Mitigating the Effects of Climate Change through Marine Renewable Energy Development in Nigeria: Law, Issues and Prospects

By:

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1 Introduction

The quest for uninterrupted electric power supply has been a long story of dashed hopes and expectations for Nigerians. Despite Nigeria's abundance of fossil and renewable energy resources, Nigerians still experience acute energy poverty: they either lack access to modern efficient energy sources or struggle with the inadequate supply and poor quality. The state of the Nigerian energy sector has been consistently described as inefficient; this inefficiency is chiefly attributed to the lack of diversification of energy sources. Close to 95 million people are fully reliant on traditional wood stoves for cooking, with the attendant health implications.[1] Statistics optimistically state that about 40% of the population has access to electricity from the national grid. But while

electricity demand is estimated at 95 GW for loads connected to the national grid, the national utility delivers a paltry 3 GW to a population of about 200 million people.[2]

Renewable energy is very germane for promotion of energy availability and redressing of teething environmental concerns with energy use in Nigeria. Nigeria is a coastal state located within the hub of the Gulf of Guinea and as such has access of various Marine Renewable Energy (MRE) sources. Unfortunately, Nigeria has failed to harness these abundant resources within her territorial waters to solve her energy problems, and achieve her climate change mitigation target under the Paris Climate Agreement, 2015.

This blog focuses on the legal and institutional framework for Marine Renewable Energy development in Nigeria. The blog examines Nigeria's MRE potentials and how their maximization will assist Nigeria meet her climate change mitigation obligation under international climate regime. It further examines the possible impacts of exploring MRE sources in Nigeria and how this venture may co-exist with already existing uses of the sea and natural oceanic environment so as not to entirely alter the bio-diversity of the marine environment. It also examines emerging issues with MRE development in Nigeria. Finally, it makes suggestions on how Nigeria can develop an MRE legal framework that can balance all the competing interests.

2 Nigeria's Marine Renewable Energy Potentials

Nigeria is a coastal state with enormous marine renewable energy sources such as tide and wave energy.[3] Tidal and wave energy are acclaimed to be environmentally friendly and are feasible energy sources that can ameliorate the negative impacts of fossil fuel energy in Nigeria.[4]

Wave and tidal energy are environmentally friendly and are a viable source for mitigating the harsh effects of fossil fuels in the country. Wind that blows across the ocean surface produce surface waves; which is 'a more certain form of energy because its inflow time can be predicted at the wave power facility'.[5] Tidal energy on the other hand, is 'derived by converting the gravitational interaction between the earth and the moon on the ocean's waters through tidal energy generators'.[6] Research has shown that tidal energy potentials along the 9 coastal states of Nigeria[7] are high and have not

been exploited.[8] Nigeria needs to integrate these MREs into its energy mix in order to efficiently meet the energy demands of her coastal states and beyond. Currently, the power sector accounts for 60% of Nigeria's gross greenhouse gases (GHGs) emission, MRE development will reduce Nigeria's GHGs emissions and attain her pledged Nationally Determined Contribution under the Paris Climate Agreement, 2015. Nigeria's Intended Nationally Determined Contribution, retrieved February 13, 2020 from https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Nigeria%20First/Approved%12.

MRE is ecofriendly and sustainable being that these sources can naturally replenished on a symbiotic basis.[9] It is also cheaper to install and maintain on a long term basis when compared to fossil fuel. It will reduce the overburden on fossil fuel in Nigeria thereby introducing diversification which will increase energy stability and efficiency in Nigeria. However, major obstacles to the development of MRE in Nigeria include the huge finance required to set up the needed facilities, and the competing international sea rights and obligations of Nigeria towards the marine environment. Other obstacles are discussed under part four of this blog.

These sources of renewable energy (RE) have generally not been properly exploited. Some of the constraints to their use are the high costs associated with establishing the necessary facilities and the inadequate number of sites with the requisite tidal rages and velocity flows needed for energy production.

3 Legal Framework for MRE Development in Nigeria

The legal framework on energy in Nigeria comprises of both legislations and policy documents. The *Electric Power Sector Reform Act (EPSRA)*, 2005 is the principal legislation on power and energy in Nigeria. The Act established the National Electricity Regulation Commission (NERC) and saddled it with the responsibility of regulating Nigeria's Electricity Supply Industry (ESI);[10] and the Rural Electrification Agency (REA) to oversee rural electrification in Nigeria.[11] Renewable energy development in Nigeria is classified under rural electrification.[12] Renewable energy is provided for under section 88(9) of the Act, where the minister of power in consultation with NERC and REA is mandated to submit quarterly reports to the President on progress and

