begin to pay for fuel would be much harder to persuade.

The overview of the strategy development process was well-received by stakeholders, who acknowledged the need for a viable strategy to lay out the pathway towards universal access to clean cooking by 2028. Although 2028 is just 5 years away, several stakeholders commented on the need for such an ambitious target as the sector is in need of immediate action. A major piece of feedback was to draw in key stakeholders that have been only peripherally involved in the KNCCS. In particular attendees highlighted the Ministry of Health and County Governments as missing pieces of the puzzle that need to be fully engaged from the beginning of the strategy development process. Issues of messaging and awareness creation were also discussed at length. According to stakeholders, there is limited information on the risks attached to the use of unclean fuels for cooking. For example, participants highlighted the need to reach people at all levels with relevant information regarding the health effects of using unclean fuels. Reference was also made to past successful awareness creation campaigns that could work as a blueprint for upcoming initiatives. It was proposed that a prominent clean cooking ambassador be identified. Finally, the amplification of consumer voices emerged as a key concern, with participants expressing the need for the strategy to take into account the needs of the intended beneficiaries of the transition to clean cooking.

At this Open Committee Meeting, sector stakeholders were able to interact with the process of developing the KNCCS. The feedback received during this session and on the inception report prepared by EED Advisory will be instrumental in shaping this into a truly inclusive strategy for Kenya's clean cooking strategy.

## OPENING PLENARY REMARKS

### **Address by the Clean Cooking Association (CCAK) Chairman, Jechoniah Kitala**

The plenary session was opened by the CCAK Chairman Jechoniah Kitala who highlighted the importance of the Clean Cooking Week in creating awareness of the need for concerted efforts to support the transition to universal access to clean cooking solutions in Kenya. He noted that the theme of this year's forum which is "*Transforming the Enabling Environment to Achieve Universal Access to Clean Cooking by 2028*" has been inspired by the realization that transformation in the clean cooking sector cannot be delivered through the implementation of legal solutions or by development organizations or even the Government alone.

Mr. Kitala said the solution lies in addressing the underlying systemic constraints through a multi-factor development approach, including working with the national and county governments, private sector, financial institutions, and development partners. He said CCAK, as an association, appreciates the enormous task ahead, considering there are still about 70% of Kenyan households cooking with firewood stoves and 59% using the three-stone open fire.

Mr. Kitala noted that through the support of partners, the clean cooking sector has recorded key milestones, namely increased production capacities up to industrial scale, better quality assurance in the market, innovative business models, and knowledge management. He ended his remarks by lauding the Ministry of Energy and Petroleum for taking the lead in driving the agenda for clean cooking solutions.

### **Address by Council of Governors (CoG) CEO Mary Mwiti**

The Council of Governors (CoG) CEO who was represented by Esther Kagwima said adopting clean cooking technologies is a priority in the county governments' development agenda.

She said 59% of Kenyans still use the traditional three-stone open fireplace with the figures being higher in ASAL counties where over 95 to 98% of the population rely on fuelwood to meet their primary cooking needs. She singled out women and children as the most affected groups, with close to 5000 children dying in Kenya every year due to unsafe cooking methods.

Mrs. Mwiti indicated that the county governments have taken various measures to save Kenyans from indoor air pollution resulting from unsafe clean cooking methods. She gave the example of the County Government of Kilifi which last month launched an initiative to boost the adoption of clean cooking energy solutions in collaboration with the CCAK.

She said Kilifi county has enacted a law that spells out the pathway through which forest resources will be used and how licensing of wood fuels needs to be done. These regulations, she said, have been critical in ensuring that the charcoal production in the county adheres to the best practices and technologies available.

Mwiti stressed that through County Energy Plans, county governments can develop specific policies that enable them to access funding to promote access to clean cooking energy at the household level. She cited the high cost of clean cooking fuels, limited availability of high-quality cooking stoves, and low consumer willingness to pay for the incremental benefits of clean cooking solutions as some of the challenges facing the drive to achieve universal access to clean cooking solutions.

### **Keynote Address by Energy and Petroleum Cabinet Secretary Hon. Davis Chirchir**

The keynote address was delivered by Principal Secretary, Ministry of Energy and Petroleum Maj. Gen (Rtd) Dr. Gordon O. Kihalangwa on behalf of the Cabinet Secretary, Davis Chirchir.

Chirchir noted that cooking is a fundamental aspect of human life and is of cultural and social significance in different communities and that the Government considers reliance on open fires and traditional cookstoves and fuels one of the most pressing health and environmental problems that call for urgent actions. He said that in Kenya, 59% of households use the traditional fireplace for cooking, while only 30% have access to clean cooking solutions.

Chirchir informed the participants that is developing a National Clean Cooking Strategy to ensure Kenya is on track to achieving the target of universal

access to modern cooking services by 2028. The strategy is aimed at guiding the process through which the country will increase access to improved transitional and clean cooking solutions.

He indicated that the solutions include climate-friendly efficient biomass stoves, as well as fuel transition from solid biomass and kerosene to cleaner and environmentally friendly options such as biogas, bioethanol, LPG, solar PV, and electric cooking.

The CS also talked about the Electric Cooking Strategy whose aim is to bridge the policy gap between electricity access and the adoption of clean cooking. The intention is to raise the profile of electricity as a viable option for mitigating the effects of climate change associated with the use of polluting fuels for cooking. The interventions, Chirchir said, will take advantage of the over 75% national access to electricity (90% of which is renewable) to increase the percentage of households using electricity for cooking beyond the current 1%.

The CS told delegates attending the forum that the Government has demonstrated a high-level political will to implement coordinated actions that support the transition to clean cooking. It has also ensured that the same is incorporated into the National Integrated Energy planning and budgeting. The implementation of the Kenya Clean cooking Energy Compact 2021, he said, will ensure an enabling environment for strengthening supply and stimulating demand for clean cooking fuels and technologies.

## **PARTNERS' SPEECHES**

### **Modern Energy Cooking Services (MECS), Prof. Ed Brown**

Prof. Brown said the clean cooking agenda is being recognized internationally and hailed the role Kenya is playing to promote the adoption of clean cooking solutions. He noted that Kenya has witnessed groundbreaking and leading clean cooking technologies across Africa that are helping to transform the approach toward achieving access to clean cooking energy.

He noted that addressing the challenge of ensuring access to clean cooking solutions should not just be limited to rural areas of Kenya but also urban Kenya, where many people are still using fuels that are seriously affecting their health.

### **GIZ Corporation, Bodo Immink**

Immink explained that GIZ Corporation focuses on three priority areas of sustainable economic development and employment promotion, agriculture and food security, and global energy and climate protection. He said GIZ is supporting the commitment of the Government of Kenya to achieve universal access to modern energy solutions, including clean cooking, by 2028.

He noted the Government has made an ambitious commitment to people towards greenhouse gas emission reduction. In recognition of the need for collaborative efforts towards laboring on these commitments, Immink said, GIZ is involved



in interventions to advance universal access to modern cooking and cooking technologies, and the Energizing Development program not only promotes access to energy but also supports small and medium enterprises and social institutions like schools, through marketplace approaches.

He said GIZ supports the sector transformation from lower to higher-tier cooking solutions like electric cooking that increases direct benefits for users and paves the way for low-carbon development for the country. GIZ also implements the African Biodigesters Components project, which is focused on the development of the biodigester market in Kenya and Uganda. He concluded his remarks by mentioning that GIZ contributes to “*Just Energy Transition*” by operationalizing the Behavior Change and Communication (BCC) strategy for promoting clean cooking in Kenya.

### **SNV - Country Director Kenya and Burundi, Jeen Kootstra,**

Kootstra said SNV celebrated 55 years of presence in Kenya this year and has been at the forefront of national development, working with Government stakeholders and sector associations such as the CCAK to support universal access to modern energy services.

Kootstra said the organisation focuses on employment, market-based and social equity approaches to drive sustainable and lasting systems to change and is implementing a broad range of projects in Kenya that facilitate the provision of clean, affordable, reliable, sustainable, and secure energy services.

Kootstra indicated that SNV has been working with GIZ on capacity building, awareness raising, and creating an enabling environment for the adoption of biogas technology in Kenya. He promised the organization will continue to push for innovative financing approaches and support access to finance, generating evidence, disseminating knowledge, sharing lessons learned, raising awareness of clean cooking solutions, and promoting innovations in the sector.

### **Fairtrade Africa, Casper Pedo**

Pedo said Fairtrade Africa is engaging farmers and workers in the value chain to give them more control over their lives so that they can decide how they invest in a sustainable future. The organization is undertaking initiatives within the agriculture sector to support the cause of universal adoption of clean energy for all.

He said Fairtrade Africa is working with development partners and experts in clean energy, to support workers through various green energy and climate-friendly initiatives, including producers of tea, coffee, and flowers across East and Central Africa.

