



A LEGAL FRAMEWORK FOR ACHIEVING NET-ZERO EMISSIONS: PATHWAYS TO ENERGY SUSTAINABILITY AND ENVIRONMENTAL COMPLIANCE IN NIGERIA

Olusola Joshua Olujobi¹,  Oluwatosin Kate Olanrewaju-Elufowoju²,  and Dare Ezekiel Olipede³

1. Department of Public and International Law, College of Law, Afe Babalola University Ado Ekiti, Ekiti State, Nigeria. Email: olujobi.olusola@abuad.edu.ng /joshuadlaw@yahoo.co.uk.

2. Department of Private and Property Law, Faculty of Law, Redeemer's University, Ede, Osun-State, Nigeria.

3. Department of Public and International Law, College of Law, Afe Babalola University Ado Ekiti, Ekiti State, Nigeria. Email: olipedede@abuad.edu.ng

Article Information:

Article Type:

Research Article

Manuscript Received:

31 April 2025

Final Revision Received:

24 June 2025

Published Online:

10 July 2025

Keywords:

Climate, climate change,
greenhouse gases,
emissions, net-zero

The struggle to achieve net-zero emissions is a unifier that facilitates cooperation between nations and highlights our shared humanity. Although fighting climate change requires global efforts, there is a responsibility on independent states to formulate actionable plans to achieve net-zero emissions in their respective jurisdictions. As a signatory to the Paris Agreement, Nigeria is obligated to strive towards achieving net-zero in the second half of the twenty-first century. In an audacious move at COP 21, Nigeria declared its ambition to achieve net-zero by 2060, forty years earlier than the deadline under the Paris Agreement. To achieve this, the country has enacted laws, formulated policies and even established a national council comprised of the highest political leaders in the country to ensure the implementation of frameworks established to enable the country achieve net-zero in due time. Using a qualitative research methodology, this study critically examines the causes of enhanced GHGs which are responsible for climate change, and the pathway to achieve net-zero. By evaluating the Climate Change Act 2021 and other relevant legal instruments, the study the current framework for achieving net-zero, with a view to proposing ways the current legal framework can be strengthened, to ensure net-zero in Nigeria.

Cite this article: Olusola Joshua Olujobi, Oluwatosin Kate Olanrewaju-Elufowoju and Dare Ezekiel Olipede (2026). A Legal Framework for Achieving Net-Zero Emissions: Pathways to Energy Sustainability and Environmental Compliance in Nigeria. The Journal of Sustainable Development, Law and Policy. Vol. 17:1. 364-388. DOI: 10.4314/jsdlp.v17i1.13



© The Author(s)

Publisher: Institute for Oil, Energy, Environment and Sustainable Development (OGEES Institute), Afe Babalola University, Ado Ekiti, Nigeria.

1. INTRODUCTION

Climate change is one of the most pressing challenges of the 21st century, with far-reaching implications for the environment, economy, and human societies. Increased amounts of greenhouse gases (GHGs) in the atmosphere has resulted in severe climate-related consequences, including extreme weather events, rising sea levels, and disruptions to natural ecosystems. In response to these challenges, the concept of net-zero emissions has gained prominence as a key global strategy to combat climate change. Achieving net-zero entails balancing GHG emissions with removal mechanisms, ensuring that the total amount of emissions released into the atmosphere is effectively neutralized.

For Nigeria, a country heavily reliant on fossil fuels but also highly vulnerable to climate change, the transition to net-zero presents both challenges and opportunities. As a party to the Paris Agreement, Nigeria has pledged to reach net-zero emissions by 2060, as its contribution to fight climate change. To achieve this target, the country has enacted laws and formulated policies including the Climate Change Act 2021 and the Nigeria Energy Transition Plan (ETP). However, significant obstacles remain, such as weak institutional enforcement, financial constraints, technological deficiencies, and socio-political barriers.

