



United Nations  
Economic Commission for Africa



# MEETING REPORT ON RENEWABLE ENERGY POLICY AND REGULATORY FRAMEWORKS FOR ENHANCED COHERENCE OF NATIONALLY DETERMINED CONTRIBUTIONS IN AFRICA

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## EXECUTIVE SUMMARY

The Paris Agreement provides a framework through which African countries can increasingly realize the benefits of harnessing their abundant renewable energy resources – including wind, solar, hydropower, geothermal, bioenergy and indeed some marine energy. African nations have therefore highlighted renewable energy and energy efficiency actions in their nationally determined contributions to climate action (NDCs) for implementation of the Paris Agreement. Yet, the level of detail complementing renewable energy strategies in NDCs varies from country to country. Unlocking transformative financing from various sources to unleash the renewable energy potential of Africa countries requires policy makers to put in place the right market signals through appropriate incentives, policies and regulatory framework. This requires, *inter alia*, identification and sharing of good practices for enhancing coherence of NDCs in terms of energy actions and related areas.

The questions from the Talanoa Dialogue (Where we are? Where we want to go? How do we get there?) were used as guiding principles to country experiences. Partners such as the African Development Bank (AFDB) and the International Renewable Energy Agency (IRENA), highlighted the need for Capacity building, finance (both private and public), technology development and transfer in their opening remarks.

A presentation of the National Renewable Energy and Energy Efficiency Policies and Regulatory Frameworks for Enhanced Coherence of NDCs in Africa, revealed that the most RE installed capacity in Africa is Solar, particularly PV, and Africa's share of Share of RE (%) in global has decreased since 2012, and South Africa is emerging as a leader in RE. According to a world banks report; RISE (Regulatory Indicators for Sustainable Energy), there are important policy gaps across all regions. Sub-Saharan Africa is the world's least electrified continent, where 600 million people still live without electricity.

Country experiences showed that most Countries have designed policies to increase the share of renewables, whilst energy efficiency seems to be less preferred or prioritized area of intervention in most African countries. Also, countries are implementing programmes aimed at increasing renewables through support from Development Partners and there appears to be alignment between NDCs and countries' renewable energy plans

## 1. Opening Remarks & Setting the Scene

### 1.1 Talanoa Dialogue: A guide to the Global stock-take 2023

*Dr. Linus Mofor (Senior Environmental Affairs Officer (Energy, Infrastructure and Climate Change, African Climate Policy Centre, ECA)*

Dr. Linus Mofor welcomed participants on behalf of the Economic Commission for Africa and particularly the African Climate policy Centre (ACPC). Starting off with the Agenda of the meeting, was a review of the key questions in the Talanoa Dialogue (Where we are? Where we want to go? How do we get there?). Participants were asked to prepare for discussions on the level at which were in the implementation of the Paris Agreement, agreeing on where they wanted to go and suggestions on how they can go faster. Answering these questions was going to Prepare countries for the global stock-take in 2023.

Countries still reviewing INDCs to NDCs were advised to ratify only after a national consensus. This is because most Africa countries were rushed to prepare the INDCs, thus their NDCs were overly ambitious and not well thought out. ECA supported about 4 or 5 countries in NDC preparation. Ethiopia was a front runner as it had its Climate Resilient Green Economy strategy (CRGE) and GTP2, which made it very easy for the country to do its NDCs. Other African countries had no National Development Plan alignment with their NDCs with only one ministry involved often at times. Countries were also made to understand that the Paris Agreement, upon ratification, can only be revised aloft, not downward. Through the Talanoa Dialogue, we look at the way forward. Some NDCs were not ambitious enough. E.g. Seychelles realized its NDC was not ambitious enough and now wants to amend to include the blue economy thematic area. A meeting organized by the African Climate Policy Centre (ACPC) *themed 'Enhancing Readiness for Nationally Determined Contributions (NDCs) Implementation in Africa'*, on March 26, 2018, revealed that most NDCs of African Countries have critical issues which are acting as hindrances to their implementation.

There was need for African countries to re-evaluate their ambitious NDCs, ensuring coherence and map out a way forward. That is why a study on RE & EE policy frameworks in African countries was commissioned by ACPC. Analysis of all NDCS done by ACPC including the RE and EE actions

in all end use sectors; electricity, heating, transport, industry, etc. will subsequently be done. For way forward, private sector investments are necessary, however, there is need for policy certainty on the parts of governments.