Pedo disclosed that with funding from different development partners, the Kenya Roses project, in particular, targets over 4,500 direct beneficiaries at the initial stage, and they hope to expand this further and cater for over 20,000 indirect beneficiaries around the country.

## **Clean Cooking Alliance, Colm Fay**

Fay noted the Clean Cooking Alliance works with global network partners to drive consumer demand, mobilize investment, and support policies that allow the clean cooking sector to thrive.

He said CCA has an ambitious vision to ensure that clean cooking plays a critical role in protecting the climate and environment, as well as transforming lives by improving health, empowering women, and helping consumers to save time and money.

Fay said achieving a just and equitable sustainable energy transition at the scale that is required in Kenya by 2028 requires robust and inclusive policies and strategies. These include financing and incorporating the consumer's voice at the center of everything CCA does.

He disclosed the CCA is piloting a transformative initiative of networking clean cooking units in various countries and Kenya is one of the countries in which clean cooking delivery units will be established.

## **SESSION 1: A WALK-THROUGH ENABLING POLICIES AND STRATEGIES**

The session was moderated by Mr. Erick Muriithi and facilitated by Dr. Faith Wandera, Deputy Director of Renewable Energy, MoEP.

Dr. Wandera gave a presentation on various policies and strategies that the Government has developed to help achieve its ambitious target of universal access to clean cooking energy by 2028. The strategies include Bioenergy Strategy, Behavior Change Communication Strategy, Gender in Energy Policy, and Energy Efficiency Strategy among others.

She also talked about the Kenya National Clean Cooking Strategy (KNCCS) being developed by the Ministry of Energy and Petroleum in collaboration with partners CCAK, GIZ, MECS, AFD and Climate Compatible Growth among others. The strategy will provide a roadmap through which the country will increase access to improved transitional and clean cooking solutions.

The Behaviour Change Communications Strategy, Dr. Wandera said, will promote clean cooking by creating awareness of the benefits of adopting improved cooking solutions. This is expected to result in increased uptake of the solutions both at the household and institutional and small and medium enterprise levels.

She said increased uptake and usage of these solutions will result in additional climate change adaptation benefits such as a reduction in biomass degradation, improved health benefits, and an increase in household income.

## **SESSION 2: PRESENTATION OF KENYA NATIONAL CLEAN COOKING STRATEGY**

The presentation on the KNCCS was delivered by Murefu Barasa – Managing Partner, EED Advisory, moderated by Erick Muriithi.

Barasa said the electricity sector in Kenya has developed over the past 20 years with 80% of Kenyans having access to power up from 18%. He took participants through the six steps of developing the Kenya National Clean Cooking Strategy which he outlined as the inauguration, assessment of the current baseline, modeling out future scenarios, formulating the vision, and validating the report. He also mentioned Indonesia which ensured 50 million households transitioned from using kerosene and Ghana as case studies relied on.

### **SESSION 3: PRESENTATION OF THE KENYA NATIONAL ECOOKING STRATEGIES**

The session was facilitated by Elsie Onsongo – Director, Nuvoni Center for Innovation Research, and moderated by Erick Muriithi.

Ms. Onsongo said the strategy will be developed over the next 10 months and will be participatory to ensure feedback and buy-in/ownership from partners and players in the clean cooking sector.

She said studies have shown that whereas electrification has grown, clean cooking has not grown. The studies show a mixed picture of what's used as primary cooking fuel. This is defined by perception, cultural factors, availability of appliances and market, she noted.

She noted that the development of the eCooking strategy entails conducting a baseline study to provide data for developing different scenarios for scaling up electric cooking. The study will factor in the demand and supply of electricity in Kenya, economic growth focus, and impact on the environment, health, and quality of life. The data will be used to identify the gaps between clean cooking and electrification with a view to bridging them.

### **PANEL DISCUSSION: A WALK THROUGH ENABLING POLICIES AND STRATEGIES**

Moderator: Erick Muriithi. Panelists: Dan Marangu – Director Renewable Energy, Ministry of Energy and Petroleum, Samson Odil – Technical Assistant, Kenya Power, Jackson Mutonga – Senior Technical Advisor, GIZ and Andrew Amadi – Chief Executive Officer, KEREAA.

The panelists were asked general and specific questions which they responded to. The participants were given a chance to engage the panelists as well. They focused on the enabling policies and strategies that have helped create an enabling environment for the adoption and access to clean cooking solutions.

Dan said the Ministry has provided an enabling environment for all actors promoting clean cooking in Kenya, including enacting the Energy Act that clearly defines the roles of national and county governments. He said they have programs and projects focusing on biogas and charcoal production and they are working with development partners to enhance access to clean cooking solutions.

Jackson said GIZ focuses on the country's energy sector, sustainable mobility (transport), and climate protection and supports the government on policies on clean cooking. Through the project, 3 million people have scaled to higher-tier cookstoves. The promotion of clean cooking projects aim at the market transformation to improve cookstoves through the value chain and support from production to consumption level. GIZ promotes biogas components through the up-scaling adoption of biogas in households.

Samson said KPLC distributes 80% renewable clean energy and reaches 100% between 10 pm to 6 am when thermo generation is turned off. KPLC serves about 8.3 million customers, predominantly 6 million. Rural areas are the most affected in accessing clean energy. The priority is to improve the quality supply of power for sustainability to promote clean cooking and increase demand. KPLC is working with partners to see ways of promoting efficient electric appliances like induction cookers, considering easy access to financing.

Amadi said KEREAA promotes renewable energy across Kenya in terms of clean cooking and works with CCAK clean cooking experts. KEREAA uses data on advocacy to promote an enabling environment, and efficient options for clean cooking. The association generates and produces energy price indexes and updates in real-time. This enables people to be aware of opportunities and options. We also promote and create new markets by working with the appliance financing program of KPLC and the World Bank.

On what efforts are in place to achieve universal access to clean energy and the gaps that exist, Jackson said they include promoting briquettes and pellets; working with stakeholders to mobilize resources, creating awareness to reach the community, and coordinating with partners toward achieving the goal for support.

On what can be done to increase access and promote demand to clean cooking, Dan said demand has increased, and demand per month is more than economic returns, which is below average in consumption. He said there is need to promote demand by demonstrating how easy to use electric cooking appliances are to support global efforts to reduce greenhouse gas emissions and make clean energy available. He said a lot of work should also go into sensitization to change the perception of the high cost of electric cooking.

On the possibilities of incorporating the supply and distribution of clean cooking solutions during national relief food distribution, Jackson said relief food distribution is seasonal and mostly distributed in arid and semi-arid areas. He said the challenge lies in fuel supply caused by desertification and called for distributing cookstoves alongside food as an appropriate technology to reduce pressure on natural resources. Jackson stressed the need to balance food alongside fuel noting that a sustainable approach incorporates people affected by drought.

On how women can benefit, and the challenges they go through when using electric appliances the participants heard that in all advocacy campaigns, gender has been featured as a stand-alone issue. Reviewing gender policy and addressing all the advocacy matrix and work plans, opportunities for women, podcasts on tips to start a business for renewable energy supply and create gender targeting behavior change campaign was also mentioned

## **PANEL DISCUSSION: CLEAN COOKING PLANNING AT THE COUNTY LEVEL**

Moderator: Erick Muriithi. Panelists: Mariam Karanja – Technical Advisor, GIZ, Jechoniah Kitala – Sustainable Energy Technical Assistance (SETA), Wilfred Baya – County Energy Director - Kilifi County and Rachel Mwangangi - County Energy Director – Kitui County.

The discussions focused on Kenya's ambitious target of achieving universal access to clean cooking by 2028 and how the county government can support efforts to ensure this at the household and institutional levels

The question that was first put forward to the panelists was how Kenya's diverse cultures and natural resources influence cooking methods in various regions and the situation of access to clean cooking in the counties.

Rachel said in Kitui, according to 2018 statistics 81% of the households use firewood out of which 67% use three-stone fireplaces and 8.6% charcoal; kerosene is at 2.7%, LPG 6.7%, and electricity is 0.2%. She said the scenario changed after the introduction of pressure cookers as men are now cooking in rural areas. Rachel said the major delicacy is muthokoi which is dry food that calls for economical use of energy, and that's why most go for firewood. Challenge, she said is the stability and reliability of power supply, and fuel usage transition from firewood and charcoal to cleaner technologies using cleaner appliances such EPC and LPG.

Wilfred said in Kilifi, secondary schools are the major consumers of firewood. He disclosed there is a program by the County Government to promote the adoption of biogas and charcoal briquettes for clean cooking. The County Integrated Development Plan, he said lays more focus on renewable energy and clean cooking. We have set a target of three years to achieve access to clean cooking solutions.