This article examines Nigeria's legal framework for achieving net-zero emissions, critically analyzing its strengths, weaknesses, and the pathways to sustainable compliance. It explores the theoretical foundations of net-zero policies, assesses the role of international and domestic legal instruments, and identifies key impediments that hinder effective implementation. Finally, the study proposes strategic solutions to enhance Nigeria's climate governance and ensure a successful transition to a low-carbon future

2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Literature Review

Olayande¹ explored the pathways to achieving net-zero greenhouse gas emissions by 2060 in Nigeria. The study highlighted the challenges of transitioning from fossil fuels, which are well-understood and widely utilized, to renewable energy sources, which remain underdeveloped in the Nigerian context. It underscores the importance of aligning the country's commitment to reducing climate change with its domestic development goals, particularly as over 30% of Nigeria's population lacks access to electricity, and over 60% rely on traditional energy sources like fuelwood and charcoal. The study highlighted these energy poverty conditions as a need to ensure balance between the current realities and the nation's energy objectives in the implementation of clean energy transition. The study examined Nigeria's Energy Transition Plan (ETP), which aimed to achieve 90% of electricity generation from renewables and clean cooking technologies accessible to over 80% of the population by 2050, but adjusted the target to 2060.²

The study evaluated the complexities of achieving these targets, particularly in reconciling energy security with climate objectives. It identified renewable energy plants, natural gas, and hydrogen as tool to achieve the clean energy transition, while emphasizing the need for international cooperation and technological support to overcome Nigeria's energy and economic constraints. This work is relevant to the study as it provides a framework for balancing climate action with socioeconomic realities. However, the work does not extensively address

¹ JS Olayande, 'Energy Transition for Achieving Net Zero Emission by 2060' (Conference session, 2022 National Energy Summit, Central Business District, Abuja, Nigeria, 5–6 July 2022)

https://www.energy.gov.ng/papers/NES%202022%20Energy%20Transition%20for%20Achieving%20Net-Zero%20Emission%20by%202060_Comments%20from%20ECN.pdf accessed 10th May, 2025

² Ibid

the role of legislative frameworks in facilitating the transition. This is a gap that the present study intends to fill³

Tari and Diah⁴ examined the challenges and prospects of legal frameworks aimed at combating climate change in Nigeria. The study recognizes Nigeria's vulnerability to climate change, compounded by heavy reliance on fossil fuels. The study highlighted significant climate-related issues such as gas flaring, gully erosion, and drought, which severely impact the country's environment, livelihoods, and biodiversity.⁵ The 1999 Constitution, Climate Change Act 2021, and the National Environmental Standards and Regulations Enforcement Agency Act, 2007 (NESREA) were evaluated as the study analyzed the existing legal framework on climate change in Nigeria. Although it recognized laudable provisions in the extant legal framework, it identified several implementation challenges, including ineffective enforcement of laws, non-domestication of international treaties, weak institutional coordination, and constitutional barriers that hinder climate-related litigation. For instance, Section 6(6)(c) of the Constitution renders environmental provisions under Section 20 non-justiciable, limiting their enforceability. To address climate change, the study called for the domestication of international climate treaties, improved institutional coordination, enhanced funding mechanisms, and amendments to the Constitution to enable effective climate change litigation. The work is beneficial to the study as it undertakes a holistic evaluation of the impediments to Nigeria's climate change action and ways to curb these challenges.⁶

³ Ibid

⁴ VA Tari and EC Diah, 'Challenges and Prospects of the Legal Frameworks for Combatting Climate Change in Nigeria' (2024) 4(1) AKSU Journal of Administration and Corporate Governance https://aksujacog.org.ng/articles/24/04/challenges-and-prospects-of-the-legal-frameworks-for-combatting-climate-change-in-nigeria/aksujacog_04_01_09.pdf accessed 10th May 2025.

⁵ Ibid

⁶ Ibid

Beavor and others,⁷ explored the financial and policy mechanisms required to promote the development of net-zero carbon buildings in Nigeria. The report outlined the factors enabling environmentally detrimental practices in the construction industry, highlighting political, financial, and risk opportunities as barriers to sustainable practices in the construction of buildings. In view of the nation's housing deficit, the study encouraged the adoption of sustainable practices in building to provide a balance between addressing the housing deficit and curbing environmental pollution in construction. To mitigate financial risks, the study identified tools like concessional loans, green bonds, and technical assistance grants as pivotal measures to address these risks. Additionally, the study discussed leveraging localized strategies, such as using low-carbon materials and renewable energy technologies tailored to Nigeria's context. The report also identified the fragmented regulatory environment and limited awareness of net-zero carbon practices as critical gaps. However, the study acknowledged challenges like high construction costs, lack of expertise, and limited local production capacity for sustainable materials.⁸

This work contributes to the discourse on promoting sustainable development in Nigeria by providing pathways to integrate global methodologies with localized strategies in Nigeria's building sector. However, the report did not extensively address the informal construction sector's role or offer a comprehensive analysis of the impact of urban governance structures. This is a gap that this study aims to fill.