## 1.2 African Development Bank (AFDB)

*Dr. Olufunso Somorin*

The representative of AFDB emphasized the importance of coherence – the how question? AFDB has Climate Change Action Plan for engagement with countries of up to \$12 billion, of which majority of these actions will be around mitigation; RE in transport, water and agriculture. However, in Africa, adaptation needs are much higher than mitigation.

A key question was whether energy is all about mitigation? Need to expand to adaptation. Current Action Plan of the AFDB (2016-2021) include:

- ❖ Supporting transition to Low carbon pathway
- ❖ Support NDC implementation in countries
- ❖ Support the creation of the African NDC Hub in partnership with 13 institutions which will focus on NDC implementation; coordinate the activities of many partners in this area; Leverage on comparative advantages and avoid duplication. The objective of the Hub arises from the need to; align NDCs with development plans/framework in countries; Undertake a gap analysis about what's out there – take stock and match this with the capacities of countries to come out with critical success factors.

As such, there is need to constantly share experiences on technology transfer (local to macro technology); financing (local DRM, budget allocations, access to international financial resources, role of private sector); capacity building; legal framework and regulations (and understanding it within the socio economic and political situation of the country. Also, legal institutions – conflict between Finance Ministry and Environment ministries). *Thus, Energy is important to livelihoods and wellbeing, thus, the adaptation narrative needs to become robust to this point, as there is need to transform lives at the local level.*

### ***AFDB Expectations from the Meeting***

- Nigeria – coherence between RE/EE and NDCs
- South Africa - Alignment across government departments
- Sudan - realized INDCs prepared in a hurry. Currently revising. Learn about experiences
- How to incorporate the private sector in NDC implementation on RE & EE
- Sierra Leone
  - Need to strengthen the planning units as often times, not on the same page in many African countries
  - Difficulty in accessing funds – need help?

### **1.3 International Renewable Energy Agency (IRENA)**

*Toshiaki Nagata*

21 African countries have RE action under adaptation in their NDCs, which shows that African countries recognize the important of RE actions not just for mitigation but adaptation prospects as well as; For energy; sustainable water management including desalination or water pumping; Transport; Agriculture and livestock.

#### ***Adaptation and resilience building potential of RE***

- A total amount of \$225 billion is needed for full implementation of African NDCs RE targets (\$100 – unconditional, \$125 – conditional)
- ECA estimates that about 2.5 trillion is needed for implementation of African NDCs.
- However, the ambition of African countries is very low. There is still huge opportunity in NDCs of African countries to increase RE targets.
- There is therefore need for public finance should focus on crowding in private investment through the use of risk mitigation instruments and structured finance.
-

## 1.4 National Renewable Energy and Energy Efficiency Policies and Regulatory Frameworks for Enhanced Coherence of NDCs in Africa

*Lena Mangondo*

### 1.4.1 overview

According to a report released by the International Renewable Energy Agency (IRENA), based on a statistical analysis of all the countries in the world and their capacity and production levels in renewable energy, the most RE installed capacity in Africa is Solar, particularly PV, and Africa's share of Share of RE (%) in global has decreased since 2012.

Each country's subsequent NDC will have to represent a progression beyond the Party's last NDC. Parties may at any time review their commitments with a view to make more ambitious commitments with such review. It should be noted that the implementation of NDCs is not a part of the Paris Agreement - the Paris Agreement and COP Decision provide binding, procedural rules for the preparation and assessment of NDCs – not their execution.

According to a new World Bank Report, entitled RISE (Regulatory Indicators for Sustainable Energy):

- An increasing number of developing countries – Mexico, China, Turkey, India, Vietnam, Brazil, and South Africa – are emerging as leaders in sustainable energy, with robust policies to support energy access, renewables and energy efficiency, according to a new World Bank Report;
- But there is huge room for improvement across every region in the world and particularly in Sub-Saharan Africa, says the report.
- South Africa is emerging as a leader in RE

While many of the countries surveyed in RISE have embraced the sustainable energy agenda, the report identifies important policy gaps across all regions, and highlights opportunities for rapid progress. [Sub-Saharan Africa is the world's least electrified continent, where 600 million people still live without electricity](#). As many as 40 percent of Sub-Saharan African countries surveyed by RISE have barely taken any of the policy measures needed to accelerate energy access, compared to less than 10 percent of Asian countries. Exceptions include Kenya, Tanzania, and Uganda which

have strong policy frameworks. RISE assesses where additional efforts are most needed – both developed and developing countries need to pull their weight. Among the top 10 high-impact countries for renewable energy and energy efficiency, all have relatively robust policy frameworks in place.

