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RENEWABLE ENERGY CONFERENCE 2024 & EXPO REPORT

TRANSFORMING LIVELIHOODS THROUGH CLEAN ENERGY ACCESS



EXECUTIVE SUMMARY

The Ministry of Energy and Mineral Development, in collaboration with the National Renewable Energy Platform (NREP), held the fourth annual Renewable Energy Conference and Expo (REC24 & EXPO) from October 31 to November 2, 2024, at Speke Resort Munyonyo, Kampala. The event marked the conclusion of the 20th Energy and Minerals Week and was held under the theme "Transforming Livelihoods Through Clean Energy Access."

REC24 & EXPO brought together over 1,480 delegates from more than 20 countries, including Uganda, Kenya, the United Kingdom, Rwanda, Somalia, Burundi, Sri Lanka, Cameroon, the Democratic Republic of Congo, Tanzania, Sudan, Italy, Ethiopia, Denmark, Djibouti, India, Nigeria, South Sudan, Zambia, France, Germany, China, Austria, Spain, and the United States of America. Delegates represented policymakers, businesses, researchers, financial institutions, and energy end-users. The conference provided a platform for showcasing innovations, fostering business partnerships, and exploring solutions to accelerate Uganda's transition to sustainable clean energy.

The sessions were structured around key themes essential to advancing Uganda's renewable energy agenda, including Clean Cooking, Partnerships, Policy and Regulation, Women and Youth, Social Discourses, Productive Use of Energy, Finance and Business, Science, Research, Data and Knowledge Management, and Frontier Technologies. Clean cooking and the productive use of energy accounted for 21% and 8% of the total sessions, respectively. A total of 71 sessions were held in parallel, featuring discussions led by 528 industry experts, policymakers, and practitioners.

The expo featured 157 exhibitors, making it the largest exhibition in the event's four editions. Exhibitors included clean cooking companies, solar energy providers, financial institutions, civil society organizations, academic and research institutions, government agencies, business developers, consultancies, and development partners. Cutting-edge technologies, including electric cooking, e-mobility, green hydrogen, and solar energy, were showcased, with participants engaging in both Business-to-Individual and Business-to-Business interactions.

Key highlights of REC24 & EXPO included:

- Cultural leaders from the kingdoms of Buruuli, Busoga, Buganda, Bunyala, and the Chieftdom of Acholi demonstrated the preparation of traditional cuisines using electric pressure cookers, emphasizing the feasibility of clean energy adoption.
- Religious institutions voiced their commitment to promoting clean energy and participated in the inaugural session of the Post-Renewable Energy Conference and Expo televised series.
- The UECCC Price Subsidy Program for Clean Energy Technologies was announced during the opening ceremony, raising awareness about the available financing options, and facilitated the sale of subsidized products at the expo.
- The event served as a flagship platform for national and regional energy and climate discussions, informing Uganda's position at COP29 in Baku, Azerbaijan, where the Minister of Energy and Mineral Development emphasized the country's commitment to transitioning to clean cooking.

Summary of Recommendations REC2024 & Expo

The sessions were organized around key themes integral to advancing Uganda's renewable and clean energy agenda that included Science, Research, Data and Knowledge Management; Clean Cooking; Partnerships; Policy and Regulation; Women and Youth; Social Discourses; Productive Use of Energy; Finance and Business; and Frontier Technologies. Below is a summarized account of the takeaways and recommendations arising out of the conference

a). Development Partners and Dignitaries

1. The Minister of Energy and Mineral called for unified approach to phase out traditional biomass and inefficient technologies, invest in the acceleration of cleaner energy development and access, and integrating with other energy resources so as to reduce carbon emissions and also empower rural and underserved communities
2. Development partners were urged to prioritize support to clean cooking initiatives using bioethanol in Uganda, and work closely with the National Biofuels Coordination Committee to

achieve the goal of integrating bioethanol into productive use.

3. Development partners including the French Development Agency, TotalEnergies, European Union, the United Kingdom, committed to a continued partnership with the Government of Uganda in its energy transformation and transition, climate change issues and policy development, and to work towards carbon neutrality by 2050.

4. The French development agency highlighted early deliverables for the year 2025 to include;

- A €75 million loan from France for the rehabilitation of the Kiira-Nalubaale Hydropower Plant.
- A €51 million investment in the second phase of the rural electrification project, and

- Support for the smooth transition from UMEME and the digitization of the power supply.

5. The EU revealed that Uganda’s energy sector is benefiting from the Global Gateway strategy’s €150 billion support to Sub-Saharan Africa for the period 2021 - 2027, in terms of increased access to affordable clean energy through the GETFIT project, Support to clean cooking initiatives and development of future cross-border grid inter-connectors to South Sudan and Tanzania.

6. Highlighted that the UK partnership with the Government of Uganda has supported the creation of the Climate Finance Unit at the Ministry of Finance, Planning, and Economic Development; and the creation of the Clean Cooking Unit at the Ministry of Energy and Mineral Development.

b) Science, Research, Data and Knowledge Management			
	Area	Action Points	Responsible Parties
7	Energy Research in Universities	<ul style="list-style-type: none"> • On Influential research for policy formulation in renewable energy, Form partnerships with government and create networks for such partnerships to be effective 	Researchers at the Universities, Research Firms and Government.
8	Energy content Local and Indigenous Knowledge	<ul style="list-style-type: none"> • Increase rural electrification, create community awareness on sustainable practices like briquette-making through village meetings, social media, and exhibitions, leverage clients for marketing, and adopt eco-friendly clean technology construction methods 	Government through Rural Electrification Agency, NREP, UNREEEA, Ministry of Tourism, Wildlife and Antiquities, and Ministry of Local Government
9	Research for Policy and Social Transformation	<ul style="list-style-type: none"> • Create private sector research platforms and a research hub; align research agendas with National Development priorities, and involve MDAs in research panels to ensure wide community outreach 	Academic Institutions, Universities, NREP, Government MDAs, and Development Partners

10	Data Aggregation	<ul style="list-style-type: none"> Decentralize data in policy implementation to support clean energy businesses. Actively involve District Local Governments in data management, maintaining up-to-date electronic records, and focus on collaborative development of data management tools for decision making 	District Local Government Leaders, Sector Associations, and MDAs such as MEMD & MoICT
c) Frontier Technologies			
11	Geothermal energy	<ul style="list-style-type: none"> Prioritize funding for preliminary studies, build local administrative capacity for Ugandans, and extend subsidies to geothermal developers. 	Government through MEMD, Private sector, Financiers
12	Biofuels blending	<ul style="list-style-type: none"> Intervene in ethanol price setting, Consider tax exemptions to ensure sustained supply. Explore alternative transportation systems, such as a pipeline; Build an oil refinery to harness Uganda's oil production; and increase petroleum production, alongside raising biofuel awareness 	MEMD, MoFED, Private sector, Uganda National Oil Company
d) Smart Grids			
13	Nuclear energy	<ul style="list-style-type: none"> Establish a comprehensive legal framework for safe and effective regulatory oversight and compliance for nuclear energy; Prioritize high-impact nuclear projects, and secure funding and international cooperation; Establish specialized training and internship programmes 	MEMD, Ministry of Justice, URA, Nuclear Safety Council, IAEA
14	E-Waste Management	<ul style="list-style-type: none"> Adopt tried and tested initiatives such as the Extended Producer Responsibility (EPR) model; and impose the Advanced Recycling Fee (ARF) on each imported electronic item payable to a fund to support e-waste management 	Government through MEMD, MoICT, KCCA, MoLG, private sector, Uganda Manufacturers Association

15	Critical Minerals	<ul style="list-style-type: none"> • Greater investment in exploration, sector organization, environmental regulation for sustainable mineral extraction; • Invest in technology for waste management and clean energy access. • Spearhead stakeholder and community engagement, and promote people centered policies on mineral rights. • Simplify requirements for addressing expensive environmental impact reports. 	MEMD, Private sector, Uganda Chamber of Energy and Minerals (UCEM)
16	e-Mobility	<ul style="list-style-type: none"> • Establish a robust regulatory framework embracing fiscal strategies and innovative financing models to attract investment. • Strengthen public-private partnerships to enhance e-mobility; • Develop necessary charging infrastructure. • Engage in regulatory compliance, invest in local research, and promote technology transfer. 	MEMD, MoFED, MoWT, IST Secretariat, URSB, Private sector
17	Digitizing the energy sector (digital transformation)	<ul style="list-style-type: none"> • Engage key stakeholders through regular communication, feedback sessions, and collaborative planning. • Simplify data sharing for research through comprehensive legal frameworks, data harmonization, and public access via websites, and utilize open-source platforms like Amazon to provide datasets 	MoICT, MEMD, Private sector, DLGs, Development Partners
e) Women and Youth			
18	Trans-boundary Opportunities	<ul style="list-style-type: none"> • Pursue integration of women into appropriate energy value chains. • Target marginalized groups when localizing content, and establish linkages between local and international organizations, minding cultural sensitivity to increase adoption. • Harmonize tariff policies to reduce barriers to cross-border trade for adoption of e-technologies, 	Ministry of East African Community Affairs, MEMD, Ministry of Gender Labour and Social Development (MoGLSD), Development Partners and the Private sector
19	Youth and clean energy	<ul style="list-style-type: none"> • Implement nationwide renewable energy education programs in schools, • Host inter-generational community dialogues; Include youth representation in energy policy discussions to shape future energy strategies that address climate change and environmental concerns. 	MoGLSD, MEMD, MoES, NREP, Youth groups

20	Financing Women and Youth Energy Entrepreneurs	<ul style="list-style-type: none"> • Introduce incentives for the private sector, particularly women-led and youth-led energy business initiatives; to encourage their growth, by addressing challenges, including structural barriers, financial constraints, and technical complexities. 	<p>MoGLSD, MoFED, Financial Institutions, Women and Youth Organizations, UWONET, UWEAL, UECCC, PSFU</p>
21	Energy Knowledge for Millennials	<ul style="list-style-type: none"> • Support youth in developing creative and innovative ideas, particularly in renewable energy, music, waste management, and climate change. • Increase advocacy, mass media, and AI-driven awareness campaigns about renewable energy and energy transition, to increase adoption 	<p>MEMD, NREP, Academia, Youth Organizations, Youth Go Green</p>
22	Access to Capital, Government Incentives, Investment Opportunities	<ul style="list-style-type: none"> • Adopt technology-driven support systems, including a centralized digital platform for registration and tracking of payments for energy systems to address the high cost of energy transition; • Carry out large-scale communities awareness campaigns on the economic and health benefits of transitioning to sustainable clean energy solutions. 	<p>UECCC, MEMD, MoFED, Private Sector Associations, UWONET, NREP, UWEAL</p>
f) Clean Cooking			
23	Holistic Energy Access Plans: Electric Cooking	<ul style="list-style-type: none"> • Promote electric cooking as a means of offsetting the electricity surplus, to reducing reliance on biomass. • Roll-out the developed e-cooking strategy, with a "Triple A"-approach: affordability, availability, and awareness. • Collaborate with regional and international partners to expand financial and technical support. • Launch a national clean cooking awareness campaign to promote e-cooking. • Increase investment in local production of renewable fuels, such as ethanol, 	<p>MEMD, ERA, MoFPED, Private sector, NREP, UNACC, DPs, EACREEE, MECS</p>

24	Financing Clean Cooking	<ul style="list-style-type: none"> • Develop collaborative financing models that combine demand-side and supply-side support to scale clean cooking technologies in underserved communities. • Develop a blended financing model for informal settlement markets; • Form strategic partnerships with cooperatives, local governments, and private sector companies to expand clean cooking solutions 	MEMD, Ministry of Health, DLGs, Private sector, UECCC, and Financial Institutions, UNACC
25	Cooking Standards and Quality	<ul style="list-style-type: none"> • Establish and enforce standards to ensure safety, quality, and consumer confidence in the clean cooking market. • Establish national labelling programmes to educate consumers on the importance of standards. • Increase enforcement against illegal refilling (e.g. of LPG) and non-compliant products in the clean cooking. 	MEMD, UNBS, Private Sector, NREP, UNREEEA, UNACC
26	Address Energy Poverty Through Sustainable Biomass	<ul style="list-style-type: none"> • Recognize and support the establishment of sustainably farmed charcoal as opposed to traditional charcoal production, offering oversight along the entire value chain. 	MEMD, National Forestry Authority, NEMA, MEMD, MAAIF, Private sector, Development Partners, DLGs
27	Cooking Transition in Institutions	<ul style="list-style-type: none"> • Set policies that encourage the promotion of, and invest in clean cooking in public institutions like schools, hospitals, and prisons, • Sensitize all institutions to ensure a holistic energy transition. 	MEMD, MoES, MoH, OPM, Private sector, NREP, UNACC, MECS
28	Health as Driver for Electric cooking	<ul style="list-style-type: none"> • Increase outreach programs and community engagement including Village Health Teams (VHTs) and Healthcare workers, to raise awareness on the health risks associated with biomass cooking. • Expand access to electric pressure cookers and provide financial support for low-income households. 	MEMD, MoH, DLGs, Makerere Lung Institute, FIs, UECCC

29	Clean cooking and Biogas adoption	<ul style="list-style-type: none"> • Develop gender-focused renewable energy policies to ensure equitable benefits, • Formulate and promote tailored subsidies and incentives to lower the initial costs of biogas and other clean cooking technologies. • Invest in academic and vocational training to build a skilled workforce and drive innovation in the biodigester sector. 	MEMD, NREP, UNACC, UWEAL, Private sector, Universities, Vocational Institutes
30	Experience from Utility E- Cooking with EPCs	<ul style="list-style-type: none"> • Shift the e-cooking tariff to follow the lifeline tariff with a 50% discount on units in the 15-30 range. • Put subsidies on electric cooking appliances to propel their adoption thus increase the electricity demand 	MEMD, ERA, UMEME, UEDCL, MoFED, private sector
g) Productive Use of Energy			
31	Energy and Tourism	<ul style="list-style-type: none"> • Create a national strategy to leverage renewable energy sites for tourism while leveraging digital platforms to increase accessibility 	Min. of Tourism Wildlife and Antiquities, MEMD, UTB, NREP
32	PU-Energy in Agriculture Livelihoods and Economic Productivity	<ul style="list-style-type: none"> • Subsidize solar irrigation systems for easier access by subsistence farmers; • Introduce solar dryers for post-harvest handling; • Invest in awareness creation on the benefits of irrigation in the farming industry; • Promote energy efficiency as a cost saving measure, using energy leases and Power Purchase Agreements (PPAs), and foster partnerships; • Adopt net-metering policy to allow excess power to be fed in the grid when available, and vice-versa. 	MAAIF, MEMD, ERA, REA, UMEME Private Sector, DLGs, Communities
33	Financial Institutions and Private Sector On Financing Gaps	<ul style="list-style-type: none"> • Formulate supportive and innovative financing models like pay-as-you-go, crowdfunding, accelerators, and social impact bonds to foster enterprise growth, and tailor energy solutions through robust data collection. • Speed up NEMA processes to develop strong projects for funding; • Form Partnerships with NGOs and local stakeholders. 	Financial institutions, Private sector, and Energy Enterprises; NEMA, Local NGOs, NREP

h) Finance and Business

34	Viable Mini grids	<ul style="list-style-type: none"> • Integrate data intelligence into mini grid developers' processes to provide them with all necessary information to guide their planning, embracing data-driven designs, and innovative pricing solutions and learning from both successes and challenges. • De-risk the sector through incentives to make the mini-grid landscape attractive and ripe for investment. 	MEMD, Utility companies, Mini-grid developers, Private sector
35	Energy Finance for Climate Action	<ul style="list-style-type: none"> • Tailor financial mechanisms to the specific communities in which they are deployed; • Continue partnerships between Financial institutions and UECCC to enhance efforts and strengthen energy policies that support climate and energy financing. 	Development Partners, Financial Institutions, UECCC, Private sector
36	Energy Entrepreneurs	<ul style="list-style-type: none"> • Focus on good energy infrastructure development and maintenance; • Create community awareness about the renewable energy systems and their associated economic benefits. 	Government, Financial Institutions, the Private sector, Communities
37	Clean Energy Markets Access Through Carbon Financing	<ul style="list-style-type: none"> • Create standardized approaches, such as templates, producing knowledge products like the Capital Markets Profile for Uganda; Foster partnerships that provide essential data and technical support. • Adopt a programmatic approach to aggregate smaller projects, to enhance their appeal and demonstrate their potential to funders. • Build local auditing capacity, ensuring community consultation during project registration; • Leverage advanced carbon finance technologies like the Barcelona model, building capacity through academic institutions. 	MEMD, MoFED, Climate Finance Unit, UECCC, DPs, East African Alliance on Carbon Markets and Climate Finance, Academic Institutions, NREP, UNACC, UNREEEA, USEA

38	Results Based Financing programmes For clean energy access	<ul style="list-style-type: none"> • Institute better data collection and verification processes, • Organize Collaborative workshops for school owners to elucidate the benefits of the technology and the Reverse Auction Mechanism in RBF to help deliver the targets for project success. 	MEMD, UECCC, Development Partners, Academic Institutions, NREP
39	Energy Business Models	<ul style="list-style-type: none"> • Harmonize tax policies and regulations on clean cooking technologies to standardize the market; • Adopt Pay-As-You-Go financing model; • Explore community energy projects, such as community solar systems, to allow individuals without space to house individual systems to still access clean energy technologies, while reducing system cost to individual 	MEMD, MoFED, UNBS, URA, SACCOs, MFIs, NREP, Private Sector
i) Policy and Regulation			
40	Energy Access and Affordability	<ul style="list-style-type: none"> • Expand grid access while supporting off-grid initiatives to accelerate rural electrification. • Include Youth in research initiatives in renewable energy projects to help develop innovative financing mechanisms. • Utilize blended financing solutions to mobilize resources effectively to achieve goals related to affordability, reliability, and access. 	ERA, UMEME, UEDCL, UECCC, FIs, Private sector, Development Partners, Research Institutions
41	Enabling Environment for Mini-Grids development in Uganda	<ul style="list-style-type: none"> • Target collaboration between Team Europe, Uganda government and private sector to align Team Europe's support with Uganda's priorities, • Continue reducing the cost of renewable energy systems to ensure increased uptake and use of developed mini-grids 	MEMD, ERA, Mini-grid developers, DPs, Private sector, LGs, Team Europe
42	Regional Policy Harmonization	<ul style="list-style-type: none"> • Prioritize regional policy harmonization and establish a structured framework for collaboration between academia, the private sector and government to facilitate knowledge exchange/ transfer 	Regional govts, EAC, Academia DPs, EACREEE

43	Policy and Regulation of Waste Management	<ul style="list-style-type: none"> • Formulate a new waste management policy that reflects the waste management hierarchy; • Incorporate circular economy principles such as Reuse, Reduce, and Recycle to ensure total waste use, • Adopt the polluter pays principle and create awareness programs through media channels. 	Govt MDAs – NEMA, MoLG, MEMD, KCCA
44	Energize Refugee settings and Host Communities	<ul style="list-style-type: none"> • Foster collaboration among national and international stakeholders and expand energy access through partnerships. • Scale up the Pay-As-You-Go (PAYG) and Results-Based Financing models for affordability. • ECOCA East Africa's teams to partner with local partners in northern Uganda to grow the energy kiosk network to enhance affordability and sustainability 	MEMD, OPM, UNHCR, Development Partners, UECCC, SOLCO, NREP, UNACC, USEA

We appreciate your participation in the 4th Annual Renewable Energy Conference and Expo and look forward to welcoming you again as a partner, delegate, exhibitor, or speaker at REC25. Wishing you a prosperous and successful New Year 2025 from all of us at NREP and the Ministry of Energy and Mineral Development.

IN LOVING MEMORY OF ENG. SIMON PETER SSEKITOLEKO



A visionary leader, colleague and friend

The Renewable Energy Conferences and Expos, particularly REC24 & EXPO stand out as a testament to the dedication, vision, and unwavering commitment of Eng. Simon Peter Ssekitoleko. As a pivotal member of the organizing team, his contributions were instrumental in shaping the success of this year's conference and those before it.

Eng. Ssekitoleko was not just a professional; he was a passionate advocate for renewable energy, sustainability, and the betterment of livelihoods in Uganda. Through his role as an Assistant Commissioner, Renewable Energy Department at the Ministry of Energy and Mineral Development, he championed innovative solutions, fostered collaborations, and inspired those around him to push boundaries in the pursuit of a cleaner and greener future.

His leadership, insights, and ability to bring people together were unmatched. Whether coordinating with partners, guiding his colleagues, or mentoring young

professionals, Eng. Ssekitoleko left an indelible mark on everyone who had the privilege of working with him. His vision for a sustainable energy future lives on in the projects he led, the teams he nurtured, and the legacy he left behind.

As we reflect on the success of REC24 & EXPO, we honour Eng. Ssekitoleko's memory, knowing that his dedication and passion were central to this journey. His absence is deeply felt, but his impact will continue to guide us in our mission to transform lives through clean energy access.

"If we live, we live for the Lord, and if we die, we die for the Lord; so then, whether we live or die, we are the Lord's." Romans 14:8.

Continue Resting in Eternal Peace Eng. Simon Peter Ssekitoleko. Your legacy will forever remain a cornerstone of Uganda's renewable energy journey.



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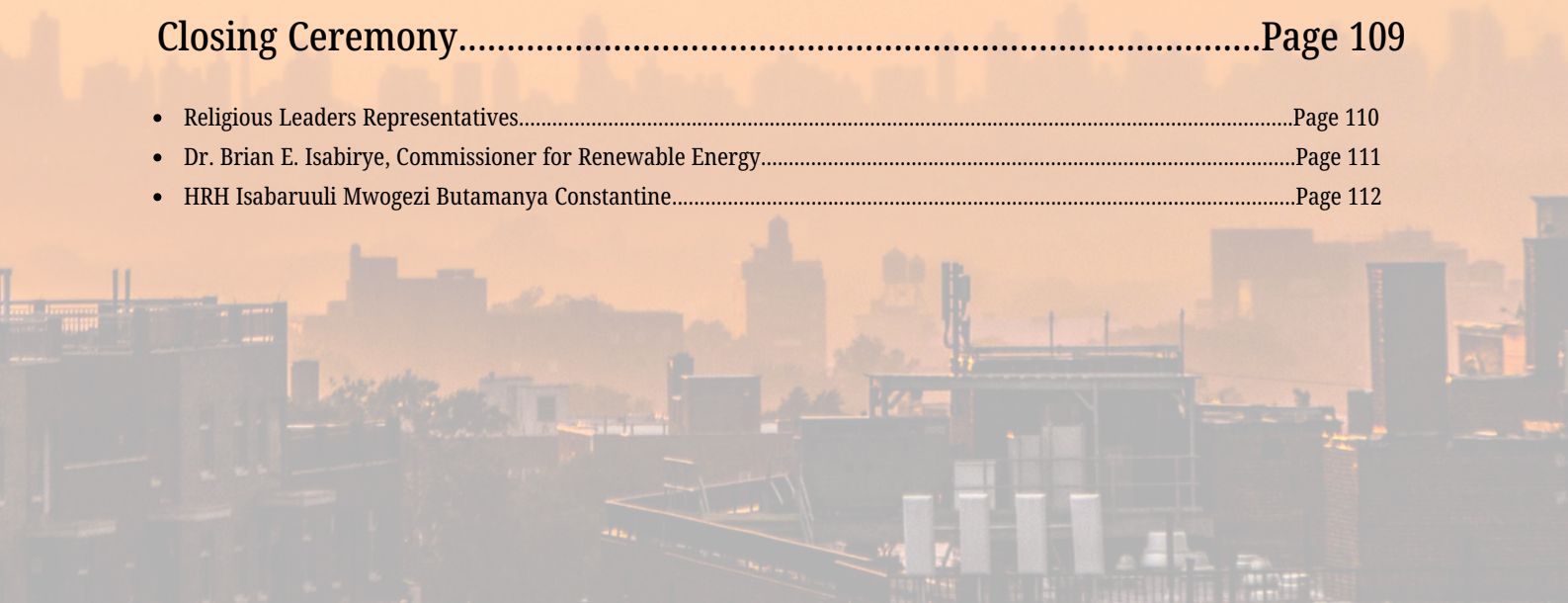
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SPEECHES FROM DIGNITARIES

HON. DAUDI MIGEREKO - CHAIRPERSON, NATIONAL BIOFUELS COMMITTEE.

Welcomed the delegates to the important Renewable Energy Conference 2024 & Expo opening ceremony, thanking the Minister for Energy and Mineral Development and the State Minister for Mineral Development for prioritizing attendance of the conference and expo annually despite having equally crucial engagements.

Reminded delegates of the theme of the conference “Transforming Livelihoods through Clean Energy Access” continuing from where the REC23 & EXPO left off under the theme “A Clean Energy Transition for All”, informing them that the 4th edition of the annual renewable energy conference was on impact noting that access alone is not sufficient and as such, targeting energy as a catalyst to improve the lives of Ugandans through productive utilization is required.

Reflecting on the conference theme, highlighted the need to address barriers around tapping into opportunities in the renewable energy space, citing the delays in the launch of the National Biofuels Blending Program due to financial, logistical and infrastructural hurdles, revealing the conference as key to liaising with all key stakeholders on how to successfully kick-start the program.

Revealed challenges in scaling up financing & investment as well as the high upfront costs associated with the technologies, commending the policy actors for doing their part and requesting the industry players to do the same. Called for further development of local industry production lines and value chains.

Called for delegates to continue the renewable energy discussion beyond the conference, encouraging them to implement recommendations arising from the discourse.

Urged development partners to prioritize support to clean cooking initiatives using bioethanol. Inviting them to work closely with the NBC to achieve the goal of integrating bioethanol into productive use, elaborating the support rendered to farmers through this support via the creation of an alternative market for their produce.



MARIAM NAMPEERA MBOWA - AG. MANAGING DIRECTOR, TOTALENERGIES.

Delivered greetings on behalf of the TotalEnergies Uganda team and the General Manager, Mr. Philippe Groueix. Expressed delight at TotalEnergies participation in the fourth consecutive Annual Renewable Energy Conference and Expo, highlighting the importance of the event for Uganda's energy sector.

Highlighted efforts to strengthen energy security, particularly commending the Ministry of Energy for the successful commissioning of the Karuma Hydropower Plant, which had significantly boosted the country's generation capacity. This achievement was seen as a step toward reaching the 52,000 MW generation target by 2040, as outlined in the 2023 Energy Policy. Noted the activation of the East African Power Pool, positioning Uganda to become a leading energy exporter in the region. TotalEnergies reaffirmed its commitment to supporting Uganda's energy security, citing several renewable energy projects, including a Solar Project Agreement with the Ministry, which covers six solar energy sites, two of which are already operational. Additionally, shared that TotalEnergies had acquired a 28% stake in the Bujagali Hydropower Plant, which supplies 12.5% of Uganda's total installed energy capacity, aligning with national energy priorities.

Discussed efforts toward a just energy transition, with TotalEnergies emphasizing its commitment to providing cleaner energy access, revealing that at the Paris Clean Cooking Summit in May 2024, the company announced its goal to empower 100 million people in Africa and India to access clean cooking by 2030. As part of this initiative, an 80-kiloton/year LPG facility was being constructed in the Tilenga Upstream area to provide cleaner cooking options for households and support thermal processes in industries. Shared that TotalEnergies had ceased the importation and distribution of heavy fuel oil in Uganda and was encouraging both commercial and industrial users to transition to LPG as a cleaner alternative.