Kitala said SETA is working in several counties to build the institutional capacity of the counties, private sector, and civil society organisations to promote the adoption of clean cooking solutions. He said they are sensitizing on the need for energy planning and that the energy delivery model was piloted in Kitui. The planning process of the County Energy Plan and the energy delivery model focus on the end user and building baseline data. He noted energy is an enabler of wider development needs in the counties.

Mariam said GIZ supports counties develop County Energy plans. Nakuru, Marsabit, Turkana are some of the counties they have. The organization also works with the counties to build the capacities of officers from the energy and agricultural departments. Projects under GIZ, Miriam said, include the Green Climate Fund, which promotes climate-friendly cooking solutions focusing on improved cookstoves, biomass, and charcoal by creating an enabling environment in the counties. At the national level, GIZ works with the Ministry of Energy, focusing on energy centers to help develop innovations and technologies.

On County Energy Plans, it was revealed that Kitui is piloting one. The plan focuses on an energy delivery model that focuses on energy and non-energy issues. This captures

what was usually omitted like building capacity for those who can manufacture improved cookstoves and jikos and those who maintain and repair cookstoves. The project has reached 40 wards, sampled in 8 priority needs. Agriculture and livestock came with seven solutions: clean cooking, water, agriculture, and access to health. We have so far done three projects - small irrigated agriculture; modern poultry and an in-depth study on clean cooking to find out the factors affecting clean cooking.

Kilifi is among the first counties to develop an Energy Plan. The county did an Energy Context Study and analyzed the type of fuel and technology being used, energy resource mapping, and conducted a biogas feasibility study. The second generation plans for all households to have a biogas digester, train youths and women on charcoal brigades, and on how to build cookstoves and biogas digesters. A more detailed document that's useful to the county and partners.

### **Other issues that came out are:**

SETA developed a planning framework process called Integrated National Energy Plan (INEP) to guide the planning process and used the framework to tell the county guides how to use the framework for planning energy plans, and the energy delivery model to actualize the framework. Clean cooking has been prioritized in INEP and there is a need to invest in building the capacity of county officers because energy is an enabler. Having integrated planning and having a definite focus on clean cooking.

GIZ has been focusing on clean cooking and has engaged counties at different levels. It has supported three counties in developing policies and promoting of climate-friendly environment. The organization is still working with more counties to promote improved cookstoves in different regions.

On whether the county government executives are aware of the target for universal access to clean cooking solutions by 2028 and what is being done to inform them and get their buy-in, it was disclosed that in Kilifi the County's executive and legislative arms have been brought together through breakfast meetings to enlighten them about the issues. In Kitui, there has been a capacity-building program for the County Executive Committee (CEC) members and chief officers on the use of the energy delivery model. An induction on the issues of energy and clean cooking will also be conducted for the new team.

### **PANEL DISCUSSION: BREAKOUT SESSION A – BIOMASS COOKING: EVOLUTION AND SCALE ON THE ROAD TO ACHIEVING UNIVERSAL ACCESS BY 2028**

Moderator: Dr. Faith Wandera – Deputy Director of Renewable Energy, MoEP, Panelists were Colm Fay – Senior Director, Clean Cooking Alliance, Maxwell Musoka – Technical Advisor GIZ, Timothy Mwangi – Head of Consulting, Practical Action.

The discussions focused on how biomass businesses involving biomass segments attract investments, what is missing to reach scalable biomass fuel distribution models, and what opportunities and challenges we have in the ecosystem.

On what the cooking sector is doing to support SMEs involved in developing improved biomass solutions, Colm Fay said there are efforts to awareness and understanding of the solutions and the benefits of biomass stoves.

Maxwell said GIZ is helping SMEs to have quality products of biomass stoves, innovation to improve stoves, capacity building of SMEs, financial literacy, business skills, and awareness creation to suit the environment based on the target market

Timothy said Practical Action is empowering women entrepreneurs through business training, and awareness creation platforms to exhibit and sell their products and link them with larger manufacturers.

Asked whether biomass fuel is fully sustainable, Timothy said the challenge with biomass is that it's not replenished. He said how to improve production and quality standard has not been achieved yet, but some innovations can help.

On the role of clean biomass on the road to clean cooking access, Maxwell said biomass remains essential and is sustainable, cleaner, and more efficient energy. He said the GCF project aims to professionalize the production of biomass stoves and fuels will play a major role in enhancing access to clean cooking solutions.

Colm said business is evolving in the finance sector. Bio-financing and its impacts are shifting towards greater and more sophisticated action in terms of a manufacturing process in Kenya and beyond industrialization and modernization. He said in terms of investments, there is an opportunity if the focus is made on the end user, design of clean cooking solutions policies and standards, and address challenges consumers are facing.

On how clean biomass is contributing to shaping the national clean cooking strategy, Timothy said from a private sector perspective, what's needed is to provide investment prospectors with business ideas for funding.

Maxwell said there is a business case for more women in the clean cooking space and there is a need for strategies that can lift women from informal businesses into formalized ones to enable them to access finance (loans) and improve agriculture by buying better seeds.

### **PANEL DISCUSSION: BREAKOUT SESSION (B): ACCELERATING THE ELECTRIFICATION OF COOKING IN KENYA**

Moderator: John Leary – Senior Research Associate, at Modern Energy cooking Services. Panelists: Irene Wanjohi – Principal Customer Relations Officer, KPLC, Ruth Kimani – Senior Associate, CLASP, David Njugi – East Africa Regional Representative, GOGLA, Dr. Joanes Atela – Kenya Technical Lead and Director, Africa Research and Impact Network (ARIN) and Aaron Leopold – Chief Executive Officer, Energrow.

The session was structured in a Q & A format where the moderator invited the panelists to give their views and what their organisations are doing towards electrifying cooking in the country.

On the question of the role of electric cooking beyond the limit of the grid, and what new technology enables off-grid households to embrace electric cooking, David said off-grid communities have the challenge of accessibility and affordability with 20% - 25% powered with off-grid solutions. He said access to integrated electric pressure cookers and appliances has made eCooking affordable to off-grid communities. He singled out companies such as PECO which have integrated electric solar into electric appliances for better experience and affordability and stressed the need to leverage the off-grid infrastructure and innovative business models to address affordability.

On global standards for electric cooking, and how Kenya will ensure only the best quality, sufficiently safe, and more durable appliances enter the market, Ruth said CLASP focuses on the energy efficiency of appliances and equipment to mitigate climate change and expand energy access.

She said the standards that exist globally are for the safety of electric cookers and performance standards for induction stoves. She disclosed in 2021, CLASP participated in the Improved Global Competition for Electric Cookers. This was to identify and promote energy-efficient quality products for use. Through this process, the organisation developed a test method for the best electric pressure cookers in Kisumu.

Irene said Kenya Power is creating awareness through demonstration centers that focus on educating customers on the use of electric appliances to help grow demand. "We want Kenyans to understand that eCooking can better their economic status since it is cheap," she said.

Aaron said Energrow is a microfinance company that focuses on bringing electricity to the people and selling electric appliances to make them more affordable. He said the company is partnering with Kenya Power to help grow the demand for electricity in rural areas through a microfinance model which saves people money.

On what kind of data do you use to demonstrate the benefits of using electricity, David said they demonstrate eCooking using energy meters and calculate the data in shillings to show how much you use for cooking using electricity as compared to other sources. They then use data (shillings) to educate Kenyans to embrace e cooking.

Asked about the technical reason why there is no priority on the standards of energy performance, Ruth said more focus has been on safety and less on performance and durability. There is a need to understand what technologies people are using to develop the standards that suit the Kenyan market.



**Wednesday - 30th November 2022.**

## **SHORT-LIVED CLIMATE POLLUTANTS (SLCP) AND IMPACTS OF HOUSEHOLD AIR POLLUTION ON HEALTH**

The session was moderated by Anthony Wainaina, the Deputy Director, of Public Health, Ministry of Health and the panelists were Brian Monde – Ministry of Environment, Lolem Bosco – Public Health Directorate, Ministry of Health, Dr. James Mwitari – Senior Research Fellow KEMRI Centre for Respiratory Diseases Research, and Dr. Anne Omambia – Director, National Environment Management Authority.

The moderator introduced the topic of discussion before guiding the panelists through questions.

On how air pollution affects health, and what is the impact of household air pollution on health, Lolem said household air pollution affects 23,000 heads per year. He said the Ministry of Health has worked through available global guidelines to address household air pollution. We came up with a training guide to reach tier 1 to target everyone. Through GIZ, he said, the Ministry has trained 60 TOTs who have trained 2600 community health volunteers to promote primary prevention strategies to enhance the transition to cleaner sources of fuel and energy.

Dr. Mwitari said Clean Air Africa which was established in 2018 and founded under the University of Liverpool School of Public Health and Policy is a partnership of experts from academic research and clinical institutions in Cameroon, Kenya, Uganda, and Rwanda. He said it works with the ministries of health and energy, the World Health Organization, and any other partner interested in reducing indoor pollution. Clean Air Africa, he said has launched several research activities and capacity-building activities that are geared towards producing evidence that will assist in understanding the barriers. At KEMRI, a center of excellence for air pollution has been established where all countries process their filters.

