LAW, CLIMATE CHANGE AND THE STABILIZATION OF GREENHOUSE GASES IN THE ATMOSPHERE IN NIGERIA: THE UNFINISHED BUSINESS*

Abstract

As part of her pledge to guarantee the stabilization of greenhouse emissions in the atmosphere, Nigeria passed the Climate Change Act, 2021. As a developing country, Nigeria is not spared of the environmental impacts of climate change among which are temperature increase, shrinking of lakes, warming of lakes/rivers, flooding, droughts, changes in marine and freshwater and biological systems, reduction of available surface water, deforestation and increasing desertification, migration of wildlife and extinction of some rare species, etc. The impacts need to be confronted frontally otherwise the goals of sustainable development might turn out to be a mirage with the increasing level of poverty in Nigeria. Apart from the latent impacts, the objective of the UNFCCC and the Climate Change Act in Nigeria to achieve the stabilization of greenhouse concentrations in the atmosphere may become a herculean task. To what extent will the Act assist in achieving the desired objectives of the global community in the stabilization of the greenhouse gases in the atmosphere? Are there are any pragmatic steps being taken to achieve the desired goals in pursuance of the provisions of the Act? The research examined the adequacy of the steps in Nigeria and suggested further actions that will complement the efforts of the government toward the stabilization of greenhouse gas concentration in the atmosphere. The research which is doctrinal found out that though Climate Change is a long -term issue, the effects manifest daily and the government of Nigeria has taken steps but there are still areas of unfinished business.

KEYWORDS*:* Climate, anthropogenic, carbon sinks, flooding, deforestation, fossil fuels.

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1.0 Introduction

Evidence of climate change is no longer opaque but transparent globally. In Nigeria, concern for climate change is generally more among environmental activists and not even among the educated class. Climate Change which was considered a hoax before the United Nations (UN) Conference in 1992 is now a significant part of the environmental lexicon. It is paradoxical that despite the level of illiteracy in Nigeria before the 1992 UN Conference on Climate Change, the average illiterate farmers in the Southwestern part of Nigeria in the period before independence in 1960 were aware of climate change but lacked the scientific knowledge to understand the causes and impacts of what they observed. The farmers then did not need the clock to know the time of the day and equally did not need anybody to tell them when to begin their farming by merely studying the weather. It is common in those days to hear farmers in their discussion to say in Yoruba dialect that '*Oju ojo ti yipada'* (meaning that the weather has changed). In this part of the country, it is common to find trees planted in the front and around each house while the communities have forests that are prohibited from entry except for some specified people and at a specified time in the year.

In Nigeria, before the discovery of crude oil in 1958 at Oloibiri in Delta State, agriculture was the mainstay of Nigerian economy until 1975 when Nigeria witnessed the oil- boom and the subsequent pursuit of industrialization which resulted in the drift from agriculture to heavy dependence on oil. This was followed by the migration of people from the rural places to the urban cities. The consequence of the migration is the increase in population in the urban cities, estate development and large consumption of fossil fuels. Nigeria is ranked as one of the 17th biggest emitters of greenhouse gases in 2015 and the second highest in Africa after South Africa from 1971 to 2014.[1] The 2024 latest report of total greenhouse gases emission in Nigeria shows increase emission by 0.73% from 380.16 Mt in 2022 to 385.11 Mt in 2032.[2] Fossil carbon dioxide emissions are still increasing at world level despite climate change mitigation agreement. In 2023 the majority of GHG emissions

1 Vivian Chime, Net-Zero target : Nigeria's greenhouse gas emissions increase by 46% in 18 years *The Cable* <London, 28 July 2022) https://www.thecable.ng/net-zero accessed 8 January 2025.