Detailed initiatives to reduce carbon emissions, including the development of a 15MW solar PV plant in the Tilenga project area, aimed at reducing greenhouse gas emissions. A biofuels blending program was being piloted in collaboration with the Ministry of Energy. Outlined efforts to support Uganda's transition to e-mobility, with TotalEnergies assisting in the establishment of infrastructure for battery swapping stations for two-wheeler e-bikes and charging stations for electric vehicles, which would contribute to improved air quality across the country.

In conclusion, emphasized that access to cleaner, more affordable fuels would significantly improve the quality of life for Ugandans. TotalEnergies reaffirmed its commitment to being a partner in Uganda's energy transformation and reiterated its ambition to be a leading player in the global energy transition, working toward carbon neutrality by 2050. Through its diverse projects and initiatives, TotalEnergies was positioning itself as a key contributor to Uganda's sustainable energy future.

ROY NYAMUTALE BAGUMA - MANAGING DIRECTOR, UGANDA ENERGY CREDIT CAPITALISATION COMPANY (UECCC).

Reported that in 1999, Uganda's energy sector was liberalized as the government adopted a power sector restructuring and privatization strategy to attract investment in generation, distribution, and access. This strategy introduced private sector participation in existing operations, financing, and management of future investments. However, noted that ten years later, several barriers persisted, including the lack of project finance in the local market for renewable energy projects, limited interest by local financial institutions in renewable energy access programs, high upfront costs of acquiring quality renewable energy technologies for households, insufficient concessional working capital financing for energy service companies to scale operations, and inadequate technical capacity among local financial institutions to appraise renewable energy projects.

Shared that these challenges led to the establishment of the Uganda Energy Credit Capitalisation Company (UECCC) to catalyze financing for renewable energy project development and increase access to clean and modern energy services. Explained that the company was designed to draw resources from government and development partners, using these to leverage private sector participation in financing renewable energy projects and access programs.

Shared that UECCC's interventions were aligned with government policies such as NDPIII, NDPIV, and SDG7, focusing on increasing access to electricity for lighting, clean cooking, and other productive uses. Disclosed that the company intermediated catalytic financing products in partnership with financial institutions regulated by the Bank of Uganda and the Uganda Microfinance Regulatory Authority (UMRA), leasing companies, investment funds, and energy service companies. The financial instruments employed included lines of credit to financial institutions, partial credit guarantees, technology risk guarantees, grant subsidies, and technical assistance.

Informed that UECCC was the implementing agency for the financial intermediation component of the USD 638 million Electricity Access Scale-up Project. Of this, USD 528 million was allocated to the Ministry of Energy and Mineral Development for on-grid intensification, while USD 110 million targeted off-grid access. Explained that



UECCC focused on catalyzing supply-side financing for solar home and commercial systems, clean cooking solutions, and productive uses of energy, with specific attention to refugee and host communities.

Highlighted a results-based grant financing facility under this component, in partnership with energy service companies, to provide price subsidies addressing affordability challenges associated with renewable energy technologies. This initiative aimed to increase access to clean energy technologies for households and enterprises.

Shared information on a credit support facility designed to catalyze supply-side activities by providing working capital and concessional working capital facilities to companies in off-grid solar, clean cooking, and productive use of energy appliances. Noted that UECCC served as the grant pass-through holder for contracts supporting the electrification of public schools, health centers, and water pumping sources, as facilitated by the Ministries of Health, Education, and Water.

Announced that on October 29, 2024, UECCC signed agreements with 67 companies to deliver price subsidies to the public. These included support for off-grid solar micro-products like solar lamps with phone charging capabilities, subsidized by 60%, and solar home systems with a minimum of two lights and phone charging capabilities, subsidized by 50% with a cap of UGX 275,000.

Clean cooking solutions received varied subsidies: 50% for household biomass cookstoves, 30% for household biogas and solar cookers, 40% for LPG packages and ethanol cookers, and 50% for induction and electric pressure cookers.

For productive uses of energy, solar-powered water pumps were subsidized at 60% with a maximum cap of UGX 5 million, while off-grid refrigerators, solar-powered green milling, solar water heaters, on-grid refrigeration, and green milling had a maximum subsidy cap of UGX 3.5 million.

Announced that subsidized sales would commence on November 1, 2024, available to all Ugandans with a national identity card, and the amounts payable after the subsidy discount.



H.E. XAVIER STICKER - AMBASSADOR OF FRANCE TO UGANDA.



Welcomed delegates to a conference focused on renewable energy access, emphasizing the need to link energy access with its transformative impact on the lives of Ugandans. Commended Uganda for the significant progress made toward universal energy access, utilizing both on-grid and off-grid solutions. Acknowledged the existing challenges, noting that electricity generation still lags behind production capacity, and highlighted the need for careful planning to ensure the energy generated can meet the demands of the population.

Expressed pleasure in partnering with Uganda stating that France is a partner for investment in Uganda, applying to electricity generation, energy transport, policy and climate change adaptation. “The French Development Agency is prepared and studying ways to partner with Uganda to ensure that policies are adapted to the issues of climate change”.

Outlined France's plans to support Uganda's nuclear energy program, particularly focusing on security, safety, and regulatory frameworks.

- Informed the conference delegates that French companies were prepared to contribute their valuable expertise to Uganda's hydro power generation industry.
- Highlighted early deliverables for the year 2025:
- A €75 million loan from France for the rehabilitation of the Kiira-Nalubaale Hydropower Plant.
- A €51 million investment in the second phase of the rural electrification project.
- Support for the smooth transition from UMEME and the digitization of the power supply.

Expressed pleasure in partnering with Uganda, with the French Development Agency remaining instrumental in that cooperation with over 250 million Euros of commitments to its portfolio speaking to the global focus on renewable energy access.

H.E. JAN SADEK - EUROPEAN UNION AMBASSADOR TO UGANDA.

Reaffirmed the European Union's commitment to supporting Uganda in achieving a just and clean energy future. Revealed that the EU's support to Uganda's energy sector was guided by the Global Gateway Strategy. This strategy, an investment framework designed to build resilient connections with partner countries, prioritized sustainable development, quality jobs, tangible community benefits, and private sector investment. It also aimed to promote high environmental and social standards while avoiding the risks of debt traps. Revealed that the EU sought to offer solid financial solutions through the mobilization of grants, blended finance with loans, and private sector investment through guarantees.

Stated that clean energy was one of the priority sectors for the Global Gateway, with a target investment of €150 billion in Sub-Saharan Africa between 2021 and 2027, describing the initiative as a potential game-changer to bridge Uganda's infrastructure gap, with the Uganda-EU partnership already benefiting from this strategy, particularly in the energy sector.

Emphasized the need to prepare strong, ready-to-invest project pipelines, noting that EU grants operate on a first-come, first-served basis, and remarking that there is a need to unleash private sector potential. Informed that the estimated \$6 billion infrastructure gap needed for Uganda to reach universal clean energy access by 2030 could not be bridged solely through public investment and the support of development partners, and as such will require attracting private sector investments, refining energy policies and regulatory frameworks that stimulate and promote these investments, and utilizing EU guarantees to de-risk financial challenges.

Stressed the importance of investing in Uganda's human capital, highlighting that developing a skilled workforce and adopting state-of-the-art technologies are essential for driving Uganda's energy transition and ensuring a sustainable energy future."

Revealed support to Uganda in:

- Electrification of Uganda's rural communities, in partnership with the French Development Agency and German Cooperation, to boost last-mile connectivity, including connecting households, schools, and businesses.



- Access to affordable clean energy through the GETFIT project, which has increased electricity production by 20% and reduced dependence on fossil fuels, in collaboration with KfW, Germany, the UK, and Norway.
- Support for clean cooking through a project financed by the Netherlands government, EU, Denmark, and the Netherlands.
- Development of future cross-border grid interconnectors to South Sudan and Tanzania, backing Uganda's ambition to become a regional power hub.

Noted the European Union's continued support for Uganda's energy sector, with a focus on last-mile connectivity, revealing plans to sign a new agreement to fund the extension of thousands of kilometers of transmission and distribution lines, and 40,000 additional connections to households, schools, health centers, and SMEs in rural areas across 34 districts and 2 islands building on the successes of the last-mile electrification project with the French Development Agency.

Disclosed a commitment of a 30 Million Euro grant to support the rehabilitation of the Nalubaale-Kiira hydropower system.

H.E. LISA CHESNEY - BRITISH HIGH COMMISSIONER TO UGANDA.

Thanked the Minister for Energy and Mineral Development and the National Renewable Energy Platform for continually growing the Renewable Energy Conference & Expo.

Revealed that the British High Commission recently announced a global clean power alliance aimed at accelerating the clean energy transition and tackling the significant challenges involved in developing clean energy. The initiative brings together like-minded developed and developing countries to drive action.

Remarked that renewable energy represents the lifeblood of Uganda's future. By harnessing the power of the sun, wind, and water, Uganda can ensure that every child has access to electric light for studying, every farmer can increase yields with the right machinery, and every business can compete on the global stage without harming the environment.

Informed that for the UK, the partnership in Uganda was not just a project or program but a statement about the future of the planet and shared global responsibility. Stressed that by investing in renewable energy, Uganda had set an example for the rest of Africa and the world, showing how economic development and environmental protection can go hand in hand.

Disclosed that the UK, in partnership with Uganda, had supported the creation of the climate finance unit in the Ministry of Finance, Planning, and Economic Development, and leveraged investments to scale modern clean cooking services. The UK has also supported the creation of the clean cooking unit in the Ministry of Energy and Mineral Development.

Congratulated the Minister of Energy and her team at the Ministry on the commissioning of the Karuma Hydropower Dam, a private sector investment that has catapulted Uganda's electricity generation to 2,048 MW.



Informed that Ugandan innovators were the most successful participants in the latest round of the flagship energy catalyst program run by Innovate UK

Revealed the launch of the climate finance accelerator program in 2023 that matches private investments with businesses that are able to grow, scale and support greener growth.

Alluded to the UK's pride in working alongside Uganda and Partners to deliver a just inclusive energy transition

Remarked that innovation, exchanging ideas & knowledge, building new partnerships, candid discussions, disagreements and delivering results are all key to bringing about the change we need to see and that's what the Renewable Energy Conference and Expo is all about.

GRACE TUSIIME - UNDER SECRETARY, MINISTRY OF ENERGY AND MINERAL DEVELOPMENT, UGANDA.



Remarked that during the conference, the intention was to take stock of the progress of the recommendations and commitments, highlighting progress, challenges faced and potential lessons learnt, with the conference also providing an opportunity to evaluate Uganda's landscape as the country continues to participate in the global discourse on just and equitable energy transition through implementation of interventions for accelerating clean energy access, such as:

- Promotion of distributed renewables and minigrids
- Blending of fossil fuels with biofuels
- Development of the green hydrogen value chain
- Value addition to development and critical minerals
- Increasing access to clean cooking
- Scaling productive use of energy
- Increasing access to context appropriate energy solutions in refugee contexts among others.

Highlighted the timeliness of the REC24 & Expo, happening as the country is finalizing development of the National Development Plan IV (NDP IV) providing an opportunity for key stakeholders to participate, inform and influence government policy and planning.

Disclosed the achievements since the REC23 & Expo, such as: launching new policies and plans to set a clear direction for the sector as well as align it to the emerging challenges and opportunities through which Uganda was cemented as a front runner to delivering clean and renewable energy on the continent.

Revealed that the Renewable Energy Conference 2023 and Expo held from the 16th to 18th of November 2023 culminated in a number of commitments from government to government dialogue, private sector and development partners to drive increased deployment and universal access to clean energy, with a number of them since progressing to development

Commended the Ministry of Energy and Mineral Development and National Renewable Energy Platform secretariat for organizing the conference. Recognized the gender and youth sensitivity of the conference evidenced by the participation.

HON. PHIONA NYAMUTORO - MINISTER OF STATE FOR MINERALS, MINISTRY OF ENERGY AND MINERAL DEVELOPMENT.



Expressed gratitude for the opportunity to share her personal take on renewable energy as a state minister. Expressed amazement at the composition in the room.

Remarked that while life cannot be renewed, it is clear that livelihoods can be transformed and sustained, revealing livelihood transformation as the goal the Ministry was working toward.

Revealed that we need to guarantee that future generations will be able to have a conducive environment that will enable them thrive.

Stated that ensuring the continued availability of natural resources for future generations is crucial. As a

generation, we are working to ensure that the environment remains sustainable for those who will come after us.

Highlighted the potential of the exploration, exploitation, and use of minerals, which are located below the ground, by leveraging renewable energy, which is derived above the ground, asking how this balance could be achieved while ensuring the protection of the environment.

Expressed hope that the 4th Edition of the Renewable Energy Conference and Expo would provide a strong foundation for addressing these challenges moving forward.

HON. CANON DR. RUTH NANKABIRWA SSENTAMU - MINISTER OF ENERGY AND MINERAL DEVELOPMENT.



Reminded the delegates that in the book of Genesis, when God created day and night, the light came from a clean source, emphasizing that the mission to promote clean energy was aimed at enjoying that light.

Expressed gratitude to the delegates and sponsors for their attendance at the conference and for joining the Ministry of Energy and Mineral Development on the clean energy journey.

Promised full cooperation, referencing the relevant laws and regulations in place to achieve shared goals.

Commended the theme of REC24 & Expo, noting that Uganda was making progress in energy access, currently at 60%, with only 22% connected to the national grid. Thanked all Ugandans who had already transitioned to clean energy sources and encouraged others to take the initiative, without waiting for government action, to adopt clean energy alternatives.

Acknowledged the significant work still ahead, with Uganda making strides, including the signing of a purchase and supply agreement with the Global Gases Group on October 18th, 2024, to construct an LPG gas cylinder manufacturing plant in Uganda. Called on delegates at REC24 & Expo to contribute to fostering a mindset change around clean energy.

Informed that many people feared using clean energy technologies such as gas, stressing the need for a shift from traditional biomass cooking to affordable clean cooking technologies. Noted that cooking with charcoal was more expensive than using electricity and other clean cooking alternatives.

Explained the connection between the National Development Plan (NDP) IV theme, "Sustainable Industrialization for Inclusive Growth and Wealth Creation," and the REC24 & Expo theme, "Transforming Livelihoods through Clean Energy Access," highlighting that inclusion and sustainable industrialization revolved around access to affordable, clean energy.

Revealed that during the NDP IV period, the energy sector would play a crucial role in supporting the government's tenfold growth strategy by:

- Maintaining focus on energy infrastructure development to support value addition in the agricultural, tourism, and mineral sectors.
- Ensuring that energy supports the knowledge economy through science, technology, and innovation to improve efficiency and productivity.
- Enhancing social service delivery in health and education.

- Delivering clean energy for all by 2040, with renewable energy playing a central role, supported by technological developments that aim to transform livelihoods.

Shared that the electricity sub-sector underwent second-generation reforms since the amendment of the 1999 Electricity Act, aiming to consolidate gains, attract investment, and improve service delivery. Cited the removal of the monopoly of bulk power purchasing by UEDCL to allow for investment and the demonopolization of electricity generation in Uganda, which encouraged investment from independent power producers.

Informed that the government of Uganda worked collaboratively with all key stakeholders, emphasizing the importance of cooperation at the conference to develop innovative solutions and mobilize the necessary investments. The Ministry remained committed to creating an enabling environment for these initiatives..

Shared that during the Paris Clean Cooking Conference, Uganda was awarded 5 million euros by the UK government to create a clean cooking unit within the Ministry of Energy.

Testified about the loss of her sister, Jennifer, which could be linked to household air pollution, a personal experience she carried forward to advocate for the transition from dirty cooking fuels.

Stated that the need for a just and equitable energy transition was urgent, emphasizing that the unified approach called for phasing out traditional biomass and inefficient technologies, investing in the acceleration of cleaner energy development and access, and integrating this with other energy resources. This, she highlighted, would not only reduce carbon emissions but also empower rural and underserved communities.

Called for the conference to serve as a platform to exchange experiences, share ideas, and foster multi-stakeholder partnerships toward refining Uganda's and Africa's unified message.



UCU-ARTEFACT BIOGAS PROJECT



SCIENCE, RESEARCH, DATA AND KNOWLEDGE MANAGEMENT



**UGANDA CHRISTIAN
UNIVERSITY**
A Centre of Excellence in the Heart of Africa

A SPOTLIGHT ON UNIVERITIES WORKS IN THE ENERGY SECTOR.



Dr. Paul Nduhuura - Head Research and Capacity Building, National Renewable Energy Platform.

Dr. Martin Kizito - Head Grants and Partnerships, Uganda Christian University.

Dr. Richard Cartland - Chairperson Innovations, Faculty of Engineering, Applied Design and Fine Art, Kabale University.

Prof. Sam Adaramola - Prof. Energy Resources, Makerere University Business School.

Disclosed that many renewable energy projects failed due to insufficient community involvement. It was emphasized that involving local communities early in project development ensures that initiatives meet their technical, social, and economic needs while adhering to national policies and minimizing environmental impacts.

Highlighted Uganda's considerable potential to contribute to global advancements in renewable energy, citing the country's abundant natural resources and growing innovative capabilities.

Revealed that an integrated partnership approach is critical for sustainable energy solutions. The importance of collaborations between universities, both locally and internationally, was stressed to complement efforts and promote more impactful solutions. One university mentioned how it had aligned its research with Uganda's National Development Plans and Sustainable Development Goals, while also working closely with local communities to ensure mutual benefit. Additionally, informed that partnerships had been established with institutions in Germany.

Revealed that the local community surrounding Kabale University had provided land for its establishment, making it essential for the university to contribute back to the community. In response, several initiatives were being explored, including solar-powered water pumping systems to transport water from valleys to hilly areas, which would improve agricultural productivity.

Disclosed that the university was also working on raising environmental awareness, implementing a biogas project to manage municipal waste, and researching remote monitoring and control technologies for long-distance applications.

Highlighted that universities had revised their curricula to integrate renewable energy technologies, in addition to organizing tours to renewable energy facilities and projects, providing students with practical exposure to the field.

Announced a new partnership with the Norwegian government to launch an energy project at Makerere University Business School (MUBS). It was emphasized that successful partnerships are often based on strong personal relationships, and the MUBS collaboration was cited as an example. The need to nurture such relationships for future success was strongly urged.

Pointed out that universities must recognize their strategic role in influencing policy, with their strength lying not only in their expertise but also in their ability to generate actionable evidence. It was disclosed that universities, through frequent research, are well-positioned to identify societal challenges and propose solutions that inform policy formulation. Furthermore, it was revealed that many universities are establishing well-equipped units to manage partnerships with government bodies.

Revealed the importance of benchmarking when writing projects, particularly to foster knowledge exchange and apply best practices drawn from successful initiatives.

Noted that, to address the high costs of research, one university had established an innovation challenge that provides funding to renewable energy projects, which must also include student mentorship components.

Recommended staff involvement in partnerships and the creation of networks among researchers. Without such networks, partnerships are at risk of being ineffective.

RESEARCH EXPEDITION: ENERGY ECONOMICS AND GOVERNANCE FINDINGS DISSEMINATION.



Gladys Rochelle Kemitare - Lecturer, Makerere University Business School.



Florence Nakajubi - Instructor and Research Associate, Makerere University Business School.



Ali Kasaija - Instructor and Research Associate, Makerere University Business School.



Maureen Namono - Instructor and Research Associate, Makerere University Business School.



Nashua Kimuli - Research Associate, Makerere University Business School.



Immaculate Nanteza - Research Associate, Makerere University Business School.

This session discussed the drivers and support mechanisms necessary for exploiting the different energy sources to achieve the country's development goals in a sustainable research-led manner leaving no one behind.

Discussants delved into the findings of research on liquefied petroleum gas (LPG), charcoal and electric cooking in controlled laboratory environments which revealed the cost and time savings associated with the use of LPG and Electric Pressure cookers over using charcoal for cooking, elaborating that most Ugandans are unaware of this fact and as such need to be informed through demonstration campaigns and behavioral change management.

Presented biogas energy systems as an economically viable energy solution, revealing that despite their cost-effectiveness as well as environmental benefits, with both supply and demand rates being low. The discussion called for government subsidies in the biogas sector, intensive training and awareness campaigns, supply chain improvement and tax incentives to boost the supply side.

Explored the findings of a communication-based pilot study in Mukono that supported potential adopters to appreciate the technology through direct engagements and practical lessons

with partial success attributed to collaboration with Uganda's National Environment Management Authority that helped bridge research findings with practical implementation and policy advocacy.

Discussed the need for tailored interventions to promote incremental approaches to energy access improvement, considering the diverse energy challenges faced by different regions. Emphasis was placed on more accurately capturing energy access data through the use of tools such as the Maldia Framework.

The discussion then pivoted to focus on the impact of the Utilities 2.0 Twake mini-grid Pilot Project in a previously electricity-deprived community, with highlights on the enhancement of livelihoods and financial standing through improved economic activities. Shared challenges regarding reduced reliability as more users were integrated into the mini-grid, a challenge that has since been addressed with the arrival of the grid.

ENERGY LOCAL CONTENT AND INDIGENOUS KNOWLEDGE MANAGEMENT.

Session Chair: Flavia Ajambo - Public Relations Officer, Centre for Research in Energy and Energy Conservation.

Discussants:

- **Juuko Kwagala - Design Consultant, Technology for Tomorrow.**
- **Jovia Natabbi - Pharmacist, Natural Chemotherapeutics Research Institute.**
- **Betty Kaddu - Founder & Managing Director, Best of Waste Ltd.**

Defined local content as the expression and communication of a community's locally owned and adapted knowledge and experience relevant to the community's situation. Noted that indigenous knowledge, such as methods for coping with periodic food shortages, helps communities by utilizing traditional know-how for preserving food, revitalizing agriculture, and increasing food security. In promoting clean energy technologies, it was emphasized that it is paramount to be cognizant of indigenous knowledge and the embracement of local content. The session discussed indigenous clean cooking methods, energy-related local content, and how to optimally utilize them in the energy mix and transition.

Emphasized the health risks of traditional cooking methods, noting that the World Health Organization (WHO) had acknowledged air pollution as a major concern, particularly for mothers and children exposed to harmful smoke. It was noted that prolonged exposure to emissions, political barriers to awareness, and limited resources for clean energy advancements were a recipe for respiratory diseases.

Illustrated the origin of the "MAKKA stove," which exemplified local material sourcing, technology transfer, and adaptation. Explained that locals had been supplied with about 100 MAKKA stoves in the Ugandan rural district of Ntungamo, and had been taught the techniques for constructing the stoves themselves to reduce reliance on three-stone fires and promote health and safety through reduced smoke emissions.

Emphasized that traditional practices had shaped cooking across Africa, but with growing populations and resource

scarcity, there had been a shift toward sustainable and efficient technologies like MAKKA stoves and briquettes.

Highlighted the underlying causes for low adoption of clean energy technologies, which included high innovation costs, the need for continuous community engagement, resistance to change, limited awareness, and insufficient marketing.

Suggested the drafting and implementation of measures to increase health awareness, build capacity in clean cooking technology, and engage local leaders to promote clean cooking alternatives like briquettes made from accessible materials for local consumers.

Informed that decentralization efforts involved forming district and parish energy committees to enhance awareness, though planning constraints hindered progress.

Highlighted that to combat energy poverty, the Rural Electrification Agency and UNREEEA should focus on rural electrification, capacity building, and advocate for clean energy solutions with international support.

Suggested that the government get more involved in clean energy production, educate children on sustainable practices like briquette-making, and adopt eco-friendly clean technology construction methods.

Recommended focusing on community awareness through village meetings, social media, and exhibitions, leveraging clients for marketing, promoting knowledge management through documentation, and advocating for innovations in all social spaces.

DEVELOPMENT AGENDA: RESEARCH FOR POLICY, INDUSTRY AND SOCIAL TRANSFORMATION.



Judith Nakirija - Lecturer, Makerere University Business School.



Dr. Maxwell Otim Onapa - Board Member, Uganda National Council for Science and Technology.



Florence Nakajubi - Instructor and Research Associate, Makerere University Business School.



David Otieno - Cluster Coordination and Head of Program, GIZ Uganda.

Emphasized the importance of inclusive research systems that consider marginalized groups and involve collaboration across stakeholders. Stressed the critical role of government in supporting academic institutions, as well as the private sector's vital contribution to innovation, stating that the ultimate goal was for research to address real-world challenges and contribute to societal development.

Elaborated on the importance of aligning academic research agendas with the needs of society and government priorities, including those of Ministries, Departments, and Agencies (MDAs). Stressed the necessity of crafting research findings in simple, clear, and accessible language to make them understandable to a broader public and non-specialist audiences. Acknowledged that motivating researchers to engage in impactful studies and fully understand societal needs was crucial.

Stressed that GIZ's program aimed to support universities by enhancing research capabilities, building capacity, and fostering collaboration between academia, the private sector, and government, an effort that sought to align academic research with national development goals through funding, technical assistance, and partnerships.

Highlighted a lack of understanding of research purposes, limited collaboration with end-users, difficulties in commercializing findings, intellectual property issues, and the use of overly technical language.

Proposed engaging downstream consumers early, enhancing researchers' knowledge of commercialization, securing intellectual property rights, using accessible language, and ensuring research aligned with societal needs and addressed real-world problems.

Recommended the establishment of a research hub where the community could easily access research information, ensuring wider outreach and availability of knowledge.

Proposed the creation of a private sector research platform where academic institutions could propose solutions to industry challenges.

Emphasized that universities should align their research agendas with national development priorities, involve MDAs in research panels, and ensure findings were communicated in simple, accessible language through a community-based research hub for wider societal impact.

UNLOCKING INVESTMENT THROUGH DATA AGGREGATION.

Session Chair: Achieng Jacinta - Chemist, Geothermal Resources Department, Ministry of Energy and Mineral Development.

Panelists:

- **Andreas Brandner - General Manager, Knowledge Management Austria, KM4Dev and Knowledge for Development Partnership.**
- **Ms. Edwina Ahamize - Senior GIS Officer, Ministry of Energy and Mineral Development.**

Emphasized that high-quality, timely, and trustworthy data formed a critical foundation for efficient markets and development, which encompassed a wide range of data types, including economic indicators like GDP growth and inflation, capital market data such as bank lending rates and trading volumes, industry metrics like market sizes and growth rates, and firm-level information such as financial statements and ownership records.

Discussed opportunities and strategies for effectively aggregating data in Uganda's energy sector to unlock its untapped potential for driving growth and efficiency.

Highlighted the existence of gaps in data decentralization within the renewable energy sector, noting that significant efforts had been focused solely on the electricity sector.

Emphasized the importance of decentralized data in policy implementation, pointing out its flexibility in supporting clean energy businesses by overcoming limitations of centralized infrastructure.

Explained that data aggregation transformed large datasets into meaningful insights essential for analysis and decision-making.

Stated that Uganda could enhance data aggregation and dissemination by leveraging information for decision-making and resource optimization for national development through the Big Data Utilization Strategy.

Drawing on advanced practices from Rwanda and Kenya, Uganda was encouraged to integrate governance systems and foster partnerships for improved data integration, underscoring the rationale behind the formation of NREP.

Noted key challenges, including unclear data management components that hindered effective policy formulation, oversimplified insights, biases, and privacy risks associated with aggregated data.

