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Politics of Energy Transitions in South Sudan: Who is Fooling Who?

Jacob Dut Chol Riak

PhD, Senior Researcher and Associate Professor, Department of Political Science, University of Juba. South Sudan

E-mail: dutsenior@yahoo.com

ORCID ID 000900340178612

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Abstract

One of the critical themes in oil and gas industry is energy transition from fossil fuel to renewables. While energy transition is importance for any society progress, it has been politicized. The politics is about the genesis and speed of transitions. While African countries wanted to transit to renewables at their phases given that they don't emit substantive emissions, Western countries wanted every country to transit fully to renewables by 2050. Yet, the Western countries are still carrying out exploration for new oilfields in the United Kingdom and Norway. The paper discuses the concept of energy transition, impacts of energy transition on extractive industries development in Africa. The paper in detail discusses economic impacts, social impacts as well as regulatory framework impacts. It examines South Sudan energy transition by looking at the obstacles as well as solutions to transition to renewables. While the study methodology embraces qualitative research design as well as case study of South Sudan, energy transition has remained as a complex matter where the Western world is fooling the developing world. Although energy transition is imperative, the study concludes that it must be just, progressive and free from coercion. Future research is hereby recommended to the stakeholders in oil and gas industry and particularly, those that have been associated with energy transition to adopt energy mix.

Keywords: *Politics; Energy; Transition; Just; Progressive; Fossils; Renewables; Energy Mix*

1. Introduction

Energy transitions have dominated international, regional and national discourses. Whereas internationally, energy transitions are discussed in the context of global reduction of carbon emissions to zero percent, they are indeed deliberated in the context of institutional frameworks of Paris Agreement 2015, the World Bank on non-fossils lending and European Investment Bank on restrictions of funding of carbonized oil and gas projects. Although regionally, both resistances and aspirations of the African continent overshadow the debates of energy transitions, the twin's contradictions demonstrate the

complexity of the energy transitions in the African region. At the national level, energy transitions are viewed with suspicion, as the origin of conversation is foreign in nature. Even with these incongruities in the perception and reception of energy transitions, the African continent and member states seem to be picking up the conversation. This leads us to explore energy transition. Then, what is energy transition? How is it likely to impact the extractive industries development in Africa? How is this relevant in the case of South Sudan? What are the roles of Paris Agreement, World Bank and European Investment Bank in energy transition? Is continental Africa and particularly, South Sudan extractive industries ready to transit fully to renewable energies? What are the obstacles? What are the possible solutions to these obstacles? This study shall attempt these questions. The study is structured as follows: section one introduces the question. Section two discusses the concept of energy transition. Section three discusses likely impact of energy transition on extractive industries development in Africa. Section four discusses South Sudan in energy transition, obstacles and solutions. Section five concludes and section six gives a direction for future research.

2. The Concept of Energy Transition

According to International Energy Agency (IEA), energy transition refers to the global energy sector transformation from fossil-based modes of energy production and consumption such as natural gas, oil and coal to renewable energy sources like hydro-power, thermal, solar and wind, as well as lithium ion batteries (IEA, 2022). On the other hand, International Renewable Energy Agency (IRENA), an intergovernmental organization dedicated to the promotion of renewable energy, conceptualizes energy transition as a pathway towards change of the global energy sector from fossil fuels to zero-carbon by 2050 (IRENA, 2022). Besides, Victoria R. Nalule defines energy transition as progressive process; nonetheless, some energy specialists have used the term to disgrace countries that still wish to develop their fossil fuels (Nalule, 2021). Energy transition doesn't mean a ban from fossil fuels and thus wholesome away from fossil fuels is not expected (Nalule, 2020). While shifting away from fossil fuels should be gradually done, the pushers of energy transition are coercively doing it.

3. Impact of Energy Transition on Extractive Industries Development in Africa

Majority of oil and gas policy developers and operators in Africa find it difficulty to transit from fossil fuels to renewable energies. This is because it is quite expensive to move to renewables as it requires billions USD, strong regulatory frameworks and new culture (Painnly, 2001). While the transition may not enforce total ban of fossil fuels as widely argue by energy experts, international agreements and institutions condition it. For instance, the Paris Agreement of 2015 conditions that all countries must decarbonize by lowering their greenhouse emissions and limit global average temperature to 1.5 Celsius (Leal-Arcas et al, 2020). The World Bank has conditioned its loans and grants to the countries that have developed regulatory frameworks and have begun transition to renewable energies (Wesley, 2022). While the bank talks about 'just transition' it may not be just as conditions attached don't provide equal energy justice for countries and communities in Africa. Moreover, the European Investment Bank endorsed a policy to ban funding for hydrocarbons and coal projects at the end of 2021 (Nalule and Mu, 2020). This confounded the already existing energy inaccessibility and poverty in Africa. The likely impact of energy transition on extractive development in Africa is discussed as below:

