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**THE FIRST ORDINARY SESSION OF THE
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COMMITTEE ON TRANSPORT,
INTERCONTINENTAL AND INTERREGIONAL
INFRASTRUCTURES, ENERGY AND TOURISM
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AUC BIOENERGY PRO-GRAMME DEVELOPMENT IN AFRICA (2010-2016)



African Union
a United and Strong Africa



United Nations
Economic Commission for Africa



NEPAD Planning and Coordinating Agency
Agence de Planification et de Coordination du NEPAD

AUC BIOENERGY PROGRAMME DEVELOPMENT IN AFRICA (2010-2016)

Partnership Programme with UN ECA and NPCA



2 Regional Overview

Bioenergy plays a significant role in the African energy sector and will continue to be a dominant source of fuel in the medium to long-term. A viable option for Africa is to develop strategies and markets for sustainable utilization of biomass resources. Currently, more than 600 million people in Africa still depend on traditional biomass as a primary source of energy. This overdependence contributes to deforestation and is, in part, responsible for widespread respiratory diseases. Indoor air pollution from traditional biomass fuels kills more people than malaria – about 2 million people per year. About 3.4 million hectares of African forests are deforested annually, with severe negative impacts on biodiversity and the ecosystems, as well as emitting GHGs, contributing to climate change. Women and children are often at the receiving end of the fuel shortage as they need energy for multiple tasks – cooking, lighting and heating – and often have to resort to using traditional biomass which tends to take its toll on their health. In addition, the opportunity costs associated with spending long hours in search of woodfuel can be used for other productive activities. Biomass as a renewable energy resource provides huge opportunities to transition towards sustainable and modern energy systems on the continent. Developing the bioenergy sector in Africa provides huge opportunities for economic, environmental and social transformation. The biomass value chain could contribute towards enhancing food security, modern energy access, rural development and transformation, jobs creation, women empowerment, market and income opportunities as well as improvements in health, amongst others

3 Bioenergy Development in Africa Programme

In 2010, the African Union Commission (AUC) established a programme on "Bioenergy Development in Africa", in order to address a range of issues that are hampering the development of a sustainable, more efficient and modern bioenergy systems and markets in Africa. This programme was actively supported by the UN Economic Commission for Africa (ECA) and NEPAD Policy and Coordinating Agency (NPCA). Through the programme, there are number of activities and programmes undertaken to promote the development of bioenergy on the continent.

4 Implementation of the Africa Bioenergy Programme

Since the inception of the "**Bioenergy Development in Africa programme**", there has been a number of activities carried out and these are aimed at promoting and unlocking modern bioenergy markets in Africa. The exempted accomplishments or impacts of these initiatives are as follows:

- i. Increased number of African countries are aware of the positive role that modern bioenergy play in increasing access to affordable, efficiency and modern energy sources,
- ii. Modern bioenergy plays a contributing role to country's economic growth through employment opportunities and local manufacturing.
- iii. An increasing number of African countries are adopting innovative policies, actions and measures to promote the use of bioenergy in the way that it does not compromise food security and water supply.
- iv. Local (African) project developers participate in bioenergy project development, along the value chains, and their capacities to develop and package project for bankability is enhanced.
- v. Integration of bioenergy planning to the overall energy planning in general and renewable energy initiatives in particular

Table 1: Chronology of supporting modern bioenergy development in Africa (2010-2016)
 (*All the outputs described will be displayed in AUC website)

