



FORUM REPORT



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THE FORUM

The Sustainable Energy Forum for East Africa was held at Serena Hotel in Kigali, Rwanda on 19–21 March 2018 and attended by high level policy/decision makers and experts in the energy sector from national governments, international organizations, development partners, financing partners and the private sector actors. It provided a high level platform to forge effective partnerships for achieving Sustainable Development Goal- 7 targets in the EAC region by 2030.

During the Forum, discussions were held on issues related to: Access to energy; Roadmap of a Sustainable Energy future for East Africa; Financing Sustainable Energy projects in the East Africa Community; Energy and Gender in the East Africa Community; Sustainable City development in East Africa; and Geothermal Energy in East Africa.

ORGANIZERS

The Forum was organized by the East African Centre for Renewable Energy and Energy Efficiency (EACREEE) in collaboration with the East African Community (EAC) Secretariat, the United Nations Industrial Development Organization (UNIDO), the Austrian Development Agency (ADA), the UN Sustainable Energy for All Initiative (SE4ALL), and the Ministry of Infrastructure of the Republic of Rwanda (MININFRA)

APPRECIATION FOR THE EXECUTIVE DIRECTOR

We would like to express our sincere appreciation to all our panelists and participants through your engagement and outspokenness in the just concluded First Sustainable Energy Forum and Exhibition for East Africa. The forum was very interesting and proactive in sharing important issues in regards to energy access for all, developing a sustainable energy roadmap for the future, financing sustainable energy projects, mainstreaming energy and gender issues in the region, developing sustainable cities in East Africa and scaling up geothermal energy in East Africa. We have gained a better understanding about the challenges, opportunities and best practices being employed. Without doubt, this First Sustainable Energy Forum and Exhibition for East Africa has provided policy makers and development agencies insights on real barriers to sustainable energy access and how they can be overcome.

Our concern is to promote sustainable energy access to accelerate development. I personally wish to express my gratitude to you all for coming to Kigali for the Sustainable energy Forum and Exhibition and sharing your experiences and thoughts. Finally, I would like to sincerely thank all the organizers, sponsors and all who made the Forum happen.

Thank you.

Michael Ahimbisibwe

Executive Director, EACREEE



OPENING SESSION

All the panelists expressed appreciation to the high level policy/decision makers and experts in the energy sector from national governments, international organizations, development partners, financing partners and the private sector actors who attended the First Sustainable Energy Forum for East Africa. They also appreciated the Republic of Rwanda for hosting the Sustainable Energy Forum for East Africa. With the majority of the EAC members living in the rural areas, the main energy source remains biomass from forests and crop wastes. The energy consumption per capita is 1360kW compared to 3000 – 6000kW per capita in developed countries.

Lack of clean energy poses many challenges especially for people’s health and education due to indoor biomass pollution. “The main focus for EAC is to ensure accessible, affordable, reliable energy to facilitate growth in an environmentally friendly way,” Ambassador Liberat Mfumukeko, who was represented by his Deputy H.E. Mr. Christophe Bazivamo, noted in his opening remarks. The EAC region possesses a unique mix of renewable energy, with geothermal and hydro having a great potential. This calls for keen assessment to consider other related energy aspects. “EAC needs to pay attention to grid extension, sustainable cooking using biomass and sustainable transport,” Mr. Sakari Oksanen, the Deputy



Photos of panelists after the opening session



The main focus for EAC is to ensure accessible, affordable, reliable energy to facilitate growth in an environmentally friendly way.”

H.E. Mr. Christophe Bazivamo

Director General at International Renewable Energy Agency (IRENA) said. Doing this with other development partners can help in achieving universal energy access. He said that the mission of the EAC is to widen economic, political and social network to boost the integration of the region. The Ambassador noted that the EAC has a number of existing framework. Among them are; Regional power masterplan, Cross border framework, Regional Security framework, and, Climate change mitigation framework.

EAC is one of the fastest developing regions with a number of Partner States joining middle income economies. For any sustainable growth and development, access to sustainable energy remains one of the key drivers. H.E Simon D’Ujanga, the Minister of State for Energy at the Ministry of Energy and Mineral Development, Uganda emphasized that at this point in time, development of a harmonized regional renewable energy and energy efficiency policies and regulations should be given priority. In his closing remarks, H.E Simon D’Ujanga likened energy to a universal key for better living. He said, “Energy access can help to improve living standards by facilitating ease of access to resources like water and food.”

It is the right time to create opportunity for market expansion to speed up the development, Mr. Upendra Tripathi, the Director General, International Solar Alliance (ISA) said. He encouraged the EAC Partner states to always sit down and share issues to develop together. He shared his experience in visiting the 8.5 MW solar power plant in Rwanda and identified a few challenges among them lightning strikes and Poles coming down. “Some of these challenges might be replicated in other regions,” he noted. With possibility of similar issues across the region, he said that a joint approach could be beneficial in the long run. “Sustainable Energy Forum brings together all development partners to recognize EACREEE as the main entry in efforts to support EAC to attain her objectives,” Mr Tareq Emtairah, the



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Director of the Department of Energy at UNIDO noted. He further said that UNIDO and its partners focus on supporting Sustainable development and finds it interesting to be associated with the First Sustainable Energy Forum for East Africa. “UNIDO’s mandate is to promote inclusive sustainable development,” he highlighted while appreciating that the EAC Partner States recognize and appreciate that Energy is key for development.

The Sustainable Energy Forum for East Africa was important in providing a pivotal role for green economic development. “Partnerships are important in enhancing the agenda to attain SDG 7 and also guides our future aspects in attaining the SDGs,” Mr Robert Zeiner, the Director at the Austrian Development Agency (ADA) noted, adding that, “Sustainable Energy should be at the heart of a just economy” and expressed optimism that the forum will provide an important step moving forward.