Recommended involving district leaders in data management, decentralizing data to ensure visibility at all levels, maintaining up-to-date electronic records, enabling easy replication and sharing, and integrating multimedia resources.

Suggested focusing on collaborative development of data management tools, employing knowledge graphs and semantic organization, enhancing data structuring to improve reliability, and leveraging electronic systems for stability, efficiency, and space-saving benefits compared to traditional paper-based methods.



FRONTIER TECHNOLOGIES



GEOTHERMAL, THE NEXT ENERGY SOURCE FOR UGANDA.



**Achieng Jacinta - Chemist,
Geothermal Resources
Department, Ministry of
Energy and Mineral
Development.**

**Godfrey Bahati -
Commissioner, Geothermal
Resources Department,
Ministry of Energy and Mineral
Development.**

**Fred Ssemuyaba - Geophysicist,
Ministry of Energy and Mineral
Development.**

**Eagle Rusoke - Geoscientist,
Geothermal Resources
Department, Ministry of
Energy and Mineral
Development.**

This session explored the role of geothermal energy in Uganda's energy mix, emphasizing the country's vast potential with 27 identified geothermal sites. Geothermal energy was highlighted as an ideal alternative energy source due to its indigenous nature, abundance, cleanliness, stability, affordability, and sustainability.

Discussed the potential of geothermal energy to complement other energy sources in light of the growing energy demand, revealing the fault-bounded nature of geothermal prospects in Uganda, where significant amounts of fluids converge and manifest on the surface at structural intersections, most commonly observed with hot water springs.

Elaborated that, in Uganda, no deep drilling had yet been conducted, with only about 300 meters of exploration carried out.

Explained the geothermal energy licensing process, starting with the expression of interest, followed by the award of the exploitation license by the Ministry of Energy and Mineral Development and/or the Electricity Regulatory Authority.

Discussed the various applications of geothermal energy beyond electricity generation, such as direct use in agricultural applications and the utilization of generated waste.

Called for policy implementation in the enforcement of geothermal projects, cognizant of the high costs associated with geothermal energy resource exploration, insufficient data collection about geothermal extraction and usage, limited private sector participation, and a lack of skilled labor.

Revealed training programs for Ugandans aimed at building local administrative capacity in the management of geothermal sites. These trainings, conducted overseas, were also intended to ensure that a young workforce would be prepared to replace the older generation upon their retirement.

Informed that geothermal energy would not complement the energy mix by 2030 due to deficiencies in experienced personnel, transportation media, and capital constraints.

Shared efforts to create awareness on geothermal energy, including worldwide promotion, information dissemination through conferences, and future plans to introduce geothermal site tours at no cost.

Disclosed that, while all development, including geothermal energy, comes with environmental consequences, these could be addressed through adequate stakeholder consultation, along with environmental management and monitoring plans.

Recommended priority funding by the government for preliminary studies, building local administrative capacity for Ugandans in the field of geothermal energy, and the extension of subsidies to geothermal developers.

BIOFUELS BLENDING IN UGANDA: A JOURNEY OF NO RETURN.



Eng. Herbert Abigaba - Principal Energy Officer, Ministry of Energy and Mineral Development.

Counsel Faridah Nakayiza Nsanja - Principal Petroleum Officer, Legal, Ministry of Energy and Mineral Development.

Muyanja Hatimu - Energy Officer, Ministry of Energy and Mineral Development.



Dinesh Donadi- Chief Executive Officer, Mahathi Infra.



David Byensi - Proprietor, Smart Sugars Uganda Limited.

Revealed that the Uganda Government had developed a Legal Framework to support the biofuels industry, including the Biofuels Act of 2020, the Biofuels Regulations of 2022, and the declaration for the licensing authority. The Act allowed for the blending of ethanol into biofuels, with an initial blend ratio of 5%, and outlined the licensing requirements to operate a biofuels business.

Disclosed that the intention was to develop biofuels for sustainable use in the transport sector, promote biofuels as an alternative renewable energy fuel that preserves the natural ecosystem's biodiversity, is carbon dioxide neutral, ensures food security, and supports the creation of green jobs and a circular economy.

Explained that in India, ethanol blending began with the implementation of the Blending Policy from 2003 to 2005. This involved converting existing petrol storage tanks into ethanol tanks, which led to government companies surpassing private companies.

Informed that in India, challenges encountered included unstable ethanol prices, limited storage capacity, inter-state transport restrictions, stringent regulations, and a supply dependent on quarterly allocations, revealing that the Indian government addressed these issues by stabilizing prices, calculating transport costs per kiloliter per kilometer, requiring bank guarantees from manufacturers, and repurposing storage tanks to improve production and storage efficiency.

Highlighted that in Uganda, the Petroleum Supply Act of 2003 regulated the downstream subsector and provided the procedures under which all activities were conducted, including fuel marking regulations to ensure the quality and standards of petroleum products.

Further highlighted the 2020 Biofuels Act as being key in promoting ethanol production by creating a supportive regulatory environment and reducing investor risks.

Alluded to the unstable ethanol prices and lack of storage facilities in Uganda, which threatened consistent supply. Indicated that the Ugandan biofuels market was still hampered by factors such as the requirement for Ethanol manufacturers to provide bank guarantees as a form of security deposit to ensure their commitment to supplying biofuels.

Noted the limited experience and poor management of the biofuels production process, which undermined the quality and standards of biofuels in Uganda.

Urged Ugandan government intervention in ethanol price setting, the consideration of tax exemptions to ensure sustained supply, and the exploration of alternative transportation systems, such as a pipeline, to reduce the challenges of biofuels transportation.

Reiterated the necessity for building an oil refinery to harness Uganda's oil production and increasing petroleum production by the Uganda National Oil Company, alongside raising biofuel awareness.

SMART GRIDS AND LOAD BALANCE MANAGEMENT

Session Chair: Edwina Ahamize - Senior GIS Officer, Ministry of Energy and Mineral Development.

Panelists

- **Alex Wanume - Country Director, NOA Uganda.**
- **Eng. Daniel Emmanuel Okello - Head Grid, Uganda Electricity Transmission Company Limited.**
- **Richard Muhangi - Principal Surveyor, Ministry of Energy and Mineral Development.**
- **Janet Mwanahema - Project Engineer, Uganda Electricity Distribution Company Limited.**

This session explored how demand response (DR), distributed energy resources (DER), and other smart grid solutions could enhance energy access and reliability in Uganda and the East African region.

Identified smart grids as a critical option for countries and utilities developing climate action plans, offering advanced load balance management through real-time data from smart meters and sensors.

Emphasized the transformative potential of smart grid technology in Uganda's energy sector by enabling real-time communication, proactive energy use, and improved reliability.

Smart grids were highlighted for their ability to detect faults before they occur and efficiently track data on both the demand and supply sides.

Elaborated that smart grids served as the backbone of a sustainable energy future due to their flexibility for both consumers and distributors, enabling energy efficiency, renewable integration, demand response, and storage.

Noted that smart grids in Uganda, which connect network distribution with ICT systems, offered significant benefits, such as improved energy availability and better monitoring of network operations and maintenance.

These systems were seen as the future of electricity, supported by technologies like Yaka meters.

Highlighted the challenges of high technology costs, regulatory hurdles, and limited consumer engagement.

Noted the redundancy in energy processes, resource scarcity, unstable routes, high internet expenses, network compatibility issues, and the lack of skilled workers trained in data management. Cited incidents of increasing cybersecurity risks, outdated infrastructure, and integration issues.

Suggested working solutions, including grid extension, development partnerships, regional interconnections, promoting e-cooking appliances, using knowledge graphs for data organization, and fostering social integration to enhance their viability.

Recommended educational training at school and university levels to improve data analysis and usage, leading to better energy management and optimization.

Proposed upgrading systems, standardizing operations, studying network capacity, and incentivizing off-peak energy use as issues that required prioritization in Uganda's electricity policy.

SUSTAINABLE DEVELOPMENT OF NUCLEAR ENERGY



Felix Okurut - Assistant Commissioner, Monitoring and Evaluation, Ministry of Energy and Mineral Development.



George Wafula - Assistant Commissioner, Ministry of Public Service.



Nawamanya Sharon - Senior Environment Officer, Ministry of Energy and Mineral Development.



Abdul Byamukama - Regulatory Officer and Head of Nuclear Power Regulation, Atomic Energy Council, Uganda.



Sarah Nafuna - Commissioner, Nuclear Energy, Ministry of Energy and Mineral Development.



Abbo Damalie - Senior Energy Officer, Nuclear Power Infrastructure, Ministry of Energy and Mineral Development.

This session provided insights into Uganda's nuclear power program, discussing key strategies for utilizing nuclear energy in an environmentally sustainable manner and showcasing Uganda's readiness to use nuclear energy for electricity generation.

Underscored the importance of developing the necessary human resources to support the establishment of nuclear energy in the country, citing efforts by the government to train young graduates and professionals, as well as strategic partnerships with learning centers. Revealed plans to establish a nuclear energy education hub at Soroti University.

Acknowledged the fears associated with past nuclear energy mishaps, reassuring attendees that necessary precautions had been taken under the guidance of International Energy Agency (IAE) guidelines, with environmental impact assessments conducted and mitigation measures in place. Further emphasized that nuclear energy in Uganda would be used solely for peaceful applications.

Revealed that the government of Uganda had strengthened regulatory frameworks to ensure the safe development of the country's nuclear energy program, some of which were prerequisites for support from the International Atomic Energy Agency.

Elaborated on the commitment to the implementation of the 2023 Energy Policy, supported by a nuclear energy road map to guide the country's adoption of nuclear energy, which included the establishment of a comprehensive legal framework for safe and effective regulation, the creation of institutions for oversight and management, prioritizing high-impact nuclear projects as milestones, and securing funding and international cooperation.

Proposed the establishment of specialized training and internship programs overseen by the Ministry of Energy and Mineral Development and the International Atomic Energy Agency.

Recommended strengthening regulatory oversight and compliance through the Uganda Revenue Authority, Nuclear Safety Council, and Ministry of Energy and Mineral Development.

PRIORITIZING E- WASTE MANAGEMENT IN THE FACE OF ENERGY TRANSITION.



Brian Kawuma - Country Rep, Power for All.



Marsida Rada - Project Manager, GIZ, ENDEV.



Sandra Nakiziyivu - E-Waste Project Manager, Mercy Corps.



Elifaz Ddamulira - General Manager, Yo Waste Services.

This session explored the emerging challenge of electronic waste (e-waste) generated at the end of life of various renewable energy technologies and their components, which had become a significant concern with the growing emphasis on sustainable energy development.

Revealed that a GIZ baseline study found Uganda to have one of the most robust policy frameworks in the world, including a National Public Sector Procurement Policy, an e-Waste Management Policy, Guidelines for e-Waste Management, and a National Steering Committee on e-Waste. Disclosed however that the main limitation was in the implementation of the aforementioned policies, with GIZ partnering with the Ministry of Energy to advocate for improved policy execution.

Discussed the need for improved policy implementation by incentivizing e-waste disposal through exchange programs or financial remuneration.

Emphasized that collaboration among private e-waste collectors, local authorities, and recycling plants was essential to streamline the e-waste management process, reduce costs, and decentralize management systems.

Revealed that MercyCorps, in collaboration with organizations like the International Organization for Migration (IOM) and community-based groups, was repurposing lithium-ion batteries recovered from faulty solar appliances with the help of trained technicians in the Bidi-Bidi refugee settlement.

Highlighted the need for intensive awareness campaigns on e-waste disposal in refugee settings and scaling logistics-intensive repair and repurposing initiatives, such as those started by organizations like MercyCorps, in these communities.

Discussed the role of digital companies in e-waste management, with Yo Waste developing an app to help users manage various waste streams, including e-waste.

Emphasized the importance of innovation in waste management, alongside the need for strict fines on improper waste disposal to drive demand for waste collection services and investment in waste management facilities, such as recycling plants.

Recommended the adoption of tried and tested initiatives such as the Extended Producer Responsibility (EPR) model, where manufacturers are held responsible for the entire life cycle of their products, and the Advanced Recycling Fee (ARF) imposed on each imported electronic item, paid to a fund supporting e-waste management and implementation by the Ministry of ICT, Kampala Capital City Authority, and Ministry of Trade, Industry, and Cooperatives.

CRITICAL MINERALS FOR ENERGY TRANSITION



Asiimwe Humphrey - CEO, Uganda Chamber of Mines and Petroleum.



Hope Kyarisiima - Coordinator, Minerals Desk, UNDP-Uganda.



Luisa Moreno - Presidential Advisor on Minerals.



Suzan Nakanwagi - Natural Resources Governance and Sustainability Specialist.

Highlighted Uganda's potential to capitalize on its critical mineral resources for the green energy transition. Emphasized the significance of critical minerals (such as lithium, cobalt, and rare earth elements) as essential for renewable energy technologies.

Recognized the supply chain challenges, sustainable extraction practices, and technological innovations for mineral extraction, processing, and recycling.

Noted that the energy transition relied on critical minerals like graphite, lithium, and rare earth elements for technologies such as electric vehicles, wind turbines, and solar panels. Cited that electric vehicle (EV) batteries could require up to 70 kg of graphite, while rare earth elements like neodymium were vital for EV magnets, motors, and renewable energy systems, making the energy transition inherently a mineral transition.

Highlighted that the global push for critical minerals faced challenges, including slowed EV demand, fluctuating prices, and Western struggles to compete with China's dominance in mineral processing and supply chains.

Revealed that whereas EV sales were rising due to policy targets, Western nations lagged in developing cost-effective technologies and profitable mining projects. As a result, these factors hampered efforts to diversify away from China's economically superior processing capabilities and geopolitical influence.

Noted that while Uganda's mineral wealth and affordable labor present an opportunity to reduce reliance on global monopolies and support the green energy transition, success requires greater investment in exploration, sector organization, environmental regulation, technical facilities, and workforce training.

Highlighted the need to develop processing and vehicle assembly capabilities, as well as prioritize water treatment, recycling, and waste management before the mining process.

Emphasized the importance of sustainable mineral extraction while preserving the environment. Underscored the need to learn from other countries, prioritize people to promote sustainability, and invest in infrastructure, capacity building, and social justice. Noted key challenges, including the resource curse and land degradation resulting from neglecting environmental concerns.

Recommended encouraging community participation, investing in technology for waste management and clean energy access, and ensuring fair revenue distribution, citing examples such as Tororo Cement's community contributions. Also noted the importance of extending government programs to rural areas, capturing mineral value before market shifts, and promoting people-centered policies. Emphasized the need for stakeholder engagement and public education on mineral rights to ensure inclusive development.

Emphasized the importance of effective resource management by prioritizing inclusivity and sustainability over mere financial gains, an essential approach for ensuring the responsible management of critical minerals while providing a secure and predictable market for Uganda's artisanal mining sector.

Disclosed major challenges in the mineral sector, including a technology gap, limited access to equipment, financing

constraints, and risks related to the sector's operations, financing and value chain, safety concerns and the high cost of environmental impact reports.

Recommended that NEMA simplify the requirements for addressing expensive environmental impact reports and train miners to approach mining as a business, with key actions including empowering small-scale miners through competitive market structures, fair pricing, and improved organization.

DECARBONIZING MOBILITY IN DEVELOPING COUNTRIES



Dr. Paul Nduhuura - Lecturer, Makerere University Business School.



Carol Katungi - Sustainability Innovation and Strategy Manager, TotalEnergies.



Jackie Bazimudde - Projects Manager and Investment Analyst, Zembo.



Claire Bakhita - Projects and Development Manager, GOGO Electric.



Gaurav Anand - Country Head, Uganda, Spiro.



Dr. John Mutenyo - Senior Lecturer of Economics, Makerere University.

The session discussed Uganda's transition to e-mobility, focusing on the carbon savings from transport electrification, as well as the necessary policy and financing instruments for its promotion. Highlighted the need to balance Uganda's investments in oil and gas with its commitment to decarbonization and sustainable energy solutions.

Underscored Uganda's readiness for electric motorcycles, noting the enthusiastic adoption among Boda Boda riders, with nearly 1,000 e-bikes introduced in just five months. Discussed essential strategies for electric vehicle (EV) adoption, including fiscal policies to make EVs more affordable and collaborative efforts to build charging infrastructure.

Mentioned that Total Energies had partnered with companies to establish charging points and battery-swapping stations, with plans to integrate EV infrastructure into urban planning, emphasizing the importance of incorporating EV charging stations into urban design and prioritizing buses for their mass transport impact.

Outlined strategies to enhance e-mobility in Uganda through partnerships with firms like Ubis and Uber Energy, and Shell to develop infrastructure such as battery-swapping stations. Highlighted collaborations with companies like Glovo for their role in building trust and visibility, while industry players were joining efforts to influence policies and improve awareness.

Emphasized that public-private partnerships and government engagement were crucial for transitioning vehicle fleets to electric models.

Noted that despite the long-term savings offered by e-bikes, challenges such as high initial costs and cultural reluctance to adopt these motorcycles persist. Additionally, infrastructure shortages and the need for supportive policies and incentives were identified as significant barriers.

Invited partnerships, policy advocacy, fiscal strategies, road safety enhancements, infrastructure development, and public education to promote the local industry and encourage broader adoption of electric mobility.

In conclusion, revealed Uganda's strategy to transition to e-mobility while keeping it affordable. Highlighted government initiatives, such as tax exemptions on battery inputs and reduced motorcycle duties, designed to lower costs.

Encouraged innovative financing models, such as those implemented by firms like Watu Credit, which allow riders to lease e-bikes and repay loans through savings, thus promoting a sustainable transport system. Stressed the importance of capacity-building efforts to train workers through cooperation with companies like Kira and URSB to ensure regulatory compliance.

GREEN HYDROGEN PRODUCTION AND ITS ECONOMIC IMPACTS FOR EAST AFRICA



Sana Musanje - Green Hydrogen Expert.



Noah Kyeyune - Energy Officer, MEMD.



Dr. Cynthia Okoro- Researcher, Shekwaga University of Leeds.



Muhamed Osman - Head of Engineering Infrastructure, Industrial Promotion Services.



Moses Busabwambogo - Cofounder and Technical Development Officer, SOA Green Energies.

Revealed efforts made by Industrial Power Solutions (IPS) in developing Uganda's green hydrogen sector through project design, implementation, and the development of a health and safety policy tailored for East Africa. Noted the high costs associated with the required infrastructure, material quality assurance complexities, and technical skill gaps. Emphasized the need for public-private partnerships (PPPs) to mobilize resources and expertise, collaboration with international experts to build local capacity, and industry-specific training to create a skilled workforce.

Shared advancements in biosystems for hydrogen recovery and the focus on optimizing microbial processes to boost hydrogen production. Stressed the importance of mapping biomass resources in Uganda as a foundation for green hydrogen production and emphasized the need to bridge gaps in localized research, data, and technology to align with global progress.

Emphasized that collaboration between the private sector and research institutions was crucial for creating a sustainable framework, as well as creating platforms for joint ventures and research partnerships.

Elaborated on the potential of hydrogen to decarbonize both the transport and fertilizer industries and drive economic growth in East Africa. Highlighted the abundant resources in the region that can be harnessed for hydrogen production. Noted efforts by the Ugandan government to work within the framework of the Energy Policy and Energy Transition Plan to incorporate hydrogen into its energy mix. Underscored the need for the government to actively seek subsidies, grants, and the development of a regulatory framework to facilitate

production, storage, and distribution.

Discussed the development of a hydrogen engine powered by water, designed to decarbonize the transport sector by emitting water as a byproduct, making it a highly sustainable alternative to traditional fossil fuel-powered engines. Underscored the challenge of validating and scaling the technology, establishing hydrogen production and distribution infrastructure, and addressing high initial costs. Proposed involving rigorous testing and pilot projects, developing nationwide hydrogen infrastructure through public-private partnerships, and attracting investment via government incentives and international collaboration.

Identified key challenges for this sub-sector, including the lack of a comprehensive regulatory framework, financial constraints, and integration into existing energy systems.

Highlighted the limited regional research, technological gaps, and weak collaboration across sectors. Suggested investing in local research, promoting technology transfer, and strengthening public-private partnerships to advance Uganda's green hydrogen sector. Emphasized that the establishment of a robust regulatory framework was critical for safety and investment attraction.

In conclusion, the session underscored the importance of coordinated efforts to ensure the sector's technical and economic viability, including the development of clear policies to de-risk hydrogen projects, seeking subsidies and grants to offset high costs, and integrating hydrogen into Uganda's national energy strategy through infrastructure development and strategic public-private partnerships.

DIGITALIZATION OF NATIONAL ENERGY RESOURCES AND SYSTEMS

Session Chair: Eagle Rusoke, Geoscientist , Geothermal Resources Department, Ministry of Energy and Mineral Development.

Panelists:

- **Paul Asimwe - Renewable Energy Engineer, Centre for Research in Energy and Energy Conservation.**
- **Robert Hoehoer - Information Systems Advisor, GIZ.**
- **Dr. Leonard Nkalubo - Senior Lecturer, Kyambogo University.**
- **Janet Mwanema - Project Engineer, Uganda Electricity Distribution Company Limited.**
- **Engineer Emmanuel Sande Nsubuga - Sustainable Energy Systems Engineer, Ministry of Energy and Mineral Development (MEMD).**

Discussed how digitalization was transforming the energy sector by improving efficiency across the value chain, stressing that policy development should address its broad impacts to benefit the energy system and stakeholders.

Highlighted the importance of cooperation between the digital and energy sectors to support national priorities.

Explained that as technologies like ICT, AI, big data, and IoT advanced, they would make energy systems more efficient, sustainable, and reliable. Stated that future infrastructure with common standards and secure networks would empower consumers to engage in the energy transition, enhancing services and energy savings.

Explored Uganda's readiness for a digitalized energy system with insights from experts and policymakers, noting that the integration of renewable energy resources into power systems required flexibility and innovative solutions, with digital technologies emerging as key drivers of productivity across oil and gas, coal, and power sectors.

Reported that governments were focusing on end-user-centric energy policies to transition from inefficient to efficient energy use, leveraging real-time data for actionable insights. Cited examples such as monitoring electric vehicle charging patterns, that demonstrated how integrated data systems improved energy efficiency and consumer understanding.

Identified challenges like data silos, fragmented systems, and scalability that impeded collaboration and decision-making. Presented solutions such as Kubernetes for scalability and digitalization for unified data views as practical advancements. Emphasized the importance of reliable, accessible data for energy management and the broader adoption of renewable energy.

Revealed that seventy percent of companies were engaged in digital transformation, with data serving as a critical pillar due to its generation from every digital interaction. Stated that a key success factor lay in how organizations leveraged this data for actionable insights.

Highlighted tools such as SCADA systems implemented by UETCL, which enabled effective tracking of processes, while electricity scale-up projects advanced digitalization efforts.

Acknowledged that real-time data aggregation presented technical challenges, requiring sophisticated algorithms and robust infrastructure. Pointed to solutions like SCADA and work management systems that enhanced resource utilization, ensured uninterrupted supply restoration, and provided easy access to data, aiding in demand planning and operational efficiency.

Discussed how the clean energy transition depended on digital technologies to integrate renewables and balance supply with demand.

Noted that data was a core element of digital transformation, enhancing organizational performance and reshaping traditional thinking. Identified challenges, including limited energy digitalization focus, planning and monitoring complexities, inadequate software processes, poor internet connectivity in remote areas, data accuracy issues, and insufficient capacity building in Uganda to promote understanding of digital energy solutions.

Recommended stakeholder engagement and broader digitalization efforts to address these barriers effectively. Asserted that digital transformation could significantly reduce global environmental impacts by improving system operations through advanced monitoring and measurement.

Highlighted challenges such as weak leadership, corruption in data digitalization funding, and inadequate ICT policies that hindered progress. Cited Uganda's short ICT policy as needing better planning compared to Kenya's comprehensive approach. Proposed solutions including research, benchmarking best practices, strengthening policies, mentoring students, and aligning education with practical applications to enhance digital transformation effectiveness.

Stated that data integration in Uganda was viable despite ministries making independent decisions, noting that decentralizing data collection could foster collaboration.

Identified challenges such as poor data quality, privacy and security concerns, and technical difficulties in integrating diverse data sources. Emphasized the need for advanced tools, knowledge, and compliance with regulations like GDPR to ensure data protection.

Proposed solutions involving decentralizing data, collaborating with partners to digitize natural and energy resources, implementing programs for data digitalization, tracking power generation methods, and increasing access to hardware and software to support effective data utilization.

Recommendations:

- Engage key stakeholders through regular communication, feedback sessions, and collaborative planning to build a strong foundation for digital transformation.
- Simplify data sharing for research through legal frameworks, data harmonization, and public access via websites.
- Recognize the private sector's role in data acquisition, supported by government initiatives.
- Address illiteracy in data dissemination by promoting clear communication and accessible technologies for research outreach.
- Utilize open-source platforms like Amazon to provide datasets.



WOMEN AND YOUTH



TRANSBOUNDARY OPPORTUNITIES FOR WOMEN AND THE YOUTH IN RENEWABLE ENERGY SECTOR ACROSS THE EAC.

KEYNOTE ADDRESS: RT. HON. REBECCA KADAGA - MINISTER FOR EAST AFRICAN COMMUNITY AFFAIRS.

Rt. Hon. Kadaga opened her address by expressing gratitude to the conference organizers for their efforts in making the event possible. Special thanks were given to the Minister of Energy and Mineral Development for leading insightful discussions on accelerating sustainable energy in the region.

Highlighted various East African Community (EAC) targets aimed at promoting regional renewable energy development, including increasing electricity access to 90%, enhancing energy storage capacity to 122,000 MWh, achieving 65% access to clean cooking technologies, and boosting access to renewable electricity by 29%. These targets are expected to create opportunities for employment, investment, and innovation.

Additionally, the Kikagati Hydropower Project, a collaboration between Uganda and Tanzania, was introduced. This project generates 14 MW of electricity for both countries.

Discussed key challenges impacting the region, including slow policy harmonization, travel restrictions, and instability in the Democratic Republic of Congo.

Emphasized the need for regional integration and called for the establishment of an East African Central Bank to address currency exchange issues, which hinder cross-border investments, particularly in the energy sector.

Concluded by emphasizing that true economic and social transformation could only be achieved through the active participation of women and youth in the renewable energy sector, which holds the potential for job creation and innovation.



PANEL DISCUSSION



Collins Owuor - Renewable Energy Expert, EACREEE. **Eng. Betty Muthoka - Regional Energy Expert, Norwegian Refugee Council.** **Mercy Kitomari - Policy and Government Lead, Grow Tri.** **Mugisho Josue - Project Engineer, Aptech Africa.** **Kuol Arou Kuol - Advocacy and Policy Officer, Last Mile Climate.**

This session explored the the opportunities that exist in the energy transition journey and how women and youth can fully participate cognizant of the fact that though marginalized in decision making processes, they constitute the majority of the EAC's population.

Addressed the challenge of extensive experience requirements for entry-level jobs by advocating for inclusive entry-level positions and training opportunities that often lead to permanent contracts, with 55% of the workforce at organizations like Aptech being women.

Additional efforts focus on training local talent to strengthen administrative capacity. Identified key barriers to progress, including a lack of awareness about opportunities in the renewable energy sector, limited access to finance, negative socio-cultural perceptions of women in employment, skill gaps, and the overall scarcity of employment opportunities.