3.1. Economic Impacts

Majority of countries such as Algeria, Angola, Nigeria, Libya and Equatoria Guinea who are the leading producers of hydrocarbons in Africa and massively dependent on oil and gas for their budgets are going to lose billions of dollars and will not be able to run their economies. While it might seem that extractive industries are key in confronting poverty and ensuring economic development, there have been occasions where countries endowed with massive natural resources economically grow slower than

resource-poor countries and are faced with political conflicts and violence (Nalule and Mu, 2020). This condition has been argued as 'resource curse' (Auty, 1993). It is also argued as the 'paradox of plenty' as well as the 'the Nigerian disease' for petroleum producers in Sub-Saharan Africa. This situation is demonstrated through deep-seated poor governance, corruption and weak institutions (Olawuyi, 2018). However, if well managed, the hydrocarbon resources can be a blessing to countries. Examples of countries where hydrocarbon resources have led to economic development include Norway and Brazil, which are known as resource booms. Although United States, Canada and Australia are resource-rich countries, their conundrum is how to harness the premium revenues from fossil fuels sector and contribute to sustainable growth and development (Namir et al, 2018).

3.2. Social Impacts

Access to affordable and clean energy is a basic right for all citizens. The UN Sustainable Development Goal 7 advocates for access to affordable and clean energy for all (UNDP Report, 2022). Reliable data shows 3.2 billion people, representing about 40% of the world population are still relying on unhealthy fuels for cooking (Boyle, 2018). 940 million, representing 13% of the world population don't have access to electricity (Herberson, 2018). Out of 940 million, an estimate of 600 million people doesn't have access to electricity in Africa (Nalule, 2018). South Africa and Egypt are the two countries where majority of the citizens have access to electricity. In East Africa Community, energy poverty is worse, out of 320 million people, about 230 million lacks access to electricity (Wekesa, 2022). Kenya is the leading country in term of access of electricity to its citizens. It generates 2819 megawatts for power mostly from renewable sources of energy (Podobnik, 2020).

Table 1: Generation Capacity of Electricity in Kenya

Source (As of October 2019)	Capacity (MW)	Capacity %
Hydro	826	29.3%
Fossil Fuels (incl. gas, diesel and emergency power)	720	25.54%
Geothermal	828	29.4%
Bagasse Cogeneration	28	0.99%
Wind	335	11.88%
Solar	50	1.77%
Others	32	1.12%
Total	**2819**	**100.0%**

Source: Podobnik, 2020

As from table 1 above, one can argue that Kenya is already in full transition to renewable energy as being shown by 74.46% of the renewable energy electricity generation. What has made this journey successful is the friendly regulatory environment that gives incentives to investors in renewable energies.

3.3. Regulatory Frameworks Impacts

While Africa countries are struggling to adapt to the energy access and transition, the regulatory environment has improved. Leading hydrocarbon countries such as Nigeria, Algeria, Angola, and Equatorial Guinea have already put in place regulatory frameworks on renewable energies (Nalule and

Acheampong, 2021). Other upcoming petroleum producers such as Kenya and Uganda have also enacted numerous regulatory frameworks on renewable energies. This is in tandem to orderly energy access and transition. The challenge associated with energy regulatory frameworks in Africa, is selective implementation. Nonetheless, there are countries, which have never implemented the energy policies, laws and regulations.

Table 2: Renewable Energy and Energy Efficiency Laws

Country	Nigeria	Algeria	Angola	Equatorial Guinea	Kenya	Uganda
Policies, Laws and Regulations	The National Renewable Energy and Energy Efficiency Policy 2000 The National Electric Power Policy 2001 Nigeria Energy Efficiency Action Plan 2015–2030	Energy-Saving and Thermal Efficiency Policy 2016 Energy Efficiency Policy 2015 Energy Act 2017 Natural gas policy 2016 Renewable Energy Act 2020	General Electricity Law 2015 Environmental Conservation Law 2021 Renewable Energies Policy 2022	Hydrocarbons Law 1999 Renewable Energy Policy 2019	Energy Act 2019 National Energy Policy 2018 National Climate Change Policy 2016 Power Development Plan 2017-2037	Biofuels Act 2018 Renewable Energy Policy 2007—2017 The Atomic Energy Act 2008 Renewable Energy Policy 2007 The Energy Policy for Uganda 2002