Period	Studies (publications) and supporting Initiatives	Outcome/Outputs
2010	<i>Sustainable Development of Bioenergy in Africa: Opportunities, Challenges, Potential Impacts and Policy Options for Poverty Reduction and Climate Change</i>	<ul style="list-style-type: none"> ○ Harmonised and appropriate policies and frameworks to link bioenergy development with development plans ○ Benefits of developing a sustainable bioenergy market; ○ Strategies to access modern and efficient bioenergy technologies; ○ Platforms to share best practices and experiences; ○ Addressing the energy-water-agriculture nexus; ○ Finance mobilising and private sector participation.
2011	<i>Biofuels Development in Africa: Technology Options and Related Policy and Regulatory Issues</i>	<ul style="list-style-type: none"> ○ Prospects and opportunities for sustainable biofuels industry; ○ Appropriate feedstock and technology options for biofuels industry; ○ Economics of improving electricity access through biofuels industry; and ○ Policies and regulations to create enabling environment for biofuels industry
2012	<i>African Bioenergy Framework and Policy Guidelines</i>	<ul style="list-style-type: none"> ○ Consensus on shared framework to inspire and provide guidance to countries and regions in developing bioenergy policies and regulations; ○ Awareness about need for environmentally friendly and socially acceptable bioenergy development policies.
	<i>Validation Process and Political Process</i>	<ul style="list-style-type: none"> ○ Validation of the African Bioenergy Framework & Policy Guidelines (Addis Ababa) ○ Endorsement of Bioenergy development resolution adopted at the Conference of Energy Ministers of Africa (Addis Ababa)
2013	<i>Adoption of the Bioenergy Resolution by AU Assembly</i>	<ul style="list-style-type: none"> ○ Consensus on the implementation of the Bioenergy Policy Framework and Guidelines with a view to promote the sustainable development of bioenergy ○ AUC to support member countries in developing clean cooking mechanisms ○ AUC & NPCA to prepare a plan to mobilise necessary financial and technical resources for the implementation of Bioenergy Policy Framework and Guidelines ○ Sovereign rights of member states to establish sustainability criteria to ensure sustainable development of bioenergy within their territories. ○ Commitment to support the development, operation and expansion of economically viable, socially acceptable and environmentally friendly bioenergy. ○ Alignment of implementation and monitoring of the bioenergy policy framework within the PIDA

Period	Studies (publications) and supporting Initiatives	Outcome/Outputs
2013	<i>Mainstreaming Bioenergy Framework in African policies, plans and action</i>	<ul style="list-style-type: none"> ○ Create country's ownership (thought institutionalisation) of the Bioenergy Framework and Policy Guidelines, and support for countries to harmonise their policies, actions and plans ○ Build capacity on various modern bioenergy technologies and associated conversion platforms ○ Assessment of bioenergy using BEFS Toolto make better and informed choices about policy directions, as well as training in assessment tools ○ Ensure the recognition of women as energy manager and ensure their participation in the bioenergy value chain ○ Support countries to better their bioenergy policies, standards and processes to ensure sustainability and taking into account cross-sectoral linkages
2014	<i>Mainstreaming gender issues into the Africa Bioenergy Policy Framework and guidelines</i>	<p><i>Validated at a Workshop in Kigali, Rwanda, in December, 2014:</i></p> <ul style="list-style-type: none"> ○ Recognition of role of women as energy managers ○ Importance of engendered aggregated needs assessment ○ Identification of roles of women along the value chain ○ Application of gender lens to bioenergy development ○ Ensuring gender equity as part of the policy objectives in bioenergy development
2015	<i>Implementing Biofuels Programme for Transport and Households: Lessons on Regulatory Reforms for Adoption of Biofuels in Selected Countries</i>	<p><i>Case studies in Ethiopia, Kenya, Rwanda, Mauritius, South Africa, Burkina Faso & Cameroon on</i></p> <ol style="list-style-type: none"> Overview of countries' energy supply options and energy demand patterns Policy and regulatory instruments Biofuels industries and markets Economic benefits of the biofuel industry Financing and investment options Private sector participation Manufacturing potential
	<i>Regional Capacity Building Workshop on Biofuels Development for Transport and Household Sectors</i>	<p><i>Workshops held in Swaziland, Tanzania and Ghana</i></p> <ul style="list-style-type: none"> ○ Assisting countries in creating enabling environment for biofuels especially supporting policies and regulation ○ Empowerment of small-scale and strengthen their role in the biofuels value chain (for feedstock) ○ The role of integrated national systems of innovation in supporting new approaches & technologies ○ Expanding the markets for biofuels to ensure local private sector participation and finance ○ Local manufacturing through localisation of cooking technologies ○ Innovative ways of creating awareness on biofuels and programmes