Discussed the varying progress across East African countries in e-mobility, stressing the importance of benchmarking against early adopters.

Revealed that Tanzania provides a general exemption on the importation of lithium-ion batteries to promote the adoption of electric two-wheelers and is exploring e-waste management through high taxes on lead-acid batteries to encourage recycling development.

Called for the appropriate integration of women into energy value chains, advocating against placing them in ill-suited roles, and proposed a harmonized tariff-setting process to de-risk the e-mobility sector for investors.

Recommended intentional targeting of marginalized groups when localizing content, an effort that necessitates establishing linkages between local and international organizations. Emphasized the need for cultural sensitivity in initiatives to increase their chances of adoption within communities.

Revealed that alternative energy sources in refugee settlements could reduce energy-driven violence, and ailments resulting from the use of traditional biomass, emphasizing the need to explore financing options, such as carbon credits, to make these alternatives more affordable, attesting to the financial reliability often demonstrated by refugees contrary to popular belief.

Revealed that solar cooking technologies are more cost-effective than traditional fuels in the long run, while also being the most climate-friendly option.

Drew attention to several regional policies and initiatives, such as the East African Power Pool, the African Renewable Energy Initiative, the EAC Regional Strategy for Scaling up Access to Clean and Affordable Energy for All, and Regional Climate Change and Low-Carbon Development Policies, all of which have been leveraged to secure funding, foster collaboration, and increase renewable energy capacity.

Emphasized that the government must seek clearance from the Attorney General before entering into memorandums of understanding with private entities, as such agreements could pose risks.

Recommended harmonization of tariff policies to reduce barriers to cross-border trade, development of inclusive vocational e-mobility training programs and the promotion of innovative financing models for energy projects.

A YOUTH DIALOGUE ON CLEAN ENERGY AND SUSTAINABLE ENVIRONMENT

Session Chair: Edwin Muhumuza - CEO, Youth Go Green.

Discussants:

- **Fortunate Mugabe - Petroleum Engineering and Environmental Management Student, Mbarara University of Science and Technology.**
- **James Ainembabazi - President, Equity Leaders Program & Climate Mitigation Advocate.**
- **Grace Stuart Ninsiima - Youth Go Green Ambassador & Founder, Little Earth Soldiers.**
- **Dickens Ocheru - Institutional & Partnerships Officer, Youth Go Green.**
- **Stellah Nambabubye - Managing Director, Bio Flame Africa.**
- **Virginia Nyachwo Daphine - Team Leader & Assistant Programs Manager, HADE.**

Acknowledged that young people would be the most affected by the climate crisis and needed the knowledge and skills to address it. Stated that this provided an opportunity for youth to engage in discussions on clean energy and sustainable practices in the context of climate change threats. Reflected on the connection between climate education and climate action, considering how clean energy affected their lives and identifying actions they prioritized within their local contexts.

Recognized the negative impact of oil extraction in the petroleum sector, which led to carbon emissions and environmental degradation. Cited WHO statistics indicating that "around 7 million premature deaths occurred annually due to greenhouse gas emissions." Noted that over 95% of Ugandans relied on charcoal and firewood for cooking and heating, contributing to deforestation, health issues, and further environmental damage. Agreed that Uganda's deforestation rate of 50,147 hectares annually generated emissions equivalent to 8,253,982 tons of CO₂, according to Uganda's 2017 Forest Reference Level.

Stressed the need for a behavior change campaign, focusing on community education to promote the benefits of renewable energy, solar power, and efficient cooking technologies. Such initiatives would highlight the environmental and health advantages of reducing reliance on firewood and charcoal. Additionally, it was noted that Uganda's energy transition faced an intergenerational gap, with older and younger generations holding differing priorities and levels of awareness.

Emphasized the importance of recycling as a key component in the "Reduce, Reuse, Recycle" waste hierarchy. Companies like Bio Flame Africa were leading efforts to offer eco-friendly solutions to address global environmental challenges. Observed that initiatives like 'Ghetto Go Green' were empowering young people in the K-zones, who may have lacked sufficient knowledge about climate change, by helping them understand its impacts on their communities.

Lamented the absence of renewable energy courses in schools and the lack of access to sustainable funding for women- and youth-led innovations. Observed that much of the discussion surrounding renewable energy remained overly basic and theoretical, often lacking practical, actionable strategies and political will for proper implementation. Decried the limited access to education, healthcare, and economic opportunities for women and girls in Uganda, which restricted their empowerment and ability to contribute to community development. Noted cultural beliefs, norms, and traditions that conflicted with development initiatives, such as resistance to new health practices, education for girls, or modern agricultural techniques, as significant barriers to the energy transition.

Suggested student exchange programs to facilitate knowledge transfer, foster innovation in renewable energy, and offer global perspectives to build a skilled workforce and support the energy transition. Emphasized the need for more tangible solutions and real-world applications to drive progress. Advised securing more diverse financial resources from both the public and private sectors, as well as partnerships through green bonds, international climate financing, and government incentives, to support renewable energy projects and infrastructure development.

Advocated for gender equality, promoting women's participation in decision-making and creating more opportunities for women in the economic, education, and health sectors.

In conclusion, discussants observed that Uganda could implement nationwide renewable energy education programs in schools, host intergenerational community dialogues, and include youth representation in energy policy discussions to shape future energy strategies. Suggested regular monitoring, enforcement of environmental regulations, and collaboration with environmental NGOs to ensure effective implementation and long-term sustainability.

FINANCING WOMEN AND YOUTH ENERGY ENTREPRENEURS AND INNOVATORS



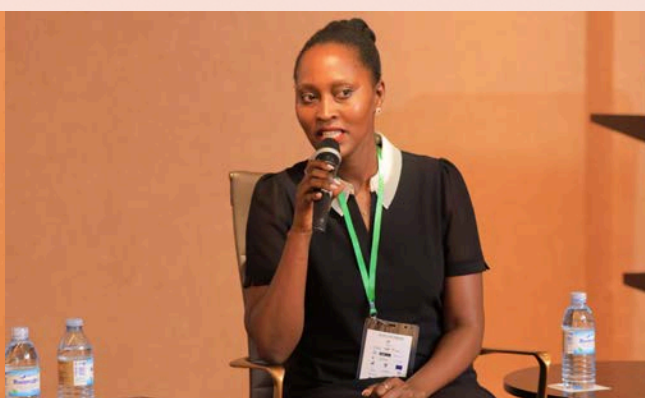
Aidah Ssemakula - Director Business Consulting, Belli Advisory.



Peninah Mbabazi - Program Officer, Trade Justice, SEATINI Uganda.



Eva Mpalampa - Head Oil and Gas, Stanbic Bank.



Catherine Nsungwa - Technical Advisor, Private Sector Foundation Uganda.

Acknowledged that women and youth continue to be underrepresented as entrepreneurs in the Energy Community Contracting Parties, particularly within energy economies. Observed that they face significant challenges, including structural barriers, financial constraints, and technical complexities, which hinder their entry into entrepreneurship. Emphasized that closing these gaps can unlock immense growth potential for the region, as global research has consistently demonstrated. Highlighted the vast opportunities emerging within the energy transition to foster new entrepreneurial ventures, provided an enabling environment is cultivated to empower women and youth to lead in this dynamic sector.

Acknowledged that SEATINI, a policy advocacy organization, has primarily focused on promoting trade, fiscal, and related policies at both national and local levels, but has not prioritized trade justice, which considers how individuals are positioned to benefit within the trade landscape. Noted the absence of women- and youth-focused provisions, as well as gender sensitivity, in current trade policy discussions across Africa and Uganda. Informed that the Government of Uganda approved its first National Gender Policy in 1997, which established legitimate provisions to address gender inequalities at all levels and for all stakeholders. Observed that this policy significantly advanced gender equality, empowered women, and provided greater momentum for gender activism in Uganda.

Highlighted a programme called the Advance High Results Financing Project, which works with various energy efficiency product providers to close the affordability gap for disadvantaged women and youth in Kiryandongo and Northern Uganda.

Noted that Stanbic Bank Uganda is utilizing funds from the extractive sector to support the Adjusted Energy Transition Programme, enabling the population to access energy solutions. Clarified that a significant challenge remains the lack of requisite skills and awareness among women and some youth to effectively participate in energy space contract opportunities available through banks.

Informed that Stanbic Bank Uganda has a Financial Literacy Incubator, which has successfully upskilled over 1,000 SACCO board members in financial literacy and business skills, specifically in relation to energy issues, to help overcome awareness obstacles.

Recommended that the government introduce incentives for the private sector, particularly for women-led and youth-led business initiatives, to encourage their growth. Suggested strengthening multisectoral approaches, such as those involving Microfinance Institutions and SACCOs, to further support these efforts.

ENERGY KNOWLEDGE FOR MILLENNIALS IN BUILDING A GOLDEN UGANDA

Session Chair: Edwin Muhumuza - CEO, Youth Go Green.

Discussants:

- **Rogers Mukiibi** - Electrical Engineering Student, Makerere University.
- **James Ainembabazi** - President, Equity Leaders Program & Climate Mitigation Advocate.
- **Lise Eric Mathew** - Innovator & Environmentalist, Founder, Actions For a Better Future.
- **Dickens Ocheru**- Institutional & Partnerships Officer, Youth Go Green.
- **Virginia Nyachwo Daphine** - Assistant Programs Manager, Holistic Actions for Development and Empowerment.
- **Teopista Atim** - Founder, Taraji Teenage Girls Initiative.

This session brought together learners from different schools to discuss renewable energy, energy transition, and climate change. Participants suggested ways to advance awareness for increased adoption and advocacy of cleaner renewable energy for sustainable future generations.

Noted significant gender inequality and ignorance in Uganda regarding renewable and clean energy utilization. Emphasized the importance of gender equality for development and the need for the government to support the involvement of both men and women in similar social activities for balanced human development.

Informed that the Youth and Children Climate Academy aims to empower youth to become climate champions through innovation and creative arts like singing. Cited a specific instance where a song composed during REC24 & Expo by a student highlighted the dangers of waste dumping, pollution, and climate change, illustrating the consequences for present and future generations. Explained that the lyrics described how carbon, plastics, and pollution have become ingrained in lifestyles, emphasizing renewable energy as a critical solution to rescue the environment and future generations.

Revealed that personal experiences of marginalization due to physical weakness motivated a participant to join ICT and music classes, enabling them to express situations through music, focusing on renewable energy, climate, and environmental advocacy.

Reasoned that attending REC24 & Expo helped participants consolidate their knowledge and awareness of clean energy and environmental issues, preparing them to become advocates for clean energy transition in their communities. However, noted that transitioning requires integration and beneficiary preparation to ensure understanding before adopting new clean energy technologies wholesale.

Elaborated on various student-led activities for climate and environmental action, including Climate Smart Agriculture (CSA), which promotes the reuse of waste for hydroponics in schools with limited spaces.

Acknowledged that the ideas discussed contributed to enlightening and raising awareness about the Sustainable Development Goals (SDGs).

Noted that some renewable energy utility sites impact other sectors, such as tourism, and suggested conducting necessary studies to ensure compliance with environmental standards.

Discussed challenges faced by youth, particularly girls, including demoralization, isolation, and humiliation due to early pregnancy. Emphasized the need for self-counseling and resilience to overcome self-pity and become inspirational to others. Encouraged youth, especially girls, to actively engage in producing local renewable energy products, such as briquettes, to overcome trauma and poverty.

Noted financial disempowerment as a major challenge for youth in turning technical ideas into practical renewable energy projects for sustainable development.

In conclusion, alluded to the need to identify youths' different passions before sensitization for more effective awareness raising. Encouraged youth to remain alert and responsive to new ideas that could positively impact their lives.

Called on the government to strengthen support for youth in developing creative and innovative ideas, particularly in renewable energy, music, waste management, and climate change. Recommended increased advocacy, mass media, and AI-driven awareness campaigns about renewable energy and the energy transition.

ACCESS TO CAPITAL, MICROFINANCE, GOVERNMENT INCENTIVES, INVESTMENT OPPORTUNITIES, AND GENDER-LENS INVESTING



Samuel Ochanya - Project Manager, Uganda Energy Credit Capitalisation Company.



Isaac Were - CEO, Zimba Technologies.



Elizabeth Kasenene - Chairperson, Uganda Women Entrepreneurs Association



Eric Olanya - Country Director, Gridworks Development.

Noted the high cost of transitioning from traditional energy sources, such as charcoal, to cleaner alternatives like ethanol, LPG, biogas, and electric stoves. Discussed various financing models aimed at bridging this affordability gap.

Emphasized the importance of mobilizing women as champions of clean energy initiatives by leveraging their influence within communities to accelerate the adoption of sustainable practices and technologies. Highlighted the focus on gender inclusivity, with initiatives ensuring that at least 50% of financing beneficiaries are women.

Informed that technology platforms designed to support distributors and streamline mobile payments were introduced. Clarified that these platforms enable alternative credit scoring, which reduces financial exclusion among underserved populations.

Suggested innovative financing models, such as installment payment plans for cookstoves, allowing end-users to spread costs over 3-6 months. Proposed subsidies covering up to 60% of the costs for productive energy systems, including solar-powered irrigation and refrigeration equipment.

Recommended adopting a technology-driven support system, including a centralized digital platform for registration, payment tracking, and alternative credit profiling. Outlined that this platform would incorporate psychometric tools to assess customers' financial trustworthiness without relying on traditional credit histories.

Recommended capacity building, particularly for community leaders, with a focus on women, to enhance understanding of the benefits and maintenance of clean energy systems. Proposed the creation of Public-Private Partnerships to foster collaboration between government entities, private firms, and non-governmental organizations to expand the reach of clean energy solutions.

Suggested conducting large-scale awareness campaigns to educate communities on the economic and health benefits of transitioning to sustainable energy solutions. Advocated for more inclusive energy policies, ensuring that subsidies and incentives are aligned with community needs.

POLICY CHALLENGES, GENDER-RESPONSIVE ENERGY POLICIES, INTERNATIONAL AGREEMENTS, AND THE ROLE OF ADVOCACY GROUPS

Session Chair: Haawa Bukenya - Secretary General, Women in Energy and Extractives Network.

Panelists:

- **Edwin Muhumuza - CEO, Youth Go Green.**
- **Esther Naigembe - Managing Director / Founder, Di**
- **Florence Kintu - Business Development & Marketing Manager, Biogas Solutions Uganda Limited.**

The session comprised four distinct presentations, focusing on women's role in influencing renewable energy policies at both national and global levels. Discussions addressed transformative innovative solutions, financial mechanisms, security concerns, and partnerships aimed at ensuring sustainability, accessibility, and financial inclusion within renewable energy and technological systems.

Highlighted four major renewable energy cooking innovations:

1. **Bukona's Greenagine Biostove:** A sustainable, cassava-derived ethanol-based cooking solution that emits no smoke or odor, has low carbon emissions, and is cheaper than LPG or charcoal.
2. **EcoStove's Solar Cooking Systems:** Powered by organic crops and solar energy, these systems include batteries, fans, and adapters for non-solar use. They are suitable for areas without reliable electricity and are supported by robust customer service.
3. **Kenya's Ecosystem Pellet-Based Stoves:** Utilizing sugarcane waste (bagasse), these stoves feature rechargeable batteries and fans for optimal pellet combustion. They also offer adjustable heat settings for precise cooking control, with pellets that are affordable and longer-lasting than traditional charcoal.
4. **Red Apple Electric Pressure Cookers:** High-efficiency kitchen appliances designed to save time and energy, constructed from stainless steel for durability and easy cleaning. These innovations are versatile for both homes and commercial enterprises.

Explored various financing models and opportunities to enhance access to renewable energy products. Noted partnerships with entities like Rentco and UETCL, which provide up to \$4 million in leasing funds.

Highlighted non-collateralized loan products for women, such as Equimama by Equity Bank, offering loans up to UGX 5 million based on group recommendations. Demonstrated loan management and tracking through digital systems like Zimba App to facilitate loan recovery.

Discussed the security of digital wallets and payment systems, citing assurances provided by Bank of Uganda regulations and rigorous IT security protocols.

Addressed resistance among rural populations to adopting clean cooking solutions, such as ethanol-based stoves, due to lack of awareness, collateral-based lending options, and the costs associated with digital systems. Mentioned logistical challenges related to meeting minimum order quantities to satisfy local demand.

Recommended expanding community training programs to encourage rural adoption of clean energy solutions. Advocated for improving awareness of non-collateralized loan options and assisting groups in accessing funding. Emphasized the need for end-user training on digital wallet security features to build trust.

Stressed the importance of partnerships and the role of agents, proposing clear guidelines for agent operations, including commission structures and stock management, to enhance market outreach for clean renewable energy solutions.



CLEAN COOKING

DESIGNING HOLISTIC ENERGY ACCESS PLANS: WHERE DOES ELECTRIC COOKING FIT IN



Ronald Ssejuko - Project Manager, Global Green Growth Institute.



Eng. Herbert Abigaba - Principal Energy Officer, Ministry of Energy and Mineral Development.



Dr. Denis Mugagga - Team Lead, Climate Change Financing Unit, Ministry of Finance Planning and Economic Development.



Dr. Louise Medland - Projects Manager, Modern Energy Cooking Services.



Patrick Tutembe - Principal Economist, Electricity Regulatory Authority.



Yunus Akolore - Technical Expert, EACREEE.

Outlined a comprehensive overview of the early finalized e-cooking strategy in Uganda, which adopted a "Triple A" approach: affordability, availability, and awareness. Emphasized the prioritization of public engagement, policy alignment, technical capacity building, and infrastructure development.

Explained that Uganda's e-cooking strategy focused on leveraging the country's electricity surplus and encouraging productive energy use through the adoption of electric cooking (e-cooking). Stressed the integration of electric cooking within holistic energy access strategies in East Africa and highlighted the role of e-cooking as a solution to both energy surplus utilization and the shift towards cleaner, sustainable cooking alternatives.

Shared insights into Uganda's evolving energy landscape, where increasing attention to e-cooking aligned with national goals to reduce reliance on biomass, improve public health, and boost energy efficiency.

Presented financial strategies specifically aimed at promoting electric cooking in Uganda. Revealed Uganda's ambitious strategic target to raise \$28.7 billion over the next seven years to support its clean energy goals and scale up e-cooking initiatives. Noted that this aligned with Article 6 of the Paris Agreement, which

focuses on mobilizing climate financing and encouraging emission reduction projects.

Emphasized the importance of strategic partnerships and targeted initiatives to drive the adoption of electric cooking (e-cooking) in Uganda and across East Africa, highlighting a specialized e-cooking tariff, designed to address cost-related barriers by offering an economically viable option tailored specifically for cooking needs.

Emphasized the importance of a coordinated regional approach to promote clean cooking solutions in East Africa. Noted that the East African Centre of Excellence for Renewable Energy and Energy Efficiency (EACREEE) aims to unify stakeholders, streamline policies, and set cohesive standards through initiatives with a focus on e-cooking. Stated that a key strategy includes aggregating the East African market to attract investment and scale up solutions.

Hinted that promoting e-cooking in Uganda would help maximize energy resources, reduce reliance on biomass, and contribute to more sustainable and health-conscious cooking methods.

Projected that by 2040, per capita electricity consumption could reach 3,068 units, showcasing the country's potential to handle increased demand from initiatives like e-cooking.

Highlighted the need for broad public adoption and development of awareness about e-cooking benefits, as well as the need to bridge the gap between climate financing frameworks and e-cooking projects.

Noted the lack of technical capacity to deploy effective tracking and monitoring technologies to allow Uganda to substantiate its claims of emissions reductions in order to secure additional funding.

Noted the complexity of coordinating across ministries and international funding bodies to streamline climate financing resources, ensuring affordability for end-users, particularly in rural and low-income areas where the perceived cost of e-cooking remained a barrier.

Pointed out that the high cost of electricity remained a substantial barrier, especially for households in low-income brackets, coupled with technological constraints that prevented utilities from distinguishing between electricity used for cooking and for other household activities, which complicated the implementation of targeted tariffs specifically for e-cooking.

Highlighted the need for the establishment of minimum energy performance standards for e-cooking appliances like Electric Pressure Cookers (EPCs) as essential, along with the need for skilled personnel to install, maintain, and promote the technologies, especially in underserved rural areas.

Recommended that Uganda should embrace and promote electric cooking as a means of offsetting the electricity surplus, supporting energy sustainability, and reducing reliance on biomass.

Urged the finalization and rollout of the e-cooking strategy.

Called upon continued collaboration with regional and international partners to expand financial and technical support, especially through climate financing initiatives and carbon market access, and to launch a national clean cooking awareness campaign to promote e-cooking.

BREAKING BARRIERS TO CLEAN COOKING FOR HARD-TO-REACH MARKETS: ADDRESSING LIMITED MARKETS IN RURAL AND URBAN CONTEXTS

Session Chair: Claire Kagga - Founder and CEO, Klima Advisory Limited.

Panelists:

- **Judith Mbabazi - Researcher, Makerere Urban Action Lab.**
- **Ben Odongo - Renewable Energy Lead, Goldstone Enterprise Consulting & Training.**
- **Moses Amone - Cofounder, ReNewable Hub.**

Noted that the transition to clean cooking solutions was a critical pathway to addressing climate change, reshaping environmental landscapes, and redefining trade dynamics. Pointed out that for people relying on traditional biomass fuels, advancing to clean cooking technologies presented a transformative opportunity.

Clarified that financing sustainable clean cooking systems for hard-to-reach areas, where communities often live on day-to-day income, required innovative and inclusive approaches that addressed affordability, accessibility, and long-term viability.

Suggested flexible payment systems, including PAYGO systems, carbon credit markets, and targeted subsidies, to meet the needs of low-income, hard-to-reach communities and ensure sustainable access to clean cooking solutions.

Confirmed that strengthening the capacity of local manufacturers and leveraging local partnerships with community-based organizations, NGOs, and women's groups could create resilient, inclusive, and sustainable distribution networks, ensuring that clean cooking

technologies reached even the most remote areas in Uganda.

Highlighted challenges, including limited policy support, low awareness, high initial costs of clean cooking technologies, and the misconception that traditional biomass was a free or cheaper alternative.

Noted the lack of access to affordable financing mechanisms and insufficient technical support for after-sales service and maintenance as significant barriers to transitioning to clean cooking solutions.

Recommended a multi-pronged approach combining affordability, accessibility, local engagement, and supportive policies to breaking barriers to clean cooking adoption in hard-to-reach markets.

Called for increased investment in local production of renewable fuels, such as ethanol, and the implementation of awareness campaigns. Emphasized the importance of collaborating with local stakeholders as key avenues to ensure access to clean cooking technologies in remote areas.

FINANCING CLEAN COOKING



Loy Kyozaire - CEO, SENDEA.



Miriam Kisamba Bwengye - Project Officer, Uganda Development Corporation.



Victoria Butegwa - Programme Component Manager, Cooking Energy, EnDev-GIZ.



David Sheridan - Senior Specialist Sustainable Energy, ICLEI Africa.



Kajura Francis - Project Manager, DSRBF Project, Private Sector Foundation Uganda.



Desmond Tutu Opio - Senior Monitoring & Evaluation Specialist, Uganda Energy Credit Capitalisation Company.

Explored the financial mechanisms, strategies, and partnerships essential for advancing clean cooking initiatives in Uganda. Focused on the importance of innovative financing, strategic partnerships, and inclusive approaches to make clean cooking solutions accessible and sustainable, especially for underserved communities.

Highlighted the commitment to promoting clean cooking through investments that align with agro-industrialization, job creation, and regional balance. Noted that UDC provided subsidies to reduce high upfront costs for clean cooking technologies and underscored the importance of comprehensive stakeholder engagement to embed clean cooking into community practices.

Stated that demand-side financing and blended subsidies were essential to reach informal settlement markets, supporting both the demand and supply sides of clean cooking technologies and creating a balanced ecosystem.

Informed that GIZ was committed to inclusivity in energy interventions, supporting local manufacturers and gender-focused training for women in renewable energy. Noted that Uganda-UECC had adopted initiatives to

tackle affordability barriers in clean cooking through the EASP program in partnerships with financial institutions.

Highlighted initiatives such as the Price Subsidy Scheme for electric pressure cookers (EPCs), biomass stoves, and ethanol stoves to make these technologies more accessible to millions of Ugandans.

Noted the limited awareness and adoption of clean cooking, as well as the challenge of maintaining affordability even after subsidies are provided. Pointed out the lack of access to financing models that blend demand-side and supply-side support, particularly in informal and underserved areas. Mentioned the limited private sector capacity and inadequate infrastructure to support clean cooking.

Proposed collaborative financing models that combine demand-side and supply-side support to scale clean cooking technologies in underserved communities.

Recommended developing a blended financing model for informal settlement markets and forming strategic partnerships with cooperatives, local governments, and private sector companies to expand clean cooking solutions to both rural and urban informal settlements.

CLEANING THE ENERGY MARKET: ADHERENCE TO COOKING STANDARDS AND QUALITY

Session Chair: Ronnie Habasa - Audience Reactions manager, 104.1 Power Fm.

Panelists:

- **Richard Ebong - Manager of Legal Metrology, Uganda National Bureau of Standards.**
- **James Baanabe - Former Director, MEMD & Energy Consultant, Modern Energy Cooking Services.**
- **Agnes Naluwagga - Regional Testing and Knowledge Center Coordinator, CREEC.**
- **Lafelle Chu - Country Director, UpEnergy.**
- **Dr. Emmy Wasirwa - CEO, WANA Energy Solutions Ltd.**

Addressed the importance of setting and enforcing standards for clean cooking technologies in Uganda. Regulatory bodies, testing institutions, and the private sector pinpointed the need for robust standards and certifications to ensure product safety, quality, and consumer confidence. Key factors included the technical aspects of standards development, the role of testing and labelling, and the importance of stakeholder collaboration. Discussed challenges such as affordability and the need for awareness campaigns to encourage clean cooking adoption.

Discussed the role of standards bodies in establishing standards for clean cooking technologies and collaborating with key stakeholders to ensure conformity.

Noted that Uganda's standards body, in partnership with UK-Aid, had developed standards for e-cooking. Stated that there was a need for product testing capacity in Uganda to ensure the quality of products.

Noted that with established standards, clean cooking technologies could foster consumer confidence and stimulate market growth.

Informed that CREEC in Uganda had testing capabilities for clean cooking technologies, particularly biomass stoves, to confirm adherence to standards. Noted that for EPCs, adherence to international standards was critical

to ensure that products were safe. Observed that EPCs came at a cost, therefore financing options were needed to make these products accessible.

Also highlighted that Uganda's market had been flooded with substandard EPCs, and illegal refilling of gas was harming the sector.

Noted that building local testing capacity and ensuring that stakeholders understood complex technical standards was a key challenge.

Pointed out that ensuring labels and standards were well-publicized to aid consumer decision-making was also a significant problem, including the lack of testing facilities for e-cooking appliances. Informed that UNBS issued certificates to compliant companies.

Recommended establishing and enforcing standards to ensure safety, quality, and consumer confidence in Uganda's clean cooking market.

Suggested expanding advocacy and awareness campaigns, instituting national labelling programmes to educate consumers on the importance of standards in clean cooking technologies.

Proposed increasing enforcement against illegal refilling and non-compliant products in the clean cooking market to protect consumers and uphold quality.

ADDRESSING ENERGY POVERTY THROUGH SUSTAINABLE BIOMASS ENERGY RESOURCES.