achievement of the Rural Electrification Strategy and Plans in relation to inter alia renewable energy. The provision is not clear and detailed. A detailed provision for renewable energy development in Nigeria can be found in the *National Renewable Energy and Energy Efficiency Policy* (NREEEP), 2015.[13] The NREEEP was made to align Nigeria's renewable energy plans and policy with the Economic Community of West African States' (ECOWAS) Renewable Energy Policy.[14] The NREEEP identified solar energy, wind, biomass, small and medium hydro, geothermal, tide and wave energy as the RE sources in Nigeria.[15] It made explicit provisions on policy, objectives and strategy for the development of solar energy, wind, biomass, and hydro energy in Nigeria.[16] Regrettably, the policy regarded noted that geothermal, tide and wave energies are 'not in use for energy supply at the moment',[17] it did not make provision for them on policy, objectives and strategies. The ECOWAS Renewable Energy Policy is also silent on the development of tide and wave energy despite their abundance within region being that 12 of 15 member states of the ECOWAS are coastal states within the Gulf of Guinea.[18] Tide and wave energies are therefore energies for the future in Nigeria and ECOWAS with no plans on how to embrace this future.

4 Emerging Issues with MRE Development in Nigeria

MRE development in Nigeria is currently plagued with some legal, social and economic issues which have the capacity of making MRE development in Nigeria mere wishful thinking. These issues include

a. International Maritime Jurisdictional Issue:

The *United Nations Convention for the Law of the Sea* [19] set the limit of territorial sea of a coastal state to be 12 nautical miles from its baseline.[20] Nwokocha et al[21] noted that Nigeria's high wave energy potentials lies along the Calabar coast of Nigeria. Nigeria's territorial waters overlaps with that of Cameroon and Equatorial Guinea within this axis. Can Nigeria *suo motu* initiate MRE operation within this axis? UNCLOS envisaged this kind of scenario and provided that where the coasts of two States are adjacent or opposite each other, "…neither of the two States is entitled, failing agreement between them to the contrary, to extend its territorial sea beyond the median line every point of which is equidistant from the nearest points on the baselines from which the

breadth of the territorial seas of each of the two States is measured."[22] It therefore connotes that where natural resources straddles around territorial waters that are overlapping, the set of circumstances is apt for joint development, irrespective of whether or not their territories are delimited.[23] Nigeria cannot develop MRE within the Calabar axis of her territorials except if it is a joint development with Cameroon and Equatorial Guinea. The teething question is, are the other countries ready for MRE development, more so, when they are not members of ECOWAS bound by ECOWAS Renewable Energy Policy?

b. Balancing the Need for MRE Development with Already Existing Obligations under International Marine Environmental Laws

The development of MRE will help to mitigate climate change through the reduction of greenhouse gases emission. However, it may pose serious environmental risks to the marine ecosystem. Marine species under articles 64-68 of UNCLOS, (such as, marine mammals, highly migratory species, birds, pelagic, sea turtles, fishes and benthic organisms) are the major receptors of the impact of anthropogenic activities on the sea which MRE is inclusive. UNCLOS made general provision for the protection of the marine environment from MRE activities. Article 192 of UNCLOS obligates parties to protect and preserve the marine environment. Article 194 require that states undertake 'measures to prevent, reduce and control pollution of the marine environment'. The lacuna in the convention is that the provisions are generic in nature without a specific obligation on MRE developers. The convention on Biodiversity (CBD) in its articles 7-8 made provisions for reservation of species in their natural habitat.

Nigeria is therefore, obligated to develop a regulatory framework that will balance the competing interests of MRE development and marine environmental protection.

c. Absence of Explicit Regulatory Framework

MRE is considered to be energy for the future in Nigeria, hence, no explicit plans or strategies were drawn out for it under ESPRA and NREEEP. This absence of regulatory framework makes it difficult for both local and foreign investors to consider the portion of investing it.

c. High Cost of Investment in MRE

Technologies needed for MRE development are very expensive. It requires technological transfer, importation of mechanized equipment, and expatriate. Lack of local content of MRE technologies necessitates for the importation of MRE technologies. This venture will gulp billions of dollars and expatriate manpower.[24] Accessing loan locally for renewable energy investments is difficult for investors. Due to unreliable credit records, investments in Nigeria needs collateral; when you look at Renewable Energy Technologies (RETs), the technologies and land cannot be taken as collateral as the technologies are uncertain and the land still belongs to the government. MRE development in Nigeria therefore require Public Private Partnership. Nigeria must restore investors' confidence in this regard by creating tax incentives.