Daudu and Idehen⁹ provided a comparative analysis of climate change laws in Nigeria and selected jurisdictions, namely the United Kingdom, Scotland, and Denmark. The study underscored the global legal efforts to combat climate change, emphasizing the strengths and

⁷ A Beavor, S Khan, N Makarem, BO Obasiohia, NJ Oketa, and F Pedro de Aragão, *Financing Net Zero Carbon Buildings in Nigeria* (Cities Climate Finance Leadership Alliance and Climate Policy Initiative 2023) https://www.climatepolicyinitiative.org/wp-content/uploads/2023/10/Financing-Net-Zero-Carbon_Full-Report.pdf accessed 10th May, 2025

⁸ Ibid

⁹ SO Daudu and SO Idehen, 'A Comparative Analysis of Climate Change Laws in Nigeria with Some Selected Jurisdictions' (2024) 15 Beijing Law Review 1771 <https://doi.org/10.4236/blr.2024.153101> accessed 10th May 2025

weaknesses of Nigeria's Climate Change Act, 2021, compared to other advanced climate governance frameworks. The study outlines key features of Nigeria's principal legislation on climate governance, the Climate Change Act, 2021, such as the establishment of a climate change council, a Climate Change Fund, and a carbon budget mechanism. It also identifies its weaknesses, including: The absence of specific interim emission reduction targets; Ambiguity in financial sources for implementation; and a lack of sector-specific strategies for achieving net-zero emissions. In its appraisal of the foreign legislations on climate governance, the study highlighted that the United Kingdom Climate Change Act, 2008 employs a five-year carbon budgeting to ensure steady emission reductions; establishes a Committee on Climate Change, which advises the government on policy effectiveness; and integrates emissions from international aviation and shipping, unlike Nigeria's framework. Evaluating the innovations in Scotland's Climate Change (Emission Reduction Targets) Act, 2019, it highlights the following key features: An ambitious net-zero target for 2045, with interim targets of 55% reduction by 2020, 75% by 2030, and 90% by 2040; A Citizen Assembly to enhance public participation in climate policymaking; and the introduction of a Nitrogen Balance Sheet to monitor environmental nitrogen flows across sectors. Innovations under the Denmark Climate Act, 2020 include: the requirement of annual climate reports assessing emission trends and global impacts; and the establishment of the Danish Council on Climate Change, an expert-driven advisory body ensuring scientifically sound policymaking.¹⁰

Drawing from the practices in these jurisdictions, some of the recommendations proposed in the study are: The adoption of a five-year carbon budgeting framework similar to the UK; Setting clear interim targets for emission reductions; Incorporating public participation mechanisms, such as Scotland's Citizen Assembly; and Including international shipping and aviation emissions in its regulatory framework. This study positively contributes to the discourse on climate governance by providing a comparative perspective that highlights the gaps in Nigeria's Climate Change Act 2021 with the climate laws of other

¹⁰ Ibid

jurisdictions. However, it does not propose legal solutions peculiar to Nigeria's socioeconomic and political realities. This is a gap in the work that this study aims to fill.

2.2 Theoretical Framework

Sustainable Development Theory: The theory of sustainable development advocates for the adoption of processes and systems which allows a community or country satisfy its needs and improve the lives of its citizens without jeopardizing the ability of future generations to cater for their own needs. The theory is based on the philosophy of sustainability. The purpose of the theory is to ensure that resources vital to human survival and even civilization do not deteriorate irredeemably. To achieve sustainable development, policies and strategies must be constantly reviewed to ensure they align with current needs of the community and are not detrimental to natural resources in the long term. Sustainable development is multifaceted, cutting across various dimensions, including politics, economics, culture, and the environment.¹¹

Sustainable development in relation to the environment and biology is concerned with the protection of physical and biological resources and ecosystems. The environment and biology is the most relevant area of the sustainable development area to climate change. The need for sustainable development in the society underscores the need for net-zero systems. Climate change is the consequence of enhanced GHG activities carried out by man for decades. To address climate change, the theory advocates for the establishment of systems to reverse the effect of harmful environmental practices and call for the reasonable and prudent use of natural resources by present generations to ensure the ecosystem retains its utility for future generations.¹² Proponents of this theory call for a holistic approach to sustainable development, because simply

¹¹ S Zahedi, 'Sustainable Development Theory: A Critical Perspective and an Integrative Model' (2019) 10(21) *Journal of Economics and Sustainable Development* 43 <https://iiste.org/Journals/index.php/JEDS/article/download/50313/51969> accessed 9th May, 2025.