The Director General, East African Community Affairs Secretariat of South Sudan H.E. Mou Mou Athiany Kuol, noted that the absence of stable peace has deprived his country of many opportunities for scaling up access to sustainable energy. He was, however, optimistic that peace is soon returning, reiterating that that Partners will see it safe to support South Sudan. “Energy needs in South Sudan is enormous,” he said. South Sudan mostly consumes traditional biomass energy. He expressed confidence that the forum would be a great opportunity to learn from other regions.

Meanwhile, Ms. Rachel Kyte, the Special Representative for the UN Secretary-General and CEO of Sustainable Energy For All argued that without modern energy, the world will not enjoy a number of activities including education, transport and many others. She called upon leaders to make dynamic changes to lift everyone.

“We need to map ourselves first to see how we can make strides ahead. Each economy needs dynamic changes to lift everybody today,” Ms. Rachel Kyte, said adding, “As leaders, we have to be honest and understand that we have not done the best and hence a renewed urgency to make remarkable progress is critical.”

She told the gathering that huge steps have been made in the technological sphere and underscored the importance of using public money responsibly and sharing the risks that are brought forth to the new fronts. On progress made so far, she said, “A number of countries have shown good progress, with international energy finance remaining the main source of finance. Market on clean cooking needs to be well developed to enhance access to clean cooking stoves as well as clean fuel. It is important to remember that the less the energy the higher the hours taken gathering sources of energy which slows down education and development. Every year of delay just pushes the attainment of the goal further hence pushing that lack of economic opportunity onto new generations in this region. Financing in the right way, amount and time is a key factor to speed up access to energy.” In order to leave no one behind, there is need to have standards and benchmarks across to give clear guidelines, improve proper flow of finances and incorporate energy efficiency in planning.

Streamlining EAC policy and creating enabling environment can make EAC region to leapfrog and emerge an energy sufficient economy if the leaders set ambitions at the right size. The international community needs to stand with Sub-Saharan Africa through transfer of good practices from their regions.



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Mr Tareq Emtairah, UNIDO



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Ms. Rachel Kyte, the Special Representative for the UN Secretary-General and CEO of Sustainable Energy For All

Hon. Germaine Kamayirese, the Minister of State for Energy, Water and Sanitation of the republic of Rwanda delivered the official opening statement on behalf of the Minister of Infrastructure. She pointed out that the forum had come at a time when the East African Community Partner States are working together to strengthen infrastructure development in the region including energy to stimulate economic growth. She urged all participants to take advantage of this platform and forge effective partnerships for resource mobilization to implement infrastructure projects including the Sustainable Development Goal-7 target of ensuring access to affordable, reliable, sustainable and modern energy for all in the EAC region.

She reiterated the commitment of the Government of the Republic of Rwanda to achieving universal access to sustainable energy by 2024 with focus on renewable energy resources, which would require doubling the generation and demand capacities by working closely with development partners.

She expressed gratitude to UNIDO and ADA for their financial and technical support towards the establishment of EACREEE, reiterated the commitment of the Government of the Republic of Rwanda to support the centre and appealed to all EAC member states, development partners and international organizations to support EACREEE initiatives.

OPPORTUNITIES AND CHALLENGES FOR SCALING-UP ACCESS TO ELECTRICITY IN THE EAC REGION

The EAC region has a sizable share of solar market, however, much more needs to be done including: taxation, legislation and proper consultation. “Revenue authorities are giving players across EAC region a challenge in operation and therefore harmonization of tax policy is necessary to smoothen solar business across the region,” Ms. Johanna Diecker the Policy Director at the Global Off-grid Lighting Association (GOGLA) said. She emphasized that proper consultation needs to be done to enhance access. “The most valuable solutions or options are to consider diverse factors and through proper market intelligence,” she said.

Ron Weiss, CEO, Rwanda Energy Group (REG) said that Rwanda Energy Group works with the private sector to help Rwanda achieve her energy targets. He echoed the fact that proper planning is important to match the generation and demand. For the current situation to change, the government needs to give better regulations to encourage financial flow to the renewable energy sector. In addition, private sector needs to clearly follow the rules. Mr Ron requested governments and regulators to be a little flexible by minimizing long and complex procedures. He said, “While we receive a lot of support from development partners, a little more flexibility is important to avoid tedious and long processes.” Through their involvement, he noted that the number of breakouts has reduced from

once per week to a few times a month. “Rwanda requires more work to increase demand, improve transmission stability and improve automation of the distribution lines through reducing length and power of distribution lines,” he said.

To have a strong private operator, recognition by the government, financial institution among others is key. “EPD are doing a lot on enabling the environment including taxation negotiation,” Mr. Ivan Twagirashema, the Chairman, Energy Private Developers (EPD) in Rwanda said adding that, “List and specification need to be developed for renewable energy systems to make it easy on the customer/consumer side.” He emphasized the importance of Public Private Partnership (PPP) in helping the government in its strategy of rural electrification. He said, “Success of integrated planning lies on proper consultation to properly look at opportunities and challenges. This will enable us to come up with a feasible planning and a proper country mapping.”

“It is important to factor in the fact that planning sometimes does not work as designed and therefore, in planning, room for changes should be considered,” Mr. Mike Gratwicke, the Managing Director and Co-Founder at Rift Valley Energy said, adding that that they were focused on agriculture only and entered the energy business 10 years ago after struggling with electrification challenges. To create opportunities and overcome challenges, he said, it is crucial to identify your potential consumers as well as future consumption. “One needs to ensure that industrial consumers are well supplied with reliable power, Mr. Gratwicke added, emphasizing that the current situation calls for everyone to do things a little different and with some value addition.