2 GHG emissions of all world countries 2024 Report *Edgar- Emissions Database for Global Atmospheric Research.* https://edgar.jrc.ec.europa.eu accessed 5 January 2025.

consisted of fossil Carbon dioxide which accounted for 73.7% of total emissions.[3] Nigeria loses over 3.7% of its forest annually, making it the country with the highest rate of deforestation in the world, and deforestation has been implicated as one of the major causes of greenhouse gas emissions.[4]

As a technical field of discourse, the goal of this research is to ensure that readers would be constrained to participate in the actions toward the stabilization of greenhouse gas emissions in the atmosphere. Understanding the impact of climate change and what it connotes is the first part of this paper. Part two discussed the legal framework of climate change. While part three discussed the appraisal of the Climate Change Act in Nigeria. Part four is the discussion on the sources of emissions of greenhouse gases in Nigeria and part five discussed the pragmatic approach towards achieving the goal of the research

2.0 Understanding Climate Change

Climate change is defined by the United Nations Framework Convention on Climate Change (UNFCCC) as a change in climate that is directly or indirectly attributed to human activity that modifies the composition of the global atmosphere.[5] The long-term regional or even worldwide average of temperature, humidity, and rainfall patterns throughout seasons, years or decades is referred to as the 'climate 'in environmental studies.[6] The term 'weather' describes local

atmospheric conditions that last anywhere from a few minutes to several hours or days. Simply put, climate change is the way the planet's climate system reacts to changes in atmospheric in quantities of greenhouse gases like Carbon dioxide.[7] The term 'climate change' also encompasses a wide range of worldwide phenomena that are mostly brought about by the burning of fossil fuels which increase the number of gases in the atmosphere that trap heat.

3 *Ibid*.
4 GHG Emission of all World Countries, (n2).
5 UNFCCC 1994, art 1(2); CCA 2021, s.35.
6 MR Usikalu, 'Health Impact of Climate Change due to combustion of fossil fuel (2009)4 (13) *ijps* https://d.academicjournals.org/ijps accessed 10 January 2025. See also https://do1.org/10.5897/ijps 9000287
7 Chris Wold, David Hunter and Melissa Powers, *Climate Change and the Law* (Matthew Bender and Company 2009).

The greenhouse gases identified by climate scientists are Carbon dioxide (Co2), Methane (CH4), Nitrous Oxide(N20), Chlorofluorocarbons, Hydrofluorocarbons, Perfluorocarbons (PFC),, Sulfur Hexafluoride (SF6) and Black Carbon (soot).. Human beings have been implicated for accelerating the release of the greenhouse gases by mining and drilling large quantities of fossil fuels and burning them to produce energy while in the process emitting Carbon dioxide. Climate change occurs from the increase concentration of these gases in the atmosphere. The period between 2011 and 2020 has been described as the warmest on record.[8] The year 2024 was also reputed to be the warmest year since global records began in 1850. 2024 saw unprecedented global temperatures, following on from the remarkable warmth of 2023. It also became the first year with an average temperature clearly exceeding 1.5 degrees Celsius above the pre-industrial level.[9] Impacts of climate change are all over the continents and they include droughts, water scarcity, severe fires, rising Sea and Ocean levels, flooding, melting polar ice, declining biodiversity, shrinking of lakes and catastrophic storms. Tornadoes are among the weather disasters depicting climate change in some continents. Apart from tornadoes, there are tropical storms known as hurricanes, cyclones and typhoons. The storms are known as hurricanes when they form in the northern Atlantic Ocean and the northeastern or southern Pacific Ocean. They are known as typhoons when they develop over the northwestern Pacific and they are referred to as Cyclones when they form over the Indian Ocean.[10]

The industrial revolution which started in the early Century in Europe could be said to have marked the commencement of the aggressive emission of greenhouse gases into the atmosphere. Automation resulted in the burning of fossil fuels and the harvesting of trees as raw materials for production contributed to the emission of greenhouse gases. Forests, soils and Oceans are natural carbon sinks or reservoir. The destruction of forests and the disturbance of soil and Oceans which are carbon sinks contributed to the release of more carbon dioxide into the atmosphere. High concentration of carbon dioxide and other air pollutants caused the trapping of the heat from

8 Annual 2020 Global Climate Report https://www.ncei.noaa.gov accessed 10 January 2025.

9 Copernicus Climate Change Service, 'The 2024 Annual Climate Summary https://climate.copernicus.eu accessed 10 January 2025.