¹² Ibid

addressing issues of environmental degradation does not inadequate to ensure sustainable development.¹³

Environmental Justice Theory: Proponents of environmental justice advocate for fairness in the distribution of environmental benefits and burdens, and just processes to determine the distribution of these burdens and benefits. The theory is concerned with the fair treatment and the significant involvement of poor, racialized and indigenous communities in environmental policy and natural resource development decisions that have typically resulted in those communities bearing more than their fair share of environmental harms. The distinguishing feature of the environmental justice theory is its focus on minority and vulnerable groups, and the effect of harmful environmental practices on these groups.¹⁴ In the international community, proponents of this group focus on the adverse effect of climate change on developing and under-developed country, especially as these countries are responsible for less GHG emissions than developed countries who are well equipped to adapt and mitigate the effects of climate change. They argue that international frameworks are designed to protect developed companies while local frameworks protect the elite and corporate giants, most of whom are responsible for greater proportions of GHGs in the atmosphere. Thus, they advocate that developed countries, corporate giants, and the elite bear greater responsibility in the fight against climate change.

Additionally, the theory's application extends beyond the protection of the environment to include issues like the health and wellbeing of the impoverished, by ensuring best practices in urban planning for middle and low income earners, such as clean water and efficient sanitation systems.¹⁵ The proponents of this theory bridge the divide between society and nature by calling for environmental action to go beyond the wild and natural ecosystems, to integrate the ecological

¹³ S Konstańczak, 'Theory of Sustainable Development and Social Practice' (2014) 9(1) *Problems of Sustainable Development* 37-46 <https://www.researchgate.net/publication/260390513> accessed 9th May, 2025.

¹⁴ DN Scott, 'What is Environmental Justice?' (2014) 10(16) *Osgoode Legal Studies Research Paper Series* <http://digitalcommons.osgoode.yorku.ca/olsrps/4> accessed 10th May, 2025.

¹⁵ *Ibid*

health of human communities, with particular focused on minority groups and the less privileged.¹⁶

Transnational Legal Theory: The theory of transnational law refers to the complex body of regulatory systems and legal relationships that extend beyond national law but do not precisely fit in the category of international law. The term often refers to legal influences crossing national boundaries, affecting individuals, corporations, and agencies through regulations originating outside their home jurisdictions. Philip Jessup, a proponent of the theory, describes it as “all law which regulates actions or events that transcend national frontiers.” Some scholars include national and international legal rules that have cross-border effects, while others argue that transnational law is distinct, primarily involving private actors such as corporations and NGOs, rather than nation-states or treaty-based international institutions. Despite the lack of consensus, transnational law is evident in various regulatory domains, including international environmental law. Other domains where the theory is reflected are international human rights law, trade law, and internet regulation. These areas demonstrate the growing influence of legal norms that transcend traditional national and international boundaries, reshaping the global legal landscape.¹⁷

The transnational legal theory is reflected in Nigeria’s pursuit of net-zero emissions. Nigeria, as a signatory to the Paris Agreement, is subject to international climate obligations that originate beyond its national jurisdiction. These commitments influence Nigeria’s domestic environmental laws and policies, demonstrating the cross-border regulatory effect of transnational law. Additionally, a number of multinational corporations operating in Nigeria must comply with global sustainability standards, such as Environmental, Social, and Governance (ESG) standards, which are not strictly national or international but transnational. These regulatory influences shape Nigeria’s environmental

¹⁶ PF Cannavó, 'Defining Environmental Justice: Theories, Movements, and Nature' (2008) 22(3) *Ethics & International Affairs* 336
https://www.researchgate.net/publication/263529056_Defining_Environmental_Justice_Theories_Movements_and_Nature_-_by_David_Schlosberg accessed 10th May, 2025.

¹⁷ Ibid

governance, compelling compliance with emission reduction targets even beyond what national laws might mandate. Moreover, international climate finance mechanisms—such as the Green Climate Fund and carbon credit markets—also reflect transnational regulatory dynamics. Nigeria's access to such funding depends on its adherence to globally recognized net-zero pathways, further embedding transnational law principles into its environmental strategy. In essence, Nigeria's transition to net-zero is not driven solely by its municipal legal framework but is increasingly shaped by transnational legal regimes, illustrating how non-state actors, cross-border regulations, and international institutions collectively influence its climate action policies.