To change the current situation on renewable energy financing, local banks need to be encouraged to support renewable energy projects. “The Central Banks in the EAC region need to encourage local banks to invest in Energy,” Ms. Johanna Diecker said. In addition, she said, the government should demand for proper financial flow to off-grid set-up.

“The Central Banks in the EAC region need to encourage local banks to invest in Energy.”

Ms. Johanna Diecker



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OPPORTUNITIES AND CHALLENGES FOR SCALING CLEAN FUELS AND TECHNOLOGIES FOR COOKING IN THE EAC REGION

There is even more need now for development of a low carbon cooking fuel and stove technology to replace combustion of dirty wood and charcoal than ever before. Energy access in EAC should also look at how to produce alcohol fuels and the whole value chain from production to consumption. Access to clean cooking fuel and improved cook stoves can be accelerated through bulk procurement, subsidized costs of fuel and cook stoves, and street by street activities; these are some of the issues highlighted by Mr. Eric Reynolds, the Executive Director at Inyenyeri, a biomass ‘fuel utility’ company placing ultra-clean Tier 4 gasification technology cook stoves into Rwanda’s poorest households at zero cost through a for-profit model.

Mr Reynolds urged governments to subsidise costs of clean fuels and clean cook stoves to scale up an all-inclusive access.

Ms. Elizabeth Muchiri, the Gas Business consultant at Global LPG Partnership (GLPGP) said research has indicated that indoor pollution is a major killer in the EAC region, calling for commitment to address these challenges. “Global LPG Partnership (GLPGP) helps the consumers understand that LPG is not only for the rich and elite. LPG is a modern fuel that is clean, efficient, eliminates wastage of fuel and time for fuel fetching as well as cooking, environmentally friendly due to low carbon footprint e.t.c,” Ms. Muchiri said, adding that to manage the LPG business well, a few things have to be done well; the first being proper management of cylinders which is critical because it is expensive than the gas it holds. Secondly, proper distribution channels remain key for pushing for increased access. In addition, she identified the need for proper value chain management by bringing in commercial enterprises to the front for sustainability. Lastly, she highlighted the need for creation of proper market enabling policy and environment. She further noted that it is important to appreciate the fact that LPG is a transitional fuel to scale up the EAC clean cooking energy pathway. Ms Muchiri encouraged creation of market that attracts customers. “The fact is that a person’s choice bases much on the need and the fuel price but when we compare prices of solid biomass fuels, they are more expensive than clean energy,” she said.

In his presentation, Mr. Ed Agnew who works in Business Development and External Relations for the Nairobi based KOKO Networks, a technology company that provides hardware and Software services to the downstream fuels industry said that “we can create an ecosystem that can accelerate adoption through commercial capital.”

“Person’s choice bases much on the need and the fuel price but when we compare prices of solid biomass fuels, they are more expensive than clean energy.”

Ms. Ms Muchiri

HARMONIZED POLICIES TO SCALE UP SUSTAINABLE ENERGY IN THE EAC REGION

Majority of the panelists agreed that modern cooking technologies has not received the attention it deserves, which is partly the reason it attracts less support or promotion than electricity. Among the challenges leading to low attention on cooking technologies are cultural issues coupled with weak standards and regulations. “Standards and regulations for biomass energy systems have to be developed,” Ms. Faith Wandera, the Deputy Director of renewable Energy at the Ministry of Energy in Kenya said. Ms Ilka Neyla Buss, Project Officer, African Development Bank (AfDB) noted that energy is one of the key focuses because it supports agriculture, transport, businesses, e.t.c. She emphasized the fact that it is important to know how we can work together.

Mr Mahama Kappiah, Executive Director, ECREEE said that statistics and situations vary with countries; therefore harmonization has to be for country to country. During the discussion, it was noted that an integrated approach can help in developing regional policies. “We can harmonize Renewable energy by coming up with integrated cross-border transmission tariffs as well as harmonized electrification standards and codes,” Mr. Yohannes Hailu, the economic Affairs Officer at UNECA said.

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Mr. Yohannes Hailu

Ms Laura Williamson, the Communication and Outreach Manager at the REN21 said that we need to have knowledge to forge forward for the future. “We can speed up this by avoiding to talk about new technologies rather than talking about a combination of technologies that exist, offering dedicated services and weight to sectors like cooking fuel and improved cook stoves, and transport and collection of relevant up to date and concrete record keeping,” she said.

PERSPECTIVES ON SUSTAINABLE ENERGY POLICIES IN EAC

There has been considerable work done on policy and regulation which have been helpful in accelerating access across countries in the EAC region. Industrial energy audits have been done and possible saving identified. “Currently, energy efficiency bills are being fronted with efforts to improve distribution of LED bulbs in Uganda,” Mr. Godfrey Ndawula, the Former Commissioner, and New and Renewable Resources of Energy in Uganda said. He said that Uganda consumes about 1.2 million tonnes of charcoal per annum and therefore charcoal production in a modern way should be supported. In addition, he supported promotion of other technologies like briquetting as key to help save on resources and the environment.

“There is greater need to enhance investment financing and political commitment in integrating of clean energy in the planning framework.”

Mr. Daniel Wanjohi, GACC

Mr. Isaac Kiva, the Director in the Ministry of Energy in Kenya noted that several avenues have been put in place. “Strong government commitment, strong partner commitment, innovative ways in providing energy through private sector and infusion of private sector in planning are among the many initiatives the government of Kenya is fronting,” he said. Kenya has an energy management act in place to help large power consumers cut down energy usage while remaining competitive in the market. “Kenya has put in place and enforced legislation on energy management that require industrial institution do energy audits every 5 years and implement at least ½ of the recommendations,” he said adding, “Kenya Association of Manufacturers (KAM) has been on the forefront to support institutions and large power consumers carry out energy audits.” In addition to energy management, he said, Solar Hot Water Heating (SHWH) regulations are also in place for using solar energy in water heating for those consuming over 100 litres of hot water per day. He also noted that Kenya is committed to power off grid population in a green way. “Off-grid power systems have been done with solar now and not diesel generators any longer,” he noted. Mr Kiva noted that financing should be done with clear project objectives for investors to find it sound to support large projects that have a faster and higher impact.