Zainab Kakungulu - Program Officer, Capacity Development, FAO.



Quinn Neely - CEO, Kijani Trees.



Jim Ssebaduka Jim - Board Chairperson, Uganda National Alliance on Clean Cooking.



Siraje Kamugisha - CEO, Good Briquette Initiative Ltd.



Justine Akumu - Energy Officer, Ministry of Energy and Mineral Development.

Highlighted the challenges and opportunities in shifting from traditional biomass energy and technologies to sustainable and modern alternatives haunting Uganda's energy transition. Unveiled feasible options for sustainable charcoal production, its certification, as well as the required policy and regulatory frameworks for an improved charcoal value chain.

Acknowledged the associated socio-economic benefits, including job creation and a source of income for the unemployed.

Elaborated on various initiatives to make biomass usage for cooking more sustainable, focusing on firewood, charcoal, and briquettes, revealing that the Ministry was working to shift reliance from firewood and charcoal to modern bioenergy solutions like biogas, ethanol, and briquettes derived from agricultural and forestry waste.

Highlighted the environmental benefits of using briquettes, including reduced emissions since they do not produce smoke when burning.

Noted that social and environmental benefits accrue around briquette production, as bio-waste is used as raw material for their production, presenting briquettes as an economically viable and sustainable solution that aligns with Uganda's transition to cleaner energy sources.

Highlighted the inconsistent supply of raw materials for briquette production, which jeopardized sustainable production.

Encouraged the sale of ethanol in small quantities to stimulate easy purchase in large numbers by small households.

Discussants mooted the idea of subsidizing small-scale ethanol producers into large-scale manufacturers to increase availability.

Hinted that transitioning to clean cooking technologies in Uganda had just begun, starting from using naked wood to improved energy cooking stoves, noting that more sensitization and awareness creation among the public about new efficient cooking technologies was needed, along with efforts to make them more affordable.

Recognized that available standards for lump charcoal were voluntary, while those for briquettes were determined by the manufacturer driven by business requirements with customers who have tenders. Revealed that UNBS had made the certification process simple and virtual, while testing laboratories like CREEC existed to conduct tests and third-party audits.

Expressed dissatisfaction with the voluntary nature of standards, which led to the flooding of fake products that distorted the market. Noted that enforcement of these standards was still lacking.

Decried the private sector's lack of financing for community clean cooking campaigns, which was leading to slow market penetration of clean cooking solutions. Acknowledged the high cost of clean cooking products for rural consumers, which condemned them to traditional biomass cooking methods.

Recommended that the government recognize the need and support for sustainably farmed charcoal as opposed to traditional charcoal production, offering oversight along the entire value chain.

CLEAN COOKING SUBSIDIES AND BUSINESS MODELS: A PRIVATE SECTOR EXPERIENCE

Session chair: Judith Nabimanya - Head of Advocacy, Café Africa.

Panelists:

- **Isaac E. Tumusiime - Chairperson, Energy Efficiency Association of Uganda.**
- **Edwin Kwesiga - Clean Energy Consultant.**
- **Charles Kisekka - General Secretary, Biomass Energy Efficiency Technologies Association.**
- **Sarah Babirye - Project Coordinator, Uganda National Alliance on Clean Cooking.**
- **Robinah Nanyunja - Chief Executive Officer, Uganda Solar Energy Association.**

Discussed preferences in the design of subsidies by DFIs, business models, and their impacts on private sector businesses. Noted that the use of subsidies by development finance institutions (DFIs) can often be controversial because of their potential to distort markets.

Emphasized that subsidies should be used efficiently, ensuring that the level of subsidy provides value for money to minimize market distortion.

Advised examining the practical approaches and frameworks in place for effectively delivering subsidies to private sector entities for development purposes.

Highlighted the amount of work needed in marketing and creating awareness about subsidies, with less concentration on the price of products. Noted that in Uganda, traditional cooking technologies were still in use because they are readily available.

Established that biogas had been identified as one of the most feasible clean cooking technologies in most rural communities because most homes had livestock.

Alluded to Kenyans having higher levels of income, therefore more funds to invest in clean cooking compared to Uganda.

Conceded that Kenya had a higher rate of mobile phone usage, making mobile money transactions for clean cooking solutions easier in Kenya than in Uganda.

Acknowledged the irony that subsidies tend to disproportionately favor big companies, which have the capacity to operate without them, thus suffocating emerging players.

Noted the low levels of awareness among the public on clean cooking solutions. Highlighted that voluntary standards for the available clean cooking technologies had led to many counterfeit products on the market.

Decried the inefficient implementation of the available clean cooking policies and regulations, which had led to increasing negative health, environmental, and economic effects on the population. Pointed out that taxation of private players had led to high prices for clean cooking technologies.

Expressed concern about the high cost of carrying out awareness marketing campaigns by the private sector for clean cooking solutions, which they felt was unbearable.

Suggested collaboration and coordination amongst all stakeholders, including responsible government agencies, private sector players, and the public (customers), to come together to solve these challenges. Called for the government to provide free airtime on radios and TV shows to private sector companies to promote clean cooking.

Proposed that the government come up with mandatory clean cooking technologies' standards. Advocated for the need to create awareness messages and engage end users jointly by the government and private sector players for effective information transfer.

Suggested that taxes levied on charcoal should be high, with the generated funds used to finance clean cooking campaigns.

Urged the formulation of flexible financing mechanisms to make clean cooking solutions and technologies accessible and affordable to a wider range of consumers, including low-income households, small businesses, and institutions.

COOKING TRANSITION: EVIDENCE FROM INSTITUTIONAL CLEAN COOKING



Mariah Kizza - Head, Project Finance and Corporate Affairs, NREP



Jacob Etunganan - Energy Expert, SNV.



Pamellah Rhodah Ademba - Representative, Panda Cooker.



Barbra Nankya - Managing Director, Sanyu Babies Home.



Ronald Kaweesa - Business Manager, ECOCA East Africa.



Hannington Kasumba - Research Secretary, National Private Educational Institutions Association

Highlighted that households and institutions in Uganda, like in many sub-Saharan African countries, rely heavily on fuel wood and charcoal burned in traditional devices for cooking and heating. Noted that burning these fuels causes pollution that can damage health and contribute to climate change. Moreover, pointed out that when harvested unsustainably, wood fuel consumption leads to forest degradation and other environmental damage. To reduce these impacts, the government of Uganda aims to scale up cleaner cooking options like liquefied petroleum gas (LPG), electric appliances, ethanol, and biogas. This session brought together promoters and users of institutional clean cooking systems who shared lessons learned, challenges encountered, benefits, and opportunities identified so far.

Delegates urged the government to set policies that encourage the promotion of clean cooking in public institutions like schools, hospitals, and prisons. Advised the private sector in the clean cooking business to market their products through institutional associations. Emphasized the need for capacity-building programs within the private clean cooking industry. Called on those concerned to minimize bureaucratic procedures for project implementation in public institutions.

Pointed out that after-sales services by private players should be a must to ensure proper maintenance of the clean cooking systems.

Recommended that energy audits be conducted for institutions to equip them with the appropriately suitable clean cooking systems. Acknowledged that the use of electric pressure cookers has helped Sanyu Babies' Home save about 81% of the funds initially used for cooking.

Highlighted challenges such as lack of awareness about existing technologies among some institutional leaders, high initial investment costs for clean cooking technologies, lack of access to these technologies in certain parts of the country, saturation of the market with poor-quality and unstandardized products, and low skills/poor workmanship. These issues act as disincentives to the adoption and use of clean cooking technologies.

Urged government to sensitize all institutions to ensure a holistic energy transition at the institutional level. Advised the private sector to learn how to package effective clean cooking technology business proposals. Encouraged government to invest in clean cooking in public institutions, such as schools, hospitals, and prisons, to facilitate the shift to cleaner cooking systems.

HEALTH AS THE CENTRAL DRIVER FOR ELECTRIC COOKING ADOPTION



Zahra Namuli - Communications Officer, Makerere University Lung Institute.



Dr. Simon Batchelor - Director, Gamos Ltd.



Dr. Rebecca Nantanda - Senior Research Scientist, Makerere University Lung Institute.



Syprose Ochieng- Research Associate, Gamos East Africa.



Martin Bbaale - Senior Software Engineer, AirQo.

Emphasized the importance of community engagement and education for behavioral change, alongside the long-term economic and environmental benefits of electric cooking. Prof. Simon Batchelor OBE, Research Director at MECS, delivered a keynote speech, highlighting the global and national momentum for clean cooking. Noted the commitment to funding clean cooking initiatives made at COP28. Highlighted Uganda's energy surplus as a strategic advantage for electric cooking projects across the country. Spotlighted energy-efficient devices, particularly Electric Pressure Cookers (EPCs), as practical and economical solutions, stressing their low energy consumption, affordability, and their role in improving public health and promoting environmental sustainability.

Noted that shifting from biomass to clean cooking results in an immediate improvement in air quality, benefiting public health. Pointed out the direct link between biomass smoke and an increase in pediatric respiratory diseases, including pneumonia, a leading cause of child mortality. Emphasized that the cost-benefit of adopting electric cooking outweighs the cost of illness due to indoor air pollution from biomass.

A major challenge identified was the lack of accessible indoor air quality data, which hampers targeted public health interventions in cooking and undermines public awareness of air pollution.

Recognized that cultural resistance to electric cooking remains a significant barrier, along with the perception that biomass is the most affordable and accessible fuel, especially in regions where electricity is limited or intermittent.

Recommended implementing community engagement programs to bridge the knowledge gap by sharing air quality data with the public, encouraging behavioral changes around cleaner cooking practices.

Stressed that training Village Health Teams (VHTs) and healthcare workers on the health hazards associated with biomass fuels and clean cooking practices is a preventive health measure. Called for awareness campaigns to highlight the health and economic benefits of electric cooking, to help counter the perception that biomass is always the cheaper option.

Informed that electric cooking can dramatically improve indoor air quality, reducing respiratory illnesses, especially among vulnerable populations like children. Recommended increasing outreach programs and community engagement to raise awareness of the health risks associated with biomass cooking, in addition to expanding access to electric pressure cookers and providing financial support for low-income households.

LEAVING NO ONE BEHIND: COOKING IN THE INFORMAL SETTLEMENTS



Dr. Nicholas Mukisa - Deputy National Coordinator, National Renewable Energy Platform.

.Kiberu Hassan - Community Leader, Kisenyi

Abdu Ssekamanya - Kamu Kamu Briquettes Lead, Bwaise.

Nava Zubeda - Clean Cooking Ambassador, Kisenyi.

Jane Nabanoba - Administrative Assistant, CREEC.

This session, conducted entirely in Luganda and translated for this report, provided an overview of the cooking landscape in Uganda's informal settlements and the settlers' perceptions of various clean cooking technologies. It also showcased efforts to promote these technologies to last-mile users in these communities. The session brought together clean cooking advocates from the Kisenyi informal settlement to highlight challenges and share successes in promoting clean cooking within the community.

Highlighted that the majority of households in informal settlements use traditional metallic and clay stoves for cooking, with recent efforts by Wana Energy Solutions to introduce improved cookstoves, liquefied petroleum gas cookers, and electric pressure cookers resulting in cost savings for adopters, along with health benefits and increased safety.

Shared effective approaches in promoting clean cooking in the Kisenyi informal settlement, including demonstrations that address limited awareness of clean cooking technologies and engaging local leaders as clean cooking champions to mainstream key messages on clean cooking.

Advocated for the improvement of service provision to informal settlements to encourage the adoption of electric cooking in urban informal settlements, and for the government to understand the needs of the people, tailoring approaches to enable adoption of clean cooking. This includes considering cultural factors, such as Islam's prohibition on paying interest (Riba), which requires financing arrangements to be tailored accordingly.

In response to the question of appropriate technologies in the face of electricity instability in urban informal settlements, it was highlighted that a variety of cooking technologies exist, such as briquettes and LPG, which do not require electricity for cooking while remaining environmentally friendly.

Key Insights

- The government must invest in understanding the specific needs of people in urban informal settlements to effectively promote electric cooking.
- The availability of clean cooking technologies in urban informal settlements is heavily influenced by the outreach approach used to engage the community.
- People's attitudes, behaviors, and appearance serve as indicators of the shift towards clean cooking adoption.
- Promoters of clean cooking need to consider these indicators when tailoring strategies to influence change.

Recommendations

- The promotion of clean cooking in urban informal settlements should involve door-to-door visits accompanied by live demonstrations of the technologies.
- The Ministry of Health should actively participate in awareness campaigns, focusing on the health benefits of clean cooking.
- The government of Uganda, through its ministries, departments, and agencies, should ensure the implementation of policies and strategies developed specifically for urban informal settlements.

SOLAR ELECTRIC COOKING IN DISPLACEMENT SETTINGS



Purity Kendi Gituma - Energy Access Technical Adviser, MercyCorps.



Charles Bakafi - Assistant Commissioner, Office of the Prime Minister.



Dr. Iwona Bisaga - Global Clean Cooking Lead for Global Platform for Action Coordination Unit and Norwegian Capacity.



Ruth Komuntale - Managing Director, ECOCA East Africa.



Milly Lagu - Refugee Representative, Refugee Welfare Council III.



Antony Mayanja Mukasa - Business Development Manager, Vision Fund.

This session addressed the role of solar electric cooking technologies in Uganda’s refugee settlements exploring various strategies to scale interventions by the public sector, private sector, financing institutions and other partners guided by the challenges faced in the promotion of solar electric cooking in displacement settings.

Discussed the strain on Uganda’s resources due to the high influx of refugees from neighboring countries, with the Ugandan government taking proactive measures to support sustainable solutions for both refugees and host communities through the integration of solar cooking solutions into policy initiatives.

Elaborated on the pivotal role of promoting alternatives to wood fuel for environmental protection by encouraging innovation and scaling production and distribution of sustainable renewable energy solutions, facilitated by funding partnerships between both local and international financing agencies and partners, such as the Global Electric Cooking Coalition.

Revealed that in refugee settlements, the most commonly relied-upon cooking fuels are firewood and plastic bottles, which pose serious environmental and health risks,

necessitating community engagement to create awareness through demonstrations and trainings in close collaboration with local leaders. Mainstreamed the role of partnerships to bringing clean cooking solutions to institutions.

Discussed the high tax rates levied on clean cooking appliances and the lack of local manufacturing, making them less affordable in refugee host communities, along with negative cultural perceptions of food prepared using clean cooking technologies.

Informed that group loans were highly effective in refugee communities, as they bypass the need for security, and attested to the financial discipline exhibited by refugees. Called for partnerships between the government and financial institutions to tailor more affordable loans for refugees.

INSIGHTS ON CLEAN COOKING AND BIOGAS ADOPTION



Howard Mwesigwa - Team Lead – Energy and Environment, Kalikumutima & Co. Advocates.



Viola Ninsiima - Monitoring and Evaluation Specialist, Biogas Solutions Uganda.



Esther Naigembe - Chapter Leader, Uganda Women Entrepreneurs Association Limited.



Michael Kiiza - Program Officer, United Nations Development Programme.

Introduced the Uganda Women Entrepreneurs Association Limited (UWEAL) Clean Energy Champion Model, emphasizing its role in empowering women in business to drive the adoption of clean energy technologies. Highlighted that the initiative was central to sensitizing, demonstrating, and converting households into both users and distributors of clean energy technologies for clean cooking, productive use, and electric mobility.

Explored policy perspectives and challenges in gender-responsive renewable energy strategies. Discussed how biogas systems provide cost-effective and clean energy, reduce indoor air pollution, and serve as a source of organic fertilizer.

Emphasized the transformative impact of clean cooking technologies, citing examples from biogas installations, which have created employment opportunities for rural women.

Highlighted the disproportionate burden on women due to traditional cooking methods, reiterating that empowering women through biogas and clean cooking solutions enhances their health, reduces deforestation, and promotes sustainable livelihoods.

Outlined gaps in gender-segregated energy data and the need for more inclusive energy policies, stressing that mindset change is critical to adopting clean energy technologies alongside policy reforms.

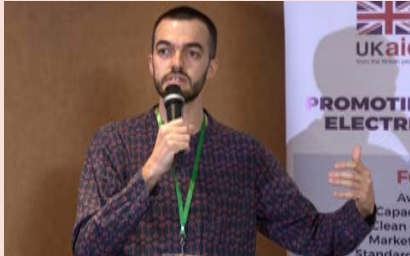
Cited biogas installations in Kamuli and Jinja, which have enabled women to turn waste into valuable resources, reducing their dependence on firewood. The production and use of organic fertilizer from biogas systems have increased agricultural yields by 30%, creating additional income streams.

Recommended capacity building through expanded training programs for women to adopt and maintain clean energy systems. Advocated for the development of gender-focused renewable energy policies to ensure equitable benefits, as well as formulating and promoting subsidies and incentives to lower the initial costs of biogas and clean cooking technologies.

Concluded by underscoring the potential of renewable energy to transform lives, especially for women in underserved communities, through addressing policy gaps, raising awareness, and investing in sustainable technologies to accelerate the shift to a clean energy transition.

UTILITY E-COOKING PROJECT: LESSONS FROM INTRODUCTION OF 1500 EPCS IN GKMA AREA

EARLY DATA INSIGHTS



Dr. Will Clements - MECS Research Lead for Uganda.



Elliot Evila - Research Director, Access to Energy Institute (AZEI).



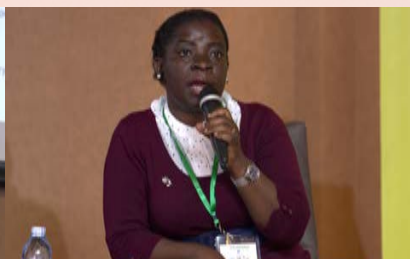
Sarah Najjuma - Brand Development Manager, UMEME.



Jimmy Agaba - e-Cooking Specialist, Centre for Research in Energy and Energy Conservation.



Patrick Tutembe - Principal Economist, Electricity Regulatory Authority.



Nabirye Christine - Electric Pressure Cooker (EPC) Customer Representative.

Reported that in January 2023, Umeme Ltd and Loughborough University signed a collaboration agreement to implement an e-cooking pilot project in Uganda under the MECS programme. Informed that the project leveraged the strategic presence of UMEME in Kampala, Mukono, and Wakiso to raise awareness about the benefits of cooking with electricity while testing its impact on electricity demand and behavioral change.

Shared that within 12 months, 1,500 electric pressure cookers (EPCs) were sold, with 80% purchased by UMEME customers and 20% by staff. Conducted 40 physical cooking demonstrations across UMEME offices, and trained 30 technicians to repair EPCs, with repairs, quality testing, and warranty management led by the Centre for Research in Energy and Energy Conservation and monitoring and evaluation overseen by the Access to Energy Institute.

Stated that customers could only purchase EPCs using their yaka meter numbers. Emphasized that the monitoring and evaluation framework was instrumental in assessing the performance of the e-cooking tariff, shedding light on user behavior and demand patterns.

Noted that a study by the MECS programme comparing cooking costs across energy sources found electricity to be the cheapest option, which informed the Electricity Regulatory Authority's introduction of a subsidized cooking tariff. With the caps and limits developed through a lack of information.

Indicated that the pilot project provided critical insights into the potential for metered electric cooking equipment, enabling tailored pricing mechanisms for household users. Expressed ERA's commitment to extending tariff subsidies to domestic customers transitioning from biomass to electricity for cooking.

Highlighted that the project dashboard tracked CO2 emission reductions and electricity use through smart meters and survey data. Pointed out that women cooked for an average of 115 hours monthly compared to men's 8.5 hours. Reported that household cooking costs averaged UGX 140,000 per month, predominantly from charcoal and LPG.

Mentioned that awareness of the cooking tariff remained low, with over 72% of participants unaware of it. Noted that word-of-mouth was identified as an effective method for promoting knowledge of the tariff.

Explained that the cooking tariff was based on electricity units purchased rather than consumed, resulting in low utilization. Highlighted that the correlation between appliance usage frequency and tariff benefits was weak, with some users benefiting despite infrequent use while frequent users did not benefit.

Informed that between July and October 2024, EPCs were actively used, with households consuming an average of 25.0 kWh. Demonstrated that cooking with an EPC was affordable across all tariffs.

Proposed adopting hire-purchase schemes to enable low-income earners to afford appliances through deductions from Yaka token purchases. Suggested revising government policies to introduce tax exemptions on electric cooking equipment, ensuring their availability.

Stressed the importance of physical cooking demonstrations despite their cost, noting their significant impact.

Emphasized the role of community leaders in customer engagement and the importance of partnerships for project implementation, providing capital, expertise, and improved feasibility.

Recommended shifting the e-cooking tariff to follow the lifeline tariff with a 50% discount on units in the 15-30 range. Suggested creating a program to provide free electricity units for cooking to customers buying electric cooking appliances, either as a monthly incentive for a specified duration or a one-time incentive.

Encouraged subsidies on electric cooking appliances that could be recovered through increased electricity demand.

Announced that the project would be handed over by UMEME to a new distributor in March of 2025.

BIODIGESTER MARKET DEVELOPMENT: WHAT IS MISSING?



Denese Ayijuka - Relationship Manager, Sistema.bio.



Lucy Shillingi - Founder, Ndundu Investments Ltd.



Micheal Mivule - Executive Director, Biogas Solutions Uganda Limited.



Scovia Owomugisha - Plant Operations Manager, National Water and Sewerage Corporation.



Esther Nyanzi - Project Manager, ABC Project, SNV.



Micheal Ahimbisimbwe - Ag. Principal Energy Officer Bio-Energy, MEMD.

Discussed strategies to translate Uganda's biogas potential into practical projects, noting challenges such as insufficient raw materials, high technology and installation costs, logistical demands, and cultural resistance to specific feedstocks.

Highlighted policy gaps, including the requirement for sewage line connections to the National Water and Sewerage Corporation (NWSC), which limits feedstock supply.

Highlighted initiatives by Ndundu Investment Ltd, including efforts to reduce charcoal use and enhance environmental sustainability through biogas technology.

Revealed that their biogas systems can process local waste to produce biogas and up to 800 liters of fertilizer. Suggested government grants, specialized bank loans, better marketing strategies, and gas cylinder distribution to cut costs.

Stressed the importance of building stakeholder capacity through training and partnerships with government bodies to advance the biogas sector.

Noted biogas's potential to enhance sanitation, support agriculture, and create jobs in a high-unemployment country, while also serving as a vehicle fuel, reiterating

the importance of partnerships, awareness, and infrastructure development to unlock biogas's potential in Uganda.

Recognized challenges such as limited funding, high installation and piping costs, low market awareness, and resistance to certain feedstocks due to cultural and religious beliefs.

Advocated for financial support, including carbon credit programs, to drive sector growth.

Suggested expanding feedstock options, including industrial waste and fecal matter from the national sewerage system.

Recommended investing in academic and vocational training to build a skilled workforce and drive innovation in the sector.

Called for targeted educational campaigns, supportive policies, and tailored subsidies to accelerate biogas development.

Proposed the integration of carbon tracking into sustainability efforts and developing urban smart dumping sites alongside a plastic shredding model.

SEE-CLEAN COOKING, HIGHER TIER COOKING COMPONENT (HTCC) ACCESS TO FINANCE LAUNCH



Ella Tirwomwe - Technical Advisor, GIZ-HTCC.



Sarah Babirye - Project Manager, Uganda National Alliance on Clean Cooking



Kizza Maria - CEO, Swedo Innovations



Virginia Ssemakula - Project Manager, Energy, Environment and Climate Change, Equity Bank Uganda Ltd



Justine Akumu - Energy Officer, Ministry of Energy and Mineral Development



Ruth Kimani - Senior Associate Clean Energy, CLASP



Victoria Butegwa - Energy Advisor, GIZ

The launch provided attendees with insights into the Innovation Challenge Fund (ICF) and Results-Based Financing (RBF), featuring pitch deck presentations by companies in the clean cooking sector. These highlighted the contribution of higher-tier clean cooking technologies to the development of the HTCC market in Uganda.

Revealed that the HTCC project, overseen by the Netherlands Enterprise Agency and aligned with Uganda's National Development Plan objectives, was commissioned in 2020 for a five-year duration to support small and medium-sized enterprises in innovating and improving their business operations.

Highlighted challenges associated with prioritizing electric cooking over other clean cooking solutions by policymakers, revealing a dialogue initiated with government actors at the district, regional, and national levels to mainstream clean cooking.

Disclosed the importance of trade finance in opening up global markets for facilitating the import and export of renewable energy technologies, accessing the latest innovations, and benefiting from economies of scale.

Discussed the low consumer exposure to technologies and their benefits, substantial upfront costs, and long payback periods, calling for the creation of trade finance instruments to mitigate risks for both investors and financiers, such as insuring against potential loss.

Revealed the challenge of indoor air pollution, which produces invisible fumes that place the lives of women and children at risk, emphasizing the need to transition to clean cooking solutions by improving their accessibility.

Elaborated on the importance of engaging with local communities through their village leaders, health workers, and religious figures when promoting the use of clean cooking technologies and highlighting the dangers associated with the continued use of traditional biomass.

Divulged that the HTCC emphasized tiers 3 to 5, with tier 5 representing solar cooking, tier 4 for electric pressure cooking, and tier 3 for improved biomass stoves, targeting a population of 12,000.

Acknowledged the Energy Enterprise Coach program for the business development support it provides to clean energy SMEs in Africa to foster their growth, remarking that the promotion of clean cooking is synonymous with saving lives.

Highlighted Uganda's vast potential for ethanol cooking, pointing out the challenges of intermittent power supply, which limits the production capacity of ethanol manufacturers, and variations in the supply of feedstock, calling for partnerships to address these hindrances.

Discussed the group lending model as a solution to address affordability challenges in rural Uganda, the installation of smart meters to influence user behavior, and the importance of supporting after-sale services.

Revealed that the lack of an all-inclusive supply chain model is the most direct challenge facing Uganda's clean cooking sector, exacerbated by poverty, which lowers adoption rates.

Commended the HTCC project for supporting Uganda's achievement of sustainable energy access for all, while making a lasting impact on communities by addressing critical energy needs, improving health, and fostering economic empowerment, and recommended the creation of an all-inclusive supply chain for clean cooking technologies taking into consideration the financial standing of rural communities.





PRODUCTIVE USE OF ENERGY

ENERGY AT THE INTERFACE OF TOURISM PROMOTION



Eng. Simon Peter Ssekitoleko - Assistant Commissioner Renewable Energy, Ministry of Energy and Mineral Development.



Dr. Patricia Litho - Assistant Commissioner of Communications & Public Relations, Ministry of Energy and Mineral Development.



Sophie Kayongo - Senior Product Development and Research Officer, Uganda Tourism Board.



Charles Mwesigye - Environmental Manager, Uganda National Oil Company.



Muhumuza Didas – Petroleum Authority of Uganda.

This session moderated by Eng. Simon Peter Ssekitoleko brought together tourism and energy experts to explore opportunities for collaboration to promote Uganda and the region through the new frontier of "Energy Tourism"

Emphasized the need for a national strategy to attract investors through policy incentives and called for the establishment of information centers at selected energy sites to provide public information.

Discussed the challenge of underdeveloped infrastructure, which restricts access to tourism sites, and proposed collaboration with the Ministry of Works and Transport to improve access roads to energy sites designated for energy tourism.