Source: Author

4. South Sudan and Energy Transition

Since its independence on 9th July 2011, South Sudan has not developed any energy policy. What the lawmakers have enacted is Southern Sudan Electricity Corporation (SSEC) Act 2011, which govern the state-owned electricity company, mandated to generate, transmit, distribute, and sale electricity across South Sudan and beyond. Whereas the Ministry of Energy and Dams remains the regulator for energy sector, SSEC is the technical and commercial arm of the government representing the government interests in power sector. Although South Sudan has natural resources for renewable energies such as river Nile waters, sun, wind, earth crust & heated rocks, the leadership of the country has never thought of tapping into these resources to provide renewable energies.

4.1. Obstacles to South Sudan Transition to Renewable Energy

The first and biggest obstacle to South Sudan transition to renewable energy is lack of energy policy to guide this very importance sector (Riak, 2024). While the Ministry of Energy and Dams proudly calls itself a regulator, it has failed to regular the entire energy industry, particularly, the renewable energies. Although it can be argued that the power sector is regulated through the SSEC, this legislation is not sufficient and it has not covered the renewable energy sector. Whereas SSEC Act 2011 has covered the power sector, it has failed to detail the generation, transmission, distribution and sale of the electricity. What the SSEC Act has concentrated on is the functions and roles of SSEC. Hence, it is not a power or electricity law.

The second obstacle is access to electricity in South Sudan. The country's demand for electricity stands at 300MW and is expected to increase to 1,500MW by 2040 (Gatluak, 2024). The estimated installed capacity for the country power consumption, which previously stood at 131MW, was recently increased to 141MW but still not sufficient. Of an estimated 13 million South Sudanese, only 3.7% of the population is connected to the electricity power generated by fossil fuels (Deng, 2022).

The third obstacle is failure of South Sudan to adhere to 2015 Paris Agreement. Whereas South Sudan signed the 2015 Paris Agreement for Climate Change on 22nd April 2016, it has never implemented the articles of the Agreement. The country still relies heavily on fossil fuels by 100% for its power generation, which has profoundly polluted the environment (Chol, 2016). The renewable energy sector is not yet enhanced. The department of renewable energy at the Ministry of Energy exists in papers but it has never rolled out any policy or activity on renewable energy in the country (Mozersky and Kammen, 2024).

4.2. Solutions to the Stuck-South Sudan Transition to Renewable Energy

The first solution is to create a comprehensive energy policy encompassing hydrocarbon resources and renewable energies. Besides, the renewable energy law and its regulations need to be put in place to specifically regulate this sector.

Secondly, the country leadership needs to invest in the power generation, particularly, using natural renewable resources such as water, sun and wind. Energy is a human right matter and South Sudan government should align itself to UN Sustainable Development Goal 7 of enhancing affordable and clean energy to all.

Thirdly, South Sudan should implement the provisions of 2015 Paris Agreement for Climate Change by ensuring that it operates within the heat limit of 1.5 Celsius. As it is currently fossils-based energy generation country, the leadership through the Ministry of Energy and Dams should commence enacting a policy and sensitizing the energy generation stakeholders so that de-carbonization begins earlier. The policy should cap on the carbon emissions to ensure that the country stays at low carbons energy generation (Bulkeley et al, 2010). South Sudan should avoid energy 'transition risks' by adopting 'just transition' through its national and international obligations.

Conclusion

While energy transitions are critical for Africa, and particularly, South Sudan, they should not be done at wholesome. They should be 'just', gradual and at each country phase to avoid 'transition risks. While majority of countries in Africa have enacted policies and laws, South Sudan is yet to join them. Although South Sudan situation is baffled by civil wars and political instability, the nascent state has no excuse in rolling out renewable energy policy and activities. Energy transition requires clean technologies to facilitate effective carbon capture and carbon sequestration (storage). Whereas the conversation about energy transition begun outside Africa, African governments should seize the opportunity to enact renewable energy laws and policies and above all implement them in totality for the benefits of their citizens and environments.

Recommendation for Future Research

While I have exhaustively attempted this question, I still feel that much research is desired. Further research is hereby recommended for energy mix as way of moderating energy transitions to renewable energy.

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