10 Beth Rowen, Time, Holly Hartman, and Curtis Slepian, *Time for Kids Almanac 2012* (Time for Kids Books, 2012).

the sun in such a way that makes the planet hotter. Carbon dioxide is produced when fossil fuels are burnt, and its effects become intensified when forests that should absorb it are cut down. Farming techniques and grazing of cattle are among the sources of Methane and Nitrous oxides that have more potent effects than Carbon dioxide in the atmosphere. The primary source of energy for the earth is the sun. The sun energy on getting to the earth planet radiates back into the space. The energy radiated back to the space is trapped by the greenhouse gases which results into what is known as greenhouse effect which is the rise in the temperature of the earth. The gases have different abilities to trap heat returned from the atmosphere.

The impacts of climate change across the planet differ from one continent to the other, and from one country to another depending on the available natural resources and human activities. The effects of climate change include higher temperatures, depletion of marine living resources and the destruction of their habitation, hostile weather, depletion and extinction of wildlife, forced migration of wildlife species, deforestation and increased desertification, shrinking of lakes and rivers drying up. Lake Chad, for instance, in West Africa has shrunk and it is predicted that it might disappear in a couple of decades or less.[11] The water discharges of Niger, Volta, Nile and Congo rivers in 2021 was less than the average calculated from 2002 to 2020.[12]

3.0 Overview of Climate Change Treaties

One of the historic outcomes of the Earth Summit of Rio de Janeiro in 1992 was the United Nations Framework Convention on the Climate Change (UNFCCC) that came into force in 1994. The goal is to keep atmospheric concentrations of greenhouse gases stable enough to avoid harmful human impact with the climate system.[13] The Convention did not provide binding limits on greenhouse gas emissions for individual countries and neither did it provide for enforcement mechanism as there is nothing to enforce but it laid the foundation for subsequent treaties that provide limit on emission of greenhouse gases. The Convention also laid the foundation for the Conference

11 Usman Sarki, 'Rescuing Lake Chad : A Call to Urgent Action on an Existential Problem *Vanguard Newspaper* (Lagos, 25 December 2024) https://vanguardngr.com accessed 12 January 2025.

12 Kiran Pandey, Major rivers in Africa ran drier than usual in 2021, finds WMO' (Down to Earth, 5 December 2022) https://www.downtoearth.org.in accessed 15 January 2025.

13 UNFCCC, supra, art 2.

of Parties (COP) that has continued to meet annually since the coming into force of the Convention. The parties acknowledged at the preamble of the Convention that there is climate change and at the same time observed that human activities are responsible for increase concentration of greenhouse gases in the atmosphere. The Convention provides for the commitment of parties. The COP is the supreme decision -making body for the Convention and all States that are parties to the UNFCCC meet every year unless the parties otherwise agree. The first COP was held in Berlin, Germany in 1995 while the last COP, that is, COP 30 took place in Brazil in 2025.The COP is the sole authority for the adoption of protocols and any proposed protocol is required to be communicated to the parties by the Secretariat at least six months before a session.[14] As the UNFCCC did not provide for a binding emission limit, the parties in 1997 adopted the Kyoto Protocol in Kyoto, Japan and it entered into force on 16 February 2005. The objective of the Protocol is the reduction of the gases that contribute to global warming. It called for reduction of six greenhouse gases in 41 countries and the European Union to 5.2% below 1990 levels. Another significant development in the history of climate change is the 2009 United Nations Climate Change Conference which took place in Copenhagen, Denmark. The meeting recognized that climate change is one of the greatest challenges and demanded that actions must be taken to keep temperatures below 2 0C. The Kyoto Protocol of 2005 was replaced by the Paris Agreement which entered into force in 2016. The United States of America declined to sign the Convention and the Paris Agreement, arguing that it would hurt the US economy and that it excluded 80% of the world including key population centres like China and India from compliance. Canada withdrew from the deal in 2012, while Australia refused to ratify it until 2007.

The Paris Agreement works on a five -year cycle of increasingly ambitious climate action carried out by countries and since 2020, countries have been submitting their climate action plans known as nationally determined contributions (NDC's). The most recent initiative to stabilize the greenhouse gas concentrations in the atmosphere was the Conference of Parties (COP 29) held in Baku, Azerbaijan in November 2024. An agreement on financial measures to lessen the consequences of climate change and assist developing

14 UNFCCC, art. 17.

countries in their transition to more sustainable energy was reached. A body supported by the UN was created to oversee global carbon credit trading. A deadline was also set to phase-out coal and for the growth of hydrogen markets, which are essential to meeting the goals of the Paris Agreement.