Mwitari said Clean Air Africa has been trying to strengthen the community health systems, especially the workforce, to create awareness in the community. He divulged more community health volunteers will be trained to reach the households using simple messages put into visual aids.

On the linkages between air pollution and climate change, and how to accelerate bigger mitigation and adaptation measures, Brian explained climate change focuses on greenhouse gas emissions namely methane, carbon dioxide, and hydrofluorocarbon. Air pollutant gases are nitrogen oxides, sulfur oxides, and black carbon. He mentioned some of the substances that contribute to greenhouse gas emissions also contribute to air pollutants which are referred to as short-lived climate change pollutants, which are methane and black carbon. The solution, he said, relies on the use of more energy-efficient methods, adoption of more renewable energy, embracing efficient transport systems like electric vehicles, and use of biofuels.

Philip talked of the Integrated Assessment of Air Pollution and Climate Change for Sustainable Development in Africa report that was worked on by Stockholm

Environment Institute Africa, the United Nations Environment Program (UNEP), the Africa Union Commission, and Climate and Clean Air Coalition. He said the report identifies measures through which African countries can achieve sustainable development goals and meet agenda 2063 goals. The report identified five key areas for Africa to take action on: agriculture, transport, energy generation, waste management, and residential measures. Residential measures identified, he said, require African governments to increase energy efficiency, particularly electricity-efficient biomass cooking stoves. These measures must be cross-sectorial to achieve the objective.

On how intersectional multidisciplinary collaboration can be enhanced, Dr. Mwitari called for strengthening the existing coordination mechanism to be able to add more value by building a national coordination channel and capacity building of all the sectors.

Lolem said selling LPG on a small scale, disseminating findings from research done; training the communication and journalism sector to report appropriately, and using existing best practices can help to get people to shift from unclean energy to clean energy.

Dr. Anne noted that NEMA is a Government agency dealing with climate change and works through: environmental and social safeguards, clean development mechanisms, and collaboration with partners to capacity build create awareness, train, and ensure public participation.

## **ONGOING CLEAN COOKING INITIATIVES**

The session was moderated by CCAK chairman Jechoniah Kitale and the panelists were Peter Thobora – Assistant Director, Ministry of Energy, Florent Eveille - Senior technical advisor, GIZ, Fred Amariati - Technical adviser, GIZ, Jonathan Waita - Project officer, Practical Action and Myra Mukulu - Technical Advisor, KOSAP.

This session explored some of the ongoing initiatives in the sector alongside the related achievements, challenges, opportunities, and outlook and what needs to be done differently to achieve the goal of universal access by 2028.

After the introductions, Fred took to the floor to explain how GIZ innovated its clean cooking programs in response to changing local and international contexts. He said in the beginning, the project focused on a lot of aspects of the value chain, like specific stoves, technologies, and how to help producers and suppliers meet specific criteria as per the existing global requirements. It has, however, transitioned from just focusing on one part of the value chain to the entire value chain from the supply side to the demand side. He said the organization is leveraging lessons learned from one phase to define what happens in the next phase.

Florent said African Biodigester Component focuses on not only the biogas but also the biofluid to improve the business model of biodigesters to make them more affordable and more beneficial for households. He said the direction aligns with the Government's efforts to have a higher target and universal access to cooking by 2028. One of the added values is the enabling environment part where there is a strong digester construction sector from the fixed and also the prefabricated.

Myra said the Kenya Off-grid Solar Access Project (KOSAP) is a five-year project started in 2017 and ending in 2023 to enhance access to renewable energy solutions in 14 underserved counties in Kenya. The counties are in the northwest, northeast, and southeast of the coastal regions. She said the clean cooking subcomponent deals with distribution rather than sales and called for incentivizing the private sector to be able to go to these countries and sell their products. She noted the counties in the NE and SE are underserved because they are sparsely populated, and have poor infrastructure and poor security.

Myra said the typical result-based finance model is that once you sell the product, it is verified and checked if it has been sold, then given an incentive, but KOSAP model is different because they give market development incentives, so advance payment is made for suppliers to go into these counties, set up shops, do after-sale service, and recruit local agents.

Asked about experiences, opportunities, and challenges in supporting women-led entrepreneurs Jonathan of Practical Action said women share the largest responsibility when it comes to cooking. He said the project, Women in Energy Enterprise in Kenya, worked with entrepreneurs in Siaya, Kisumu, Homabay, and Migori counties. The project built its capacities in issues of record keeping and customer care marketing. Cultural behaviors hinder the use of new fuels (charcoal briquettes and pellets) and created awareness by unlocking last-mile distribution channels for improved cookstoves through market development and education.

Peter said the Ministry of Energy is targeting the sector value chain, by creating an enabling environment, strengthening the sector supply chain, and ensuring demand are created. He said the Ministry supports deductions of import duty and VAT, creating linkages and a robust monitoring framework. On challenges, Peter cited a lack of comprehensive linkage, inadequate coordination, and monitoring while opportunities are sustained market focus, strengthening multisectoral coordination, and facilitating access to finance.

Fred also talked about the specific objectives of GCF and the expected outcome whose goal he said is to transform the cooking sector to a level of professional, easy access to financing to achieve irreversible transformation. Build capacity to access carbon credit from the finance institutions, knowledge management, and enabling environment.

### **ENHANCING DEMAND, INCREASING SUPPLY, AND KEEPING THE VOICE OF THE CUSTOMER AT THE CLEAN COOKING CORE**

The session was moderated by Daniel Wanjohi – Director of Strategy & Engagement EED Advisory while the panelists were Peter Scott – CEO, BURN Manufacturing Improved cookstoves, Dorothy Othieno - Founder, Nyalore Impact, Dinesh Themekhar – Lean Solutions – Briquette player and Mabel Rubadiri – KOKO Networks – Ethanol player.

The session outlined the need for generating insights on consumers to tailor services and products to their needs, behaviors, and constraints. It also explored what is

being done and what needs to be done and How to facilitate demand creation and strengthen supply chains.

On ensuring there is sustained adoption of clean cooking solutions, Mabel KOKO networks is a climate tech platform that manufactures and sells two-burner cookers that run on ethanol fuels transitioning people from unclean fuels such as charcoal and kerosene in an accessible and affordable way. He said they have a robust technology platform and unique fuel ATMs across the country. We have about 700,000 customers we're continuously engaging with our customer needs to integrate with our hardware and software technology.

Dorothy said Nyalore Impact is doing cookstoves and charcoal briquettes as its fuel. At Nyalore Impact, we constantly listen to the customers and provide after-sales customer care service.

Dinesh said Lean Energy Solutions manufactures briquettes for biomass from industrial wastes from companies like Coca-Cola and Pepsi. We also manufacture pellets for gasifier cookstoves. These offer clean cooking solutions.

Peter Scott said BURN is the world's largest vertically integrated stove manufacturing company. So right now, we make about 250,000 units a month, and we're on track to do 600,000 units per month by June of next year. We provide suitable energy saving for wood and charcoal, commission wood charcoal stoves as well as suitable LPG products, and again we have about a 60% RT that is obsessed with the customer.

Weche Akarla said ISAK is a membership association comprised of people who are producers of stoves and marketers.

Don Gaitano said Kijani Testing Lab is limited to product testing, market testing, and field testing for renewable energy products. Our role in clean cooking is to act as a bridge between solution providers and customers.

Adams Ameyia said Sistema Bio is a social enterprise that was set up ten years ago. We work with smallholder farmers to tackle climate change, food security, and poverty. The footprint is global in India, Kenya, Mexico, and Colombia as well. But we are expanding into the larger East Africa. We have partners across the continent, helping us reach as many smallholder farmers as possible.

Asked how BURN has embedded customers' feedback in designing and distributing cooking appliances, Peter said their operations take place here in Kenya to be near the customer and get the feedback. Feedback, he said, leads to a better product at a lower cost. Having a close relationship with the customer is very important and this leads to continuous improvement of our products.

On barriers to the uptake of improved cookstoves, Dorothy singled out a lack of awareness and noted that educating the community can help change behavior. She also cited a lack of financing as customers are not able to pay upfront to acquire improved cookstoves. Most of their payments, she disclosed, are done through installments or monthly payments for locals to be able to afford.

Dinesh talked about some of the measures being taken to meet consumer demands, saying there the challenge is the cost and hindrance in the distribution. He also

noted that people are not aware of what briquettes or pellets are and that there is a lot of resistance in the market.

Mabel said there is a rapid demand for biofuels but in Africa, it is based on the development impact of transitioning households to a clean fuel like ethanol. She said improved energy access in low-income households has increased the demand for KOKO products. KOKO, Mabel said, is creating evidence research to support policy and other private sectors as demand grows. We engage customers and offer robust after-sale services, free customer care lines, and customer care teams.