- There is more focus on RE than EE. There's a lot of potential for further improvement there.
- The same cannot be said for the top 10 high-impact countries for access – both Nigeria and Ethiopia still need to make much progress in policies and regulations
- The report notes that in order to improve electricity access, there must be a better balance between making power both affordable for customers without undermining the financial viability of the utilities that need to invest to provide service.
- The report highlights that, [in many countries, policymakers are not paying nearly as much attention to energy efficiency as to renewable energy](#), particularly in the developing world. Energy efficiency measures are usually the most cost-effective way of greening the energy sector.

***NB:*** Due to the interventions and opportunities associated with energy efficiency (e.g. combined heating and cooling and green city programmes) this is more suited to municipal interventions – however, there is capacity and finance constraints for most municipalities in Africa

#### 1.4.2 South Africa- Renewable Energy & Energy Efficiency Policies and regulatory Framework

South Africa anticipates that promoting renewable energy will contribute towards the diversification of electricity supply and introduction of greater levels of competition in electricity markets. It encourages investment by the private sector in renewable energy power producers, and in the commercialisation and local manufacturing of renewable energy technologies.

New energy infrastructure investments however, must consider the impacts of climate change. Thus, it advocates that the investments should avoid locking-in emissions-intensive technologies into the future. However, since it is accepted that there will be investment in new coal-fired power plants in the short term, the 2011 White Paper identifies the most promising mitigation

options as '*energy efficiency and demand side management, coupled with increasing investment in a renewable energy programme in the electricity sector*'.

### **Green Energy Accord**

- Commitment three of the Green Energy Accord deals with the rollout of renewable energy. The government has committed to procure renewable energy as part of the plan to expand the energy-generation capacity of the country. Together with the procurement of renewable energy, government, business, labour and community structures committed to support efforts to increase the local industrial manufacture of components for renewable energy. The sector associations committed to developing a long term renewable energy rollout strategy and programme in partnership with all social partners, within the policy framework set by government.

### **National Development Plan (NDP)**

- The NDP was adopted by cabinet and serves as the long term vision and plan for the country. Notwithstanding this, and given that the benefits of building resilience against the effects of climate change are manifest, the NDP reaffirms South Africa's commitment to act responsibly to mitigate the effects of climate change and the commitment to the PPD trajectory. In order to achieve this goal, the NDP sets a target of procuring at least 20 000MW of renewable electricity by 2030.

### **Integrated Resource Plan (IRP)**

- The Green Energy Accord and the National Development Plan all culminated in the Integrated Resource Plan (IRP). The current IRP was developed in a manner that sought to balance Government objectives. It represented an appropriate balance between the expectations of different stakeholders and considered a number of key constraints and risks, including: reducing carbon emissions; new technology uncertainties such as costs, operability and lead time to build; water usage; localisation and job creation; regional development and integration; and security of supply.

This IRP sets aggressive targets for amongst others 17800MWs of new electricity generation facilities as well as set targets and requirements for looking at energy efficiency initiatives as part of the medium term risk mitigation framework.

***Summary -** From the policy framework set out above it is apparent that the decision to procure renewable energy generation capacity was consciously adopted by government based on a thorough and rational decision-making process and was informed by extensive public participation. This policy approach was adopted with full knowledge that, in the short term, incorporating renewables into the energy mix would impose additional costs on the economy. But in the long term the average cost would decrease and South Africa would realise significant benefits, including diversification of supply, increased competition, stimulation of upstream supply industries, social and economic development benefits, a reduction in greenhouse emissions, and a reduction in other health and environmental externalities and impacts.*

*While South Africa does not have bespoke renewable energy legislation in place, the Electricity Regulation Act as well as the regulations on New Generation Capacity issued in terms of this Act ensure there is robust legislation and regulatory certainty to enable investments.*

