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RAPPORTEUR'S REPORT FOR 2024 REIAMA NATIONAL ENERGY CONFERENCE

LEVERAGING ENERGY FOR SOCIO-ECONOMIC TRANSFORMATION

September 26 – 27, 2024
BICC, Lilongwe, Malawi

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A. INTRODUCTION

The 2024 National Energy Conference (NEC) was organized from September 26 – 27, 2024 at the Bingu International Convention Centre in Lilongwe, Malawi, bringing together policymakers, international experts, civil society organizations, and private sector players under the theme **Leveraging Energy for Socio-economic Transformation**. This two-day event aimed at addressing Malawi's critical energy challenges, such as energy poverty, renewable energy adoption, energy financing, and socioeconomic development. Malawi's progress toward its 2063 vision for development was also assessed, with special attention on achieving Sustainable Development Goal 7 (affordable and clean energy for all).

The overarching goal was to provide practical, actionable steps for transforming the energy sector, while ensuring inclusivity and alignment with Malawi's national development goals. The conference featured keynote speeches, high-level panel discussions, technical sessions, and breakaway forums that explored challenges, strategies, and innovations in the renewable energy technologies (RET) sector.

In here, key sections and sample text where possible are outlined.

B. CONFERENCE OBJECTIVES

The conference set out to achieve the following objectives:

- ✓ Promote the Productive Use of Energy (PUE)
- ✓ Explore Economic Benefits
- ✓ Identify Financing and Investment Opportunities
- ✓ Strengthen Policy and Regulatory Frameworks
- ✓ Facilitate Knowledge Sharing and Networking
- ✓ Showcase Successful Case Studies
- ✓ Address Barriers to Project Implementation
- ✓ Launch a Roadmap for PUE

C. REMARKS

Opening Remarks: Mr. Brave Mhone, President of REIAMA (Renewable Energy Industries Association of Malawi)

In his opening remarks, Mr. Brave Mhone emphasized the importance of adopting practical solutions to drive energy transformation in Malawi. He identified key drawbacks in the sector, including the lack of cohesion among stakeholders, outdated guidelines for RET, and low consumer confidence in renewable energy products. He urged stakeholders to work collaboratively and adopt transparent practices, particularly in climate financing.

Key takeaways from the opening remarks:

- Cohesion in RET Stakeholders: Without coordinated efforts among industry stakeholders, progress in policy implementation and adoption of RET remains slow. Mr. Mhone called for a more cohesive strategy.
- Outdated Guidelines: The current RET guidelines do not align with Malawi's 2063 vision. Mr. Mhone stressed the need for revisions to keep pace with technological advancements and policy shifts.
- Consumer Trust: Increasing consumer trust in RET products was seen as crucial to the widespread adoption of renewable energy solutions. This would require providing reliable and genuine products that meet consumer needs.
- Job Market: There was also a call to open the job market for graduates trained in renewable energy, ensuring that skills are absorbed into the sector.

Address by the Minister of Climate Action, Scottish Government (Pre-recorded)

In a pre-recorded address, the Minister of Climate Action from the Scottish Government reiterated Scotland's commitment to supporting Malawi in its journey toward renewable energy adoption. The minister discussed successful renewable energy projects in Scotland, such as the Buchanan Community Hydro and Glasgow Community Energy, which have provided clean energy at the community level. Scotland's decentralized energy solutions were presented as a model that could be adapted for Malawi.

Keynote Speech by UNDP

The UNDP representative's keynote speech centered on the issue of energy poverty, which remains a significant challenge in Malawi, with the majority of the population lacking access to safe, affordable renewable energy. UNDP is committed to resource mobilization and providing support for businesses in the renewable energy sector, especially in rural areas. The speech highlighted the importance of community involvement in achieving Malawi's 2063 development vision, stressing that the government must play a leadership role while communities actively participate in energy initiatives.

UNDP also noted that the high cost of renewable energy solutions remains prohibitive for many Malawians. This highlights the need for innovative financing models and government policies that make renewable energy accessible and affordable.