Ms. Pauline Githungu, Head of External Affairs, M-KOPA SOLAR, a "pay-as-you-go" energy provider to off-grid homes, supported earlier presenters by saying that policies are in place and harmonizing them is the way forward. Appreciating integration of IT in renewable energy, she said, “There have been a number of innovation initiatives within the EAC region that targets improved access.”

Other than the major and common ways and sources of electricity generation, newer sources and technologies can be employed, she added. “There is need for mindset change that electricity is able to be generated from various sources,” she said adding, “Therefore, proper perspective for government, private sector and consumer is key.” She raised concerns over government coherence in implementation and enforcement of regulation. She said, “There is potential in renewable energy though governments are not working in coherence in some aspects like in taxes and revenue collection.” In regards to energy access, she said, “The issue of affordability is also very important to accelerate access in all aspects, electricity, cook stoves and fuels etc.” On energy efficiency, she said that the appliances which are commonly in use need to be efficient ones to conserve and save energy.

Mr. Daniel Wanjohi, Regional representative, Global Alliance for Clean Cook Stoves (GACC) said that there is need to change the way we do things. “We need to question and challenge the policies in place, bring in innovations that are drivers to achieving better options,” he said adding, “There is greater need to enhance investment financing and political commitment in integrating of clean energy in the planning framework.” He encouraged formation of cook stoves investment hubs and noted that financing ideas is a challenge. Prototypes, he said, can attract funding through seed or angle. “The main issue is that ideas are not provable to work,” he noted.

FINANCING SUSTAINABLE ENERGY IN EAST AFRICA

Financing sustainable energy products and projects in East Africa is still viewed as a high-risk investment by the financing community. This eventually comes with stiffer requirements for consumers, investors and developers. In recent years, a number of promising initiatives that seek to address, shoulder or mitigate this risk whether real or perceived are coming up. “Regulatory risks, technology risks and management team risks are among the major barriers in scaling up renewable energy and energy efficiency investment,” Ms. Jaswinder Kaur, an Expert at UNIDO highlighted. She also noted that the cost of investment is coming down due to reduced cost of solar panels and equipment. This means reduced money spent on solar investments in the developing world.

“Regulatory risks, technology risks and management team risks are among the major barriers in scaling up renewable energy and energy efficiency investment.”

Ms. Jaswinder Kaur, UNIDO



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Mr. Lénaïc Georgelin, the Team Leader, Delegation of the EU to Rwanda noted that research shows that between USD 46-60 billion per year is needed in the EAC to close the energy access gap. In addition, he said, up to 60% of projects are delayed or underfinanced. He reiterated that financing of clean fuel for cooking is still low to cover the gap, emphasizing that bankability of projects remains key for financing.

On the other hand, Ms. Jaswinder Kaur noted that within East Africa, there has been USD 4 billion worth of investments, mostly in geothermal and hydropower. This has been associated with the emergence of policy support and regulatory framework, FIT, ZERO-VAT, RPO, Renewable energy auctions, tax credits/exemptions.

Ms. Helena Mcleod, the Director, Climate Change & Renewable Energy said that they are specialized in funds management from many development partners. She lauded the EAC for leading the world with only 18% of fossil fuel used. She noted that as enterprises grow, adoption of different financing models will be needed.

Ms. Monica Keza, Managing Director, BBOX said that for sustainable growth, there is need for the EAC community to start getting independent on donor funds. “Solar home systems can be a solution for homes, however, proper after sales service need to be done to remain in the market and relevant in ensuring energy access,” she noted adding, “Financing challenges can change if proper regulations are in place. Proof of sustainability and profitability of projects needs to be clear to attract and guarantee financial support.”

She however emphasized the need to develop better ways to finance players in the solar business. “Training bankers on renewable energy and energy efficiency is also key to unblock the knowledge barrier,” she said. She noted that there is currently no financing models in place for energy efficiency financing in most of the EAC countries.

SCALING UP INVESTMENT INTO SUSTAINABLE ENERGY

Investment levels in renewable energy to improve access, efficiency and decarbonize the energy sector is still low in East Africa. Main barriers to scaling up investment are associated with weak finance and bankability, weak administration and capacity, and weak policy and regulatory framework. There was consensus among the various panelists that there is no lack of capital in the marketplace for good projects; there is, however, a lack of bankable projects (compounded by political and market barriers) to attract investment and scale up renewables to meet the Paris target and the Sustainable Development Goals.

Mr. Country Programme Manager of Energising Development (EnDev) Rwanda, noted that to generate momentum to scale up investments in sustainable energy it is important to; have a clear political decision to enhance access; come up with flexible regulations that make business run; and improve conditions for access to working capital. Mr. Eric Naivasha, the General Manager at the Equity Group Foundation, Kenya, said that hindrance to access energy is accessibility and affordability of energy products. Commercial banks are currently less engaged in funding mini grids and micro grids. For these reasons, developers go through institutions like the World Bank because they give better offers by understanding these projects. “Each country needs to have a dedicated bank to finance renewable energy and energy efficiency projects of all scales. This needs to be done soon to enhance service delivery by the private sector,” Mr. Eric Naivasha said. We are continually having mini grids that have potential for commercial funding models

Mr. Kuljit Singh Popli, the Managing Director, IREDA said that there is need to foster development and awareness of renewable energy and energy efficiency. IREDA is a pioneering developmental financial institution dedicated for financing of renewable energy and energy efficiency projects in India. “To develop mini and micro grids that are workable and viable, it is important to adopt them to energy demand, develop fair tariffs and link them to productive use,” Mr Singh said adding that, these aspects can make it easy for companies to access commercial finance and operate easily. “As much as we focus on improved cook stoves we also need to focus on fuel,” he noted.

