

# ELECTRICITY AND ECONOMIC DEVELOPMENT IN CAMEROON AND THE REGION.

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**A great man is a torch in the darkness, a beacon in superstition's night, an inspiration and a prophecy. Robert Green Ingersoll**

## INTRODUCTION

Electricity and power, in the CEMAC region and Cameroon is the bedrock for the Sustainable Development Goals (SDG). According to the International Energy Agency (IEA), 1.2 billion people worldwide are without access to reliable and uninterrupted electricity, with the largest concentration of 620 million in SSA. Developed countries are in the fourth industrial revolution. Digital technology runs on various platforms, with reliable and continuous supply of electricity.

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The millions of people without access to electricity have little or no access to digital technology. They are not connected to the world wide information grid.



In a report by McKinsey Global Institute (MGI) called a brighter Africa (the growth potential of the Sub-Saharan electricity sector), on the relationship between electrification and GDP, it was observed that countries with electrification rates of less than 80 % have consistently lower GDP. The exception to this is Angola and Gabon, with revenues from extractives. The

economic impact of power shortages in SSA according to the World Bank, trims about two

percentage points from the annual economic growth of SSA. The report further states that the distribution and transmission of electricity alone by 2040, will exceed \$300 billion. Infrastructure and distribution, will consume about \$265 billion and transmission \$80 billion.

The Prime Minister of Ethiopia Hailemariam Desalegn at Davos in January 2016, made a very important assessment, that “Africa has a huge opportunity and it is becoming a global pole for growth. Energy is the main challenge in Africa. The challenge is to have a quality reliable energy source that makes industrialization possible “. In 2017, of the 200 billion dollars spent globally on funding projects in electricity, Africa received only 10 billion dollars. There is room for renewable energy, as first time energy source in remote areas (solar, wind or biomass). According to Charlotte Aubin CEO of GreenWish Partners, a renewable power producer dedicated to SSA “Cooperation between old and new energy industries may be the only engine that is capable of powering Africa forward”.

Reliable and consistent supply of electricity is a key component to enable diversification and economic transformation. The CEMAC region as a monetary union, with tariff exempts, and the free movement of goods and services is an opportunity to invest in electrification. “The majority of transactions being completed in the region are in infrastructure, power and transportation sectors. Not surprisingly the power sector has been the most active sector in 2015 and the first half of 2016.” Michael Creighton Head Export Credit Finance at Nedbank. The growth rate in the region, with the renewed impetus on diversification and innovation guarantees return on investment. With regional integration and a cross border market for electricity, the CEMAC region should be able to attract investors. The huge hydro potential, together with renewable energy can provide off-grid and on-grid solutions to rural and urban areas.

Africa has contributed less than 4 % of carbon emissions worldwide and provides an opportunity to invest in cheap and climate friendly energy. Secondly carbon emissions reduction/climate funds coupled with the reducing cost of solar provides ample support for investment in renewable energy. Renewable energy from solar, wind, biomass, and geothermal in the agriculture sector will create value chains in storage, transportation and marketing. The electricity sector if well-developed will create jobs and spur economic growth.

## **CAMEROON**

With a population of about 23 million people, Cameroon is the most electrified country in the region. The electrification rate is approximately 60%, in the majority central and coastal areas. The rural areas have electrification rates of less than 25%.

The government, through policies and regulations has created an enabling environment for the production, distribution and sale of electricity. Electricity is governed by LAW N° 2011/022. The law focuses on the modernization, development, promotion and expansion of efficient electricity and renewable energy. The law provides that, government promote and develop rural electrification nationwide. Law n°2006/012 dated December 29, 2006 sets forth the general regulations of partnership contracts, for the fast construction of infrastructure and energy projects. The Ministry of Energy and Water (MINEE), is responsible for implementing government policy, and is the general overseer of the electricity sector. The Rural Electrification Agency (AER), is responsible for the promotion and implementation of rural electrification. The agency manages the rural energy fund, for studies on rural electrification, and renewable energy. The Electric Sector Regulation Agency (ARSEL) is responsible for regulating the electricity sector, as well as setting electricity rates and determining electrical standards. Tariffs on electricity are defined by MINEE, further to instructions and advice from ARSEL. The Electricity Development Corporation (EDC), develops the electricity sector including all hydroelectric projects in the country. Last but not least ENEO, is responsible for the transmission and distribution of electricity in Cameroon.