Guest of Honour Remarks: Rt. Hon. Vice President of Malawi, Michael Usi

The Vice President's address at the National Energy Conference emphasized the critical role of energy in driving socioeconomic development, poverty reduction, and achieving the Sustainable Development Goals (SDGs). He acknowledged the many challenges that Malawi faces in the

energy sector, particularly the lack of widespread access to electricity, which continues to impede progress in education, healthcare, and economic activities.

Key Highlights of the Guest of Honour's Remarks:

1. **Commitment to Energy as a Pillar of National Development (Malawi 2063 Vision)**

Vice President Usi reiterated the government's commitment to improving energy access and aligning it with Pillar 2 of the Malawi 2063 Vision, which focuses on agricultural productivity and commercialization, industrialization, and urbanization. He acknowledged that without reliable and affordable energy, Malawi will not achieve the SDGs or the broader goals of economic transformation. He stressed that energy must be treated as a priority if Malawi is to move from surviving to thriving.

2. **The Importance of Energy for Achieving SDGs**

Dr. Usi reminded attendees that energy is central to achieving many of the SDGs, particularly those related to poverty reduction, health, education, and economic growth. He emphasized that without significant improvements in the availability and reliability of energy, especially in rural areas, it would be difficult for Malawi to meet these global targets. The government, he said, is committed to ensuring that all Malawians, regardless of location, have access to affordable and clean energy by 2063.

3. **Challenges in the Energy Sector**

While expressing optimism about the future, the Vice President did not shy away from acknowledging the serious challenges that the energy sector faces. One of the most pressing issues is the lack of access to electricity, with a large percentage of Malawi's population still relying on inefficient and harmful traditional biomass for cooking and heating. He also highlighted that the country's energy infrastructure is underdeveloped, contributing to frequent power outages and limited coverage in rural areas.

4. **Policy Implementation and Social Exclusion**

Dr. Usi criticized the slow implementation of energy policies, which has been a major hindrance to progress. He called for improved coordination and action among government institutions to ensure that existing energy policies are effectively executed. Moreover, he raised concerns about social exclusion, noting that many marginalized groups, particularly women and rural communities, are often left out of energy planning and access. He stressed the need for deliberate policies that include all demographics to ensure equitable access to energy and its benefits.

5. **Renewable Energy Investments**

The Vice President lauded the efforts by private sector players and international development partners, such as UNDP and OXFAM, who are supporting Malawi's renewable energy projects. He mentioned the government's support for projects like the 60 MW JCM Solar Plant in Salima and other upcoming renewable energy projects. Dr. Usi also **stressed the need for more partnerships between the government, private sector, and international organizations to increase energy generation and distribution.**

6. **Review of the National Energy Policy**

A key takeaway from the Vice President's remarks was the government's intent to review and update the National Energy Policy (NEP) to address the current needs and challenges in the energy sector. The updated policy will reflect the advancements in renewable energy technologies and seek to harmonize energy plans with the country's development agenda. This review is seen as essential for accelerating Malawi's transition to renewable energy and achieving greater energy access for all citizens.

7. **Actionable Outcomes**

In conclusion, the Vice President called for actionable outcomes from the conference. He urged all stakeholders - government agencies, private sector, development partners, and civil society - to work together to implement the recommendations from the conference. Dr. Usi expressed his hope that the discussions would not merely remain theoretical but lead to concrete, measurable actions that would transform Malawi's energy landscape. He stressed that collaboration, inclusivity, and a results-driven approach are essential to overcoming Malawi's energy challenges.

D. PRESENTATIONS

1. **Energy Sector Overview and Challenges**

Presenter: Engineer Chikuni, Ministry of Energy (MoE)

Engineer Chikuni provided an in-depth analysis of Malawi's energy sector, stating that the national grid supplies 506 MW, with 94% coming from renewable sources (hydropower). Despite this, only a small fraction of the population, approximately 11.3%, has access to grid electricity, and 14% of the population relies on off-grid solutions, particularly solar energy. The low energy access rate is a major concern as it limits socioeconomic development, especially in rural areas.

