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Carbon emission, solid waste management, and electricity generation: a legal and empirical perspective for renewable energy in Nigeria

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Abstract

This research investigates the necessity for transformation of wastes to energy for environmentally friendly and improvement in Nigeria's power sector for sustainability, to reduce greenhouse gas discharges and to encourage financings of renewable energy resources, and to alleviate the anxieties on dumping of deleterious wastes in Nigeria. The research utilises a library-centred doctrinal legal study modus operandi with a conceptual methodology, count on current researches. It investigates the effectiveness of subsisting legal regime and other regulations and policies which are requisite on the procedure of waste administration involving electricity generation in the country. Furthermore, the study conducts a quantitative assessment concerning augmented dickey fuller for analysing the stationarity of the data sequences and abound test cointegration approach to ascertain the subsistence of enduring connection between carbon emission and its determinants. A relative assessment of the renewable energy practise via biological wastes to electricity in other nations was also performed in this research. Additionally, the study uses dogmatic-legal analysis which draws on the results of linguistic grammatical, systemic, and teleological (purposive) interpretation of the existing legal regime on solid waste management and electricity generation in Nigeria. The study's fundamental finding indicates that when the Federal Government takes pragmatic actions to combat waste dumping, it will curtail

waste from the numerous bases in compliance with the regulatory and statutory obligations. This can be exploited to produce power while carbon emissions are regulated. The research investigates the consequence of metropolitan solid waste administration and electricity sources on carbon emissions, advocating substitution of power generation source in tackling environmental problems in the country. The study ends with suggestions for the amalgamation of policies and non-statutory encouragements for transforming waste to energy in the country's power industry and prescribes comprehensible law on energy bases with strict execution of electricity regulations for constant electricity generation and sustainability in the country's electricity industry.

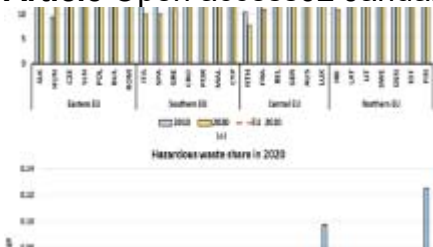
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Data availability

Data and materials used were acknowledged.

Abbreviations

MW:

Megawatts.

MJ/KG:

Megajoules per kilogram.

NERC:

Nigerian Electricity Regulatory Commission

EPSR:

Electric Power Sector Reform

Twh:

Terawatt-hour

Mtoe:

A unit of energy used to describe the energy content of all fuels, typically on a very large scale

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The authors declare no conflict of interest whatsoever.

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