Mr. Peter Storey, Global Coordinator, of the Private Financing Advisory Network (PFAN), a multi-lateral public private partnership which connects Clean Energy projects with investment in developing countries, called for the need to shift attention from woody biomass as conservation biomass. “Something needs to be done on biomass to make sure it is scalable,” he said. In addition, research on biomass needs to be done and the results be made aware to the majority. He emphasized that as we continue to seek for a breakthrough, technology needs to be scaled up to integrate prepaid access/mechanism on improved cook stoves. He echoed that proper financing needs to be developed in these lines. “Local capacity needs to be lifted to access finance, learn on technical skills,” he added.

“As we continue to seek for a breakthrough, technology needs to be scaled up to integrate prepaid access/mechanism on improved cook stoves. Local capacity needs to be lifted to access finance, learn on technical skills.”

Mr. Peter Storey, PFAN



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MAINSTREAMING GENDER IN THE EAC MEMBER STATES

Similar to most Sub-Saharan countries, countries in the EAC region are still facing gender and energy challenges. The progress towards providing greater access to modern energy services to particularly poor women has been generally slow.

Energy access challenge in the EAC remains deep. “Hosting about 169 million people, it is estimated that about 156 million people lack access to clean cooking while 119 million lack access to electricity. This is also recorded with serious gender disparities,” Ms. Ellen Morris the President of Sustainable Energy Solutions and Faculty Columbia University noted. She however noted that pockets of progress still hold great promise. “The last mile connectivity project in Kenya, Pay-As-You-Go end-user finance among other business and technological models are slowly improving the situation,” she added. On gender, she said that sustainable energy supply in the EAC is slowly mitigating gender disparities and promotes human and economic development. The EAC political commitments and legal frameworks all moving in the right direction have supported this. In addition, partnerships have brought in a number of benefits including financial, social and technical.

Cultural, financial and technical capabilities are few of the key gender issues in the EAC region. There is need to invest in and promote education, outreach and awareness-raising activities to change cultural norms, behaviours, structures and practices that can lead to equitable energy access. For women to be powerful agents of change, it is essential to ensure their participation in energy decision-making processes and policy development as well as throughout the energy value chain. “When key decisions are made including project compensations, women are left out hence disadvantaged,” Mr. Michael Ahimbisibwe, the Executive Director, EACREEE said. Ms. Linda Davis, Director of Partnerships at wPOWER Hub, said that we should be concerned with promoting the central role that women must play in clean energy entrepreneurship and in addressing climate change. “It is critical that women have to be involved in very critical points of value chain. Gender equality is about equality,” said Linda Davis from wPower.

Access to adequate education and training opportunities is critical to enable women to develop their skills and to seize opportunities in the sector. Ms. Monica Maduekwe the Program Coordinator at ECREEE said that the challenges of lack of capacity in implementation of gender is a problem. “Most important questions in Africa still lay on the fact that little has been done on the need for women in entrepreneurship, policy, e.t.c,” she noted. She said that ECREEE identified focal persons in energy ministries to closely work with them. The outcomes of this effort were; gain in



Panel session on gender mainstreaming

“Africa needs to know that traditions we are holding on need to be dropped. This happened in Europe and Asia. Men and women are supposed to support and respect each other. Women need to be involved in every step of the development agenda.”

Mr. Mahama Kappiah, ECREEE

technology capacity, improved financial access for women in energy in entrepreneurship, improved knowledge for women in running energy businesses. She emphasized that gender programs should aim at having both men and women to access beneficial energy.

Mr. Samuel Nshuti Rugerinyange the Program Associate and Sector Lead for Water Sanitation and Hygiene at the UNHCR noted that women in the refugee setting bear the biggest burden in cooking energy provision. “In refugee settings, firewood is the main cooking fuel,” he said adding, “Refugees face health issues during cooking, women face gender based violence as they go looking for firewood.” He identified lack of information as one of the challenges refugees face adding that the private sector is working with UNHCR to provide some unique solutions.

Enhanced participation of women in the energy sector can contribute significantly to the adoption of less-polluting fuels and technologies and achieve energy savings. Ms. Generose Minani the Principal Gender and Community Development Officer at the EAC said that EAC supports gender policy mainstreaming and called for the adoption of gender mainstreaming guidelines in energy planning strategies; further calling for the need to consider gender issues at every stage of the energy project cycle from identification to evaluation.

LISTENING FROM THE AUDIENCE ON GENDER AND ENERGY

1. Top gender and energy concerns in the EAC region

- a) Participants from Rwanda identified cooking energy as one of the most critical issues affecting citizens and questioned how men and women can be involved in addressing this.
- b) In Kenya it was highlighted that the low number of women involved at a higher level in policy making and business, managers, producers of technology, etc. need to be looked into and addressed accordingly.
- c) In the EAC region, it was noted that the patriarchal nature of society gives men an upper hand in controlling family resources including finances and often times this leaves women without any disposal income.
- d) Still from the EAC region, there was a call for mindset change on issues of energy and gender.
- e) There was concern raised about rampant bush burning in the EAC region, which in some cases leads to death. There was a suggestion that bushes be used for fuel instead of open burning which leads to loss of value.
- f) Finally, there was a call for men and women to be involved in planning for successful projects

2. Lessons and experiences from the region on gender inclusion in the energy sector

Ms. Meseret Teklemariam Zemedkun, the Program Manager, UNEP and ARGeo said that the Africa Women Energy Entrepreneurs Framework. (AWEEF) focuses on ensuring gender inclusive policies and decision making as well as enhancing the capacity of women.