Key areas discussed included:

- ✓ Role of Solar Energy: Solar energy was presented as the most effective off-grid solution for increasing energy access in rural areas. The government aims to achieve a 50-50 split between on-grid and off-grid energy sources.
- ✓ Biomass for Clean Cooking: The promotion of biomass as an alternative to firewood was highlighted as an important strategy to reduce deforestation. Clean cooking solutions such as biomass stoves were presented as a means to reduce indoor air pollution, deforestation, and reliance on firewood.

Engineer Chikuni emphasized the need for continued investment in renewable energy and stressed that energy should be viewed not only as a utility but as a catalyst for socioeconomic transformation.

2. Role of Energy in Socioeconomic Transformation

Presenter: Damian Frames, Scottish Global Renewables Centre

This presentation explored how renewable energy (RE) can drive socioeconomic transformation through community-driven initiatives. Damian Frames provided examples from Scotland, such as the Buchanan Community Hydro and Glasgow Community Energy, which have successfully generated clean energy while creating economic opportunities for local communities.

Key Projects Presented:

- Buchanan Community Hydro (100 kW run-of-river): Fully operational since July 2022, this project has been a model for sustainable energy production.
- Mull and Iona Community Hydro (400 kW): A community initiative that successfully harnessed hydroelectric power.
- Glasgow Community Energy: Solar PV installations in secondary schools have saved nearly 50 tonnes of CO_2 annually, demonstrating the significant environmental benefits of renewable energy.

The presentation emphasized the importance of decentralizing energy solutions, particularly in rural Malawi, and promoting productive uses of energy (PUE) such as in agriculture and small-scale industries. The role of GESI (Gender Equality and Social Inclusion) in energy was also discussed, with a focus on involving women in energy-related decision-making and business ventures.

3. Policy and Regulatory Framework

Presenter: Dr. Masanjala

Dr. Masanjala provided an overview of Malawi's energy sector reforms, which began in 1998 with the privatization of the electricity sector. Despite these reforms, Malawi still has the lowest access to grid electricity in the region. The presentation highlighted the evolution of Malawi's energy policy, including the 2018 National Energy Policy (NEP), which remains a key document guiding energy sector reforms.

Challenges Identified:

- Outdated Policies: Many of Malawi's energy policies are outdated and do not address current energy needs. MAREP was criticized for focusing too much on electrifying trading centers rather than rural households.
- Political Will: Successful implementation of energy reforms requires strong political will. The presentation noted that political ambivalence has resulted in a regulatory vacuum, with key legislation, such as the Renewable Energy Act, still pending.

Key Recommendations:

- Transform MAREP into a National Electrification Fund that can co-finance decentralized renewable energy systems in rural areas.
- Fast-track the passage of the Renewable Energy Act to provide a more robust regulatory framework for renewable energy development.

4. Prospects and Constraints of Productive Use of Energy (PUE)

Presenter: Hope Chamdimba, Malawi University of Science and Technology

The session on Productive Use of Energy (PUE) examined how renewable energy can be integrated into small-scale industries, particularly in rural areas. Although there are many opportunities for PUE, particularly in agriculture, challenges such as limited financing and low adoption rates were identified. The session concluded that **more needs to be done to create an enabling policy and regulatory environment for PUE to thrive**.

E. PANEL DISCUSSIONS

1. High-Level Panel Discussion: Status, Progress, and Challenges in the Energy Sector

This panel discussion addressed the current state of energy access in Malawi, the progress made in recent years, and the challenges that remain. The panel highlighted the following key points:

- Energy Access: Although progress has been made in increasing energy access, particularly through off-grid solutions, Malawi still lags behind in terms of universal energy access.

The Ministry confirmed that policy reforms are underway, including the review of the outdated National Energy Policy (2018).

- Financing: Financing remains a major hurdle for Malawi's energy sector, particularly in the implementation of the Malawi Rural Electrification Programme (MAREP). Vandalism of energy equipment was also cited as a recurring challenge.
- GESI: Gender equality and social inclusion (GESI) were discussed as critical components of Malawi's energy strategy. The panel agreed that empowering women in energy-related businesses and decision-making processes would help build a more inclusive energy sector.