About the drivers for high-level demand and rapid adoption and acceptance of biogas Adams disclosed Sistema Bio holds a conversation with 5000 customers. This helps in observing, recording, noticing, and completing data sets that support terms of demand. Customers optimize satisfaction by using technology lifespan. He said farmers, through access to information, have to appreciate new technology, and this has helped get first-hand information that has shaped the strategy in terms of products and market strategies.

### **FINANCING THE CLEAN COOKING SECTOR FOR THE ENERGY TRANSITION**

The moderator for the session was Prof. Ed Brown while the panelists were George Okuthe, Portfolio Manager Energy East Africa; Acumen, Walter Kiprutom - Africa Enterprise Challenge Fund, Tom Owino - Climate Impact Partners, Maurine Adhiambo - Technical Adviser GIZ, Adele Boadzo - Senior Energy Specialist Africa Development Bank and Patrick Thimba, country coordinator Private Financing Advisory Network (PFAN).

The discussions centered on the mechanisms which can mobilise a new scale of investment from concessional funds, climate finance, and the commercial sector to develop a pipeline of bankable projects for clean cooking in Kenya to support affordable clean cooking solutions.

Maurine said there are various programs under GIZ. Under access to finance, there are various players where we develop bank development proposals at artisanal and business-class levels. We approach financial organizations and give them opportunities. It also does financial literacy across the board on banking and microfinance, and we also do result-based financing.

Walter said AECf is a fund manager working on renewable energy, agribusiness, and fragile settings (refugee settings). They support and unlock potential sectors. Under the renewable energy program, we do financing mechanisms, advisory, and investment services and bridge the gap to sustain commercial funding.

George said Acumen is a global community that is changing the way the world tackle poverty. They do that by investing capital in early-stage companies and providing solutions to help improve the lives of the poor. In academy work, and support social innovators and change makers that are coming up with solutions to climate change crisis.

Adele said AfDB supports public and private sector investments and financial intermediaries using debts and equity. The organization has invested over 10 billion shillings in African resources.

Patrick said PFAN is a global network working in five regions and supports any climate change projects. Currently, it is supporting five projects to evaluate commercial viability and climate change procedures. They partner with CCAK.

Tom said Climate Impact Partners is a merger between Climate Care and Natural Capital Partners involved in three areas of project development and financing, carbon asset development and commercialization, and climate change advisory services. Under carbon assets, they have developed many projects in Africa and Asia, and in Kenya, we have developed a standard cooking methodology for the measured amount of energy directly used.

On eCooking and the associated demand for electrical appliances and if that means there is access to finance within the sector and if GIZ sees opportunities with electricity demand Mourine said there is an opportunity to leverage the progress to integrate clean cooking as part of the broader energy access. He said utilities could lead an integrated approach by potentially including e-cooking appliances to stimulate demand, thereby shifting potential funds from charcoal toward electric cooking. Electric cooking, he said provides a path to low-carbon projects; this allows to tap into climate financing for electricity projects.

George said Acumen has invested in 5 companies in the clean cooking space financing to the tune of 6 million dollars. These companies came up with very diverse solutions, exposed to different types of wood charcoal biofuel, and now electric cooking. This is a space that is most profitable in Acumen's portfolios. He said the returns are generally three times the average portfolio company returns. He said over 3 million stoves are going to the market through portfolio companies, and any stove that is aiming to replace the available cheap biomass options must be affordable, tough to withstand the operating environment, and good quality to become a recognizable brand, and it should offer sustainable values. On affordability, he said most companies started selling their products at negative margins because the populations they were targeting could not afford them, and they were keen to bring products to the market. It implies that they needed patient capital; otherwise, they cannot market it to the level that products are adopted.

On the role of development partners in supporting access to finance Maurine says GCF is working with improved cookstoves actors to target the irreversible transformation. Working with the rural and semi-urban areas, we are promoting improved cookstoves by building on the Endev project (energizing development project), professionalizing what the artisans were doing before by training them on issues of business development so that they can move from artisanal to professional and later business class. She said GCF is creating enabling environment for the stoves to be adopted in rural areas through working with the county governments, mainstreaming gender issues, and strengthening the sector association.

## **JUST AND INCLUSIVE CLEAN COOKING TRANSITION GENDER MAINSTREAMING AND SOCIAL INCLUSION IN ENERGY**

The session was moderated by Philomena Mitalo of CCAK while the panelists were Dorothy Otieno – Founder, Nyalore Impact, Dr. Tullu Bakhari - Researcher ICIPE, Prudence Lihabi – Founder of Youth for Sustainable Energy, Emily Bolo – MECS Kenya Impact Officer and Evelyn Makori – Regional development Advisor GIZ.

The session discussed innovation as an essential enabler for development and one of the key components to achieving SDG7 and making young entrepreneurs a crucial part of the solution while leveraging the experience of entrepreneurs. The panelists gave their experiences as entrepreneurs in the energy space and this provided young entrepreneurs with the keys to how to turn their ideas into action and how gender and social inclusion can be mainstreamed in clean cooking.

Prudence talked about how social behavior change strategy factors in the social aspects of cooking. She said there is a need to interact with the people one wants to design a project for and sell technologies to and understand who they are and the needs they have. She noted one must be cognizant of the different foods the target group prepares to determine if the technology can cook some of the foods they eat daily.

Asked about how to leverage modern energy appliances to encourage more men to cook, Emily said one has to sell the idea that modern technology takes a shorter time while cooking and one can reset the cooking time to prevent burning, and cooking is not limited to the kitchen.

On creating alternative livelihoods in the charcoal-making value chain for both men and women, Dorothy said different cultures need different approaches and stressed targeting the male influencer in the community to be able to bring men on board. She also said there are need to position messages carefully taking into account the household setup.

Reacting to the same, Dr. Tullu said women can be used to explain the importance of using technology or fuel. This she said can be achieved through the use of focused group discussions to ensure men are present and involved in the platforms and understand the role they play in society. Separate group discussions for men and women can be used.

## **UNDERSTANDING CRITICAL COST DRIVERS FOR CLEAN COOKING BUSINESS MODELS**

The session was moderated by Erick Muriithi while the panelists were Colm Fay – Senior Director market strengthening Clean Cooking Alliance, Irene Kamade – East African Commercial Director, BURN Manufacturing, Fred Amariati – Technical Advisor, GIZ, and Lea Geron Chouhan – Southpole.

The session provided a platform for sharing experiences on using carbon credits technology in clean cooking and exploring the potential for digital contract management.

The panelists were allowed to introduce their organisations and what they are doing in the clean cooking space before they were guided through questions to offer their views on the topic.

Fred explained what Result-Based Financing (RBF) is and how it can support the rollout of clean cooking in Kenya. He noted that the risk with result-based financing is the upfront cost where you pre-finance the activities, and you get paid after the verification of results.

On what form of RBF is most relevant to the clean cooking sector, Colm said outcomes and output and that there is a need to shift the mind to outcomes rather than outputs. He also said there is a need to incentivize more areas on the supply interventions side while on demand-side subsidies should be applied to the end users.

On the question of how carbon credit works and the impact on the BURN business module, Irene said the organization gets into RBF agreement to distribute several stoves, an audit is done, the outcome is verified, and reimbursement is done. The impact is that jiko okoa is carbon funded for distribution, and stoves have to be sold to primary charcoal users.

On the challenges, the increasing carbon credit poses on clean cooking, it was noted that it's user-centered, focusing on the customer but not the donor. It impacts monetization and neglects other beneficial impacts. Financing is also delayed and affects small companies as it is expensive and this reduces the willingness to pay if not well targeted.

About measures to ensure SME benefit, it emerged that capacity building on carbon credits, understanding of the project and how it works, and what it would mean for them can help.

## Thursday - 1st December 2022

### VIRTUAL PRESENTATIONS

#### ACCELERATING CLEAN ENERGY WITHIN AGRICULTURE SETUP

##### **Presenter: Paul Ayalo- Senior Project Officer- Fairtrade Africa**

Mr. Ayalo explained that Fairtrade Africa is concerned with how we can build resilience within the producer network. One of the core focuses within our strategy, he said, is that Fairtrade Africa focuses on addressing the means to ensure that producers have a sustainable system to address the effects of climate change.

Ayala said the organization strategy has four pillars; product and market development, policy and advocacy, sustainable farming system, and transformed and strengthened producer organizations.



He gave an overview of their projects implemented in the flower and coffee sectors in Uganda, Ethiopia, and Kenya. In the flower sector, they have flower farms in Aquila (Naivasha) and Agric-Flora (Njoro-Nakuru), and FASCA. The objects of the flower sector are to accelerate the adoption and utilization of clean and sustainable energy solutions by workers. The program enables farmers and workers to adapt to a changing climate and maintain adequate productivity levels that generate supply chain stability and return on investment.