### **Lessons learnt: South Africa**

- In line with the IRP, South Africa started its path to introduce and aggressively pursue the deployment of renewable energy as part of its electricity generation capacity.
- The initial years (2011 – 2014) saw significant deployment of these technologies. The Renewable Energy IPP Programme received various accolades internationally and locally.
- From 2015 – March 2018 the pace of deployment halted due to the Utility (Eskom) refusing to sign projects procured in 2013 and 2014. This resulted in a slowdown in the industry and closure of manufacturing plants which were a positive spin off from the Renewable Energy IPP Programme as well as negatives in the industry.
- With a new political leadership in Government as well as a new board in Eskom the impasse has now been resolved and the 27 outstanding projects were signed on 4 April 2018.

- Aside from what has been procured to date, future roll out and trajectory of this programme is dependent on a revised IRP though there are still Ministerial Determinations which need to be implemented.

#### 1.4.2 Morocco - Renewable Energy & Energy Efficiency Projects, Policies and regulatory Framework

Morocco launched one of the world's largest and most ambitious solar energy plan with investment of USD 9billion. The Moroccan Solar Plan is regarded as a milestone on the country's path towards a secure and sustainable energy supply which is clean, green and affordable. In 2010, the Moroccan Agency for Solar Energy (MASEN), a public-private venture, was set up specifically to implement these projects. Its mandate is to implement the overall project and to coordinate and to supervise other activities related to this initiative. Stakeholders of the Agency include the Hassan II Fund for Economic & Social Development, Energetic Investment Company and the Office National de l'Electricité (ONE). The Solar Plan is backed by Germany, with funding being provided by German Environment Ministry (BMU) and KfW while GIZ is engaged in skills and capacity-building for industry.

- The following projects (solar and other renewable energy projects) are already in implementation:
  - The Ouarzazate Solar Complex, also known as Noor CSP (the world's largest solar power plant) with a total capacity of 580 MW will produce an estimated output of 1.2 TWh/year to meet power demand of more than 1 million populations when it is completed in 2018;
  - The Ain Beni Mather Integrated Solar Thermal Combined Cycle Power Station, commissioned in 2011, is one of the most promising solar power projects in Africa. The plant combines solar power and thermal power, and has a production capacity of 472 MW; and
  - Two winds projects with installed capacity of 50 MW and 140 MW.

### **1.4.3 Uganda- Renewable Energy & Energy Efficiency Projects, Policies and regulatory Framework**

The Uganda Get – FiT Programme has enabled Uganda within a short space of time to established various renewable energy projects. This programme is being implemented by the Government with the support from the German Government and is project managed by KFW.

The programme has enabled 17 projects of 158 installed capacities to be established in Uganda. To date six (6) of the seventeen (17) projects have been commissioned with significant construction progress registered on the majority of the remaining projects. The commissioned projects include:

- Three (3) hydropower plants of total installed capacity 18.1 MW;
- Two grid connected solar PV projects totalling 20MW;
- A Co-generation plant (Kakira) of 20MW

### **Private Sector Perspectives for Investment in Uganda**

In view of the significant levels of capital required to be deployed for infrastructure, private sector participants are always concerned about protection of their investments while balancing risk with appropriate return associated with risk.

In this context the following are key considerations for any private sector participant in considering investments:

- Clarity and certainty of policy;
- Political Risks (political will and support);
- Institutional Framework and capacity (to support and implement projects);
- Legal and Regulatory;
- Investment protection;
- Exchange Control and repatriation of funds;
- Barriers to market entry (ease of doing business);
- Economic conditions (ability to recoup investment and ability of end user to pay);

- Credit worthiness of off-taker
- Credit Enhancement instruments including government support and guarantees;
- Independence of Regulator;
- Technology (track record of deployment and performance) and integration with existing systems (in the case of grid integrated renewable energy issues of grid integration, availability and stability of the grid).