d. Insecurity

The Gulf of Guinea is a volatile region prone to maritime piracy. It is a safe haven for sea robbers, militants, and pirates. Investors will not be willing to invest billions of dollars in security hot spots regardless of how viable the venture may appear. Nigeria recently enacted the Suppression of Piracy and Other Maritime Offences Act, 2019 (POMO Act) with the aim of preventing and suppressing piracy, armed robbery and any other unlawful act against ships, aircrafts and any other maritime craft, including fixed and floating platforms.[25] The coming in force of this Act have not actually changed the security challenges across the region. Regional cooperation is therefore paramount in tackling this issue of insecurity.

e. Awareness

Majority of Nigerians are not aware about the environmental impacts and economic benefits of the use of renewable energy, the public awareness of the

renewable energy technologies is generally low. Awareness of the opportunities offered by renewable energies and their technologies is low among public and private sectors. This lack of information and awareness creates a market gap that results in higher risk perception for potential renewable energy projects.[26] The general perception is that renewable energy technologies are not yet mature technologies, hence are only suited for niche markets and as such will require heavy subsidy to make it work. There is therefore a need for dissemination of information on renewable energy resource availability, benefits and opportunity to the general public in order to raise public awareness and generate activities in the area.[27]

5. Recommendation and Conclusion

Nigeria cannot afford to fringe ignorance to the abundance of MRE sources in Nigeria. Examination of the various sources of MRE in Nigeria had shown great potentials, however, the policies framed to implement them are grossly inadequate and this in turn brings a lot of obstacles and hindrances towards the implementation of renewable energy in Nigeria. MRE cannot be implemented with deficit policies and legal frameworks. Nigeria must develop a comprehensive framework for MRE development; create incentives of MRE investors, encourage PPP in MRE; cooperation with her neighbors in MRE development and maritime security; and create awareness on the efficacy of RE in today Nigeria.

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[1] Olujobi J. 'The legal sustainability of energy substitution in Nigeria's electric power sector: renewable energy as alternative', Protection and Control of Modern Power Systems (2020) 5:32. Retrieved July 30, 2021

[2] Njokuji, Ogechi Judith, "Renewable Energy as an Alternative to Fossil Fuel Use: A Legal Framework for Advancing Low Carbon Energy Transition in Nigeria " (2019). Electronic Thesis and Dissertation Repository. 6651. Retrieved 24/7/2021

[3] See the *National Renewable Energy and Energy Efficiency Policy (NREEEP)*, 2015. See also Olatunji Obafemi et al, “Electric Power Crisis in Nigeria: A Strategic Call for Change of Focus to Renewable Sources” (2018) IOP Conf. Series: Materials Science and Engineering 413, online:.

[4] Njokuji, n. 2. 64.

[5] Ibid.

[6] Ibid.

[7] The coastal states are Lagos, Ogun, Ondo, Edo, Delta, Bayelsa, Rivers, Akwa Ibom, and Cross River.

[8] C. Nwokocha, M.A. Waheed, and T.A. Layeni ‘Estimation of tidal power potential of Nigeria coastal area’, Ed. R. T. Durai Prabhakaran, S. A. Kale et al, *Renewable Energy and Sustainable Development* 2015, Nova Science Publishers, 64.

[9] Olujobi, n. 1,

[10] Section 31

[11] Section 88

[12] Ibid

[13] Retrieved July 31, 2021

[14] The ECOWAS Renewable Energy Policy was adopted by the 43rd Ordinary Session of the ECOWAS Authority of Heads of State and Government, which held in Abuja, Nigeria, from 17 to 18 July 2013, which is cited as Supplementary Act A/SA. 3/7/13 on the ECOWAS Renewable Energy Policy. Retrieved July 31, 2021

[15] See NREEEP, 1.

[16] Ibid, 10-16.

[17] Ibid, 17.

[18] ECOWAS Member States. Retrieved July 31, 2021 from https://www.ecowas.int/member-states/

[19] UNCLOS, 1982

[20] Article 3. Coastal states can exclusive exploit natural resources within their territorial waters and Exclusive Economic Zones under article 56.

[21] Nwokocha et al, n. 8.

[22] UNCLOS, 1982, Article 15. See also the case of *Qatar v. Bahrain* ICJ Reports of Judgment 2001, p. 40, paras 175-176.

[23] N.C. Eze 2011 'Rethinking Maritime Delimitation and Promoting Joint Development of Petroleum: The Nigeria-Sao-Tome and Principe Joint Development Model'. Being an LL.M Dissertation submitted to the University of British Columbia.

[24] S. Amadi, "Ethics and Values in Sustainable Development"

[25] Section 1 POMO Act, 2019.

[26] G. Sulaiman, 2019 'Legal Framework for Renewable Energy Development in Nigeria'. Being an LL.B Long Essay submitted to Faculty of Law, Adeleke University.

[27] Ibid.

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