He said some of the challenges experienced are high prices of clean cooking products, e.g., VAT on LPG, and limited funding to sustain the demand for clean cooking solutions within the agriculture sector.

On success, Ayala said the farmers have seen opportunities to reduce carbon emissions through adopting this kind of solution, like biogas projects coming out of the waste.

Fairtrade Africa, he said, also had good support under the CCAK umbrella, where businesses supported demonstrations on clean energy cooking solutions.

In the coffee sector, he said Fairtrade Africa had a project that ended in 2021, and focused on empowering women in the coffee variation. The objective is climate change adaptation and income diversification for coffee producers.

Question	Reaction
How does Fairtrade Africa utilize the carbon credit earned from the ICS projects?	<ul style="list-style-type: none"> <li>The credit that Fairtrade Africa received was managed to roll out some additional projects focused on capacity building the community. Fairtrade Africa managed to train more households on how to install cookstoves.</li> </ul>
How does Fairtrade Africa adjust to the issue of gender inequality?	<ul style="list-style-type: none"> <li>Fairtrade Africa is gender-sensitive, and we try to ensure inclusivity. Fairtrade Arica empowers women and people with disabilities, and gender inclusivity is well-captured in all our operations.</li> </ul>
<p>How does Fairtrade Africa ensure secularity in existing and upcoming projects?</p> <p>How does Fairtrade Africa ensure secularity in existing and upcoming projects?</p>	<ul style="list-style-type: none"> <li>Fairtrade Africa always looks at sustainability and how the organization can make the project beneficiaries become the owners of these projects. Fairtrade Africa ensures that when workers own the projects, there is continuity beyond the project period.</li> </ul>
Looking at your product portfolio, what is the proportion going to clean cooking vs lighting products?	<ul style="list-style-type: none"> <li>Clean cooking solutions have been adopted by approximately 60% of the workers, while the rest of the workers have adopted lighting solutions.</li> </ul>

## ENERGY ACCESS EXPLORER

### **Presenter: Dr. Dimitris Mentis- World Resources Institute**

Dr. Mentis began his presentation by talking about the World Resources Institute, which is a research organization that works with government, businesses, scholars, and secret society organizations to develop practical solutions around seven challenges, including; food, forests, waters, climate, and energy.

He said to expand access to clean cooking and clean energy services, the World Resources Institute needs access to data and analytical tools which capture key parameters of the unserved and underserved; these parameters happen to be geospatial networks.

On the reasons for the conceptualization of Energy Access Explorer (EAE), he said it is important to treat demand and supply as equal. EAE, he said, needs a platform that synthesizes granular data on both demand and supply while taking to account various parameters and criteria which are geospatial. Secondly, the need to reduce reliance on GIS and programming expertise for data users and the need to deploy an open-source dynamic information system for data providers.

He said EAE's vision is to provide geospatial data and analysis to create a future where all people and institutions have access to affordable, reliable, and modern energy for social and economic development.

EAE, he said is a fast open online interactive, customizable platform that enables different stakeholders with different perspectives to identify light priority areas where access to energy should be expanded. It synthesizes granular geospatial data on both demand and supply. The platform can host different types of data in different scales and formats (open census, satellite, sub-national, national and global)

He said since the platform was launched in 2019 in Kampala, Uganda there are more than 50 geospatial data already incorporated. EAE also contributes to the SETA program and capacity-building activities. The platform has contributed to three county energy plans (Kitui, Narok, and Makueni). He noted that the platform has been integrating the least-cost electrification modeling using the Open-Source Spatial Electrification Tool (OnSSET).

Mentis noted that in collaboration with SNV and EnDEV, EAE has worked on productive mapping uses of energy in three Kenyan countries, and we have worked on collecting spatial data from different levels (Sub-national, global, national) from departments of water, agriculture, and energy which compliments the gaps with primary data through KoBO Toolbox. EAE has also been conducting training workshops for local stakeholders.

## TRANSFORMING CLEAN COOKING RESPONSE IN DISPLACEMENT AREAS

The three joint presenters for this session were Karlijn Groen – Energy Project Advisor, SNV Kenya, Mayanne Wanjiru – Access to Finance Advisor, SNV Kenya, and Ruth Kimani – Senior Associate Clean Energy Access, CLASP

The major highlights of their presentation were:

**Priority energy areas:** Energy cooking, energy for health, energy for education, energy for water, energy for production and energy for security, greening the operation camp electrification, and energy for productive use.

**Sustainable cooking energy is part of UNHCR's global strategy for sustainable energy.**

The first strategic Action is on energy in emergencies. The second strategic plan is improving access to sustainable, safe cooking energy for refugees. The third strategic Action is expanding sustainable household electrification. And the fourth strategic action area is the sustainable electrification of community and support facilities.,

**The current status:** There is an over-reliance on traditional biomass (97%) with a mean biomass consumption of 15000MTs. The mean cooking energy expenditure per family per month is USD 20, which is the second highest expenditure after food. All the institutions through the operation are supported through in-kind support, which is the distribution of firewood.

### Biggest challenges (Gaps)

- Limited cooking alternatives/ technologies like LPG is very expensive and only have a 3% penetration into the market.
- Other sources of cooking energy are not available in the market (i.e., biomass)
- The huge demand for cooking energy from the ecosystems has led to deforestation.

### Key initiatives that support access to cooking energy.

In-kind support: it provides refugees with cooking stoves and cooking fuel, as support to all institutions (offered to health facilities, reception centers, and transit there).

Cash-based interventions (CBI)- we transit from in-kind for a household to cash support. For 18 years and all POC, they receive a grant of Ksh 42. This covers 11% of monthly cooking energy needs. Since refugees who are under who are 18 years cannot have an account, they are given 10 kg of firewood per person.

Market-based approaches, operational partners, and other private sector-led organizations have been promoting energy efficiency and eco-conscious behavior to ensure refugees and host communities adopt clean and sustainable energy available to them.

## Project activities

- Product sensitization, testing, and selection
- Markets and commercial distribution led by solarisa
- Testing of payment models led by fresh on energy
- Research and end-user cooking experience and electricity consumption (led by clasp)
- The program also focuses on knowledge insemination of the project to see how it can help sell up similar interventions to these areas.

The project started with 20 EPCs though it intended to sell 80 EPCs. The objective of the pilot was to test the payment credit models and provide an overview of payment performance. Four payment models tested were cash and carry model; short-term credit- large installments (4 weeks), short-term credit-small installments (12 weeks), and long-term credit – small installments (20 weeks)

The lower the deposit and weekly installments, the higher the chances of buying. The most popular subscription among the models was the 20 weeks payment model.

On the commercial distribution and payment model, they noted that several factors that contributed to high defaults rates were identified; they include lower purchasing power and common indebtedness culture, insufficient customer vetting, and ineffective processes and systems for payment recollection

EPC	Impact
<b>EPC impact on cooking events, time.</b>	The number of cooking events stayed similar, namely twice a day. A consistent and sufficient supply of electricity is critical for ensuring continuous EPC usage. An indication that EPC usage serves overall cooking time and frees up the time during cooking.
<b>EPC impact on water use</b>	In terms of water use, EPC usage showed average water savings of 22 L a day due to efficient cooking. Water-saving potential EPCs importantly benefit drought-stricken areas and are worth including EPC use training.
<b>Cost of cooking and meal preference</b>	Most EPC users reduced the usage of charcoal and firewood for cooking. Fuel savings reflected is 200 KES/ 160 Euros cost saving per week. Meal preference did not change after receiving the EPC indicating compatibility of food types with the EPC.

<b>EPC impact on awareness and ownership</b>	Overall awareness of EPCs significantly increased due to marketing activities. Lack of access to finance and the high price of EPC are the main barriers preventing people from purchasing. Time savings from cooking, cooking convenience, cost savings, and reduced smoke were mentioned as primary drivers of uptake.
<b>EPCs usage experience, adaptation, and continuity</b>	Most EPC users are satisfied with the EPC is primarily linked to faster cooking times, and it's being a clean source of fuel. The least liked attributes include small pot size and lack of spare pot.
<b>EPC impact on electricity consumption</b>	On average, EPC use contributed four kWh to individuals' total electricity consumption per month.
<b>EPC impact on mini-grid capacity</b>	There is sufficient energy supply from the mini-grid, therefore, providing an opportunity to encourage increased EPC utilization rate among existing users. As well it presents an opportunity to attract new customers.

### Overall key takeaways

- EPC is a good product fit for household use and positive end users' lives by reducing cooking time, fuel costs, and water consumption.
- Efforts should focus on after-sales training to optimize benefits and ensure sustainable use.
- EPCs can be accessed through payment in installments. Payment collection remains a major challenge.
- Interventions should capacitate the private sector to build a sustainable supply chain within clear reverse logistics for after-sales.
- EPC uptake among mini-grade customers has the potential to increase mini-grid electricity consumption and requires a reliable and consistent supply of energy and additional end-user training to ensure sustained and frequent usage.