### **Lessons learnt: Uganda**

- Uganda has one of the more liberal market structures when compared with other electricity supply industry (ESI) market structures in Africa in that:
  - Independent Regulator;
  - Fully unbundled ESI (generation, transmission, distribution sit on their own)
  - Concession agreements with private concessionaires for generation and distribution; and
  - REFiTs, renewable energy capacity targets, fiscal incentives for renewable energy, various forms of governmental guarantees and support available
- Despite all the building blocks being in place Uganda was unable to get private investments due to: Perceptions of risk by the Private Sector (commercial and political risk);

*Incomplete reforms and incentives to attract private sector investors;*

- With the support of KfW Uganda put in place the following which led to renewed appetite from private sector participants:
  - Reconsideration of project agreements with standardised agreements being put in place (PPA, IA, DA)
  - Credit enhancement through commercial risk insurance products (World Bank PRG Program);
  - Identification and removal of legal and regulatory barriers for private sector investments;
  - Mitigate political and commercial risks
  - Provide an attractive risk-adjusted return for first mover investors;

- Provision of grants and concessional loans

## Discussion

1. Cameroon has issues with energy regulatory framework. Thus, difficult for private sector to go in to invest. Eg. They don't want to invest in transport of electricity.
2. **East Africa** – Countries such as Kenya, Ethiopia, Tanzania are significantly increasing energy access to population. What are they doing right?
  - A Lot of policy focus on energy access
  - Good business models that work
  - More involvement of private sector which was limited in the past

## 2. Renewable Energy Policy & Regulatory Frameworks for Enhanced Coherence of NDCs in Africa

### *2.1 Reflection themes for countries; relevant to the RE policy and NDCs*

*Monga MEHLWANA, Economic Commission for Africa (chair)*

In introducing the country's responses to renewable energy and regulatory frameworks in African countries, ECA made the following remarks under the five broad themes, which should be considered when enhancing coherence of NDCs. They include;

- a) **Coherence with the Sustainable Energy for All (SE4All), particularly the SE4All hub's main activities: Rapid Assessment and Gap assessments (RAGAs), Action Agendas (AAs) and Investment Prospectus (IPs)**

It is important that there is a coherence and alignment between various strategic documents such as the countries energy strategies, in particular renewable energy. As an example, the SE4All African hub and partners initiated in 2012 the RAGAs which were followed by the AAs and IPs. In particular, almost all countries in Africa did their RAGAs, while only around 19 countries completed their AAs and even fewer countries completed IPs (Cote d'Ivoire, Liberia, Sierra Leone, Kenya, Angola, Tanzania and Gambia). The latter in particular, looks at the investor readiness of countries as well as key renewable energy and energy efficiency projects that could increase clean energy uptake and private sector investment. Lessons learned are that bankability of projects is a huge challenge, particularly for local project developers. Project preparation and packaging are identified as key skills that need to be enhanced in order for the projects to attract finance. It is therefore important that efforts by the SE4All Africa hub should be complemented and harmonized with actions proposed in the individual countries NDCs. Therefore, there should be synergies in the implementation of the both the SE4All initiatives and the NDCs, as in many countries the implementation agencies of these initiatives are different and often belong to different ministries or government departments.

**b) Mapping of major renewable energy renewable energy programmes and projects on the African continent**

It is important that for the share of renewable energy to increase in Africa, duplication of efforts should be minimized. Instead, there should be synergies created between initiatives to achieve greater impact. It is for this reason that ECA participated in the effort to map major renewable efforts (policy, projects, finance, etc.) with a view of coordination, harmonization, drawing important lessons, and identifying gaps. This initiative is led by the Africa-EU Energy Partnership (AEEP); and informs one of the major activities of the African Renewable Energy Initiatives. It is therefore important that this should be reflected in the NDCs plans that aim to increase the share of renewables in countries as a climate action.

**c) Annual assessment progress in achieving SGD 7 objectives and linkages with other SDGs (formerly Global Tracking of SE4All)**

ECA together with other UN regional commissions are integral part of assessing the progress in achieving the objectives of SDG 7 under the leadership of the World Bank. This exercise was formerly undertaken under the guise of the Global Tracking Framework (GTF). ECA authored the GTF (2017) African Chapter, which was released last year. Moving forward, this assessment of energy and interlinkages with other goals, will be undertaken using a Multi-Tier Framework (MTF), which assess energy access beyond binary approach of number of connections vs non-connection. The MTF includes issues of (a) quality, reliability, convenience, affordability, and safety, amongst others of the new energy systems; (b) interlinkages of the access to development parameters need to be addressed. Energy by its nature is a catalyst and not the end in itself. It is important for the services it provides; and (c) compare the efficacy of different technologies that provide energy access.