Highlighted the roles of the Uganda Tourism Board, TotalEnergies, and the Uganda Electricity Distribution Company Ltd in creating tourism narratives around energy installations in Uganda, stressing the importance of digital platforms in improving the accessibility of energy tourism.

Underscored the potential of branding bio-energy sites as tourism destinations to highlight Uganda's green initiatives and transform environmental challenges into valuable resources, citing the Kiteezi landfill as a potential waste-to-energy plant.

Drew attention to the vast economic potential of energy tourism and its ability to diversify revenue generation in various sectors, recommending Public-Private Partnerships and multi-sector collaboration to enhance energy-driven tourism.

Informed of various tourism campaigns in existence such as "Explore Uganda, the Pearl of Africa" aimed at attracting both local and international tourism, the importance of goodwill for mutual benefit and sustainability in partnership arrangements while also recognizing the existing challenges but remaining optimistic about the future.

Called for strategic partnerships and the localization of information for successful energy tourism initiatives.

Recommended the creation of a national strategy to leverage renewable energy sites for tourism while leveraging digital platforms to increase accessibility.

ENHANCING RESILIENCE OF AGRICULTURAL LIVELIHOODS THROUGH PRODUCTIVE USE OF ENERGY



Emmanuel Zziwa - Value Chain Development Officer, FAO.



Javan Mukundane - Engineer, Davis & Shirtliff.



Anne Nyambane - Energy Specialist, FAO.



Imelda Kanzomba - Principal Agricultural Officer, Ministry of Agriculture Animal Industry and Fisheries.



Mpuuga Percy - District Agricultural Engineer, Kiryandongo District Local Government.

Noted that access to solar-powered irrigation systems in refugee camp agricultural programs had led to increased food production (20% to 50%), enhancing food security and improving livelihoods, resulting in better nutrition in refugee camps due to the variety of intercropping on the refugee farms.

Acknowledged that in Uganda, access to solar energy irrigation systems and adoption had begun in the last five years, following the demystification of the misconception that irrigation was only for large-scale farmers (e.g., the Mubuku irrigation scheme).

Shared that the Ministry of Water and Environment had established the first solar irrigation system in 2018, and by 2023, 800 farmers had acquired solar-powered irrigation systems.

Noted that solar energy was the best solution for rural households and refugee-hosting communities that were not connected to the grid. Established that women's inclusiveness and access to the productive use of solar irrigation technologies was jeopardized by a lack of

awareness of renewable energy systems, leading to men confiscating productive-use projects, even when such projects, like "Coffee farms," were initiated by women. Consequently, women ended up being confined to subsistence farming.

Decried the low levels of awareness about post-harvest renewable energy handling and storage systems, which led to losses of up to 20-30% of produce.

Lamented the lack of information on government programs that supply these irrigation technologies at subsidized prices.

Made known the unfavorable taxation policies on some imported irrigation components, as well as the mismatch between available large-scale irrigation systems and small-scale farms.

Suggested that the government subsidize solar irrigation systems for easier access by subsistence farmers, introduce solar dryers for post-harvest handling, and invest in creating awareness about the benefits of irrigation in the farming industry.

ACCELERATING EFFICIENT PRODUCTIVE USE OF ENERGY (EPUE) FOR ECONOMIC PRODUCTIVITY.



Abdul Kyanika - Head of Micro housing, Renewable Energy and Salary Loans, Centenary Bank.

Franklin Arinda - Internal Controls Officer, Foundation Rural Energy Services Uganda.



Isaac Katewanga - Head sustainability & EGS, UMEME.

Perez Magoola - Energy Expert, Open Capital, Uganda Off Grid Market Accelerator (UOMA).

David Muwonge - Production and Marketing Manager, NUCAFE.

Disclosed that Power Africa, a U.S. government initiative was launched in 2013 to increase energy access across Sub-Saharan Africa. That Energy Efficient Productive Use of Energy (EPUE) enables end users to maximize the economic and social benefits of energy access in Uganda.

Noted that Solar-diesel hybrid systems were identified as a cost-effective solution, but their implementation requires innovative financing models and collaboration among governments, industry, and financial experts.

Emphasized the need for energy practitioners to help SMEs recognize the long-term benefits of switching from diesel to hybrid or solar-powered systems.

Stressed the complexity of the financial models and suggested simple open-source tools needed to help both the end-user and financiers to quickly assess business cases, understand system sizing, and make the transition from diesel to more sustainable energy solutions.

Explained a mixed credit approach for financing the rooftop solar installation project, combining loans from banks with a partial grant.

Highlighted a critical lack of sufficient service providers and external support to do thorough audits and assessments of energy systems citing an example where inadequate system sizing led to failure and additional costs.

Highlighted Umeme's efforts to drive productive electricity use by promoting energy-efficient technologies like portable welding machines and electric pressure cookers (EPCs) to enhance productivity. Advocated for incentivized tariffs, including off-peak and special cooking rates, to encourage adoption of electricity. Noted that Umeme has piloted industrial electricity use and prioritized collaboration, standardization, and safety through initiatives like e-cooking standards and net metering policies.

Identified barriers such as lack of collateral and high upfront costs that hinder investment, and suggested models like energy leases, where vendors maintain ownership and SMEs pay for energy used, to be adopted.

Recommended promoting energy efficiency as a cost-saving measure, using energy leases and Power Purchase Agreements (PPAs), and fostering partnerships to increase awareness and adoption. Additionally, advocated for the adoption of a net metering system, which would allow excess power to be sent to the grid when available, and power to be purchased from UMEME when the system is not generating enough energy.

Emphasized collaborations to leverage partnerships with utilities, private sector players, and local communities, to ensure knowledge sharing, access to energy-efficient appliances, and flexible financing options to drive sustainable, productive energy use and economic growth.

INSIGHTS & LESSONS FOR PURE SOLUTIONS & BUSINESS CASES TARGETING SMALLHOLDER FARMERS, AGGREGATORS AND MICRO-ENTERPRISES.



Gloria Kuyo - Junior Project Manager for Productive Uses of Renewable Energy, GOGLA.



Acheles Karungi - Energy Advisor, GIZ.



Paul Soddo - CEO, Intellisys Uganda.



Stella Lunkuse - Managing Director, Solar Nation SMC.



Emmanuel Kifutuko - CEO, Emrich Farma Ltd.

This session highlighted various experiences with Productive Use of Renewable Energy (PURE) technologies, sharing success stories, challenges, and lessons learned that are particularly valuable for smallholder farmers, aggregators, and micro-enterprises.

Emphasized the new technological solutions and business models being developed for emerging PURE applications.

Stressed that renewable energy projects for productive uses must strike a balance between financial viability, local relevance, scalability, and sustainability to succeed. Noted that robust financial models, alignment with local needs, modular designs for growth, and efficient resource use are critical for project success.

Further revealed that integrating solar energy into smallholder farms and micro-enterprises enhances value addition through drying, milling, and oil production.

Emphasized that this integration reduces post-harvest losses, improves product quality, and boosts profitability, providing access to both local and export markets

WATERING THE CLEAN ENERGY TRANSITION



**Joyce Nkuyahaga - Uganda
Country Coordinator, USAID
Power
Africa's Empower East and
Central Africa.**

**Eng. Dominic Banaga
Mucunguzi- Assistant
commissioner for Water for
Production, MAAIF.**

**Eng. Edna Nyamwaka - Project
Manager SSID/PWI, HEIFER
International.**

**Eng. Besigye Denis - Agricultural
Water Management/Irrigation
Consultant,
FAO.**

Reported that water scarcity currently affected nearly one billion people living in urban areas and emphasized water's critical role in the global energy transition required to achieve the 1.5-degree temperature goal. Noted that while green hydrogen was a promising clean energy source, it posed significant water impacts.

Emphasized that the growth of clean energy required careful management to avoid unsustainable pressures on local water sources. The session explored how clean energy policies and planning could consider water availability to mitigate water and energy risks and promote synergistic solutions, particularly in national climate planning.

Informed that non-profit and non-governmental organizations like HEIFER International operated in Uganda since the 1940s with a mission to uplift farmers' livelihoods through sustainable markets and productivity, including the provision of renewable energy solutions such as solar water pumps and milk cooling plants to support agriculture and dairy farming.

Elaborated that women and youth continued to be underrepresented as entrepreneurs in the energy community, particularly in energy economies, acknowledging that they faced major challenges entering entrepreneurship, including structural barriers, financial constraints, and technical complexities.

Shared success stories of small-scale farmers utilizing solar water irrigation solutions and the resulting impacts.

Discussed how the government was integrating clean energy solutions and water-efficient systems to enhance productivity in water-scarce regions and address climate change.

Highlighted that development partners had played a significant role in mobilizing underprivileged women and youth groups to acquire energy solutions. Cited HEIFER International's renewable energy initiatives, such as milk cooling plants, supporting around 87 cooperatives operating approximately 244 milk recollection centers, with 197 of these centers being off-grid.

Pointed out the significant role of agriculture in greenhouse gas production, which posed a challenge to agricultural productivity. Advocated for adopting nature-based solutions such as rehabilitating and protecting watersheds, practicing agroforestry, and using drought-resistant crops to ensure a consistent water supply to support agriculture.

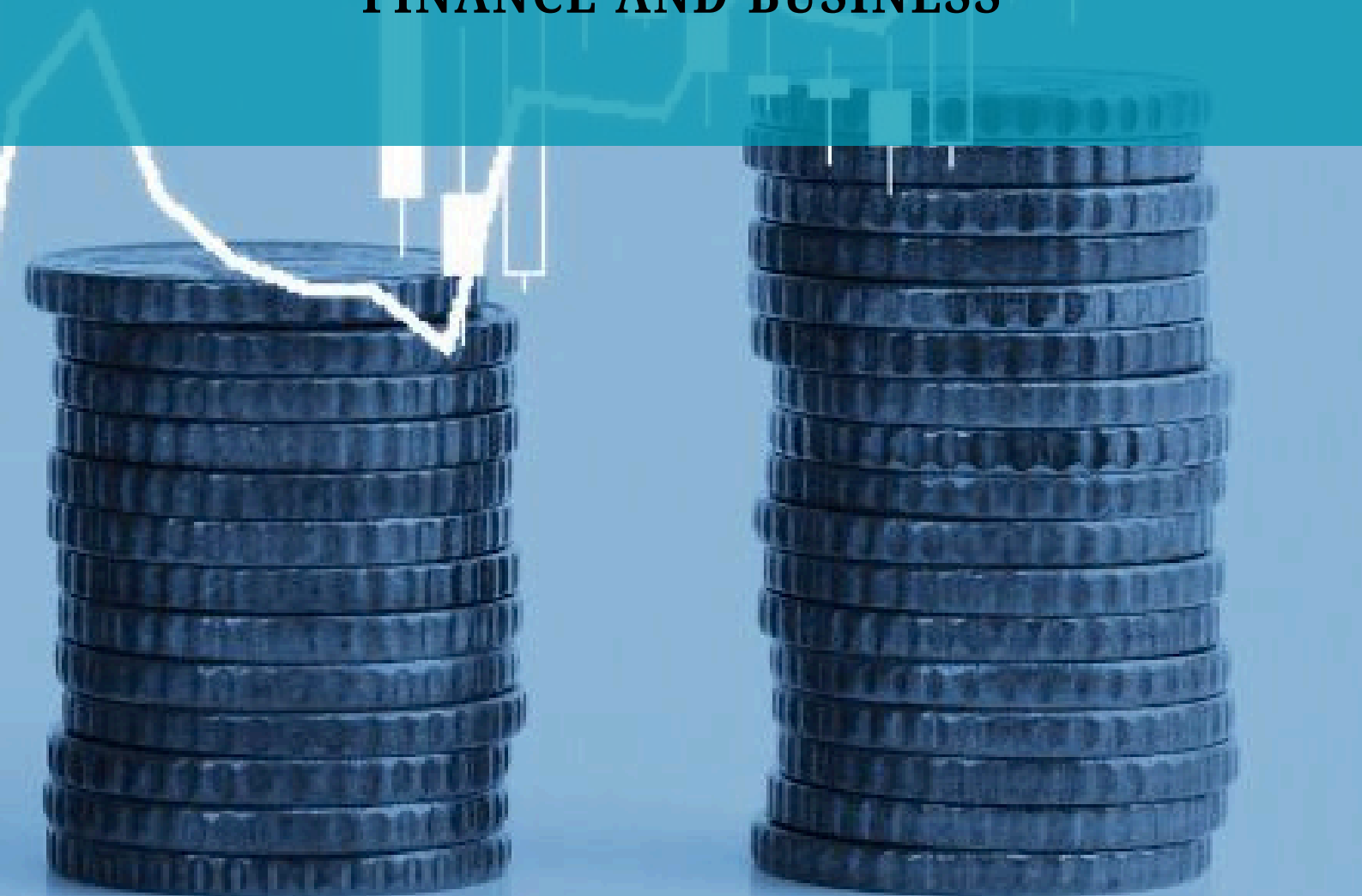
Enumerated the challenges faced by women and youth entrepreneurs, including limited access to finance, electricity, prolonged droughts, and lack of usable equipment, noting that milk tanks were often repurposed for water collection.

Commended partners such as API and MORT for supporting funding for productive energy uses, including solar energy for water and milk cooling. Encouraged the establishment of community-managed systems, such as water user associations, to maintain and effectively use water supply structures.

In conclusion, called for collaboration among government agencies and institutions—including the Ministry of Water and Environment, Ministry of Trade and Industry, Uganda National Bureau of Standards (UNBS), district local governments, research institutions, educational institutions, financial institutions, and the private sector. Advocated for partnerships to facilitate knowledge sharing, unlock commercial financing for farmers, and establish demonstration projects to enhance agricultural productivity.



FINANCE AND BUSINESS



VIABLE MINI GRID BUSINESS MODELS



Peter Nyeko - Director, Mandulis Energy.



Henry Jumba - Country Coordinator, GET.transform.



Aaron Leopold - Chief Executive Officer EnerGrow.



Patrick Mwesige - Productive Use of Energy Consultant, Columbia University.



Barnabas Mwesigwa - Senior Implementation Engineer, Equatorial Power.



Henry Ssemaganda - Senior Energy Officer, Ministry of Energy and Mineral Development.

Discussed the need for collaboration between the private and public sectors to meet the energy needs of the rural population, emphasizing the importance of viewing minigrids as a blend of social and private investment.

Elaborated on the high level of heterogeneity in minigrid markets in Uganda, which complicated their implementation, as well as challenges posed by early grid arrival, which threatened the sustainability of minigrid investors.

Proposed Public-Private Partnership models for minigrid implementation, where market forces of supply and demand prevail, while calling for increased private investment in rural electrification efforts.

Revealed that Mandulis Energy, operating in Nwoya district, Uganda, benefited from carbon credits, UN credits, and other subsidy credits to enable them to bring energy to rural Uganda, emphasizing the disparity between electricity prices in rural and urban areas of Uganda.

Shared that Mandulis Energy created a 20-year concession that allows them to offer electricity to users at no cost for the first two years in exchange for the biomass input to the gasifier.

Reiterated the need for alternative income sources, citing successful energy service providers for whom electricity sales constitute a small percentage of their revenue.

Proposed the establishment of productive hubs that champion the productive use of electricity to drive its consumption, while demonstrating various applications to communities, that should be paired with intensive awareness campaigns and tailored PUE (Productive Use of Electricity) initiatives for communities, such as ice production plants in fishing villages.

Revealed that minigrid project development in Uganda was guided by the National Electrification Master Plan, an arrangement that wasn't not always attractive to developers who have their own interests, resulting in delays when validating projects against the master plan.

Suggested the creation of a standardized concession framework to ensure consistency in project regulation.

Proposed the integration of data intelligence into minigrid developers' processes to provide them with all necessary information to guide their planning, embracing data-driven design and learning from both successes and challenges.

Called for innovative pricing solutions and the diversification of revenue streams beyond electricity sales.

Recommended de-risking the sector through incentives to make the minigrid landscape attractive and ripe for investment.

UNLOCKING PRIVATE SECTOR INVESTMENTS IN SMALL AND MEDIUM SCALE RENEWABLE ENERGY: LESSONS LEARNT FROM THE GET-FIT PROJECT

Session Chair: Harold Obiga - Director for Technical Regulation, Electricity Regulatory Authority.

Panelists:

- **Eng. Julius Wamala - Assistant Commissioner, Electrical Generation, Ministry of Energy and Mineral Development.**
- **Annicient Busingye - Chief Executive Officer, FRONTIER ENERGY.**
- **Jan Alber - Country Director, KfW.**
- **Eng. Dr. Milton Edimu - Portfolio coordinator, KfW.**
- **Davide Bixio - Programme Officer / Adviser Energy and Green Economy, EUD.**
- **Anselm Olweny - Manager ICT, Electricity Regulatory Authority.**

Discussed the challenges in mobilizing private sector investments in small and medium-scale renewable energy generation in Uganda.

Noted the significant role of the GET FIT program in promoting private-sector-led renewable energy generation, with 520 GWh supplied to the grid in 2023 through 17 newly built small renewable energy power plants.

Explored how public sector funds could be leveraged to attract private sector investments through the Independent Power Producer model.

Mentioned that Frontier Energy had over 169MW in total under operation, with 66MW of that capacity in Uganda. Reported that 8 hydro power plants are being managed by Frontier Energy, 7 of which are part of the GET FIT program.

Informed that renewable energies were capital-intensive and require sufficient financial resources and a skilled workforce.

Reiterated the importance of reviewing the legal and regulatory frameworks of any country before operating in renewable energy.

Maintained that regulatory tariffs were in place to manage the implementation of projects by renewable energy developers.

Pointed out that the introduction of the Regulatory Information Management System (RIMS) has made access to most services, payments, and work permit applications easier and more efficient.

Pointed out that poor infrastructure and lack of sufficient funds and financial support were major challenges hindering progress in renewable energy initiatives.

Decried the varying legal requirements across countries for obtaining licenses and permits, resulting in delayed achievement of mini-grid targets.

Highlighted the low levels of sensitization among local populations about renewable energy.

Noted that pandemics and natural disasters such as COVID-19, floods, and landslides along with management and environmental issues, increase implementation costs and hinder the progress of mini-grid projects.

Suggested the initiation of an environmental working group to address environmental challenges.

Recommended the maintenance of good infrastructure to support economic activities, ensuring alignment of projects with the government's development plan, and establishing strong working relationships with local communities to facilitate the provision of services.

NATURE AND ENERGY FINANCE FOR CLIMATE ACTION



Herbert Kafeero - Programs and Communications Manager, SEATINI.

Nicholas Kiiza - Sector Head Power & Infrastructure, Stanbic Bank.

Fred Tuhairwe - Project Manager PUE, UECCC.

Pascal Muhangi - Economist, CSBAG.

Peninnah Mbabazi - Program Officer Trade Justice, SEATINI Uganda.

This session brought together public and private sector actors as well as conventional and innovative financiers to spotlight key efforts to mobilize finance at scale for energy and nature while conserving the environment and mitigating climate shocks.

Revealed that 90% of Uganda’s electricity generation comes from renewable energy sources, drawing attention to the need to diversify the energy mix to ensure the sustainability of power generation and support future growth.

Highlighted Stanbic Bank’s efforts to offer financial models for businesses of all sizes, including options like green bonds and green loans, with subsidies available through the bank’s close ties with development partners.

Revealed that a dedicated resource pool had been created for clean energy projects, helping to attract investment in Uganda’s clean energy sector.

Informed delegates about the Electricity Access Scale-up Project (EASP), a World Bank-funded initiative partnering with 32 financial institutions to offer financing options to end-users, aimed at mitigating the high upfront costs of new technologies.

Revealed that despite a 60% subsidy through results-based financing, there was reluctance

among households and businesses to adopt these technologies, highlighting the need for greater awareness.

Highlighted the recurring challenge of limited access to financing from banks due to the lack of collateral, coupled with insufficient investment in renewable energy.

Emphasized the need to tailor financial mechanisms to the specific communities in which they are deployed.

Stressed that foreign interests in Uganda’s renewable energy sector must align with the country’s social and economic goals, emphasizing the need to support local manufacturing and encourage innovation in line with Uganda’s Buy Uganda Build Uganda (BUBU) policy.

Recommended that financial institutions continue partnering with UECCC to enhance efforts and strengthen energy policies that support climate and energy financing.

MEET THE ENTREPRENEURS

Session Chair: Aron Weldeghergis - Finance Manager, Solarika Energy.

Panelists:

- **Jakob Hornbach - Chief Executive Officer & Co-Founder, GoGo Electric.**
- **Herbert Wakaabu - Director Project Development, Kwanza Infrastructure Group.**
- **Caroline Nijland, Finance Catalyst Advisor, GET.invest.**
- **James Obarowski - Chief Executive Officer, Zembo Electric Motorcycles.**
- **Kevin Asinde - Chief Financial Officer, Simusolar Uganda.**
- **Claire Bakhita, GoGo Electric.**

Entrepreneurs across different market segments shared experiences, key milestones, challenges, and tailored advisory, offering practical and diverse business insights for entrepreneurs.

Shared that electric motorcycles reduce pollution and are therefore environmentally friendly.

Revealed that they enhance the economic benefits for people, with assembly taking place locally in Uganda. Noted that lithium batteries for electric motorcycles can be recycled, thus helping to reduce the e-waste disposal problem.

Mentioned challenges, including the low financial capacity among Ugandans, high upfront costs for solar power and irrigation systems, clean cooking solutions, and the lack of financing mechanisms for electric motorcycles.

Noted the absence of technical capacity for system maintenance, which affects proper operations. Acknowledged the community's ignorance about the economic and social benefits of electric motorcycles.

Deplored the low market demand in rural areas due to poor infrastructure, with few or no swap and charging stations.

Suggested innovative funding mechanisms for battery manufacturing and infrastructure improvement by the government to increase the number of charging stations. Pointed out that motorcycles are offered on a two-year loan basis.

Revealed that solar energy systems, such as solar irrigation pumps, can contribute to poverty reduction and climate change mitigation.

Explained that these systems can be offered through flexible financing, with several already operating in Uganda and Tanzania, where farmers report a 40% increase in income.

Advised the government to focus on infrastructure development and conduct community awareness campaigns about the renewable energy sector and its associated economic benefits.

ENHANCING CLEAN ENERGY MARKETS AND ACCESS THROUGH CARBON FINANCING



John Brian Menya - EASP marketing Specialist, UECCC.

Ritah Rukundo - Manager, Global Carbon Market Project Uganda and Eastern Africa, GIZ.

Andrew Ocama - Coordinator of the East African Alliance on Carbon Markets and Climate Finance.

Access to clean energy remains one of the biggest challenges to Uganda's energy transition. This session discussed clean energy markets and access through carbon financing in Uganda, exploring strategies to enhance carbon credit integrity and transparency, ensure fair revenue distribution, and promote sustainable clean energy markets by encouraging increased involvement of clean cooking companies in carbon financing.

Emphasized that Africa contributes a minimal 4% to global carbon emissions, yet is significantly vulnerable to the impacts of climate change, making it a critical area for climate action. This paradox creates a unique opportunity for Africa to utilize carbon finance mechanisms. By addressing emissions, Africa can capitalize on carbon markets to secure sustainable funding for climate initiatives, turning its climate challenges into opportunities for economic, social, and environmental advancement.

Highlighted the significant potential of Uganda for carbon credits, especially in community-based renewable energy and forestry projects, noting that over 80% of the population still relies on biomass for energy. Advocated for building technical expertise, leveraging frameworks like Article 6 of the Paris Agreement for government-to-government exchanges, and learning from successful initiatives, such as cookstove projects, that generate substantial returns by reducing emissions.

Underscored the importance of integrating technology and academic institutions to enhance carbon finance and address climate change. Highlighted the critical role of government ownership, citing Kenya's leadership in carbon markets. Uganda faces challenges in leveraging carbon markets effectively, with calls for justice and accountability in holding Western countries responsible for their contributions to climate issues.

Highlighted the need for cross-ministry collaboration to differentiate carbon finance from broader climate finance and stressed the importance of adhering to guidelines for successful project certification and verification.

Explained the dynamics of carbon trading and underscored the importance of a robust regulatory framework, such as the role of the Uganda Climate Change Department (UCCD) in project authorization. Emphasized the need for community involvement in project planning and development. Enumerated challenges such as the lack of local auditors, expensive auditing services, and complex regulatory processes involving multiple bodies that hamper carbon funding. Identified complex methodologies in carbon markets as a significant barrier for new project developers.

Advocated for creating standardized approaches, such as templates, producing knowledge products like the Capital Markets Profile for Uganda, and fostering partnerships that provide essential data and technical support to facilitate participation and enhance accessibility in the carbon market. Called for a programmatic approach to aggregate smaller projects, enhancing their appeal to funders and demonstrating their potential, despite misconceptions that only large projects can succeed.

Recommended building local auditing capacity, ensuring community consultation during project registration, and fostering collaboration among stakeholders to share best practices and improve project outcomes. Recommended leveraging advanced carbon finance technologies like the Barcelona model, building capacity through academic institutions, and establishing high-level governmental advisory roles to strengthen climate action and market initiatives.

A SPOTLIGHT ON THE ELECTRICITY ACCESS SCALE-UP PROJECT

Session Chair: John Brian Menya, EASP Marketing Specialist, UECCC.

Panelists:

- **Elizabeth Mwerinde Kasedde**- Executive Director, Equity Bank.
- **Felix Okurut**- Assistant Commissioner, Monitoring and Evaluation, MEMD.
- **Douglas Baguma**- Board Chairperson, Uganda Solar Energy Association.
- **Samuel Ocanya**- Project Manager, Electricity Access Scale-up Project, UECCC.
- **Winnie Grace Onziru**, Senior Standards Officer, Uganda National Bureau of Standards.

Emphasized the objective of the Electricity Access Scale-Up Project (EASP) to increase access to energy for households, commercial enterprises, and public institutions. Noted that the project's Financial Intermediation component provides credit support instruments for end-user financing, working capital facilities, results-based grants, capacity building, electrification of public schools and hospitals, and the productive use of energy, among others. Shared progress, testimonies, and forthcoming interventions of the project.

Emphasized expanding off-grid energy access in Uganda through financial partnerships led by the Uganda Energy Credit Capitalization Company (UECCC), which has allocated over \$125 million for on-grid and off-grid systems. Initiated various funding models including concessional funding, low-interest loans, grants for public institutions, alongside a Results-Based Financing Program offering a 60% subsidy on energy technologies.

Discussed the unique approach of the Electricity Access Scale-Up Project in bringing access to last-mile users through network expansion, industrial support, credit support for businesses, and partnerships for clean cooking. Elaborated that the project addresses financial barriers and infrastructure gaps through blended finance with numerous contingency plans to maximize success. Emphasized the need for a unified voice to interface with the government to address key issues such as quality and cost in the solar market.

Noted that 87 contracts were signed as part of the Results-Based Financing, illustrating a concerted effort to subsidize solar technologies and make them more accessible. Stressed the importance of involving regulatory bodies like UNBS from the beginning, the need for consumer awareness, and the necessity of having trained and qualified personnel for solar installations. Pointed out ongoing efforts to improve the quality of imported products and the development of local manufacturing capabilities to enhance standards and trust in solar technology.

Discussed partnerships with banks in financing clean energy projects through the Uganda Energy Credit Capitalization Company (UECCC).