## A PRESENTATION ON RENEWABLE SECTOR ADVOCACY

### Achievements on clean cooking appliances import duty and VAT exemption.

The presenter was Andrew Amadi – Chief Executive Officer of Kenya Renewable Energy Association (KEREAA). KEREAA is an umbrella body that is dedicated to the promotion of renewable energy in Kenya across the board.

Amadi said the biggest challenge in solving issues of clean cooking is the availability and reliability of data collected on biotechnology. In terms of energy consumption, he said cooking requires more energy than telecommunication and lighting. This is the reason why the total electricity demand is slightly above 2000MW.

He said issues prioritized in the strategic plan for action in the next 4-5 years are advocacy-political regulatory framework, access to finance, and access to markets.

In rural Kenya, firewood remains the primary fuel for 84% of households, followed by charcoal (9%), while LPG is below 6%. In urban Kenya, LPG shares the highest (42%), followed by firewood (21%), charcoal (17%), and kerosene (16%). That is why KEREAA found it useful to provide training and disseminate knowledge to create awareness among the various policy and decision-making entities as well as people.

Question	Reaction
VAT is one of the barriers for local manufacturers, but the lack of iron is another. How can this be addressed through your office? Since this can lock out artisanal cookstoves completely from common credit opportunities, can KEREAA advocate for these as well?	<ul style="list-style-type: none"> <li>o There is a gap in the coordination, particularly in energy research. We are looking at how KEREAA can create a framework through which research and development can be coordinated through energy.</li> </ul>
How can we support KEREAA to get VAT exemptions for electrical pressure cookers in this latest cycle?	<ul style="list-style-type: none"> <li>• We need data to do some indexing to show the price of cooking. If people can help to provide and package data in a way that the government can be able to digest and see the benefit, that can help us to strengthen our argument.</li> </ul>
Lack of access to raw materials for an artisan is another challenge experienced. A lot of middlemen make the cost of materials higher. Is there a way KEREAA can organize for artisans to get these materials from the manufacturers?	<ul style="list-style-type: none"> <li>• There is a way that can be done. KEREAA has made a connection with one of the steel manufacturers to see how they can be able to fabricate them locally.</li> </ul>

## Engaging with eCooking session at KPLC pika na Power Demonstration Centre

This was the final event of the 3rd Clean Cooking Week co hosted by [Clean Cooking Association Kenya](#) (CCAK) and [Ministry of Energy and Petroleum](#) (MoEP). On the 2nd of December 2022, the [MECS](#) and [Gamos East Africa](#) team, [Nuvoni Centre for Innovation](#), [Africa Centre for Technology Studies](#) (ACTS), [Energy Research Centre-Strathmore University](#), and [Kenya Power and Lightning Company](#) (KPLC) were joined by over 70 clean cooking week participants and stakeholders at the Kenya Power and Lighting Company (KPLC) Pika na Power Demonstration Centre for a very electrifying and engaging session moderated by Beryl Onjala (MECS/Gamos EA) and Danson Ligare (Elite Pongamia Bioenergy Project Ltd).

The day started very well with participants introducing each other as a way of getting to know each other in a fun way. The audience was then taken through a presentation by Dr. Elsie Onsongo and Dr. Abigael Okoko from [Nuvoni Centre for innovation](#). Through the aid of the slido (Pictured below), the Nuvoni team skillfully engaged the participants by posing questions such as what some of their perceptions and beliefs on eCooking are. Very interesting feedback was recorded, such as the “usual suspect” that food cooked using electricity is not tasty, electricity is expensive when used for cooking, the appliances are costly and not available, and that a lot of food such as Githeri, Nyama Choma (roasted meat) just to mention a few cannot be prepared using electric appliances.

Another question that was posed to the participants was on what types of electric appliances they owned and interestingly quite a number had purchased Electric appliances (EPC) and a few hard hotplates and air fryers. However, most people confessed to using them less and a lot more using EPC to mainly boil cereals and githeri. This exercise was important, especially for the work being carried out by Nuvoni on Kenya's National eCooking Strategy. The strategy development is still ongoing, and it was important to understand the perceptions of the stakeholder as their inputs would be valuable to the process. Electric cooking (eCooking) has the potential to offer transformative new opportunities for Kenya's clean cooking sector.

Emily Bolo, a research associate from [Africa Centre for Technology Studies](#) (ACTS) also shared with the audience her eCooking experiences and those of the community of practice that she works closely with. It was stimulating particularly for the stakeholders to hear so much good feedback on how eCooking was helping households save on time, cost and possible health improvements for women and girls. Also, present during the event was Sheila from [Energy Research Centre-Strathmore University](#) who narrated to the audience their role in engaging with Pika na Power Programme and the MECS programme to create a platform where documentation from the various eCooking initiatives could be shared for public access.

Lastly, the Pika na Power team; Wairimu Njehia, and Irene Wanjohi in collaboration with 3 suppliers from [Sayona, Burn](#), and [Tefal](#) engaged in a eCooking competition. The three suppliers together with two other eCooking champions were involved in the competition and the winners were awarded. The food was enjoyed by the audience as seen in the pictures below and the perception that food prepared on an Electric Pressure Cooker (EPC) is not tasty was obviously dispelled during this session.

## Links for the 2022 Clean Cooking Week Sessions

### Programme:

<https://docs.google.com/document/d/1MvDdY4-N-cnAGjrwrTbnD1-CI6LM8syG/edit?usp=sharing&oid=102816053597226968698&rtpof=true&sd=true>

### Photos of the Clean Cooking Week

[https://drive.google.com/drive/folders/1-UYqtErKhjCdR8V\\_YWlYdS7pku5QnB-b?usp=share\\_link](https://drive.google.com/drive/folders/1-UYqtErKhjCdR8V_YWlYdS7pku5QnB-b?usp=share_link)

### Keynote speeches

[MoEP PS Maj Rtd Gordon Kihalangwa delivering a speech during the 2022 clean cooking week event.](#)

[Prof Ed Brown delivering a speech during the 2022 clean cooking week event.](#)

[Jeen Koosta, Director SNV kenya MAJ delivering a speech during the 2022 clean cooking week.](#)

[Clean Cooking Association of Kenya Chairman Jechoniah Kitala delivering a speech during the 2022 clean cooking week.](#)

[Kiambu County Climate Change Director Esther Kagwsima during the 2022 clean cooking week.](#)

[Senior Deputy Director, Renewable Energy \(MoEP\) Dr. Faith Wandera during the clean cooking week 2022.](#)

[Senior Director, Market Strengthening, Clean Cooking Alliance, Colm Fay during the 2022 clean cooking week.](#)

[Head of Eastern and Central Africa - Fairtrade Africa Casper Pedo, during the 2022 clean cooking week.](#)

[Country Director - GIZ Kenya Mr. Bodo Immink during the 2022 clean cooking week.](#)

### Plenary sessions

[Day 2 - Tuesday – 29th November 2022, A walk-through enabling policies and strategies.](#)

[Day 2 - Tuesday – 29th November 2022, Panel Discussion: Break Out Session \(A\) Biomass Cooking: Evolution and Scale on the Road to Achieving Universal Access by 2028.](#)

[Day 2 - Tuesday – 29th November 2022 Panel Discussion Clean Cooking planning at County Level Experiences from Kilifi and Nakuru Counties and development partners.](#)

[DAY 3 - Wednesday - 30th November 2022 Panel Discussion: Break Out Session \(A\) Enhancing Demand, increasing Supply, and Keeping the voice of the customer at Clean Cooking's Core.](#)

[DAY 3 - Wednesday - 30th November 2022, Panel Discussion: Break Out Session \(B\) Ongoing Clean Cooking Initiatives Sector Achievements, challenges, opportunities \(ABC, GIZ-GCF, KOSAP, SETA, Practical Action\).](#)

[DAY 3 - Wednesday - 30th November 2022, Panel Discussion: Break Out Session \(A\) Just & Inclusive Clean Cooking Transition Gender mainstreaming and social inclusion in Energy.](#)

[DAY 3 - Wednesday - 30th November 2022, Break Out Session \(A\) Short-Lived Climate Pollutants \(SLCP\) and Impacts of Household Air Pollution on Health.](#)



[Wednesday 30th November 2022, Break Out Session \(B\) Understanding Critical Cost Drivers for Clean Cooking Business Models.](#)

## ANNEXES PICTORIALS



*Principal Secretary, Ministry of Energy and Petroleum, Maj Gen (Rtd) Dr. Gordon Kihlangwa giving his speech at the Clean Cooking Week*