4.0 Appraisal of the Climate Change Act in Nigeria

As part of the commitment towards the stabilization of greenhouse gas in the atmosphere, Nigeria enacted the Climate Change Act 2021 and pursuant the Act, a National Council on Climate Change was established to provide for the mainstreaming of climate change actions. The objective of the Act is to provide[15] a framework for achieving low greenhouse gas emissions and to provide for green growth and sustainable economic development. The Act applies to all Ministries, Departments and Agencies (MDA's) of the Federal Government of Nigeria and to the public and private entities in Nigeria.[16] The Act provides for Carbon Budget which is the approved quantity of Greenhouse Gas emissions acceptable for a specified time. The Ministry of Environment and the Ministry of National Planning are to set a carbon budget for Nigeria, and they are to revise periodically the carbon budget in line with the Nigeria's Nationally Determined Contributions.

A National Climate Change Action Plan[17] is to be formulated by the Secretariat of the Council in consultation with the Federal Ministry of Environment and the Ministry of Budget and National Planning every five years. The Action Plan is to serve as the basis for establishing national goals, objectives and priorities on climate adaptation and for identifying activities necessary to ensure that the national emission profile is consistent with the carbon budget goals. The Act provides for a Nature Based Solution[18] such as the conservation of forests by providing for the Reduction of Emission for Deforestation and Degradation (REDD+). The Federal Ministry of Environment is empowered to set up a Registry with sub-national nodes of capturing REDD+ updates in Nigeria, including updates on Forest Reference Emission Level (FREL). A person or private or public entity that acts contrary to the efforts toward mitigation and adaptation measures is deemed to have

15 CCA, 2021, s1.
16 CCA, s2.
17 *ibid*, s20.
18 UNFCCC, ss27-29.

committed an offence and liable to a penalty to be determined by the Council. A full implementation of the provisions of the Act would go a long way in achieving the goals, however, the harmful practices that contribute to the emission of greenhouse gases are still prevalent. It is expected that with the Act, the rate of deforestation will go down, however, the contrary is the case five years after the enactment. The forest lands are still inhabited by criminals perpetrating activities harmful to the forest environment. Poverty has continued to make it difficult for the masses to embrace clean energy source. The government should put in place certain measures that will ensure that the masses and the government are on the same page.

5.0 Sources of Greenhouse Gas Emissions in Nigeria

The starting point of proffering solution to any problem is the understanding of the problem and the source. As climate change is a global phenomenon, it should be known that the sources of the greenhouse gases differ from one continent to the other and from one country to the other. As noted in the Preamble of the UNFCCC, the developed countries are still the major culprit of greenhouse gases emission. One unassailable fact is that whether developed or undeveloped, each country of the world is adversely affected by the impact of climate change in one way or the other. It should be noted that many of the oil producing countries in Africa and the Middle East are regarded as developing nation whereas the greatest sources of greenhouse gas concentrations in the atmosphere are the fossil fuels emitted during the process of production and consumption. Increased greenhouse gas emissions and declining carbon sinks are still the main causes of greenhouse concentration in the atmosphere. The slightest disturbance of the carbon sinks and reservoirs usually leads to increase concentration of the greenhouse gases in the atmosphere. On this premise, Nigeria is one of the countries where the carbon sinks and reservoirs are frequently disturbed. The spate of deforestation in Nigeria is alarming across the various regions. In the northern part of Nigeria, the forests have been taken over by terrorists acting as kidnappers, bandits and insurgents. The terrorists have also gained access to forests in the southern states as well, and in all the forests, apart from using the forests as haven for kidnapping, they are engaged in illegal mining activities and destruction of forest lands by cutting down of trees and poaching of wildlife. The activities have accounted for the deforestation rate

of 3.7% annually as reported by the United Nations.[19] Deforestation disrupts the natural balance of ecosystems, leading to soil erosion, loss of biodiversity, and changes in the local climate. The drivers of deforestation in Nigeria include the rapid expansion of agriculture, over-population, logging, urbanization, bush burning, over-grazing, illegal mining and terrorism. According to the national coordinator, Nigeria Erosion and Watershed Management Project, Dr. Dahiru, Nigeria loses between 450,000 and 600,000 hectares of forests to deforestation annually to rank among the countries with the highest rate of deforestation in the world.[20] The correlation of forest to climate change is that trees take in Carbon dioxide from the atmosphere and release oxygen during photosynthesis. This process reduces the Carbon dioxide stored in the atmosphere. As the trees are cut down, the stored carbon is released into the atmosphere in such a way as to increase its quantity.