3. NET ZERO EMISSIONS, GREENHOUSE GASES AND CLIMATE CHANGE

The idea of net-zero emissions was proposed in 1991 by Gunter Pauli when he realized that the increasing demand for the derivatives of palm oil had exacerbated the destruction of the South-East Asia. Net zero refers to a state where the amount of greenhouse gases emitted by an entity into the atmosphere is balanced by the amount removed, thus establishing a system that ensures zero increase of greenhouse gases in the atmosphere. To achieve this, institutions and individuals put systems in place to ensure that they remove as much greenhouse gas as they emit into the atmosphere, thereby leaving zero-carbon footprint in the atmosphere.¹⁸ The term is often used interchangeably with carbon neutrality. It is however pertinent to note that the term is not restricted to removing CO₂ emissions by an entity, but includes other greenhouse gases.

Greenhouse gases (GHGs) are gases that prevent heat from escaping into space, by trapping it in the atmosphere, thereby ensuring enough warmth on Earth to sustain life on the planet. As Earth's sole external source of heat, the sun emits solar radiation to Earth. About twenty-five percent the radiated energy is absorbed by the atmosphere, another twenty-five percent is reflected by the clouds and other gases back into space, while the rest warms the Earth's surface as it is allowed to travel

¹⁸ S Matemiola and MA Salami, 'Net Zero Emissions' (2020) ResearchGate <https://www.researchgate.net/publication/344224009> accessed 11th May, 2025

unimpeded. Similar to the glass in an artificial greenhouse, these GHGs allow the short wave solar energy to travel unimpeded when entering the earth's atmosphere, but traps a lot of the heat in the atmosphere, thereby preventing it from escaping the Earth's atmosphere into space.¹⁹ 'Greenhouse gas' is a generic term that refers to a number of gases with different sources and lifetimes that trap heat in the Earth's atmosphere. Some common GHGs are Carbon dioxide (CO₂), Methane (CH₄), and Nitrous Oxide (N₂O). Given that GHGs ensure the presence of heat necessary to sustain life on Earth, the emission of GHGs are not inherently a negative occurrence. However, human activities—particularly energy related activities—result in the emission of excessive GHG in the atmosphere. GHGs become excessive when GHG sinks are unable to effectively remove them from the atmosphere to ensure proper regulation of the temperature. GHG sinks are biological, chemical, or physical processes that regulate the Earth's atmospheric composition by removing GHG from the atmosphere. The operation of a natural GHG sink may be exemplified by the carbon sequestration that occurs during photosynthesis. During this process, plants and algae absorb CO₂ in the atmosphere and converts this gas into organic matter, but with increasing deforestation due to urbanization and equally increasing industrial activities, there is an increased release of CO₂ into the atmosphere and a reduction in the GHG sinks. As more heat is trapped in the atmosphere, it results in extreme warm temperatures across the Earth, otherwise known as global warming.

Climate change refers to a long term change in the Earth's temperatures and overall climate state. In evaluating climate change, emphasis is placed on the extent of deviation from the usual climate, its impacts on the ecology, and the time it takes for these changes to manifest.²⁰ Climate change is caused by both natural phenomenon (biogeographical) and human activities (anthropogenic), however,

¹⁹ OA Olaniyi, ZO Ojekunle and BT Amujo, 'Review of Climate Change and Its Effect on Nigeria Ecosystem' (2013) *International Journal of African and Asian Studies* 57-65 <https://core.ac.uk/download/pdf/234689728.pdf> accessed 11 May 2025.

²⁰ AO Odjugo, 'General Overview of Climate Change Impacts in Nigeria' (2010) 29(1) *Journal of Human Ecology* 47-55 <https://www.researchgate.net/publication/229019531> accessed 11 May 2025.

research provides that since mid-twentieth century, human activities have been the primary drivers of climate change.²¹ Climate Change poses a significant threat to human health and global ecosystems, particularly as recent decades have witnessed record-breaking warm temperatures, ocean acidification, and rising water levels.²² Given that the Earth's atmosphere is indivisible, as climate systems connect all regions of the planet, enhanced GHG emission and climate change is a global problem. Thus, combating GHG emissions and climate change, requires international cooperation. GHGs are emitted from basic human activities such as using air conditioners, raising livestock, and driving petrol and diesel powered vehicles. Thus, every country emits GHGs, although certain countries emit significantly large proportions of GHGs.