Eng. Isaac Kiva, Director, Ministry of Energy and Petroleum, Kenya said that the following are in progress;

- Reviews to include gender in the policy.
- Policy checks and monitoring
- Policy implementation measures
- With the Kenya Private Sector Alliance (KEPSA), they are organizing a specific forum to discuss women and energy.
- Awarding women champions
- Training program for women with G12 to train on solar PV.

Hari -In Ethiopia

- Micro distillery has been set up in Addis Ababa for biofuel generation. Through this project, their organization is helping women refugees to start business to buy and distribute fuel.

Monica Maduekiwe – ECREEE said that

- Political goodwill is important with a proper and equitable intervention put in place.
- It is important to concentrate on sustainable projects that offer energy for productive uses for women.

3. Moving from commitments to actions on gender and energy in the EAC

- There are initiatives to support women groups, people with disabilities, special groups. Special programs like initiatives in working with fishing communities to do fish smoking.
- Many things are done through governments and for this reason governments need to be honest and develop a tracking mechanism to evaluate progress.

4. Proposed support EACREEE can offer on gender program that builds on existing EAC strategies and initiatives

- Need statistical data to be able to give valid solutions.
- Build partnerships with development partners to tap into external resources.
- Support to develop policies and action plan for refugees in EAC.
- Involve gender experts for all partner states.
- Read all gender documents and involve partner states and other stakeholders.
- Look at the strategic environmental areas and gender.
- As a strategic arm of governments, help partners in implementation of the projects and put strategies well in budget and action plan.
- Develop gender responsive accountability.
- Capacity building issues.

SUSTAINABLE CITY DEVELOPMENT IN EAST AFRICA: OPPORTUNITIES AND CHALLENGES IN EAST AFRICAN CITIES

Urban issues keep arising in many agendas focusing on energy and sustainable development. It is well known that most of the resources are consumed where the majority of people live. Most of the EAC urban areas struggle with enormous growth rates and immigration. Inequity and segregation seem to be a common challenge in all East African Cities. The EAC urbanization is among the fastest in the world. The growing urban areas majorly characterized by daunting social, economic and environmental challenges that have increased in scope in recent years. At the same time, cities and other built environments provide exciting opportunities for growth and revitalization. The interplay of these challenges and opportunities create important tasks for policymakers and researchers.

Urbanization in Africa is growing very fast, though taking place without proper focus on transport, energy, planning, industrialization, population growth, housing, e.t.c. Mr. Vincent Kitio, the Chief Urban Energy Unit at the UN Habitat said that energy is key for urbanization to support construction, offer services, planning, transport, e.t.c. He noted that the six key intervention areas for sustainable cities are; (1) proper urban planning, (2) proper building design for energy efficiency and conservation; buildings consume more than 56% of energy in Africa, (3) proper urban mobility planning and design to enable ease in transportation, connection, as well as affordable and reliable transport, (4) clean energy generation in cities, (5) waste management and energy from waste recovery, and, (6) efficient resource use. “Urbanization requires proper space alteration, plan for social mix, connectivity, and avoid zoning,” he said adding, “Strategies work well with policies and proper building codes and tools in place that are environmentally friendly.”

“People migrate to cities from rural areas although rural populations are healthier than those in cities due to reduced prices,” Mr. Naveen Kumar Agarwal, the Director and additional Mission Director of Swachh Bharat Mission in the Ministry of Housing and Urban Affairs in the Government of India noted adding, “Proper planning should be done to ensure that cities can produce energy from wastes and other sources include solar, wind, power. Urbanization is also coming up in rural areas made for agricultural purpose. As this happens, proper policy needs to be put in place and enforced. “Urban planning policy should be done in a way that even workers are accommodated to avoid challenges of commuting, curb insecurity and slum emergence,” Mr. Vincent Kitio noted. He emphasized the fact that there is opportunity to develop projects that can address the urban cities. “Proper players therefore have to



Panel session on Sustainable Cities Development

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Mr. Naveen Kumar Agarwal, Swachh Bharat

come on a round table and engage on how to catalyze the activities,” he added.

The process towards sustainable urban development starts with profound analyses of the past and present culture of the city. It builds on an inclusive and holistic vision, applies integrated planning and transparent governance, and monitors implementation rigorously. Mr. Tareq Emtairah, the Director from the Department of Energy at UNIDO said that industrial development and urban development has to be looked at in an integrated way. “Cities that go through rapid population development have need for infrastructure and therefore low carbon infrastructure are important issues to enable competitive base,” he noted adding that cities should be hubs for innovations, where clean technologies emerge.

Ms. Dima Reda, President and founder of Nataij Consulting said that we need to; identify specific sectors/sub-sectors to focus additional research particularly in relation to a project concept; identify areas where enabling environment can be created; integrate sustainable cities into long term development; clarify land rights; develop national infrastructure investment strategies; build public sector capacity; do proper structural transformation; and, mobilize financing/finance.

Modern urban challenges and planning needs political commitment that can help mobilize funds. In addition, development of local action plan needs to reflect clarity on the outputs. Mr. Yves Sangwa, Executive Director, Rwanda Green Building Organization said that they are working to put together all people in architectural and urbanization industry. He

appreciated the fact that different actors are putting together measures to build green buildings in Kigali. “Buildings should be given permits to operate if they meet certain energy requirements; gold, silver and bronze marks,” Mr Yves Sangwa said. He added that capacity building in green building and permitting in Kigali is in the pipeline.