Through this work, ECA is now part of the Technical Advisory Group on SDG 7, under the secretariat of UNDESA. This group facilitates the exchange of and expert advice on how to strengthen follow-up actions and review of SDG 7 and interlinkages leading up to the High Level Political Forum (HPLF) and beyond. Amongst many roles this group will provide advice on:

- Inclusive processes to strengthen stakeholder engagements;
- Deliverables to inform intergovernmental discussions; and
- Recommendations on how best to support and coordinate relevant processes and products development.

Therefore, the assessment of SDG 7 and the mandate of the Technical Advisory Group should, in the African context, inform and be informed by African countries' NDCs as well as actions and programmes that countries and region undertake relating to increasing the share of renewable energy and energy efficiency, as well as other actions to mitigate effects of climate change.

#### **d) Renewable energy sectoral plans, strategies and targets**

Renewables are not only about solar, wind and hydro. They also include geothermal and bioenergy (or solid, gaseous and liquid). The latter is often not prioritized in many renewable energy plans. However, the reality is that more than 70% of the African population in urban and rural rely in biomass as the main energy source for cooking. According to the recent ECA report (2017), this has hardly changed or decreased since 2000. Therefore, in designing energy plans, it is important to decouple renewable energy sources, and ensure that each renewable energy source has its own policies, plans, and measures, as well as associated targets. This will prevent the “orphaning” of biomass, as this energy source will still play a bigger role in the African energy landscape for many years to come.

The ECA together with the AUC and NPCA are spearheading an initiative that is designed to modernize bioenergy in African. This started with the *African Bioenergy Framework and Policy Guidelines* in 2013. The purpose of the Framework is to (a) build consensus on shared framework that inspires and provides guidance to individual countries and regions in developing bioenergy policies and regulations; and (b) enhance awareness among African policymakers and the civil society about the need for more environmentally friendly and socially acceptable bioenergy development policies. At present, this initiative plans to develop Regional Bioenergy Development Strategies and Investment Plans with associated action plans for Northern, Western, Central, Eastern and Southern African regions. These

bioenergy development strategies and investment plans are expected to lead to the deployment of sustainable regional bioenergy projects that will accelerate the adoption of modern bioenergy technologies, practices that will have positive impacts on modern energy access, local industrial development, job creation and general improvement of local livelihoods and rural economic development.

## *2.2 Country experiences*

### *2.2.1 Southern Africa*

#### 2.2.1.1 Lesotho

Lesotho's INDC was submitted in 2015 and revised in 2017 to produce the country's NDC. Renewable Energy targets include; improving energy efficiency by 20% by 2020, increasing access to clean cooking energy by 35% in 2015, 40% in 2020 and 50% in 2030.

Regulatory framework for Lesotho include; Coordination of climate change and RE is housed within the ministry of energy and meteorology. In 2015 there was development and approval of the energy policy which was addressing the rapid assessment that indicated no policy in Energy. There is a climate change policy approved in 2017, sustainable energy strategy that was developed in 2018-2022, revising the INDC into NDC included the issues in the policies and strategy mentioned above.

In 2017, there was collection of energy consumption data; rough statistics. Lesotho is currently implementing a number RE projects; with first IPP where there will be a 20mega watts solar generation plant financed by AFDB; also implementing a project that will assess de-risking in the RE startup-financial support scheme; mapping energy resources with the assistance of the government of Italy-Identifying sites for electricity using solar, wind and hydro

In 2015 lesotho developed a strategy- promote private sector investments; introducing tariffs. Lesotho is also implementing a project with UNDP to develop policies and strategies to promote private sector investment.

ECA contributed to the pilot First energy Centre in Lesotho. It is also at the Edge of establishing private sector fund, and has Launch entrepreneurship program to assist entrepreneurs in developing bankable projects

However, Lesotho as a major need; capacity building.

#### 2.2.1.2 Zambia

Zambia's main guiding document for RE and EE is its national energy policy 2008. Its RE is still dragging behind while others have taken the Centre stage. However, with a joint project by the government and the EU the National energy policy will be revised, and RE looked out more holistically. REfit tariff strategy is to be finalized.

There is also an ongoing RE resource mapping with the world bank, with wind and solar potentials as the main components, with solar mapping already completed. Zambia has also established a Rural electrification authority and training Centre.