Fossil fuel is another major source of Carbon dioxide in Nigeria. The Niger-Delta area of the Southern part of Nigeria is the industrial hub in Nigeria for oil exploration, exploitation and production. Emission of Carbon dioxide takes place during the process of exploitation and the refining of the crude oil by the oil companies. Apart from the emission related to the refining of fossil fuels, emission of Carbon dioxide arises also from the burning of fossil fuels to produce heat energy in industrial processes. Power plants generate emissions by burning fuels to generate electricity and heat.[21] As of 2023, carbon emissions from the power sector in Nigeria reached around 21.3 million metric tons of carbon dioxide equivalent. This was an increase from the previous year when just over 19 million metric tons of carbon dioxide equivalent was registered.[22] The oil producing companies in Nigeria have continued to flare gases associated with fossil fuels production in Nigeria causing sever environmental damage. Gas flaring in the Niger-Delta region

19 Abolaji Ogunjimi, Nigeria's Deforestation Crisis: Accelerating Climate Change (Your Commonwealth, 27 June 2024). https://yourcommonwealth.org accessed 14 July 2026. See also Michael Olugbode, 'Nigeria Has Lost Over 70% of Forest Reserves, Experts Warn, *Arise News* (Lagos, 15 July 2026). https://www.arise.tv

20 Adekunle Peter, 'Nigeria among countries with high deforestation rates globally (Global Forest Watch, 8 July 2019). See also https://www.globalforestwatch.org; *The Punch Newspapers, (*Lagos,8 July 2019) https://punchng.com

21 International Energy Agency (IEA), Emissions-Electricity 2025-Analysis https://www.iea.org; World Nuclear Association, Carbon Dioxide Emissions From Electricity, (World Nuclear Association, 26 March 2026) https://world-nuclear.org

22 Statista, Nigeria Power Sector Carbon Emissions 2023 (Statista Research Department, 27 November 2024).

has been estimated to have the capacity of emitting about 35 million tons of carbon dioxide per year and almost 12 million tons of Methane within 48 hours.[23] The Ogoni community in Rivers State of Nigeria has not recovered from the oil spillage that degraded the water, air and land resources which started in 1970 despite the clean-up exercise which started in 2016. In *Gbemre v Shell Petroleum Development Company of Nigeria Ltd and Others,*[24] the applicant claimed that gas flaring activities violated the community right to life and human dignity under the Constitution of Nigeria and the African Charter on Human and Peoples Rights. The Court upheld the claim of the applicant that gas flaring violated the right to clean environment and urged the Attorney-General of the Federation to ensure speedy amendment of the Re-Injection Act. The Act has since been repealed but this has not put an end to flaring of gas as the provisions in the Regulations made pursuant the Petroleum Industry Act have also permitted the flaring of gas. In *Asghar Leghari v Federation of Pakistan*[25], a farmer sued the government for failure to implement the Climate Change Policy of 2012 and the Framework for implementing climate change policy (2014-2030) and that the failure had resulted in food, water and energy security. The court upheld the argument of the claimant and nominated Climate Justice as successor to environmental justice to ensure the enforcement of national laws that will combat the activities of pollution industries.

The poor and epileptic nature of electricity generation and distribution in Nigeria has continued to constrain the people and corporate bodies to depend on fossil fuels for power generation. Fossil fuels remain the major source of energy for industrial production, transportation, domestic generation of power and energy supply for both private and public enterprises. The National Grid in Nigeria collapsed twelve times between January and November 2024.[26] The greater percentage of the population in Nigeria still relies on firewood for cooking because of poverty. The situation has become complicated because of the USA/Israel- Iran war that has forced the prices of oil and gas to increase

23 Catholic Secretariat of Nigeria: The Travesty of Oil and Gas Wealth (Justice Development and Peace Commission (JDPC), 2006).