In order to increase electricity access, the government of Cameroon embarked on some policies with benchmarks. PDSE (Energy sector development plan 2030) aimed at achieving an electrification rate of 75% by 2030. The Rural Electrification Master Plan (PDER) to fund rural electrification and renewable energy in rural areas. The Vision 2035(Vision2035) addresses energy infrastructure and adds value to the hydroelectric sector. It provides alternatives to electricity production improves transportation and distribution facilities and provides for modernization of the electricity sector by the year 2035.

Cameroon has a capacity of 12,000MW mainly from the Sanaga Basin and about 800 MW have been developed. The three main hydro power plants are Son Loulou 384MW Edéa 263MW and Lagdo 72MW that supply three grids, the Southern Interconnected Grid (SIG), the Northern Interconnected Grid (NIG) and the Eastern Interconnected Grid (EIG). The triangular shape of the country has made it difficult to interconnect the various grids. Cameroon is working on a regional grid that will interconnect the standalone NIG, SIG and EIG grids and further integrate the regional grid with those of neighboring countries. Other

hydro projects in Cameroon includes Lom Pangar 30 MW, Kikot 350MW, Nachtigal 420 MW ,Song Dong 250MW , Memve'ele 200 MW , Song Mbengue 950MW, Nyamzom 375MW , Bini Warak 50MW, Njock 170MW, Ngodi 475MW. The rate of electricity consumption in Cameroon was estimated at 317.3KWh/capita in 2015 and is set to increase to 422.6KWh/capita by 2025.If the electricity needs are addressed, and electricity is additionally produced from sources other than hydro , electricity shortage, will soon be a thing of the past

Government implemented fiscal measures to reduce custom duties, to attract private investment in renewable energy. Cameroon has reduced subsidies on industrial kerosene and gas, to promote the use of generated electricity, to create financial stability in the electricity sector. There is need for more fiscal incentives, and custom duty exempts to attract investors. In rural electrification, priority is granted to decentralized solutions with access to grid connection to producers of renewable energy.

The Director of ENEO has demonstrated, through management, the importance of KPI in measuring and monitoring the performance and productivity of employees .This has resulted in improved electricity services. ENEO is currently exploiting ways of providing reliable, safe and low cost electricity through innovation. The Director, Joel Nana Kountchou says ‘Innovative procurement can reduce costs while growing revenue and improving workplace safety’ this was demonstrated in the Ebolowa thermal plant. A smaller low cost battery, replaced a heavy, expensive and unreliable battery. On the issue of innovative finance, Stephen Yeboah and Adom-Opore Kwabena Boafo of the AfDB noted the following ‘The gap between allocations and actual expenditures is often large, however. The overwhelming bulk of public spending – approximately 75% – goes to operations and maintenance rather than to investment’. With the identification of friction accompanied with research there is room for improvement in the quality of services .This should not be limited to thermal plants. Innovation should be at all levels of the value chain in tracking, expenditures, recoveries and payment modules to reduce maintenance cost and increase revenues.

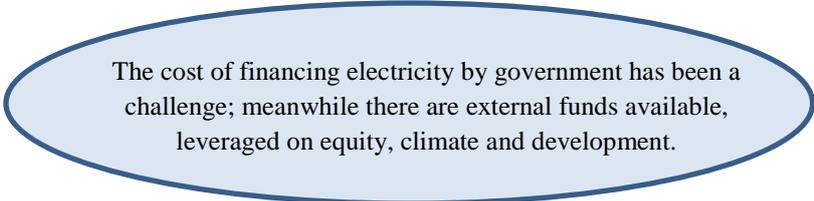


On a legal platform, Cameroon is a member of the Organization for the Harmonization of Business Law (OHADA) for the promotion of regional integration. There is an arbitration court in Abidjan (The Common Court of Justice and Arbitration

(CCJA).All member countries of CEMAC, are signatories to OHADA. Cameroon is a signatory to bilateral and multilateral treaties, to promote foreign direct investment (the Multilateral Investment Guarantee Agency, the International Centre for Settlement of Investment Dispute resolution and conciliation for foreign investors) .Cameroon, has been a party, since 1988, to the New York Convention of 1958, on the recognition and enforcement of foreign arbitral awards.