There is also scaling solar; industrial development corporation with help from the world bank; 6cents and 10 cents for solar due to the support mechanisms that have been put in place. The Green Climate Fund (GCF) approved RE fund for Zambia, thus it could develop a suitable framework for renewable energy and energy efficiency in the nearest future.

#### 2.2.1.3 Botswana

Botswana already has a draft energy policy, which has been passed to parliament and will be debated this year. Energy Policy principles in Botswana are guided by economic development, equity, environmental responsibility.

For Electricity and RE; Botswana Power organization is in control of goods and acts. Strategies supporting RE landscape include; SE4ALL, supported by World Bank and European Union. Looking at SDG 7, Botswana has set targets up till 2030, 100% of household to have electricity whether grid or off grid (15% from RE). Looking at access especially in villages, it is expected that 78% of households will be have electricity (actual population to switch power 57%)

Projects on going in Botswana include; 100watts solar PV; off grid solar solutions including construction of grids for solar either hybrid or 100% solar.

Budgetary allocation for projects; Village; 25 Million Botswana Pula, off grid 100 Million dollars; converting waste to energy 400 thousand dollars, RE grid tide 1.4 M USD.

Problems and limitations; the actual RE and EE regulatory frameworks are not yet enforced since the RE initiatives just started in the country.

#### 2.2.1.4 South Africa

90% of NDCs are related to energy; RE and regulatory framework is not conducive for small projects; with low megawatts. South Africanis developing its national actions plans.

#### 2.2.1.5 Malawi

Malawi has some Renewable Energy actions. It also has a rural electrification program. Malawi is Promoting sustainable bioenergy and usage of efficient cooking technologies. And it has Policy based mitigation targets.

#### 2.2.1.4 Comoros

Comoros has not yet developed a regulatory framework for RE and EE, and the RE sector is still undeveloped. Private investments are complicated by legal constraints. Currently, there are lots of initiatives on RE and EE but the documents to be used for elaboration has not been done.

Energy sector in Comoros is privatized. There is an ongoing process to Convince government on RE initiatives and its numerous potentials.

Limitations and constraints include lack of expertise and capacity, lack of funding, no implementation of actions yet.

## *2.2.2 Central Africa*

### 2.2.2.1 Cameroon

Status of implementation of Cameroon's NDC; the country designed its NDCs in line with its emergence in 2035. Cameroon conducted a comprehensive evaluation of the potential of renewable energies (partial study identified 262 small hydro sites and 25 biomass energy sites for a cumulative total of 284 MW of capacity 35 pilot projects with increase in electricity mix by 25% Renewable Energy: 11% micro-hydro 7% biomass, 6% solar PV, 1% wind energy). It is in the process to adopt a renewable energy development plan that will increase the share of renewable energies by 20% by 2035.

The country is also putting in place an incentive framework for the development of renewable energies. RE (tender, feed-in tariffs, etc.) and remove the barriers to investment (strengthening of the institutional framework, etc.). A draft law is already under consideration.

Cameroon is accelerating the implementation of the Director Plan of rural electrification to create other financial facilities for rural lighting such as the Rural Electrification Fund (FER), to promote the development of "mini-smart-grids" in rural areas; It is also in the process of creating an Agency for the promotion of renewable energies; - Improve collaboration between existing bodies (FEICOM, PNDP, and AER) for the development of community projects in renewable energy.

Ongoing projects include a 110 MW Solar generation in 2020; The "Photovoltaic Power Plant Project - Cameroon 2020" provides for the installation of 500 MW for a 750 GWh output (about 1500 MWh / year per MW installed). The first phase of this project includes several solar power plants spread over the 3 Grids (South, North and East Grids).

New and upcoming hydro capacities include; Additionally, to solar, new hydro capacities enter into production since 2017:

- Lom Pangar Dam which brings 160 MW additional capacity in the grid
- Memve'ele Dam 210 MW which is not yet connected to the grid
- Mekin Dam 15 MW which is not yet connected to the grid

Upcoming hydro capacities are:

- Nachtigal Dam 300 MW to enter into production from 2022 hopefully
- Grand Eweng Dam 1600 MW to enter start generating in 2030 hopefully
- Grand Ngodi Dam 724 MW
- Song Mbengue Dam 725 MW

However, these projects need high amount of investment, so that their realization is subject to high uncertainty.