2. Translating Policy Frameworks into SMART Action

The panel discussion focused on how to translate Malawi's policy frameworks into tangible, actionable strategies. Several recommendations were made:

- Decentralization: More effort is needed to decentralize energy solutions, particularly in off-grid areas.
- Partnerships: The panel stressed the importance of partnerships between government, private sector, and international organizations to mobilize resources and drive implementation.
- Support for SMEs: Small and medium enterprises (SMEs) should be supported in adopting renewable energy solutions, as they play a critical role in the country's economy.

3. New and Innovative Models for Reaching Energy Access

The panel discussed innovative strategies for improving energy access, emphasizing the following points:

- Competitive Market Entry: Participants noted the need for companies to not only enter the energy market but also to remain competitive.
- Third Phase of the GTF: Discussion included plans for scaling up the Green Transformation Fund (GTF) to support wider access to energy resources.
- Off-Grid Funds: The need for accessible off-grid funds for companies to facilitate investment and project development was emphasized.
- Breaking Affordability Barriers: Strategies to overcome financial barriers and ensure affordability of renewable energy solutions for all Malawians were discussed.
- Changing the Status Quo: Panelists stressed the need to change existing frameworks to enable and enhance universal energy access, encouraging innovative approaches.
- Tangible and Deliverable Actions: A strong call for actionable steps was made to ensure that discussions lead to real outcomes and improved energy access for communities.

- Future Conference Building: The next conference should build on the successes and lessons learned from the 2024 event, ensuring continuity in the dialogue on energy access.

F. BREAKOUT SESSIONS

1. Advancements in Renewable Energy (RE)

a. Focus: Barriers and Opportunities for Deploying Battery-Electrolysers in Malawi

This session explored the integration of battery-electrolysers in Malawi's renewable energy landscape. Participants identified **key barriers to deployment**, including:

- High Initial Costs: The upfront investment required for battery-electrolyser technology remains a significant barrier for many stakeholders.
- Lack of Awareness and Technical Knowledge: There is a need for greater awareness and understanding of the technology among potential users, including businesses and communities.
- Regulatory Challenges: Existing regulations may not support the rapid adoption of new technologies, leading to delays in project implementation.

Opportunities discussed:

- Partnerships with International Developers: Collaborating with foreign companies experienced in battery technology could facilitate knowledge transfer and reduce costs.
- Government Incentives: Advocating for government subsidies or incentives could encourage local businesses to invest in battery-electrolyser systems.
- Pilot Projects: Implementing pilot projects can demonstrate the technology's feasibility and attract further investment.

b. Focus: Modular Energy Storage with Clean Hydrogen (MESCH)

The Modular Energy Storage with Clean Hydrogen (MESCH) project is an innovative solution aimed at addressing the energy access challenges in Sub-Saharan Africa. The region continues to struggle with low energy access, with approximately 80% of the population lacking reliable electricity. In Malawi specifically, only 25.9% of the population has access to electricity. This significant gap underscores the need for scalable, sustainable solutions to meet growing energy demands.

The MESCH project proposes the use of solar power integrated with clean hydrogen storage to provide reliable and continuous electricity to underserved communities. By buffering energy

supply with hydrogen, MESCH has the potential to deliver 24-hour electricity, thereby addressing the intermittency challenges typically associated with solar power.

Benefits of MESCH

The primary benefit of the MESCH project is the provision of consistent, reliable energy through the integration of solar power and clean hydrogen storage. This system offers:

- Electricity Buffering: MESCH provides a reliable backup, ensuring continuous energy supply even when solar energy production fluctuates, such as during the night or cloudy weather.
- Sustainable Energy Access: Clean hydrogen serves as a storage medium, reducing dependence on non-renewable energy sources and decreasing carbon emissions.
- Scalability: The modular nature of MESCH allows for flexibility in deployment across both small and large communities, making it a versatile solution for rural and urban areas alike.

Barriers to Implementation

Despite its potential, the MESCH project faces several challenges that must be addressed for successful implementation:

- High Cost of Hydrogen Gas: The production and storage of hydrogen gas remains expensive, which poses a significant financial barrier, especially in low-income regions like Malawi.
- Lack of Regulatory Framework: There are currently no policies in Malawi governing the use of clean hydrogen gas. This regulatory gap hinders large-scale adoption and investment in hydrogen storage technology.
- Limited Infrastructure: The infrastructure required to support hydrogen storage and transportation is underdeveloped, making it difficult to scale MESCH technology across the country.