Period	Studies (publications) and supporting Initiatives	Outcome/Outputs
2015	<i>Regional Training Workshops on Biofuels Development for Transport and Household Sectors</i>	<p><i>Training held in Mauritius, Egypt and Senegal with the ff. learning outcomes:</i></p> <ul style="list-style-type: none"> ○ Identify linkages of liquid biofuel industry to other sectors of national economy and desired infrastructure and investment environment; ○ Explain the basic principles of biofuel development strategy, implementation and roles of various entities ○ Establish how to assess and integrate sustainability criteria and certification systems into biofuels programs ○ Explain biofuel contract negotiation process, i.e. steps involved in the various stages of contract negotiation (including pre-contract, contract and post contract stages) ○ Apply the skills and understanding to lead the development of national system of innovation on biofuels ○ Draft business model, investment profile and business plan for biofuel development
2016	<i>Bioenergy Projects Development and Packaging</i>	<p><i>All-stakeholder workshop was held in Addis Ababa, Ethiopia to achieve the ff.</i></p> <ul style="list-style-type: none"> ○ Enhance capacity of African Member States to develop bankable bioenergy projects; ○ Provide a platform for African bioenergy project developers to interact with project financiers; and ○ Exchange information and best practices related to bioenergy businesses
	<i>Senior Policy Maker's Dialogue on the Implementation of the Bioenergy Programme in Africa</i>	<p><i>A review the implementation of the bioenergy policy framework and guidelines and provide recommendations on the way forward:</i></p> <ul style="list-style-type: none"> ○ Create a framework for data availability and quality; ○ Creating a finance and risk mitigation facility to assist private and public sector project developers; ○ Establish linkages with improved cookstoves programmes.

5 Implementation Challenges

Although the "Bioenergy Development in Africa" programme continues to create interest amongst policy makers, project developers and other stakeholders in designing and developing sustainable bioenergy systems and markets in Africa, there are still huge challenges affecting the implementation of the programme. These include:

- **Budget limitations at the AUC level:** The implementation of the Africa Bioenergy Programme is constrained by financial challenges, which has limited the AUC in reaching out to a wider range of stakeholders including women, youth, project financiers; rural areas, civil society, etc. However, this was mitigated by the resources provided, in particular by the ECA.

- ***Low levels of financing for projects:*** Many African countries still face huge challenges in mobilising the required financing for projects. As a consequence, many of the identified projects are small with little potential impact;
- ***Limited expertise in project development and packaging:*** Many bioenergy project developers, especially in the public sector have limited capacity to design and implement bioenergy programmes;
- ***Limited participation of the private sector:*** The lack of meaningful private sector participation in developing and scaling up investments in bioenergy in Africa is contributing to the low levels of financing for projects development;
- ***Low levels of awareness:*** Although there is currently a growing interest in developing bioenergy projects, the low levels of political will and awareness amongst stakeholders including policy makers, project financiers, community leaders, etc. on the potentials, benefits and opportunities of developing modern bioenergy systems and markets pose challenges in the implementation of the programme.

6 Recommendations on the Way Forward

The range of challenges facing the implementation of the "Bioenergy Development in Africa" programme could be addressed through the following recommendations:

- Funding for the programme needs to be substantially increased in order for the AUC and its implementation partners to strengthen its efforts in providing support to African Member States in key areas that include:
 - Policy development and harmonisation;
 - Capacity building and skills development;
 - Awareness creation;
 - Project preparation facilities;
 - Mobilisation of stakeholders at the local, national, regional and continental levels, etc.
- Creating a finance and risk mitigation facility to assist private and public sector project developers;
- The AUC and partners also need to develop mechanisms for ensuring that lessons and experiences in bioenergy development are shared amongst Member States;
- The AUC and partners need to continue advocating for strong political will and co-operation amongst Member States in the area of bioenergy development in Africa.
- There should be a better coordination of all renewable energy programmes, and it is important that the implementation of the "Bioenergy Development in Africa" should be done within the overall African strategy aimed at increasing the share of renewables in Africa, i.e. as espoused by the African Renewable Initiative.

7 Conclusion

This programme has demonstrated the efficacy of joint implementation of an initiative to achieve common goals. The AUC, ECA and NPCA pulled together financial and human resources over a period of more than five years to ensure the achievement of the objectives of the programme. In addition, the project has managed to put together capabilities, through engagement of African experts, from the research, private and public institutions (such as universities). This capacity should ensure the sustainability of the programme as well as critical mass to carry on the objectives (as provided in the way forward above).

There are preconditions for the sustainability of the bioenergy development in Africa in 2017 and beyond. The first is the continued support of the identified programmes and projects, which were identified in all participating countries. These initiatives should be supported up to their financial close, and their impacts should be measured. The second is the identification of more support for the existing and future bioenergy programmes. The workshop held in Addis Ababa in December 2016, provided a springboard from which support across major stakeholders and investment options can be sourced and sustained. Lastly, as mentioned above, continued active support from continental partners such as ECA, the NPCA and other continental and regional institutions is paramount in successful implementation of the bioenergy programme. These organizations should offer both financial and human resources, as well as align their programmes to the AUC's. This will ensure that the collective effort will achieve greater impact.

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