Mr. Steve Kukoda, the Executive Director at the International Copper Association noted that they work with UN united for efficiency and focus on high efficiency lighting and appliances like refrigerators. “About 5% of global electricity is lost due to inefficiencies in transmission and therefore national governments should take action to develop standards and codes that can help improve this,” he said.

Ms. Monica Gullberg, Energy Policy Expert, Sida emphasized that efficiency should come first because it is cheaper and more effective. She said that electricity use in the EAC is increasing very quickly with most application going on lighting, appliances and equipment. In the EAC region, policy measures in energy efficiency needs to focus on: information, specification and conditions on quality, government provisions, and economic incentives. She noted that as donors, SIDA works to subsidize cost in lighting appliances and equipment that are energy efficient. “New areas emerging that require intervention are in urbanization, industrial and agricultural systems, and therefore proper lighting should start from building design,” she said.

One of the main determinants to sustainable urban design lies with local culture and general people perception. “There is greater need to work on changing mentality of many urban dwellers on many aspects, transport being one of them,” Mr. Lénaïc Georgelin, the Team Leader EU to Rwanda noted. He said that it is important to design and develop comfortable, secure and efficient mass transport. Furthermore, people with disability need to be prioritized in urban city development.

EAST AFRICA’S GEOTHERMAL ENERGY REVOLUTION



Panel session on Geothermal Energy Revolution

Most geothermal development occurs in tectonically active areas on Earth. Exploration reports show that the Eastern Africa Rift Valley has an estimated potential of 20,000MW of the 40,000MW world geothermal. Ms. Meseret Zemedkun the Program Manager of the African Rift Geothermal Development Facility said that the EAC is sitting on a precious resource that needs to be exploited.

Currently, Kenya is by far Africa's geothermal leader, but nations such as Tanzania, Uganda, Rwanda, Djibouti, Eritrea and Comoros have done preliminary exploration and Ethiopia generates about 7 megawatts of geothermal power. “Kenya is a good country to leverage in because of her experience in exploitation of geothermal power,” Ms. Meseret Zemedkun said.

Despite the great potential in the Eastern Africa Rift Valley, Mr. Isaac Kiva the Director in the Ministry of Energy in Kenya said that geothermal is a risky venture. Giving an example of the Kenyan experience, he said, “The first two wells in Kenya could not produce electricity as expected. After a long time, Kenya resumed exploration and was able to generate 45MW by 1982. As of now, 720MW is being generated against potential of 10,000MW.” Mr. Naotsugu Ikeda the Executive Officer and General Manager, Overseas Business Department at West JEC said that geothermal science is far from perfect, although it shares similarity with oil. Surface exploration technologies are not sufficiently bankable until validated by drilling three exploratory wells. “Geothermal potential data is not perfect, it is just a theoretical projection,” he also noted. Geothermal fields are all different depending on the geothermal well condition. Therefore, different approaches need to be employed in risk mitigation, tariffs; application e.t.c. Mr. Sakari Oksanen, the Deputy Director General at IRENA said that despite the huge geothermal potential, a few companies have technological ability for geothermal exploration and exploitation. “Proper awareness and capacity building is key to boost the sector with international networking also playing an important aspect to increase geothermal exploration,” he said.

There was a general agreement that geothermal energy faces challenges of resource risk in drilling as well as initial high cost. Ms. Mayumi Hayashi, Geothermal Energy Advisor, Japan International Cooperation Agency (JICA) said that development of geothermal exploitation programme is based on technical and economic feasibility. “Geothermal can be baseline trade if we can identify the right location to sink the well.” she said. Public intervention on resource sharing can help government use of public resources to attract the private sector. “The public has to lower or remove the risk to invite the private sector in geothermal energy investment,” Ms. Meseret said adding “Government’s commitment to develop a clear legislative policy for private sector needs to come in.”

“The public has to lower or remove the risk to invite the private sector in geothermal energy investment.”

Ms. Meseret Zemedkun, African Rift Geothermal Development Facility

Geothermal can help in economic development since in addition to electricity generation geothermal energy can be used in the agro-industrial process activities. Some of the advantages of geothermal power are that climate change does not affect generation with availability of very high efficiency systems in the market today.

“Geothermal return is between about 10-15 years, which requires a stable economy, although different models of success like in Turkey and Indonesia can be adopted,” Mr. Naotsugu Ikeda said. He added that wellhead generation technology has helped reduce time to start enjoying power hence cutting down on generation cost.

Mr. Isaac Kiva said that JICA, World Bank, AFD, among others have been very important partners who supported geothermal development in Kenya. “Electricity generated from geothermal has stabilized power supply and brought down cost of power in Kenya,” he noted. Together with other partners, Kenya is looking for better ways to manage the power generated. Mr Isaac Kiva said that “The Time of Use Tariff” has been introduced to help encourage production at night in efforts to enhance manufacturing and create more jobs. “Through this tariff, excess energy at night has also been put to use,” he said.

Mr. Sakari Oksanen the Deputy Director General at IRENA emphasized that EACREEE can be a pivotal institution to support development of a geothermal capacity building and awareness.

PARTNERSHIP BUILDING



Discussion on how to Build Partnership

The forum was marked with a number of commitments from governments and other institutions in efforts to ensure everyone has access to sustainable energy by 2030. Leaders expressed their determinations to mobilize resources through a revitalized Global

Partnership for Sustainable Development, based on a spirit of strengthened global solidarity, focused in particular on the needs of the poorest and most vulnerable and with the participation of all stakeholders. H.E. Mr. Christophe Bazivamo emphasized that solidarity is particularly important among the EAC Partner States, which are undergoing integration process. “EAC mission is to widen economic, political and social networks to boost integration,” he said.