24 Suit No. FHC/B/Cs 53/05, Federal High Court of Nigeria Benin Division.

25 W.P No.25501/2015. See also Climate Case Chart https://www.climatecasehart.com

26 Musa Adekunle, 'National Grid Collapse 12 Times, *The Guardian Newspapers* (Lagos, 11 December 2024) https://guardiang

astronomically in 2026. Greenhouse gas emissions can also arise from improper management and disposal of wastes. The problem of wastes disposal is complicated because of illegal transboundary movement of hazardous wastes and other electrical and electronic wastes that find their way into Nigeria under the guise of second-hand products. Poverty has continued to make people depend on imported goods with very short life span of expiration and many of the items especially electrical and electronic items lack spare parts for repair and they are also non-biodegradable. Other source of Carbon dioxide emission is the production of cement. Nigeria is a major producer of cement with not less than ten companies.

6.0 Pragmatic Measures for Effective Stabilization of Greenhouse Gases in Nigeria

Nigeria committed herself to the global efforts towards the stabilization of greenhouse gases in Nigeria as a party to the UNFCCC and other related protocols. The UNFCCC, the Paris Agreement and the Climate Change Act in Nigeria serve as the compass for the direction Nigeria should follow. A noticeable feature of the instruments is that they are more of curative than preventive measures by adopting hook, line and sinker the concept of adaptation and mitigation. What should be of concern to the global community is how to reverse the trend and maintain status quo go beyond the adaptation strategy. As a developing economy, Nigeria should go beyond adaptation/mitigation to measures that will effectively reduce the emission of the greenhouse gas concentration in the atmosphere. The Climate Change Act in Nigeria is elitist as it focuses more on institutions thus neglecting substantially the crucial roles individual and communities should play. The percentage of emission by individuals or per capita may be negligible compared with what corporate organization emit, however, a look at the population of Nigeria will show that the cumulative emissions from individuals would be greater than those emitted by the institutions. The Act neither specified the penalty for the breach of the provisions nor mention the court with jurisdiction. The Act also fails to provide for education and awareness of the masses that are critical to the achievement of the objectives of the global community in the stabilization of greenhouse gas concentrations in the atmosphere. The Act should be amended to fill the gaps identified.

Environmental protection in Nigeria has been sacrificed on the altar of economic development. For instance, in Nigeria, the mining activities in many States of the federation have continued to cause severe degradation of the land environment and the consequences include erosion, destruction of wildlife habitats and air pollution. A paradigm shift is required in the policymaking by the government to ensure that adequate priorities are given to the protection of the environment. Gas flaring has continued in Nigeria, and it is one of the deadly sources of emission of carbon dioxide. The Gas Flaring and Venting (Prevention of Waste Pollution) Regulations 2022 made pursuant the Petroleum Industry Act Provides that 'a producer shall maintain a daily log of the flaring and venting of natural gas and shall submit the logs to the Commission within 21 days.[27] The Regulations also provides for the flaring of gas under permit issued by the Commission. By the Regulations, a permit holder shall maintain a daily log of each occurrence of the flaring and venting of natural gas within its facilities.[28] Venting is the controlled or uncontrolled direct release of natural gas into the environment without combustion. Both flaring and venting of natural gas are detrimental to the environmental welfare and specifically the atmosphere.

The Commission may decline to issue or may revoke an exemption to a producer as prescribed in Section 104 of the PIA and Regulations 12(1). The Regulations provide:

(i) Pursuant to these regulations, no producer shall flare or vent gas from any facility operated by such producer save for the provisions of section 104(1) and 107 of the PIA and Regulations issued by the Commission

(ii) No permit holder shall engage in Routine flaring or Venting of Natural Gas from any facility operated by such permit holder.

(iii) No producer shall engage in Routine Flaring or Venting of natural gas from any Greenfield project.