Emphasized specific financial products aimed at facilitating access to financing for both end-users and companies, as well as the challenges faced in promoting these financial offers. Expressed the importance of vendor support in increasing the uptake of energy solutions, which can help individuals generate income to repay loans.

Mentioned government efforts to incentivize energy service companies to operate in less attractive regions as a way of enabling the adoption of renewable energy technologies. Indicated that the major challenge in achieving energy goals is the lack of reliable data, which hampers effective planning and implementation of energy initiatives, thus affecting the ability to track progress and make informed decisions.

“THE DEAL ROOM” – MATCH MAKING FOR RENEWABLE ENERGY COMPANIES AND FINANCIERS



Bernard Mbaine - Chief Executive Officer, Uganda National Renewable Energy and Energy Efficiency Alliance.



James Kakeeto- Regional Energy Officer, World Wildlife Fund.



Ms. Merab Twinomugisha - Head of Operations, Finding XY.



Mr. Peter J. Kakuru - Manager Renewable Energy, Standard Bank Group.

Access to external finance remains the foremost challenge confronting Renewable Energy (RE) companies in Uganda. UNREEEA, in partnership with Finding XY and support from WWF, organized a matchmaking session dubbed “The Deal Room,” designed to connect RE companies with a diverse array of external financial providers, including commercial banks, grant makers, MDAs, and development partners. Selected RE companies presented their businesses and projects to attract the interest of potential collaborators and investors for future partnerships and funding.

Highlighted the rising investment interest in renewable energy driven by the global shift toward sustainability and climate change awareness. Noted that renewable energy is considered a stable and long-term investment, with financing models like blended finance helping to mitigate risks and attract investors, especially in emerging markets. Elaborated that successful pitches require a strong value proposition, data-driven storytelling, and a skilled, adaptable team.

Explained that revenues in sustainability are increasingly derived from green investments, carbon credits, and innovative financing models supported by mechanisms like carbon taxes and emissions trading. Maintained that climate finance plays a vital role in transitioning to a low-carbon economy, with funding sourced from public and private sectors to support mitigation and adaptation projects.

Discussed the importance of building knowledge and systems across companies and financial institutions to effectively develop, manage, and finance sustainable energy projects. Elaborated that hybrid financial structures, such as Power Purchase Agreements (PPAs) and green bonds, can bridge the gap between renewable energy companies and financial institutions, thereby fostering long-term viability and alignment with global decarbonization goals.

Noted that major challenges include inadequate data, a shortage of skilled professionals, high initial upfront capital costs, limited local financing options, limited financial literacy among local companies, and conservative banking practices, which form barriers to financial access.

Highlighted weak governance structures, poor record-keeping, incomplete business plans, and the lack of capacity to meet international financial and environmental standards as serious challenges to accessing financial resources.

Proposed the creation of long-term relationships with investors, policymakers, and stakeholders to ease access to resources, reduce risk, and expand market opportunities. Urged companies to prioritize transparency and credibility while staying up to date with technological advancements.

RESULT BASED FINANCING: EXPERIENCES AND LESSONS FOR UGANDA

Session Chair: Felix Okurut - Assistant Commissioner Monitoring and Evaluation, Ministry of Energy and Mineral Development.

Panelists:

- **Jacob Etunganan - Energy Expert, SNV.**
- **Virginia Ssemakula - Energy Manager, Equity Bank.**
- **Mwaka Agoba - Program Manager RBF and Clean Cooking, UECCC.**
- **Tina Möller - Programme Manager, BGFA-NEFCO.**
- **Ivan Taremwa - Energy Advisor, GIZ-EnDev.**

This session shared experiences and lessons on RBF incentives in Uganda and ways to address bottlenecks in the market.

Highlighted that the Result-Based Financing program in Uganda aims to improve energy access through a digital platform, pointing out that the challenges faced in RBF implementation include delays in fund disbursement, issues with data verification, and the need for ready Energy Service Providers (ESPs).

Shared that the RBF program was structured to provide advanced payments to help ESPs manage working capital challenges, emphasizing the importance of quality in both products and companies, while integrating corporate and social responsibilities.

Disclosed that the instituted digital platforms incorporate features to prevent the purchase of multiple products, thus preventing fraud.

Revealed that the Beyond the Grid Financing Approach program in Uganda has successfully signed various projects, utilizing €20 million in funding through a resource-based financing model providing advanced payments to address working capital challenges.

This emphasizes quality, corporate social responsibility, and sustainability while providing extensive technical assistance and focus on sustainability to strengthen the capacity of energy service providers.

Elaborated that result-based financing, through several projects, focuses on reaching diverse demographics, including underserved communities and refugees, to improve livelihoods through clean energy access.

Explained that projects such as the ENDEV Classic RBF aim to provide solar energy solutions to 600 micro, small, and medium enterprises and 500 schools.

Illustrated that the Demand-Side Subsidy Project targets refugee and post-conflict community districts, delivering solar systems to 23,000 homes and cooking solutions to 185,000 beneficiaries.

Exposed that the "Leave No One Behind RRBF" initiative plans to reach an additional 8,000 underserved households with Tier 1 solar systems. Furthermore, noted that partnerships with financial institutions are crucial for promoting these initiatives.

Accentuated the importance of collaboration among various stakeholders, the need for awareness, capacity building among financial institutions, continuous support for projects beyond initial financing, and the challenges related to project implementation timelines, especially in educational settings.

Noted that renewable energy companies were largely making losses, making it difficult to finance the technologies effectively.

Informed that the verification turnaround time for the RBF financing tool is three months, which is significantly longer than the 45-day target set by UECCC. Stressed concerns regarding the sustainability of price cuts on energy technology implemented during the two-year UECCC project and how these price reductions affect the market.

Highlighted the potential of RBFs to drive impact and recommended that better data collection and verification processes are essential for project success. Invited the organization of collaborative workshops for school owners to help them understand the benefits of the technology and the Reverse Auction Mechanism in RBF to help deliver the targets.

FINANCIAL INSTITUTIONS AND PRIVATE SECTOR DISCOURSE ON FINANCING GAPS



Howard Mwesigwa - Team Lead – Energy and Environment, Kalikumutima & Co. Advocates.



Matindi Waringa - Chief Executive Officer, Village Energy.



Alice Kampire Muwonge - Chief Financial Officer, Ortus Africa Capital.



Laura Corcoran - Chief Business Development Officer, Aptech.

The discussion underscored the \$28.1 billion emissions reduction funding need, surpassing half of Uganda's GDP, highlighting challenges such as varying financial institution mandates, investment culture disparities, and risk alignment. Pointed out that a "360-degree approach" and successful financing strategies were proposed to attract international and national funding for renewable energy financing.

Highlighted that Uganda's financing landscape is evolving, with digital platforms like mobile banking, digital lending, and crowdfunding enhancing access to finance for both companies and end users. Emphasized the role of data analytics in improving credit profiling, making lending more efficient and tailored, while crowdfunding supports diverse, impactful projects despite challenges in due diligence. These advancements illustrate the transformative potential of digital tools in addressing financial barriers and fostering community-driven investment.

Commended improvements in Uganda's regulatory framework but emphasized persistent challenges such as bureaucratic inefficiencies and outdated systems that continue to disrupt business operations, exemplified by delays in issuing Tax Compliance Certificates (TCC). Applauded Rwanda's more synchronized and efficient business registration systems and underscored the need for Uganda to adopt streamlined practices and improve system synchronization.

Additionally, highlighted challenges in Africa's financing landscape, including high interest rates, infrastructure gaps, regulatory hurdles, and limited SME funding, particularly in clean energy. Proposed alternatives such as blended financing, stronger investor-entrepreneur connections, robust financial planning, and impact

measurement, clearer financing types, and innovative models like crowdfunding, accelerators, and social impact bonds to foster enterprise growth.

Emphasized that innovative financing models like Pay-As-You-Go (Pay-Go) have improved solar access for underserved communities but face setbacks in terms of profitability. Elaborated on the importance of presenting a bankable project model, maintaining a favorable risk profile, showcasing a proven track record, and ensuring robust company management to attract financiers.

Noted that entrepreneurs face challenges such as high solar product costs, limited startup funding, and inconsistent company success. Additionally, the need for collateral, the regulatory framework, high taxation, high-risk project profiles, and the ongoing nature of fundraising efforts were highlighted as significant barriers.

Elaborated that solar loans from commercial banks, community-based funding, and utilizing COVID relief funds to address affordability and finance gaps could offer viable solutions. Building a strong reputation and effective storytelling are essential for market success, as trust is crucial due to skepticism stemming from past underperforming solutions. Platforms such as "The NSSF Innovator" can help startups gain credibility and reach customers. Moreover, demonstrating historical success in similar projects, improving financial management practices, and leveraging fixed assets as collateral when available can enhance financing opportunities.

Recommended speeding up NEMA processes, developing strong project models for funding, improving organization within the private sector, maintaining consistent communication.

ENERGY BUSINESS MODELS: WHAT WORKS AND WHAT DOESN'T

Session Chair: Dr. Brendah Akankunda- Lecturer, Makerere Univerity Business School & General Secretary, Energy Efficiency Association of Uganda.

Panelists:

- **Paul Kamoga - General Manager, AptechAfrica**
- **Mohammed Kadhi - Strategy Business Development Manager, Bukona Agro processors ltd.**

Revealed challenges related to the seasonality of energy resources, such as bioethanol, which impacts price stability, as well as low awareness of the health, economic, and environmental benefits of clean cooking technologies. Highlighted the significantly higher costs of clean energy technologies, like bioethanol, compared to traditional biomass, and the underdeveloped supply chain as key barriers to adoption.

Disclosed successes with Village Savings and Loan Associations (VSLAs), which have played a pivotal role in overcoming financial and social barriers to a clean energy transition by providing a local and sustainable means of accessing finance.

Highlighted partnerships as a critical element in the success of business models, such as collaborations with local governments to utilize storage facilities and partnerships with financial institutions and development partners for distribution and end-user subsidies.

Discussed the need to invest in value chain development by recruiting the right distributors and managing inventory to prevent theft of materials, which has been a challenge in ensuring smooth operations.

Revealed a gap in policy implementation, particularly concerning taxation. Many enforcement agencies are unaware of the details of existing policies, coupled with selective implementation of tax exemptions by the Uganda Revenue Authority, hindering progress.

Highlighted the challenges posed by over-reliance on subsidies and grants, which are unsustainable in the long run and often result in market distortions.

Disclosed the effectiveness of distributed energy resources in rural areas, allowing for localized energy generation and management, which has proven to be a practical solution in areas with limited access to centralized grids.

Proposed the adoption of the Pay-As-You-Go (PAYG) model, which has been successfully implemented in Uganda, as a way to make payments more manageable over time. Highlighted the collaboration with Savings and Credit Cooperative Organizations (SACCOs) to ease system monitoring and improve access to renewable energy.

Called on the government to harmonize tax policies and regulations on clean cooking technologies to standardize the market, fostering a more predictable and efficient environment.

Recommended the exploration of community energy projects, such as community solar systems, which would allow individuals without the space to house individual systems to still access clean energy technologies. This approach also reduces the overall cost by spreading the investment across multiple participants, making it more affordable for each.



POLICY AND REGULATION

A SINCERE DISCOURSE ON ENERGY ACCESS AND AFFORDABILITY: GOVERNMENT'S PERSPECTIVE



Dr. Brian Isabirye - Commissioner, Renewable Energy, Ministry of Energy and Mineral Development.



Eng. Ariho Denis - Lead Technical Expert EAC, EACREEE.



Eng. Caleb Twongire - Principal Energy Officer, Uganda Electricity Generation Company Ltd.



Tuzinde Mbaga - Head Regulatory, UMEME.



Dr. Muzafalu Kayondo - Head of Research and Business Development, Uganda Electricity Generation Company Ltd.



Edward Iruura, Director Financial Services, Electricity Regulatory Authority.

Presented insightful government strategies to address energy access and affordability challenges. Shared perspectives on policy implementation, infrastructure development, renewable energy promotion, and sustainable energy financing. The session explored solutions for advancing energy equity, stimulating investment in renewable energy, and enhancing Uganda's energy capacity. Focused on promoting investment and harmonizing renewable energy policies across the East African region to increase energy access. Advocated for a targeted strategy for the production of green hydrogen and the productive use of energy.

Informed that the government, through its agency (UEDCL), is implementing various strategies to make electricity connections more affordable, including subsidies and innovative financing. Local procurement of materials and equipment is being utilized to reduce costs and lower the overall connection fees for end-users. The agency is also supporting off-grid and mini-grid systems as cost-effective alternatives to extensive grid expansion, aiming to reach remote areas.

Disclosed that despite a significant suppressed demand for electricity in Uganda, the country's energy requirement is growing at an increasing rate of 10% annually, underscoring the need for increased capacity and efforts to explore generation options such as floating solar and geothermal potential to meet the rising demand and expansion needs.

Highlighted that regulations to foster competition in the energy sector, particularly through supporting independent power producers aimed at cost reduction, had been formulated. Noted the importance of undertaking comprehensive cost-of-service studies to understand consumers' willingness to pay and assess affordability across different segments. Informed that the government had introduced various tariffs, including lifeline and cooking tariffs, as well as declining block tariffs to make electricity more affordable. Addressing policy debates, such as transitioning from charcoal to electricity in institutions, had created a favorable investment climate to attract both local and foreign investors into the energy sector.

Noted the difficulty in packaging products that meet market readiness, due to challenges of poor-quality standards, as well as the challenge in securing sufficient funding and investment to expand and modernize Uganda's power generation capacity.

Recommended expanding grid access while supporting off-grid initiatives to accelerate rural electrification. It emphasized that research initiatives and youth inclusion in renewable energy projects could help develop innovative financing mechanisms. ERA suggested utilizing blended financing solutions to mobilize resources effectively to achieve goals related to affordability, reliability, and access. Additionally, collaboration across government and private sectors was recommended to scale up energy access and affordability.

ENHANCING THE ENABLING ENVIRONMENT FOR MINI-GRID DEVELOPMENT IN UGANDA

Keynote address: Karolina Hedstrom - Head Cooperation, European Union Delegation to Uganda.

Expressed excitement about attending the renewable energy conference, which brought together experts from various fields to share knowledge and experience on creating a conducive environment for Uganda's energy transition. Highlighted Team Europe's role in supporting Uganda's ambitious target of achieving universal access to electricity by 2030.

Explained that Team Europe comprises the European Union, European financial institutions, and implementing partners. Revealed that Team Europe had been working closely with the Ugandan government, the private sector, and other development partners to help Uganda achieve universal energy access and build a low-carbon, resilient, and sustainable energy system.

Emphasized that the Team Europe side event was intended to demonstrate their commitment to a collaborative approach in meeting Uganda's energy targets. Stressed that working together as Team Europe could bring about significant achievements and greater impact in Uganda's energy sector. Mentioned that the brochure titled "Energizing Uganda's Greener Future" highlights Team Europe's support for the sector, focusing on four critical areas: energy access, renewable energy, regional market integration, and clean cooking.

Pointed out that the aforementioned areas are interconnected and interdependent. By addressing them in a coordinated manner, greater and more sustainable results can be achieved. Revealed that Team Europe is focused on increasing electricity access for millions of Ugandans by promoting both on-grid and off-grid solutions, including mini-grids and stand-alone systems to reach remote and underserved communities.

Explained that Team Europe's approach includes a clear division of labor, with different members taking the lead in specific areas. Stated that France is leading efforts in grid expansion, the EU is providing vital grants for cross-border connections, Germany and the EU are working to scale up the mini-grid market, and Sweden and Denmark are championing the development of stand-alone systems

Elaborated that Team Europe was working with Uganda to support the development of renewable energy sources, diversify the energy mix, and reduce the cost of electricity generation to below \$0.25 per kilowatt-hour, as set out in Uganda's third national development plan. Announced that the EU had secured 30 million euros in grant funding for a major project under the 'Global Gateway Strategy', part of a 170-million-euro Team Europe package, to rehabilitate the Nalubaale hydropower system and prevent future failures that could cripple the economy and drive up electricity tariffs.

Stated that in the area of regional energy market integration, Team Europe is providing substantial support to help Uganda achieve its vision of becoming a regional power hub by 2040. This includes developing cross-border electricity interconnectors to enhance energy security, reduce energy costs, and foster good regional relations. Expressed her hope that a 45 million-euro grant decision would be made in November 2024 to meet concessional requirements for the Tanzania-Uganda interconnector.

Explained that Team Europe is supporting the sustainable management of Uganda's forests by reducing the use of traditional biomass fuels. Clarified that there is a clear division of labor in this area as well, with different Team Europe members taking the lead. The EU, Italy, Denmark, and the Netherlands are all actively involved in forest management, reforestation, and clean cooking initiatives.

Concluded by emphasizing that Team Europe's targeted collaboration with the Ugandan government and private sector aligns with Uganda's priorities, enabling them to amplify their impact and deliver greater value. Wished participants a lively and expressive discussion.

PANEL DISCUSSION:

Olga Namatovu - Project coordinator, GIZ Pro Mini Grids.

Panelists:

- **Eng. Elizabeth Kaijuka - Principal Energy Officer, Ministry of Energy and Mineral Development.**
- **Patrick Tutembe, Principal Economist, Electricity Regulatory Authority.**
- **Jeroen van der Linden - Team Leader Beyond the Grid Fund for Africa MRV and Institutional Support Services.**
- **Alex Wanume - Country director, NOA Uganda.**
- **Henry Jumba - GIZ coordinator, GET FiT transform in Uganda.**

This session discussed Uganda's electricity mini-grid market development, citing the challenges of policy and regulatory frameworks, financing, and sustainability facing the market, and explored ways to create a more conducive environment for mini-grid development.

Mentioned that approximately 500 mini-grid sites were ready for development. Get access project was coming up to implement 150 mini grids. Highlighted that tariffs were a key drawback issue for mini-grid development and deplored the fact that while hard-to-reach rural areas had high rates of mini-grid extension, they had fewer economic activities to ensure use of generated power. The extension of the grid to areas covered by mini-grids would make the developers lose business.

Observed that inadequate regulatory frameworks and higher tariffs were limiting mini-grid uptake. Noted that there was a lack of productive use of energy and income-generating activities in most hard-to-reach areas. Many developers failed on operation and maintenance practices, making continued operation of the mini-grid difficult.

Disclosed that the short license period given for system development was an inhibitor to mini-grid functioning. Decried the difficulty in making mini-grids accessible to wider local communities, worsened by lack of capital from the government to set up mini-grids. The rural populace did not trust the private sector when it came to setting and charging high tariffs for their services.

Recommended continued reduction in the cost of renewable energy systems to ensure increased uptake. Stressed that the private sector should have strong bond relationships and cooperation with clients to enable a strong appeal for the use of developed mini-grids.

REGIONAL POLICY HARMONIZATION POLICY AND REGULATORY ENVIRONMENT FOR ACCELERATED ENERGY TRANSITION



Yunus Alokore - Technical Expert, EACREEE.



Elsam Turyahabwe - Senior Energy Officer, East African Community.



Thomas Opande - Lead Africa Energy Initiative, World Wide Fund for Nature (WWF).



Dr. Miria Nakamya - Lecturer, Makerere University Business School.



Leonidas Hitimana - Team Lead Forestry, Food and Agriculture Organization (FAO)

This dialogue aimed to make the case for continued harmonization of regional energy policies and regulations by reviewing opportunities for policy alignment within the EAC, identifying barriers, and discussing the impact of regional policy harmonization.

Revealed the existence of the EAC Climate Change Policy (EACCCP) and the ongoing development of the EAC Energy Efficiency Policy (EACEEP), both of which align with the East African Community's development strategies derived from the EAC Treaty. Some of these strategies are due for updating or strengthening.

Suggested pooling resources among EAC member states to address challenges such as disparities in development levels, a shortage of trained professionals, limited manufacturing capacity for renewable energy products, and inconsistencies in policy frameworks. This initiative could be supported by organizations like EACREEE, aiming to achieve results similar to those realized by the Economic Community of West African States (ECOWAS).

Discussed the need to focus on standardization, skills development, and e-waste recycling initiatives, given the influx of renewable energy technologies. Emphasized the

importance of cultural sensitivity and localization to boost acceptability, as well as innovative financing models to enhance growth and adoption across the region.

Brought attention to the looming challenge of language barriers within EAC member states, which could be further exacerbated by the inclusion of French-speaking companies, potentially slowing regional integration.

Elaborated on the role of academia in providing research to better understand sector challenges and inform policy development processes.

Proposed prioritizing regional policy harmonization and establishing a structured framework for collaboration between academia and the private sector to facilitate knowledge exchange.

DISTRICT LOCAL GOVERNMENT SUB-REGIONAL FORUM

Session Chair: Caroline Ruffing - Energy Advisor, GIZ.

Panelists:

- **Usamah Kaggwa - Assistant Commissioner Energy Efficiency Department, MEMD.**
- **Hatimu Muyanja - Energy Officer, Ministry of Energy and Mineral Development.**
- **John Bosco Oryema - Technical Advisor, GIZ.**
- **Robbert Hoeboer - Head GIS, Ministry of Energy and Mineral Development.**
- **Israel Katongole - Technical Advisor, GIZ.**

Emphasized that energy mainstreaming integrating clean energy considerations into planning, budgeting, and coordination across various sectors at both Central and Local Government levels is essential for enhancing access to clean energy. Noted that the Sub-Regional Energy Forums have been held biannually to strengthen coordination across government levels, unite diverse stakeholders, and advance the decentralisation of the energy sector.

The session focused on incorporating energy into district development plans. Energy Focal Persons and Planners from 32 Local Governments representing Acholi, Lango, and West Nile regions, including three cities, as well as representatives of the Ministry of Energy and Mineral Development and the Ministry of Local Government participated in the discourse.

Maintained that the purpose was to enhance cooperation, empower local governments, and strengthen frameworks for energy mainstreaming in the four subregions. Stressed that the forum lays the groundwork for decentralisation of energy-efficient use and is essential for energy planning, budgeting, and implementation of unique solutions responsive to the specific needs of each region.

Informed that the Decentralisation phase (2024 – 2026) focuses on creating practical pathways for Sub-Regional stakeholders to actively participate in renewable energy and energy efficiency strategies.

Noted that such collaborations allow for prioritization and implementation of well-coordinated energy policies to foster market development and improve access to clean energy for Ugandans.

Emphasized that this is part of a broader strategy to integrate energy into all District Development Plans (DDP), ensuring the prioritization of energy needs at the grassroots level.

Enumerated the objectives of the forum, including information exchange, sharing practices, capacity building, and collaborations for energy decentralization aligned with national development objectives.

Elaborated on priority actions in the electricity sector to increase power supply, enhance productive use of energy, streamline governance issues, and mitigate challenges and risks, including cultural barriers and vandalism in the electricity sector.

Thanked GIZ and MEMD for their tremendous efforts in capacity building, which helped in demystifying energy and development.

Concluded by pointing out that collective efforts and shared responsibilities will not only promote decentralization but also ensure that the energy needs of all Ugandans are met.

OVERCOMING BARRIERS: LOCAL GOVERNMENTS' ROLE IN CLEAN COOKING



Jackie Nandawula - Policy Advisor and Energy Investment, EnDev GIZ.



Ruth Kiwanuka - Chief Executive Officer, Joint Energy and Environment Projects.



Mwaka Agoba - Program Manager, Results Based Financing & Clean Cooking.



Patrick Drama - District Energy Focal Person, Moyo District Local Government.



Hatimu Muyanja - Energy Officer; Ministry of Energy and Mineral Development.

Outlined key insights, including constrained budgets, governance and capacity building issues, as well as limited awareness of modern technologies as key drivers for the development of energy projects.

Explained that modernizing cooking at the institutional level, particularly in schools, is crucial. However, lack of access to finance jeopardizes the effective operation and maintenance (O&M) of these technologies. UECCC observed various financing models, including input-based, output-based (results-based), and hybrid, with a particular emphasis on the benefits of output-based financing.

Identified several challenges, including issues within the electricity distribution sector, vandalism, budgetary constraints, land acquisition problems, and lack of sustainable support for projects. Mentioned the difficulty local community members face in accessing training due to limited timeframes for projects.

Disclosed the inherent difficulty in altering established mindsets and attitudes toward new technologies, as well as ineffective O&M of clean cooking technologies, which pose significant challenges to the success of initiatives.

Highlighted that lack of access to finance and affordability jeopardize the implementation of clean energy technologies at the local government level. Advised focusing on the successful different financing mechanisms

particularly at the local level. These mechanisms can provide the necessary support to overcome financial barriers and enable wider adoption of sustainable energy solutions in communities.

Emphasized the importance of consistent promotion and awareness creation about modern technologies as a way of addressing cultural barriers. Recommended tailoring training and project initiatives to fit local cultural and social contexts to increase buy-in for new technologies.

Advocated for regular follow-ups and evaluations as critical troubleshooting mechanisms to identify problems and develop strategies for overcoming them using the technology. Advised for persistent engagement with local leadership, as they command influence and confidence within communities, ensuring project longevity.

In conclusion, discussants were informed that output-based financing is an effective mechanism for acquiring clean cooking solutions at the institutional level. Setting standards and prices through output-based financing can enhance product quality and affordability.

Recommended that relevant institutions define clean cooking compliance standards and establish an enforcement structure, led by the Ministry of Energy and Mineral Development in conjunction with the Uganda National Bureau of Standards.

THE ROLE OF POLICY AND REGULATION IN WASTE MANAGEMENT



Ajutu Emmanuel - Assistant Commissioner, Sectoral Planning and Policy Analyst Department, Ministry of Energy and Mineral Development.



Charles Magumba - Commissioner Urban Administration, Ministry of Local Government.



Innocent Achai - Manager Division of Chemical Safety, Regulation and Pollution Prevention, National Environment Management Authority.



Hanifa Lubega - Director, NLS Waste Management Services.



Saifa Sodhi - Country Manager, Infinitum Energy.

Informed that countries in the global south, especially in Sub-Saharan Africa, including Uganda, continue to grapple with waste management, largely relying on conventional landfilling with minimal recovery of waste resources. However, Uganda has seen a transformation in its waste landscape due to increased public demand for improved waste management services. The session discussed the theory of change behind policy in waste management and shared experiences from the Regulatory Impact Assessment process of the National Urban Solid Waste Management Policy and its recommendations.

It was emphasized that decentralization has empowered local governments to raise awareness, enact by-laws, and manage waste disposal effectively. These local authorities are responsible for the entire waste management chain, including collection, transportation, disposal, and securing land for disposal and landfills. A new policy is being developed to establish regional collection centers and incorporate circular economy principles such as Reuse, Reduce, and Recycle to ensure total waste use. These regional centers aim to make recycling more accessible to locals.

Suggested the enforcement of complementary laws such as the polluter pays principle to place the financial responsibility on those responsible for pollution.

Noted that the major challenges in waste management include a lack of awareness at the household level and weak coordination between various entities, including the private sector, ministries, departments, agencies, and the local population. A notable misconception is that the government is solely responsible for managing waste, alongside the absence of a proper reporting structure for licensed waste collectors and transporters.

Encouraged efforts to create awareness and promote the separation of waste at the household level, while adopting the polluter pays principle. Additionally, support for upcoming private sector entities involved in waste management was highlighted as crucial.

Recommended the formulation of a new waste management policy that reflects the waste management hierarchy, alongside the development and circulation of awareness programs through media channels to educate the public on best practices and necessary information for effective waste management.