**THE CASE FOR INTERNATIONAL FINANCE**

The cost of financing electricity by government has been a challenge; meanwhile there are external funds available, leveraged on equity, climate and development.



There should be informed and concerted efforts to attract these funds.

In 2003, countries within Central Africa formed ECCAS (Economic Community of Central African States) to improve economies of scale, system reliability, security and diversification through an energy policy. This policy is managed by the Central African Power Pool (CAPP) to secure energy supply within ECCAS, while achieving socioeconomic development through a regional electricity market. The purpose was the implementation of a regulatory network, with market codes to promote investments in the power sector, and increase regional trade. CAPP so far, has not been effectively exploited. There are many obstacles, amongst which is finance.

One of the catalysts for increased productivity is the uninterrupted supply of electricity, to enable development of self-reliant economies in industry and manufacturing. Countries in the CEMAC region are in the second or third industrial revolution. For sustainable development this gap has to be plugged. Ethiopia, Ghana, Kenya, Liberia, Nigeria, Liberia and Tanzania are set to add 10.0000 MW of clean efficient electric generation capacity. These countries are taking advantage of the opportunities presented by the AfDB, Power Africa, the World Bank ,Climate funds, The French Development Agency AFD, International Renewable Energy Agency IRENA, and a many other institutions. The region has to incorporate a better understanding of financing, given the many available sources.

The African Development bank has the New Deal on Energy for Africa, on power potential through partnerships, with the goal to light up Africa by 2025. It is the mobilization of political will and financial support to solve Africa's energy challenges. The bank plans to invest over \$12 billion, in energy funding in the next five years. The New Deal, will partner with the G7, Africa Renewable Energy Initiative, UN Sustainable Energy for all Initiative, US Power Africa, the Africa Energy Leaders Group for leadership for funding. The AfDB signed an agreement with International Solar Alliance of India in early 2018 on a 10,000 MW "Desert to Power initiative", to provide electricity to 250 million people in the Sahel area. In Chad and Northern Cameroon this will go a long way. The Bank is also instrumental in many other initiatives in electricity.

The International Renewable Energy Agency IRENA, mobilizes capital for investment in renewable energy globally, and provides tools and platforms to government and the private sector, to facilitate project initiation, development and financing.

Power Africa, is a US based initiative to electrify Africa signed by President Barack Obama, in 2013. The initiative leverages with financial institutions, to make available to investors billions of dollars earmarked for power production and distribution. It is headlined to cost about \$50 billion, and the US government committed to spend \$7bn.

The roadmap is to produce 30,000 MW, with 60 million connections in Sub Saharan Africa by 2030. This is a tenth of the 620 million people, without access to electricity. The scope of Power Africa falls under three pillars, generation, connections and unlocking the energy sector potential. In 2018 in Washington DC, Power Africa 2.0 was launched to strengthen the efforts of Power Africa. Mark Green the Administrator for, USAID stated that the project will be moving from power generation to transmission, while assisting investors in the sector and at the same time allow government to manage the capacity. By 2018, about 80 projects have been financed by Power Africa to the tune of about \$18 billion. Power Africa is relatively absent in Central Africa and Cameroon.

**CLIMATE SMART**

Alternative energy sources can add to existing grids, or used as standalone power producers. There is a market for electricity in the region. Electricity can be readily produced

and exported to member countries, and non-member border countries like Nigeria with a huge market.

The New York energy Forum on 28<sup>th</sup> of September, 2018 was an opportunity for climate funds to interact with investors and actors on climate change. The former Minister of Finance of Nigeria Ngozi Iwela, while commenting on the UN report on the economics of climate change, talked of a \$26 trillion economy by 2030 in climate change. There should be an inflection point, where the rubber meets the road as New York, and Paris might be unreachable to local entrepreneurs. According to Mafalda Duarte, head of the Climate Investment Funds “We need to revisit the narrative and adjust the way we present the prospect of climate change”. She is of the opinions that in the economics of climate change there are opportunities and not doom and gloom. The challenge for the next generation of investors in renewable energy is how to source climate funds.