The prohibitions are about procedures. What it means is that flaring can be done provided it is not routine and that flaring or venting must be carried out in accordance with the guidelines contained in the sections referred to in the

27 CCA, s. 15.
28 CCA, s.15(2).

Act. As observed earlier, the production and consumption of cement are one of the potent sources of the emission of greenhouse gases. Emission of greenhouse gases can be mitigated through energy efficiency, clinker substitution, waste heat recovery, carbon capture and storage. Clinker substitution involves using alternative materials such as fly ash, slag and calcinate clays. At COP 28, four critical strategies were identified for the reduction of emission of greenhouse gases during the production of cement and they are cutting the clinker, replacing limestone, fuel switching and electrification and capturing carbon clinker. The forum also advocated the use of limestone calcinated clay cement which can reduce carbon dioxide emission. In Nigeria, these strategies should be part of the environmental impact assessment prerequisite for any upcoming cement industry while the existing industries should be mandated to adopt the procedure by upgrading their facilities.

The Power sector in Nigeria as previously observed is another source of carbon dioxide emissions. As vast majority of carbon dioxide emissions in the energy sector comes from the burning of fossil fuels[29] such as coal, oil and natural gas for power generation or to fuel vehicles and machines, it is suggested that a switch from the use of fossil fuels to renewable energy source such as solar, wind and hydropower will solve the problem. Nigeria electricity supply should also be upgraded to ensure the use of electric vehicles. Also necessary to improve transportation in Nigeria is the need to rejuvenate the rail system in Nigeria. This will help to reduce the use of vehicles by individuals and the subsequent burning of fossil fuels.

Another area that requires urgent attention is the problem of deforestation which is also a major source of emission of carbon dioxide. The potential of forests to continue to serve as carbon sinks must be enhanced by proactive action targeted towards curtailing the unbridled invasion of the forests and poaching activities. A state of emergency must be declared on the forests in Nigeria to primarily ensure the restoring of the forests into their pristine nature. The governments at all levels must ensure the actual surveillance of the forests with a view of prohibiting illegal activities. Also, conscious

[29] Doris Dakua Sasu, Nigeria Power Sector carbon emissions 2023 (Statista, 27 November 2024) https://www.statista.com/statistics accessed 27 January 2025.

efforts must be geared towards creating new forests in each Local Government and each State of the Federation and in doing this, the federal authority should allocate a percentage of the monthly allocations for forestry development. Finally, the existing laws prohibiting illegal activities in the forests must be upgraded and enforced with stiffer penalties for violations. Activities detrimental to the growth of forests such as illegal mining, wildlife hunting, fishing, cattle grazing, poaching of trees and farming should be prohibited in the forests. The people in the rural communities must be encouraged to switch from the use of firewood through extension/improvement of electricity supply, subsidizing the cost of cooking gas and kerosene for domestic operations. These would halt dependence on forest trees and the felling of trees to produce charcoal or the use of firewood for domestic cooking

7.0 Conclusion

Nigeria is committed to the achievement of the goal of stabilizing the concentrations of greenhouse gas in the atmosphere and this is shown by the various steps taken by the government since the ratification of the UNFCCC and other treaties related to climate change. The Climate Change Act was enacted by the government and the government has put in place some guidelines toward the reduction of carbon emissions but there are still some unfinished businesses toward the realization of the goals of global community. The Climate Change Act requires a modest touch of amendment. The government should evolve policies that would ensure that masses are not left behind and at the same time the government should put in place necessary measures to curtail the emissions of the greenhouse gases from the various sources of emissions identified. A fundamental issue to be addressed is the issue of poverty and electricity generation. Nigeria as a developing country would not be able to play her part fully except the developed countries provide the necessary support. Nigeria is indebted to many of the technologically advanced countries and to abandon the dependence on fossil fuels, the international community should assist Nigeria to shed the heavy burden of foreign debts obstructing the government from providing social infrastructures. This can be done through debt forgiveness and the transfer of technology required to reduce emission of greenhouse gases from the various sources. The problem in the energy sector of the economy requires the assistance of the global community. The

development of the energy sector will alleviate the use of imported generators once there is stable supply of electricity. Also necessary is the harnessing of solar energy. The government should take advantage of the available sun energy to invest in solar power which should be made available at subsidized rate to the masses.