One Private company for electricity generation called ENEO; entirely responsible for production and distribution but has little or no investments in rural areas. State has launch actions in order to nationalized the production and transportation and leave only distribution to private sector. Conflict with ENEO which does want to sign certain agreements in terms of Renewables

Energy efficiency; The promotion of the use of low energy consumption appliances is not intense. Populations are not aware of the improvement of technology that consume low energy such as light bulbs. Thus, the government promote the prepaid system to ensure economy of energy

On the regulatory aspect; the financial contributions that operators must pay in the form of taxes for the operation of the regulatory structure go directly into the account of the regulator without intermediary. This direct transfer of funds from operators to the regulator does not facilitate a healthy relationship that often prevents the regulator from being free. The solution to this situation is modifying the texts so that it is the public treasury that collects the funds of the operators and reverse them to the regulator, so that there is no link between regulator and operators.

### *2.2.3 West Africa*

#### 2.2.3.1 Sierra Leone

Sierra Leone has Renewable Energy and Energy Efficiency policy and actions in partnership with ECREE. With regards to regulation, it has an electricity and water regulation act. Some ongoing Projects include; 6megawatts project for a grid connected solar and the country is working with NCC, SE4ALL.

### 2.2.3.2 Ghana

Ghana has a RE act and RE sub code for distribution network. Investments needs for Ghana is RE and EE amounts to over 300M dollars.

#### Contributions by SACREE

*Henry Shingwe (ADC Centre for Renewable Energy and Energy Efficiency (SACREE))*

SACREE measures and monitor action plans of member countries, and in turns leads member states on doing same. SACREE is seriously Looking at RE and energy efficiency with projects such as; Capacitating entrepreneurs with IRENA, integrating RE to the grid. For gender, SACREE is creating a gender responsive sustainable business in energy. Through the nexus project, SACREE hopes to empower the nexus issues with RE, that is food security, water, health, trade etc. SACREE is currently identifying gaps and how member states can be best assisted.

#### Key discussion issues

The following were the salient issues raised in the countries' presentations. These are the issues that need to be reflected in the ECA study on Renewable Energy Policy and Regulatory Frameworks for Enhanced Coherence of Nationally Determined Contributions in Africa:

- Countries have designed policies to increase the share of renewables, although in some countries, these are still in draft phase or in others, the policies need to be reviewed and updated, reflecting current and future trends.
- Energy efficiency seems to be less preferred or prioritized area of intervention in most African countries. However, some have made strides through coupling energy efficiency and renewable energy as in the case of South Africa.
- Countries are implementing programmes aimed at increasing renewables through support from Development Partners. Others have initiated special renewable energy funds to support development of projects. The private sector is mobilized through the power purchase agreements. However, it was not clear from the presentations, how the procurement systems were designed or how the feed-in-tariffs were structured.

- It appears that there is alignment between NDCs and countries' renewable energy plans. However, some institutional changes and alignment or coordination is needed to ensure the coherence of NDCs renewable energy actions with other energy plans, such as in AAs and others. However, in some countries, such as Lesotho, the implementation of NDCs and energy plans are within the same ministry, so the issues lack of coordination does not apply.
- Most of the presentation did not allude to the regulatory issues, such as price determination, grid connection, tariff structure, etc. It was also clear that most countries have either non-independent or very weak regulators. So therefore, this is an area that needs to be addressed especially how countries should regulate renewable energy in their energy supply systems.
- The SACREEE has a mandate to (a) support the achievements of the sustainable development objectives of SADC Member States by promoting the use of renewable energy and energy efficient technologies and energy services; and (b) to support the Region's sustainable development objectives through: resource mobilization, policy, quality assurance, capacity building and knowledge management, communication, promoting investments in renewables and energy efficiency projects and programmes. Currently, the centres offer entrepreneurial support to renewable energy by providing technical support to project developers.

## Conclusion

The meeting used the questions in the Tanaloa dialogue (Where we are? Where we want to go? How do we get there?) as guiding principles with countries sharing their experiences in rolling out renewable within their INDCs. The presentations focused on implementation challenges, enabling policies, institutional frameworks, and how these policies, actions and measures to increase renewable energy and energy efficiency share are anchored within climate change mitigations actions. The last presentation by SACREEE focused on how this new regional centre

is set up to assist countries in the region to further their renewable energy and energy efficiency strategies and objectives.

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