There is need for a “Climate Smart” energy revolution, as sources of clean and renewable energy are under exploited. President Macron of France and President Xi of China promised to partner with Africa following the Paris Agreement (COPS21). A proper cost /benefits analysis in the region, high lights that a climate friendly economy is cheaper and produces jobs in industry, energy, agri-business and a clean environment.



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There are 800 thousand households on “pay as you go” solar panels in East Africa and about 100.000 in West Africa. LNG can be used as fuel for power plants, to produce electricity, it emits less carbon dioxide. It can also be used for, domestic heating and cooking. Proponents for the proper utilization of LNG N J Ayuk and Elias Pungong both experts in the sector have recently commented on LNG.

According to NJ Ayuk, the CEO of Centurion Law Group a Pan African Law firm, “Gas flaring has resulted in, and continues to result, in the burning of huge amount of resources across Africa” He talked of the need for improved technology to help reduce the cost of exploitation and transportation, and questions why African countries import diesel for local power stations, when there are available and cheaper resources locally. Gas flaring is not only waste, it pollutes. The focus should be on renewable and alternative sources of energy with faster deployment rates and quick access to grids.

Mr. Elias Pungong formerly of PWC and EY, an oil and gas leader in Africa, in an op-ed “The case for Domestic Gas Industry in Cameroon” opined on the effects of price fluctuations and its impact on the market place in Cameroon. He advised on the need to devise new strategies, through technology to liberalize the market place. Domestic gas production for local consumption, Mr. Pungong says will make LNG profitable and attract investors. It is not the case for now. Fossil fuels in Central Africa should be made profitable.

Waste in the main cities of Yaounde, Douala, Bafoussam with improved technology can be converted to electricity. In Ethiopia a waste dump in Koshe will transform 1400 tons of waste, to supply about 25% of Addis Ababa households, with electricity.

## RECOMMENDATIONS

There is need for strategic vision that incorporates local realities, competitive and comparative advantages for successful partnerships. This will include an understanding of the following:

- Governments and utility companies have to provide a secure business environment, an investor friendly environment with standard models for independent power producers.
- Provision of transparent regulations and a history of consistency in electricity regulations through stake holder cooperation and collaboration
- Dispatch risk to mitigate risks for lenders, i.e off takers, fixed tariffs, foreign exchange and change in laws and other clauses.
- Assurances on rates and tariffs agreed upon in PPA’s on the resale price of electricity by distributor companies.
- Compliance and due diligence to mitigate risk and manage the expectations of investors by working with development agencies on the ground and local experts, on host countries laws, regulations and business environment.
- A Regional legal framework for electricity trading, well-articulated regional regulations with appropriate mechanisms for dispute resolution and to encourage investment in hydro, solar renewable or wind projects.
- Local expertise should be sought by General Counsels on fiscal regimes, local laws and regulations during the structuring of energy projects.

- Most of these recommendations are in place, but there is need for improved visibility in the evaluation and monitoring of projects.

## CONCLUSION

For the region to be part of the fourth industrial revolution, and the digital age, there is need for long term investments, and improved management of existing and new energy infrastructure.

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Innovation in the various stages of electrification, will assure continuous supply of electricity at lower production cost. This will provide the necessary stimulus to grow the economy, create jobs and attract investors in other sectors.

Cameroon is blessed with fauna, flora, human resources and vast arable which are prerequisites for industry and manufacturing. Cameroon is the food basket in the region and supplies food to Chad, Equatorial Guinea, Central African Republic and Gabon. The Cameroon sea port serves Chad and the Central African Republic. Reliable and uninterrupted electrification will positively impact productivity in many sectors.

There are many issues related to electrification, like the huge cost of financing power projects, the availability of good projects and delays in return on investment. Renewable energy is cheaper with available funds for good projects, shorter installation times and quick (ROI). Climate smart energy solutions will provide clean and cheap energy that will add capacity to complement existing hydro plants. There are regulatory reforms and administrative changes to be copied from Asian, East and Southern African countries, in renewable and off-grid projects. The successful implementation of all the prescriptions for

electrification will provide outcomes that will support the sustainable development goals of the region.

*Disclaimer, any wrong spellings or misinterpretations are not intentional and TIAC, is prepared to correct and adjust to speak to the original intent.*

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