Recommendations

To overcome these challenges, the following steps are recommended:

- Policy Development: The Malawian government, in collaboration with regional bodies, should prioritize the formulation of policy framework for clean hydrogen gas. This would include safety standards, storage guidelines, and incentives for clean energy projects.
- Subsidies and Financial Support: To reduce the cost of hydrogen gas production, governments and international donors could provide subsidies or financial incentives to make clean hydrogen more affordable.

- Public-Private Partnerships: Building partnerships between the public and private sectors could help mobilize the resources needed to develop the necessary infrastructure for hydrogen storage and distribution.
- Research and Development: Continued research into cost-effective hydrogen production methods, such as using locally available materials, could drive down prices and make the technology more accessible.

2. Exploring Productive Use of Energy (PUE) Applications

Focus: Income Generation, Job Creation, and Service Delivery

This session focused on how renewable energy can be utilized for productive purposes that generate income and create jobs. Key points included:

- Agricultural Applications: Renewable energy can support irrigation systems, cold storage for perishable goods, and processing facilities, leading to increased agricultural productivity.
- Small and Medium Enterprises (SMEs): Empowering SMEs through energy access can create jobs and stimulate local economies, particularly in rural areas.
- Social Services: Energy access in health clinics and schools can improve service delivery, enhancing education and health outcomes.

Participants discussed case studies showcasing successful PUE applications and the importance of community involvement in these initiatives as evidenced from BNG Contractors and DIFF.

3. The Role of Digital Innovations and Artificial Intelligence in the Energy Sector

This session highlighted various technological advancements and their applications in the energy sector:

3.1. Grid-Forming Inverters in Malawi's RE Sector:

- Participants discussed how grid-forming inverters can stabilize the power grid and allow for a higher penetration of renewable energy sources.
- Technical challenges, such as integrating these systems into existing infrastructure, were explored.

3.2. High-Resolution Geospatial and Socio-Economic Modelling:

This topic addressed how high-resolution geospatial data can be utilized to assess the impact of new electric loads on the distribution network infrastructure.

- Participants emphasized the need for data-driven decision-making to optimize energy distribution.

3.3. Power Network Development Methodology: LV Distribution Networks:

The session explored methodologies for developing low-voltage (LV) distribution networks while overcoming data gaps related to new electric loads.

- Innovative solutions for data collection and analysis were discussed to ensure effective network planning.

4. Feasible Renewable Energy Panel Discussion

This panel brought together experts to discuss feasible renewable energy solutions tailored to Malawi's unique context. Key themes included:

- Solar Energy as a Primary Solution: Solar power was identified as the most viable option due to its abundant availability.
- Hybrid Systems: The potential for hybrid systems combining solar, wind, and biomass was discussed to ensure a reliable energy supply.
- Financing Models: Innovative financing models, including pay-as-you-go systems, were proposed to enhance accessibility for low-income households.

5. How to Grow Your Energy Business.

Focus: Strategies for Scaling Up Renewable Energy Businesses

This session provided practical strategies for entrepreneurs looking to grow their energy businesses:

- Building Partnerships: Collaborating with other businesses and stakeholders can enhance credibility and expand market reach.
- Market Research: Understanding local energy needs and preferences can help tailor offerings and improve customer satisfaction.
- Access to Finance: Participants discussed options for accessing grants, loans, and investment to support business expansion.

6. Climate Change and Carbon Credits Market for Developers

This session focused on the opportunities presented by the carbon credits market for renewable energy developers:

- Understanding Carbon Credits: Participants were educated on how carbon credits work and how developers can participate in the market.
- Regulatory Frameworks: The importance of establishing clear regulatory frameworks to support carbon credit trading in Malawi was emphasized.

- Potential Revenue Streams: Developers were encouraged to consider carbon credits as a potential revenue stream, enhancing project viability.

