Energy Policy 149 (2021) 112070

Contents lists available at ScienceDirect

Energy Policy

journal homepage: http://www.elsevier.com/locate/enpol

Nigeria's quest for alternative clean energy development: A cobweb of opportunities, pitfalls and multiple dilemmas

Agaptus Nwozor [a,c,*], Segun Oshewolo [a], Gbenga Owoeye [a], Onjefu Okidu [b]

[a] Department of Political Science and International Relations, Landmark University, Omu Aran, Kwara State, Nigeria
[b] Mass Communication Programme, Landmark University, Omu Aran, Kwara State, Nigeria
[c] Landmark University SDG 7 (Affordable and Clean Energy Research Group), Nigeria

ARTICLE INFO

Keywords:
Alternative clean energy
Energy mix
Renewable energy
Energy transition targets
Nigeria

ABSTRACT

Nigeria has made pledges at various international fora to mainstream renewable energy in its energy mix. In keeping with these pledges, the country's domain for alternative clean energy development is filled with multitudinous policy documents. This paper undertakes a systematic appraisal of the subsisting opportunities, pitfalls and dilemmas surrounding Nigeria's quest for alternative clean energy development. The data for this paper are generated from key informant interviews as well as formal policy documents and scholarly archival materials. The paper finds a huge gap between setting national energy transition targets and realizing same. It further finds that Nigeria is yet to begin its journey of energy transition from fossil fuels to renewable energy in real terms despite ambitious targets and projections. It links it to structural gaps, policy discordance, unconducive investment climate, questionable commitment of stakeholders to transit to renewable energy and inability to attract robust private investments. It recommends institutional overhaul to reposition the energy sector for real transition to green energy systems.

1. Introduction

Renewable and nonrenewable energy resources are abundant in Nigeria. Their abundance offers the country a wide latitude to harness and integrate them into its energy mix. On the wings of global de-emphasis on fossil fuels due to their link with global warming and climate change, Nigeria began to develop policies to transit to alternative clean energy systems. Thus, Nigeria's policy domain is suffused with various types of policy documents, all of which contain strategies, frameworks, targets, projections and action plans on how to achieve green energy transition to meet national energy needs for the household, industrial and transportation sectors.

Notwithstanding Nigeria's endowment with renewable energy resources and a plethora of policy initiatives to harness these resources for energy generation, the country's energy sector still appears imperiled. The country's energy profile suggests that it is energy insecure. Energy insecurity in Nigeria has two sides. The first side is exemplified by the proportion of the population that has or does not have access to electricity. According to World Bank sources, only 54.4 percent of Nigerians had access to electricity as at 2017 (World Bank, n.d.). Both anecdotal evidence and responses from our key informants indicated that such factors as population growth, low-level of infrastructural investment, low power generation capacity and expansion in urban slums have actually reduced access to electricity. What this implies is that Nigeria is acutely deficient in terms of the percentage of the population that has access to electricity. A recent report put the number of Nigerians without access to electricity at 93 million (Ujamadu, 2018). The only condition for Nigeria to exit from the rank of countries with electricity access deficit is to expand its energy holdings. It is estimated that Nigeria would require to connect between 500,000 and 800,000 new households to the electricity grid on yearly basis between 2018 and 2030 to be able to achieve its targets of electricity access (Odin, 2018).

The second side of Nigeria's energy insecurity is the excessive power outages suffered by those that have electricity access. The outages diminish the kilowatt-hours available and therefore reduce the overall quality of access to electricity in the country. This has induced the prevalence of self-generation of power through small generators with attendant pressure on the environment and the economy (Nigerian Energy Support Programme, 2015; Osae-Brown and Olurounbi, 2019).

Nigeria's policy documents have various permutations and projections about how to expand the country's energy sector, especially through renewable energy sources. Beside the overall objective of

* Corresponding author. Department of Political Science and International Relations, Landmark University, Omu Aran, Kwara State, Nigeria.
E-mail addresses: nwozor.agaptus@lmu.edu.ng, agapman1@yahoo.co.uk (A. Nwozor).

https://doi.org/10.1016/j.enpol.2020.112070
Received 11 July 2020; Received in revised form 27 November 2020; Accepted 29 November 2020