SOCIAL DISCOURSES

NATURE AND ENERGY: IN THE VOICE OF CIVIL SOCIETY ORGANIZATIONS



**Richard Kimbowa -
Chairman, INFORSE & CSOs
Network Uganda.**

**Peninah Atwine -
Programmes and
partnership coordinator,
Environmental Alert.**

**Jovia Lokose - Berna
Acago foundation.**

**Howard Mwesigwa - Speaker
National Environment
Parliament.**

Highlighted the key role played by Civil Society Organizations (CSOs), including NGOs, community groups, advocacy networks, and grassroots organizations, in promoting accountability, protecting human rights, and ensuring vulnerable populations are included in decision-making. Noted that renewable energy civil society organizations had united under the Renewable Energy network to strengthen their institutional capacity, increase their voice to promote environmental protection, and share information and collaborate among network members.

Noted that renewable energy policy frameworks encouraged stakeholder participation in projects and addressed the needs of the poor. Gender mainstreaming and poverty issues were recognized as integral parts of renewable energy strategies to improve the socio-economic well-being of women and the poor in general. Women-led organizations advocated for gender equality and climate change, and sensitized communities on how to use energy efficiently through organized training programs to ensure sustainability.

Elaborated that various dynamics, including structural difficulties, selfishness, global forces, limited resources, and energy illiteracy in many communities, had come into play. Civil society groups could advocate for policy reforms that ensured an equitable energy transition by

pushing for energy policies that prioritized access to energy for underserved communities, particularly rural areas, women, and marginalized groups, while focusing on minimizing the negative environmental and social impacts of large-scale energy projects.

Stressed that civil society should also advocate for inclusive decision-making processes during the design and implementation of energy policies at local, regional, and national levels. Gender-sensitive policies were emphasized as essential for ensuring that women had equal access to clean energy and opportunities.

Stressed the importance of enhanced collaborations between government, civil society, and the private sector through multi-stakeholder platforms or committees for regular dialogue on energy policies, regulations, and projects.

Recommended that civil society should continue engaging communities and government to ensure that issues like counterfeits, operational maintenance, affordability, and accessibility were tackled and addressed. Advocated for the integration of renewable energy technologies into school curricula to create awareness among the youth and equip them with operational skills.

MEDIA AS A PARTNER AND CATALYST FOR UNIVERSAL ENERGY ACCESS



Dr. Patricia Litho - Assistant Commissioner of Communications & PR, Ministry of Energy and Mineral Development.

Gloria Sebikare- Manager Corporate Affairs, Petroleum Authority of Uganda.

Thomas Opande - Lead Africa Energy Initiative, World Wide Fund for Nature (WWF).

Frederic Musisi - Head Investigations Special Projects Desk, Nation Media Group.

Miria Babanga Sidney - Head Special Projects, Vision Group.

The session highlighted the importance of collaborating with the media to promote renewable energy, acknowledging the media's crucial role in shaping public discourse, determining which issues to highlight, and setting the societal agenda. It was noted that by influencing political debates and public opinion, the media drives awareness and steers conversations. Historically, it has played a significant role in pressuring governments, international organizations, and businesses to invest in energy access and environmental stewardship, while also fostering two-way communication between the public and policymakers.

Noted that the oil and gas sector was funding renewable energy projects and emphasized the need to balance Uganda's energy mix, recognizing the varying levels of development across countries. Called on the media to provide a broader perspective in their reporting.

Announced the establishment of a climate desk at Nation Media Group in early 2024, dedicated to handling climate change and energy issues while covering key stories.

Highlighted that energy poverty was a continent-wide issue, with fewer than five countries having achieved universal electricity access. Advocated for a multi-faceted approach to addressing these challenges, with the media playing a pivotal role. Commended the Ugandan government's efforts to extend energy infrastructure to every corner of the country, while noting that challenges remained in connectivity, partly due to limited awareness among last-mile users.

Called for the creation of mutually beneficial partnerships built on respect and specialized media product development tailored to the sector, as well as added specialization by journalists on energy issues to ensure effective reporting from a factual standpoint. Also called for news bites in line with energy across news outlets.

Revealed challenges to the mainstream media industry due to the advent of social media, leading to the downsizing of newsrooms and a reduced interest among journalists in energy reporting. It was disclosed that the masses were not actively seeking information, and that public relations experts within companies were not making information public. The need for countries to tell their own stories was emphasized in order to combat propaganda and change the narrative.

Informed the delegates that the media was not the enemy, and as such, they should partner with media actors, fostering a relationship of mutual trust and transparency, reiterating the need to tell our own story to prevent the curtailing of resources.

Called for the safeguarding of electricity generation, supply, and distribution infrastructure with efforts from both the fourth estate and the citizens of Uganda, since their vandalism set back efforts to improve access to electricity.

ACCELERATING ENERGY ACCESS AND CLIMATE ACTION



Dr. Sylvia Aarakit Manjeri - Lecturer, Makerere University Business School.

Dr. Maureen Kamusiime - Technical Advisor for Climate Change and Livestock, MercyCorps.

Dr. Paul Bagabo - Senior Officer, Natural Resource Governance Institute.



Dr. Mary Gorret Nantongo, Lecturer, Makerere University Business School.

Anthony Wolimbwa - National Coordinator, Climate Action Network Uganda.

This session placed a spotlight on building resilient energy systems as a critical lever for climate action, convening professionals to share experiences and lessons learnt in the promotion of energy access and climate action.

Emphasized the need for collaboration between Uganda's private and public sectors to accelerate the energy transition, highlighting the importance of balancing stakeholder involvement. Elaborated on the successes of Public-Private Partnerships in various projects, positioning them as an effective strategy for achieving universal energy access.

Argued that, contrary to popular belief, in-depth analysis showed that unprocessed biomass was not cheaper than clean cooking fuel, while acknowledging that its greater accessibility explained its continued dominance.

Called for the adoption of the right policies and legal frameworks to ensure that the country sustainably harnesses its renewable energy resources effectively.

Emphasized the need for comprehensive and realistic market assessments, along with properly designed market strategies for effective functioning. Also highlighted the importance of disseminating information about clean energy products to support market expansion.

Called for capacity building in the enforcement of standards within the country to address the limitations in the country's capacity to ensure compliance with quality standards.

Recommended the exploration of community-based energy projects that involve community members in the design, implementation, and maintenance of energy systems, ensuring energy access while building local capacity and ownership of energy solutions.

ENERGIZING REFUGEE SETTINGS AND HOST COMMUNITIES



Pauline Cyiza -Project Manager, Ayuda en Acción.



Ben Betele Adrama - Refugee Energy Projects Coordinator, GIZ.



James Love - Program Director, Mercy Corps.



Eng. Caleb Twongirwe-Principal Energy Officer, Ministry of Energy and Mineral Development.



Gule Swaleh - Energy and Environment Officer, UNHCR



Ruth Akiiki Komuntale-Managing Director, ECOCA East Africa.

This session focused on building energy markets in last-mile contexts through partnerships, financing mechanisms to de-risk investments, incentivizing private sector supply chains, and introducing demand-side subsidies to expand sustainable energy access.

Highlighted efforts by GIZ to provide affordable renewable energy to refugee settings and host communities under the “energy kiosks” initiative, offering sustainable solutions for cooking and daily needs in areas with limited electricity. GIZ, in collaboration with the Ministry of Energy, supports local entrepreneurs through training and technical assistance to build energy businesses, thereby fostering economic growth and sustainability. Leveraging Results-Based Financing (RBF) ensures that energy systems remain affordable for refugees and low-income households.

Detailed efforts by Mercy Corps to improve energy access for refugees by tackling demand-side issues, such as raising awareness about energy solutions, and supply-side challenges, including driving behavioral change among suppliers and improving distribution systems. Underscored the importance of coordinated dialogue and stakeholder collaboration, recognizing the market potential in refugee communities. Revealed that Mercy Corps had conducted research, advocated for government support, and fostered partnerships to ensure sustainable energy access for the most vulnerable households.

Elaborated Initiatives by government to improve energy access for refugee communities which include deploying mini-grids, off-grid solutions, and extending electricity

lines. Recalled that a special cooking tariff has been introduced to enhance affordability, while financial support from the UECCC, helps refugees access energy systems.

Stressed the need to work closely with refugee communities to gain insights and design effective and responsive frameworks, tailored to specific needs, to address operational barriers and advocate for increased budget allocation for energy projects. Mentioned innovative solutions by ECOCA that have created tailored solar cooking solutions for refugee communities, including a solar electric kitchen.

Informed that ECOCA has localized its products in northern Uganda, particularly in Adjumani and Yumbe, thus creating jobs. Explained that financing models like Pay-As-You-Go (PAYG), Results-Based Financing (RBF), and partnerships have been used to make products affordable.

Noted limited infrastructure and financial barriers, low awareness, the absence of an enabling environment for scaling solutions, difficult accessibility, adapting products to local needs, and the need to ensure market sustainability as major challenges.

Recommended efforts to foster collaboration among national and international stakeholders and expand energy access through partnerships. Called for scaling the Pay-As-You-Go (PAYG) model and ECOCA East Africa's teams to partner with local partners in northern Uganda to grow the energy kiosk network to enhance affordability and sustainability.

CHAMPIONING CLEAN ENERGY THROUGH CULTURAL INSTITUTIONS



Hon. Sindronius Okaasai Opolot - Minister of State for Energy, Ministry of Energy and Mineral Development.



HRH Mwogezi Butamanya Constantine - Isabaruuli, Buruuli Kindgdom.



HRH Rtd. Major Baker Kimeze - Ssabanyala, Banyala Kingdom.



Rwot Collins Muttu Atiko - Acholi Chiefdom Representative.



Mugambwa Everest Kizito - Buganda Kingdom Representative.



Alex Katushabe - Bunyoro-Kitara Kingdom Representative.



Andrew Kawanguzi - Busoga Kingdom Representative.

This session placed a spotlight on building resilient energy systems as a critical lever for climate action, convening professionals to share experiences and lessons learnt in the promotion of energy access and climate action.

Hon. Sindronius Okasaai Opolot, Ministry of Energy and Mineral Development

Expressed that the session provided a valuable opportunity to showcase what modern technologies can achieve within Uganda's cultural settings and appreciated the representatives of various cultural institutions present.

Informed that the Government of Uganda is committed to transitioning everyone to clean cooking technologies, with cultural institutions playing a key role in moving away from harmful, environmentally unfriendly fuels.

Revealed that Uganda is endowed with diverse alternative energy sources such as solar, geothermal, hydro, wind, waste-to-energy, and liquefied petroleum gas, highlighting the need to transition away from polluting fuels.

Disclosed that the session would depart from the norm, with cultural institution representatives demonstrating clean cooking technologies in practice.

HRH. Mwogezi Butamanya Constantine, Buruuli Kingdom

Greeted the delegates in the Ruruuli-Lunyala language, thanking them for attending the session and the conference.

Rwot Collins Muttu Atiko, Acholi Chiefdom

Greeted the delegates in the Acholi language, emphasizing the importance of utilizing the information shared during the conference. Expressed gratitude to the Minister of Energy, Sponsors, Development Partners, and Delegates for their contributions to the success of REC24 & EXPO.

Rtd. Major Baker Kimeze, Bunyala Kingdom

Expressed gratitude for the invitation to attend REC24 & EXPO. Highlighted the urgent need to protect our environment, referencing Northern Uganda's commitment to curbing deforestation for charcoal production. Reiterated the necessity of transitioning from harmful cooking fuels.

Mugambwa Everest Kizito, Buganda Kingdom

Delivered greetings from the Kabaka of Buganda and expressed appreciation for the delegates' participation. Shared that Buganda Kingdom has raised significant awareness about clean energy and, in collaboration with the central government, would continue to explore ways to make it more affordable.

Alex Katushabe, Bunyoro Kingdom

Revealed that the Bunyoro-Kitara kingdom would support the clean energy initiative given the ongoing oil and gas activities in the region.

Andrew Kawanguzi, Busoga Kingdom

Delivered the Kyabazinga's appreciation to the Ministry and Sponsors for organizing REC24 & EXPO. Reaffirmed

Busoga Kingdom's commitment to promoting clean energy as a means to ensure sustainability for both present and future generations.

Practical E-Cooking Demonstration

Dubbed the "I Too Can Cook Men's Challenge", conducted in partnership with ecostove, the cultural leaders present were tasked with preparing different dishes as assigned below:

- Chicken: Busoga Kingdom Representative
- Goats meat: Hon. Okaasai
- Kalo: Acholi Chiefdom Representative
- Beans: Bunyala Kingdom Representative

Cultural Leaders Participating in a Live Cooking Demonstration





PARTNERSHIPS

CELEBRATING UK-UGANDAN COLLABORATIONS IN ENERGY ACCESS



Peter Nyeko - Co-founder, Mandulis Energy.



Alice Goodbrook - Innovation Lead Energy, Innovate UK.



Zoe Slattery - Engineering Project Manager, Smart Villages Research Group.



Laura Corcoran - COO, ApTech Africa Limited.



Dr. Cynthia Okoro - Shekwaga - University Academic Fellow, University of Leeds.



Ghirmay Abraham - Executive Chairman, Aptech Africa.

Acknowledged that Uganda had goals of reaching universal energy access by 2030 and net-zero emissions by 2065 (IEA, 2023), revealing that achieving net-zero emissions by 2065 would require reaching USD 8 billion in annual clean energy investments in Uganda by the end of the decade. Revealed that Energy Catalyst funded the critical innovation needed to create jobs, spur economic growth, and drive an inclusive clean energy transition. Agreed that Energy Catalyst had funded 18 projects focused on Uganda, totaling over £7.4 million in grant funding. Nine of these projects followed ongoing UK-Uganda collaboration, including an Energy Catalyst Brokerage Event in 2022 that brought 12 UK-based organizations to Uganda to build collaborations ahead of Energy Catalyst Round 10 funding. Celebrated the UK-Uganda Energy Catalyst projects, both past and present, and the opportunity to continue the collaboration.

Noted that sustainable financing hinged on diversifying funding sources, fostering financial transparency, and aligning with development priorities. Maintained that leveraging technology to enhance financial accountability and exploring untapped opportunities, such as green financing and diaspora remittances, could bolster financial resilience and scalability.

Recognized that partnerships between Uganda and the UK, bolstered by technological support, created a powerful synergy for innovation, capacity building, and sustainable development. Observed that empowering the private sector through innovative financing, supportive policies, and cutting-edge technology was essential to unlocking the full potential of renewable energy, driving sustainability, and transforming energy access for all.

Reiterated that technological access should be driven by a deep understanding of local needs through data, ensuring that sustainable solutions are tailored to unique needs and relevant, rather than relying on generic, one-size-fits-all approaches that fail to address unique challenges. Applauded the transformative potential of solar-powered water pumping systems in bridging the gap between energy and affordable, sustainable water access in Uganda's rural communities.

Highlighted the uncertainty in ensuring long-term commitment in creating projects that are economically and environmentally sustainable. Deplored the high dependency on external funding, particularly in the absence of access to affordable financing, as well as the perceived risks of developing markets that deter investors, and the high initial capital costs for renewable energy projects. Revealed a shortage of a skilled workforce, low awareness, and limited technical expertise to design, install, and maintain renewable energy systems, which slowed down the pace of development. Experts disparaged the consistent lack of quality data, especially for rural areas, and a thorough understanding of local needs, making it difficult to avoid generic technological solutions.

UK-Uganda governments were urged to establish clear collaboration frameworks, develop formal agreements and Memoranda of Understanding that outlined roles, responsibilities, and shared objectives for both nations for effective energy access initiatives. Concurred that governments should leverage financing mechanisms, utilize blended financing models, including grants, loans, and private investments, to fund energy projects.

POLICY ADVOCACY: A SPOTLIGHT ON THE DEVELOPMENT PARTNERS' INTERVENTIONS

Session Chair: Hon. Biyika Lawrence Songa - Member of Parliament, Ora County

Panelists:

- **Antonio Querido - Country Representative, FAO.**
- **David Otieno - Representative GIZ Uganda.**
- **Pablo Martinez - Country Representative, GGGI Uganda.**
- **Ivan Tumuhimbise - Country Representative, WWF.**
- **Nabujja Yusura - Representative, UN Women.**

Explored the critical challenges posed by climate change and energy poverty in Uganda, with a focus on the role of policy advocacy in enhancing the effectiveness of development partners' interventions. Highlighted the urgent need for collaborative policy frameworks to stimulate investment and drive the transition to clean energy. Analyzed ongoing projects, identified barriers, and shared strategies to enhance the impact of development partners' interventions in Uganda's energy sector.

Elaborated on several interventions in renewable energy and policy advocacy initiatives by development partners. Informed that GIZ had established more than 25 mini-grids in Northern Uganda and was also putting efforts into capacity building with a focus on skilling in electric cooking and electric vehicles. Noted that WWF was supporting tree-planting initiatives and renewable energy policy development with the East African Community. Mentioned that UN Women was rendering support to women, particularly in agro-industries and refugee settlements, with access to renewable energy, and advocating for increased partnerships and community-based awareness on clean energy benefits. GGGI emphasized opportunities that lay in productive energy use and extracting energy from waste, and promoting initiatives for climate finance.

Noted that fragmentation of efforts across initiatives was a major barrier in mini-grid development. Noted the lack of coordination in the energy transition, emphasizing the need for unified efforts, such as transitioning one million motorbikes to electric models. Observed that integrating women into energy policy was a big challenge. Decried the high upfront costs of clean energy solutions for productive energy use in agriculture. Emphasized regional collaboration and highlighted examples from South Africa on hydrogen and Ghana for rural electrification. Cited Kenya, which had achieved an energy access rate of over 70%, as a model Uganda could learn from in policy formulation and implementation. Proposed incentives for renewable energy use in agriculture and also advocated for an integrated approach to tackle affordability and accessibility challenges.

Recommended that enhanced coordination seeking unified approaches, such as joint policy initiatives and regional collaborations, was essential for an effective energy transition. Reiterated that investment in innovation and increased funding for research and development was necessary to harness Uganda's renewable energy resources effectively.



PARTNERSHIPS FOR CLEAN ENERGY ACCESS

Session Chair: Dr. Frank Bunnya Ssebowa - Senior Adviser, UOMA.

Panelists:

- **Marc Trouyet - Director, French Development Agency (AFD).**
- **Oscar Ankunda - Senior Energy Specialist, Office of Economic Growth, USAID.**
- **Jones Gwilym - Regional Climate Adviser, UK.**
- **Joseph Kapika - Senior Energy Specialist, World Bank.**

Discussed collaborative efforts between sector players, including government, private sector, industry experts, and the National Renewable Energy Platform, in accelerating the adoption of clean energy solutions.

Identified opportunities for collaboration in prioritizing approaches to fast-track universal energy access in Uganda, and the relevant policy and regulatory frameworks to support clean energy development.

Emphasized government and development partners' efforts and initiatives to ensure more people, especially in rural areas, have access to one form or another of electricity connection.

Highlighted the UK's initiatives to support the government in mainstreaming climate finance to aid electricity access.

Acknowledged that the World Bank launched the Mission 300 initiative with the African Development Bank to increase access to electricity and enhance income generation, standards of living, and wealth creation for the people of Africa, and Uganda in particular.

Stressed the overdependence on biomass energy consumption in Uganda, which leads to health and social security issues.

Observed that people still lack awareness about clean and safe cooking methods and technologies in Uganda, despite the UK initiative on modern cooking.

Discussed various options to ease access through innovative financial solutions, including Results-Based Financing to access the market, improve asset financing for climate change, and attract investors into energy efficiency programs to increase the availability of safe and clean cooking materials.

Called for the provision of financial support to the private sector and government agencies to uphold stakeholder involvement in the energy sector.

Recommended that NREP, MEMD, and relevant government agencies sign a Memorandum of Understanding (MOU) to collaborate on clean energy projects.

Proposed that the private sector increase their resource mobilization and commit to investing in generation and clean energy initiatives, particularly for rural areas.

NREP/OFF-GRID ENERGY WORKING GROUP STEERING COMMITTEE MEETING

Session Chair: Alexander Akena - Institutional Expert, Beyond the Grid Fund for Africa.

Speakers

- **Dr Mukisa Nicholas - Deputy National coordinator, National Renewable Energy Platform.**
- **Eng. Simon Peter SSekitoleko - Assistant Commissioner for Renewable Energy, Ministry of Energy and Mineral Development.**

Panelists

- **Oscar Ankunda - Senior Energy Specialist, Office of Economic Growth, USAID.**
- **Adam Sparre Spliid - Deputy Ambassador of Denmark.**
- **Tina Mullo Wilber - Country coordinator -GIZ.**
- **Bernard Mbaine, Chairperson of Finance and Physical Incentives UNRRREA.**
- **Walter International Council for Local Environmental Initiatives**

Disclosed that the Off-Grid Energy Working Group (OGEWG), under the National Renewable Energy Platform (NREP), acts as a focal point for sharing experiences, knowledge, and information on off-grid energy solutions. It tracks key regulatory and policy developments to ensure alignment with sector growth.

Shared efforts in partnership with the Ministry of Energy to provide the productive use of energy strategy for off-grid solar solutions, informing that a master plan for Uganda had been developed and was only awaiting proper placement in a relevant ministry.

Revealed that financing beyond off-grid had been attracted from a TFE company in South Africa, with whom a contract was signed to harness off-grid energy solutions.

Informed that Energy Empowers East Africa was targeting women entrepreneurs to improve their productive efficiency with off-grid solutions. Noted that national access to the grid stood at 38%, with the government seeking to enhance energy activities with off-grid solutions.

Revealed that over 17 million euros had been used to build private sector capacity in off-grid solutions in Uganda.

Noted that access to energy did not solely imply energy, but also reaching millions of people, especially women and children, promoting gender balance, and improving the health and safety of people.

Predicted that Uganda would achieve widespread energy access through off-grid solutions by 2030. Observed that Uganda currently has 34 installed mini-grids.

Explained that a 20-year concession period would allow investors to plan for upscaling and reinvestments, navigating demand risks and low capacity.

Noted that finance, taxation, physical incentives, and varying subsidies are major issues for off-grid solutions. Clarified that policymakers should disburse tailored subsidies in terms of timing milestone disbursements and verification, balancing certainty with effectiveness.

Emphasized that public-private partnerships (PPPs) played a significant role in scaling up mini-grid projects by offering exclusivity for developers through government guarantees.

Expressed regret at the fact that while off-grid solutions played a crucial role in the country's economy, they still suffered from challenges related to policy direction.

Recognized the lack of data speaking to the sector, resulting in investor skepticism due to the absence of conclusive data.

Concluded by calling on the government and relevant stakeholders to increase awareness creation for off-grid solutions and formulate tailored subsidies to support the expansion of the off-grid market, as well as develop and enforce relevant policy and regulatory frameworks for quicker off-grid development in the country.



CLOSING CEREMONY



OFFICIAL CLOSING



Mr. John Bosco Komakech Aludi, Christian Community Representative.

Revealed that religious leaders play a crucial role in the country due to the deep trust people place in their institutions. Called for leveraging religious institutions to disseminate renewable energy information to grassroots communities, noting the significant involvement of religious leadership in sectors like education and healthcare. Emphasized that climate change and renewable energy are just as critical.

Quoted Pope Francis from Our Common Home, urging participants to reflect on their lifestyles and make changes that will benefit future generations.



Hajji Mukasa Mpungu, Muslim Community Representative.

Appreciated the inclusion of religious leaders in the Renewable Energy Conference 2024 & Expo, recognizing the vital role religious institutions play in the development of countries, especially through the education and health sectors, which were significantly advanced by missionaries. Emphasized that religious leaders should be involved in efforts to drive behavioral change in the renewable energy sector as well.

Noted that the Muslim community is a key consumer of various forms of energy.

Called for energy sector initiatives to be tailored to benefit last-mile energy users, ensuring that energy is affordable for all. Urged energy sector decision-makers to be spiritually conscious when making contracts.



Dr. Louise Medland, MECS Program Manager.

Commended the REC24 & Expo for highlighting modern energy cooking solutions and praised Uganda for its world-leading initiatives, such as the e-cooking tariff and the largest e-cooking schools pilot in the world.

Encouraged participants to share the knowledge they've gained from REC24 & Expo with others, helping to spread the message of clean energy adoption. Expressed eagerness for the next edition, REC25 & Expo.

DR. BRIAN E. ISABIRYE - COMMISSIONER FOR RENEWABLE ENERGY, MINISTRY OF ENERGY AND MINERAL DEVELOPMENT.

Expressed heartfelt gratitude to the conference delegates for their active participation and presence at the conference and expo over the past three days.

Thanked the sponsors for their generous support, which was vital to the success of the Renewable Energy Conference 2024 & Expo, while also acknowledging their confidence in the government of Uganda and recognized the National Renewable Energy Platform for their crucial role in organizing the event.

Thanked the exhibitors for their valuable participation in the expo, which provided a memorable experience for all conference delegates. Also acknowledged the media team for their live streaming efforts, which enhanced the visibility of the conference.

Announced that the Renewable Energy Conference & Expo will continue to grow, with plans for an even bigger and more impactful REC25 & EXPO in 2025.

Acknowledged the significant contributions of HRH the Isabaruuli in the renewable energy sector and as the national champion among cultural leaders in the Energy Transition. Invited him to address the conference delegates and officially close the REC24 & EXPO.



HRH ISABARUULI MWOGEZI BUTAMANYA CONSTANTINE, CHAIRPERSON - UGANDA KINGS AND CULTURAL LEADERS FORUM



Expressed gratitude to the Minister of Energy and Mineral Development, cultural leaders, delegates, and the Permanent Secretary - Ministry of Energy, for inviting him to speak at this important discourse on championing clean energy access through cultural institutions.

Thanked the government, under the leadership of H.E. Yoweri Kaguta Museveni, for establishing cultural institutions in Uganda and acknowledging their active role in the country's development activities.

Informed attendees that cultural leaders had gathered not only as representatives of their respective institutions but also as stewards of Uganda's cultural heritage. These leaders reaffirmed their commitment to a brighter, cleaner, and healthier future for all Ugandans, aware that traditional energy sources are no longer sustainable in the face of climate change.

Shared with the audience that cultural institutions have for long served as the moral compass of their communities, and as such, they should now lead by championing the transition toward clean, renewable, and sustainable energy sources. Clean energy is crucial for preserving both our heritage and our natural resources, ensuring a healthy and prosperous future for generations to come.

Called on traditional leaders to collaborate in advocating for favorable clean energy policies. Urged the Ministry and development partners to work closely with cultural leaders to create a shared vision for clean energy, through forums such as the Uganda Kings and Cultural Leaders Forum.

Called for attendees to ignite a collaborative movement to protect their environment with the same passion they protect their traditions, ensuring that they remain both culturally rich and economically resilient.

Recommended the following actions for the government of Uganda:

- Promote e-mobility to reduce greenhouse gas emissions from the transport sector.
- Introduce tax incentives on solar accessories to enable last-mile access.
- Reduce electricity costs while intensifying rural electrification efforts.
- Foster collaboration with cultural institutions to promote renewable energy.

Officially declared the Renewable Energy Conference 2024 & Expo closed.

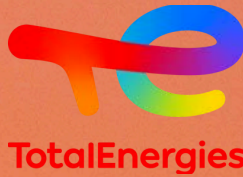


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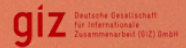
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