*CCAK Chairman Jechoniah Kitala giving his speech during the Clean Cooking Week*



*Principal Secretary, Ministry of Energy and Petroleum, Maj Gen (Rtd) Dr. Gordon Kihlangwa launching the MoEP Trucks for the BCC Campaign*



*Principal Secretary, Ministry of Energy and Petroleum, Maj Gen (Rtd) Dr. Gordon Kihlangwa launching the MoEP Trucks for the BCC Campaign*



*Joanes Atela - MECS Kenya Technical Lead at Africa Centre for Technology Studies and Director, Africa Research, and Impact Network (ARIN/ACTS); David Njugi- East Africa Regional Representative – GOGLA; Ruth Kimani - Senior Associate – CLASP; Irene Wanjohi- Principal Customer Relations Officer - KPLC; and Aaron Leopold - Chief Executive Officer – EnerGrow*



*From left: Erick Muriithi- the Managing Director of Blaze Entertainment Ltd; Lea Geron Chouhan - Southpole Lorraine; Fred Amariati-Technical Advisor, GIZ GCF Indangasi - Charm Impact; Colm Fay – Senior Director, Market Strengthening Clean Cooking Alliance*



*From left: Dorothy Otieno – Founder - Nyalore Impact; Dr. Tullu Bakhari - Researcher – ICIPE; Prudence Lihabi - Founder - Youth for Sustainable Energy; Evelyn Makori - Regional Development Advisor -GIZ; Emily Bolo – Research Associate at ACTS; Philomena Mitalo Clean Cooking Association of Kenya*



*From left to right, Adams Amenya - Sistema Bio - Biogas Player; Don Gaitano -Kijani testing lab - eCooking; Weche Akarla - Artisanal stoves (ICS producer) – ISAK; Peter Scott – CEO, Burn Manufacturing - Improved*

*Cookstoves; Dinesh Thembekhar - Lean Solutions - Briquette Player; Dorothy Otieno – Founder, Nyalore Impact; Mabel Rubadiri - Koko Networks - Ethanol Player and Daniel Wanjohi Director Strategy & Engagement EED Advisory*



*From left: Lolem Bosco - Public Health Directorate, Ministry of Health; Dr. Phillip Osano -Center Director - Stockholm Environment Institute Africa; Dr. Anne Omambia – Director -National Environment Management Authority; Antony Wainaina – Deputy Director Public Health, Ministry of Health; Brian Mounde- Ministry of the environment; Dr. James Mwitari – Senior Research Fellow KEMRI center for respiratory disease research*



*Photo from the clean cooking week webinar done by Endeavor, SNV, and CLASP from their Case study on Piloting Electric Cookers in Kalobeyei integrated settlement*



*E-Cooking Demos*



Photo by Fiartrade Africa



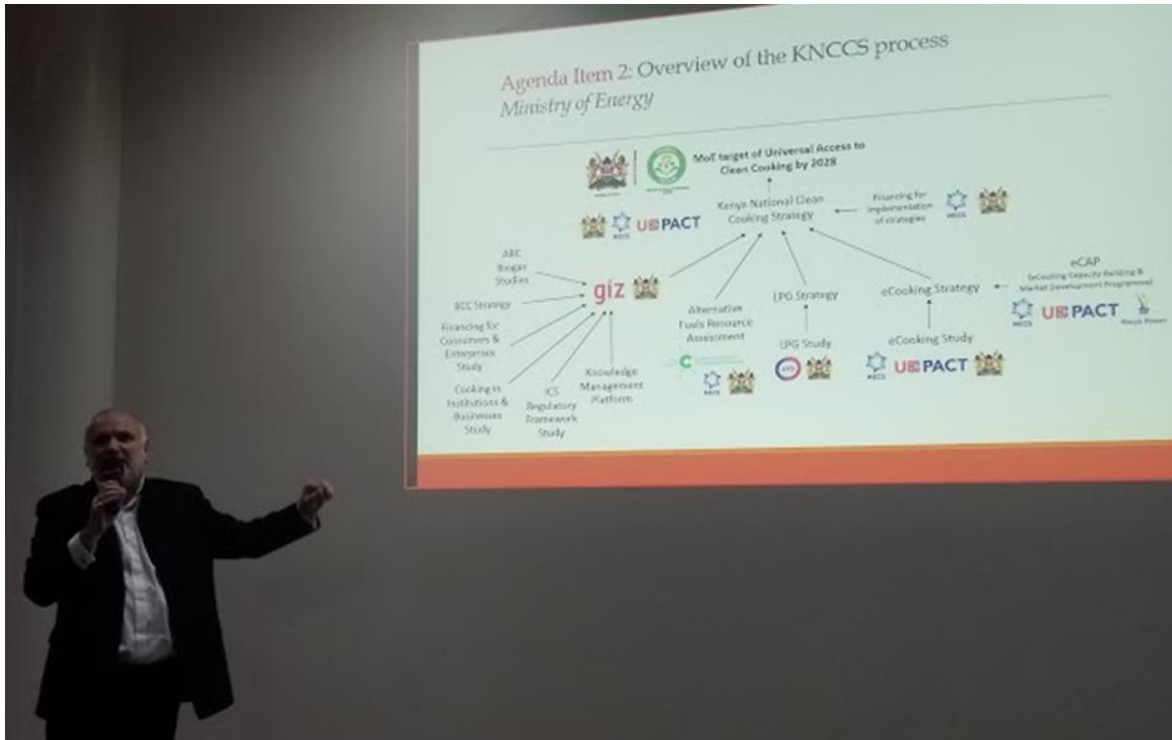
Prof. Ed Brown with his



**Participants at the KNCCS Open Coordination Committee Meeting held on the first day of the CCW**



**Dr. Faith Wandera from the Ministry of Energy and Petroleum giving Participants an Overview of the KNCCS Development Process during the Open KNCCS Coordination Committee Meeting**

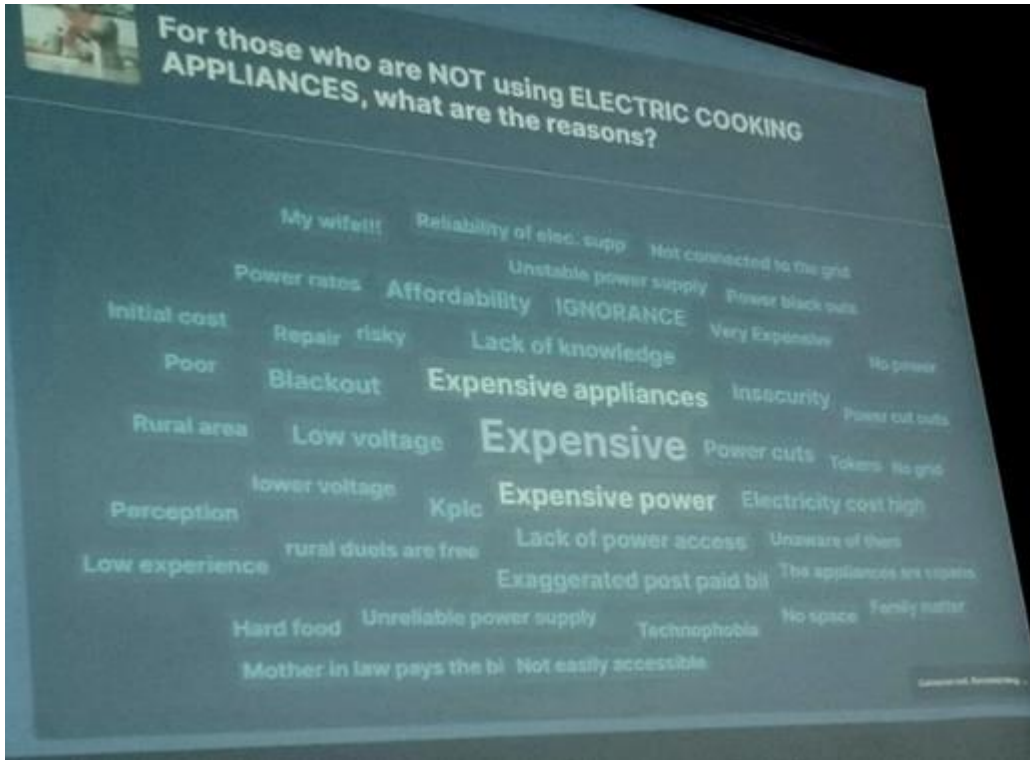


Prof. Ed Brown giving an overview of the KNCCS process during the KNCCS Coordination Committee Meeting



Mr. Murefu Barasa from EED Advisory taking participants through the envisioned process of developing the KNCCS





**Responses submitted via slido during the presentation by Nuvoni team at KPLC pika na Power Demonstration centre**



**Wairimu KPLC pika na power facilitator with the ecooking competitors preparing the meals and ingredients to be used during the cooking competition**



**Participants at the engage with eCooking event tasting the meals prepared by the competitors using various eCooking appliances.**