Ms. Rachel Kyte, the special representative for UN Secretary general and CEO of SEforAll called upon the international communities to support Sub-Saharan Africa to help transfer good practices from other regions to Africa. “Partnerships are important in enhancing the agenda to attain SDG 7 and also guides our future aspects in attaining the SDGs,” Mr Robert Zeiner, the Director at the Austrian Development Agency (ADA) noted. As EACREEE positions itself as a regional hub for UN Sustainable Energy for All Initiative to engage the leaders, there were more emphasis on strengthening the existing partnerships with UNIDO, ADA, and Sida as it seeks new partners who can assist in the drive to achieve sustainable energy for all.

The forum was marked with a number of commitments to support EACREEE. ADA and UNIDO reiterated their commitment to support full establishment and operations of EACREEE. Mr. Tareq, the director in the department of Energy at UNIDO noted that UNIDO finds it interesting to be associated with the Sustainable Energy Forum for East Africa and called upon development partners to support EAC region through EACREEE. “Sustainable Energy for East Africa brings together all development partners to recognize EACREEE as a main entry point to support EAC to attain her objectives,” said Mr. Tareq. Mr. Robert Zeiner, the Director at ADA noted that partnerships are important in enhancing the agenda to attain the SDG 7. He further said, “ADA and UNIDO have supported EACREEE since establishment and look forward to its full operations.”

The forum also saw commitment from other development partners and institutions. Mr. Sakari, the deputy director at IRENA noted that the regions proposed and working programs are in line with approved IRENA’s program and they seek to strengthen their collaboration with the EAC through EACREEE. Ms. IlkaNeyla, the project officer, SEforAll Africa hub from the African Development Bank (AfDB) noted that there are opportunities to collaborate. “It is important to know that we can work together,” she said. Mr. Hailu Yohannes, the Economic Affairs Officer at UNECA said that it is important to harmonize renewable energy in East Africa. During his speech, he noted that UNECA has committed USD 50,000 to support the harmonization projects in the region. Mr Upendra, the director general at the International Solar Alliance (ISA) noted that it is important to work together to resolve common challenges facing us. He noted that ISA is committed to support of bankable projects and help in building capacity in the region in collaboration with EACREEE.



CALL FOR ACTION

We, the Participants at the First Sustainable Energy Forum for East Africa held in Kigali, Rwanda from the 19th to 21st March 2018:

EXPRESS our profound gratitude to the Government of the Republic of Rwanda for hosting this First Sustainable Energy Forum for East Africa, and sincerely thank all the organizations and persons who were involved in organizing the Forum.

CALL UPON the governments of the EAC Partner States to strengthen individual and collective national commitments toward addressing the special energy and climate resilience needs of the East African region in the context of the Sustainable Development Goals and the Paris Agreement on Climate Change,

RECOGNIZE the need for the EAC Partner States to enhance their cooperation and coordination, to have a greater regional voice in energy-related international forums and participate actively in regional and global decision-making processes aimed at addressing the global challenges facing our region in particular and mankind in general;

CALL UPON the EAC Partner States and Development Partners to strengthen the capacity of EACREEE to be the lead institution in the EAC region in promoting equitable universal access to modern, efficient, reliable, affordable, renewable energy to all households, businesses, industries and institutions in order to stimulate sustainable socio-economic development of the region;

URGE the EAC Partner States, in consultation with private and civil society organizations, to develop and implement a coherent regional renewable energy, energy efficiency and energy access policies, including integrated regional and national energy access strategies, which are aligned to the Sustainable Development Goals and the Paris Agreement, and seize this opportunity and leave no one behind.

CALL UPON the EAC Partner States to put in place an enabling environment to enhance public private partnerships for investments in grid extension, decentralized and distributed generation systems to increase rural electrification, energy efficiency and sustainable and inclusive industrialization.

CALL UPON the EAC Partner States to put in place mechanisms to reward good innovations in renewable energy and energy efficiency

CALL UPON the EAC Partner States, Development Partners, Civil Society Organizations and the Private Sector to promote use of low carbon and clean fuels and technologies for clean cooking, including LPG as a transition fuel.

CALL UPON all development partners to facilitate transfer and adaptation/adoption of innovative technologies to leap frog EAC partner states to achieve SDG goal 7.

CALL UPON all relevant stakeholders to set up a Working Group on Sustainable Energy Financing (WG-SEF) that would provide an ongoing and open platform for exchange of information, best practices and solutions between EAC partner states to strengthen and coordinate pre-investment activities and financing solutions for SE initiatives and projects in the region.

CALL UPON Development Partners to support capacity building of local financial institutions on assessing renewable energy business plans and project risks, and sensitizing potential investors/entrepreneurs on conducting feasibility studies and preparation of bankable project documents.

CALL UPON the EAC Partner States and Development Partners to support gender-inclusive programmes specifically those aimed at empowering women, youth and the disadvantaged in sustainable energy entrepreneurship, productive uses of energy and strengthening their involvement in sustainable energy development leadership and workforce.

CALL UPON the EAC Partner States, Development Partners, Civil Society Organizations and the Private Sector to pursue initiatives such as energy efficiency, solar photovoltaic and thermal systems, waste-to-energy programmes and alternative transportation, geared toward achieving Sustainable Development Goal #11 (Sustainable Cities);

RECOGNIZE the great potentials of geothermal energy resources in the EAC region and **CALL UPON** EAC Partner States, Development Partners and the Private Sector to develop programmes to enhance capacity for exploitation of these resources; and

RESOLVE to establish the Sustainable Energy Forum for East Africa as a high level biennial event, to be hosted in any of the East African cities, with the objective of providing a platform for discussion on practical solutions to energy challenges in the EAC region and reviewing progress made.



SEF EA

Sustainable Energy Forum for East Africa

19-21 March 2018 in Kigali, Rwanda