7. Fostering Community Ownership of Energy Projects

This session explored the importance of community engagement and ownership in energy projects:

- Community-Led Initiatives: Successful case studies of community-led renewable energy projects were shared, highlighting the benefits of local ownership.
- Capacity Building: The need for capacity-building initiatives to empower communities in project development and management was stressed.
- Sustainable Impact: Participants discussed how community ownership can lead to more sustainable energy solutions, as local stakeholders are more invested in the success of projects.

8. Missing Links in Applications for Donor Funding Windows

Focus: Addressing Gaps in Accessing Funding

This session focused on identifying and addressing the gaps that hinder successful applications for donor funding:

- Lack of Technical Expertise: Many applicants struggle with the technical aspects of project proposals, which can lead to unsuccessful applications.
- Insufficient Data: Participants discussed the importance of robust data collection and reporting to support funding applications.
- Networking and Collaboration: Building relationships with potential funders and other stakeholders can enhance the chances of securing funding.

G. RECOMMENDATIONS

1. Strengthening Partnerships

- ✓ Public-Private Partnerships (PPPs): Foster collaboration between government entities, private sector players, and non-governmental organizations to leverage resources and expertise. Establishing clear roles and responsibilities within these partnerships can enhance project execution and ensure accountability.
- ✓ International Collaboration: Engage with international development agencies and organizations to facilitate knowledge transfer and access to innovative technologies that can enhance Malawi's energy sector.

2. **Policy and Regulatory Frameworks**

- ✓ Streamline Regulatory Processes: Simplify and expedite the approval processes for renewable energy projects to encourage investment. A clear and efficient regulatory framework will reduce the time and cost of project implementation.
- ✓ Establish Feed-in Tariffs: Introduce feed-in tariffs that guarantee fixed payments for renewable energy producers, thereby providing long-term financial certainty and encouraging investments in solar, wind, and biomass projects.

3. **Access to Finance**

- ✓ Create Off-Grid Financing Mechanisms: Develop dedicated funds to support off-grid renewable energy projects, particularly for companies targeting underserved communities. This can help overcome financial barriers and encourage innovation in energy access solutions.
- ✓ Support for Startups: Facilitate access to funding for startups in the energy sector through grants, low-interest loans, or equity financing. This support can help new companies scale their operations and contribute to job creation.

4. **Capacity Building and Training**

- ✓ Workforce Development Programs: Invest in training programs to equip the workforce with the necessary skills to support the renewable energy sector. Collaborate with technical schools and universities to develop curriculum aligned with industry needs.
- ✓ Community Engagement and Empowerment: Conduct workshops and training sessions in communities to build capacity for project management and maintenance of renewable energy systems. This can lead to greater community ownership and sustainability of energy projects.

5. **Advancements in Technology**

- ✓ Promote Research and Development (R&D): Encourage investment in R&D for innovative renewable energy technologies suited to Malawi's specific context. Establish partnerships with universities and research institutions to foster innovation.
- ✓ Leverage Digital Innovations: Utilize digital tools and artificial intelligence to improve energy management systems, optimize grid performance, and enhance data collection for informed decision-making.

6. **Environmental and Social Considerations**

- ✓ Integrate Environmental Sustainability: Ensure that all renewable energy projects comply with environmental sustainability standards. Conduct environmental impact assessments (EIAs) to mitigate adverse effects on local ecosystems.

- ✓ Address Social Equity: Prioritize projects that benefit marginalized communities and ensure equitable access to energy services. Engage local stakeholders in decision-making processes to ensure that their needs and concerns are addressed.

7. Advocacy for Renewable Energy

- ✓ Promote Awareness Campaigns: Launch awareness campaigns to educate the public on the benefits of renewable energy, energy conservation, and the importance of climate action. Mobilize communities to engage in advocacy efforts for policies that support sustainable energy solutions.
- ✓ Support for Youth Initiatives: Encourage youth participation in renewable energy projects and advocacy initiatives. Provide platforms for young leaders to share their perspectives and innovative ideas for energy access and sustainability.

H. CONCLUSION

The next National Energy Conference will build on the outcomes of the 2024 event, focusing on accelerating implementation and delivering measurable results in the energy sector. Stakeholders were urged to take the insights and recommendations from the conference seriously, ensuring a sustainable and inclusive energy future for Malawi.

REIAMA
Renewable Energy Industries Association of Malawi