The longevity of each GHGs presence in the atmosphere differs. GHGs also have varying abilities to trap heat. To efficiently juxtapose the various GHGs, these gases are measured in carbon dioxide equivalents (CO₂e). Nigeria is responsible for 0.71% of global GHG emissions.²³ Producing 75.7% of GHG emissions globally, the energy sector is the leading industry responsible for GHG emissions in the world. (Ge et.al, 2024) Despite Nigeria's thriving energy sector, the industry is not the leading source of GHG emission in Nigeria. The Federal Ministry of Environment evaluated GHG emission from 2000–2017 across 4 sectors.²⁴ The study revealed that that Agriculture, Forest and Other Land Use (AFOLU) was the leading emitter of GHGs for the period under review, followed by the Energy, Industrial Processes and Products Use, and Waste. In 2017, AFOLU was responsible for 57.48% of GHGs emitted in Nigeria. The energy sector emitted 36.27% of GHGs in the same year, while the Waste and IPPU sectors were responsible for 4.55% and 1.71%

²¹ Ibid 19

²² European Environment Agency, *Greenhouse Gases and Climate Change: Greenhouse Gas Emission Trends and Projections in Europe 1999* (1999) 79-98 <https://www.eea.europa.eu/publications/92-9157-202-0/3.1.pdf> accessed 11 May 2025.

²³ R Boyle, 'Greenhouse Gas Emissions in Nigeria: Emissions Index' (2024) <https://www.emission-index.com/countries/nigeria> accessed 11 May 2025.

²⁴ Federal Ministry of Environment, *National GHG Inventory Report NIR 2000–2017* (2021) <https://unfccc.int/sites/default/files/resource/NIGERIA%20NIR1%20-%20First%20National%20GHG%20Inventory%20Report%20.pdf> accessed 11 May 2025.

of GHGs emitted, respectively. The leading source of national GHG emissions remained CO₂ followed by CH₄ and N₂O during the period.

The effects of climate change are dire, and developing nations such as Nigeria are more vulnerable to its effects. Its effect on the health sector for instance, is evident in the increased cases of malaria which is partly attributed to rising temperatures in the region which provides conducive habitats for female anopheles mosquitoes to thrive. Additionally, flooding in the coastal areas of the country due to heavy rainfalls increase the chances of cholera. In 2023, Nigeria recorded over 3,500 cases of cholera across 31 states.²⁵

Climate change due to global warming is also responsible for erratic rainfall patterns, as it causes reduced rainfall in interior parts of the continent and increased rainfall in the coastal regions like Warri, Calabar, and Lagos.²⁶ The sea incursion due to a rise in sea level results in the destruction of coastal wetlands and mangrove ecosystems amongst other harmful effects. The increasing temperature and decreasing rainfall in interior parts of the continent have resulted in drought and desertification, as the borders of the Sahara desert continues expanding by 1–10 kilometers annually.²⁷ The threat of desert encroachment persists in Northern Nigeria as sand dunes continually bury Arable land in places like Yobe, Borno, and Katsina. The combination of rising temperatures, reduced rainfall in the inland regions, and irregular rainfall patterns, sets the stage for water scarcity in the interior areas, as water bodies dry up. This is exemplified in the shrinkage of Lake Chad by 95% from the 1960s to the 2000s.²⁸

The desertification in Nigeria's interior regions and rising sea levels in the coastal areas is set affect the livelihood of millions. The depletion of arable land in the North impedes farming and cattle grazing. Likewise, the erosion of land area and sea incursion results in the loss of

²⁵ A Akindele and R Chabinga, 'Navigating Climate Change and Sustainability Solutions: Nigeria's Role in International Environmental Law' (2024) 3(1) *African Journal of Climate Change and Resource Sustainability* 331-344 <https://doi.org/10.37284/ajccrs.3.1.2188> accessed 11 May 2025.

²⁶ Ibid 20

²⁷ Ibid

²⁸ Ibid

properties and livelihood, thereby, causing population displacement.²⁹ The resulting emigration has resulted in communal clashes, particularly among herdsmen and local farmers, as the herdsmen seek out pasture for their cattle to graze.

4. LEGAL FRAMEWORK GOVERNING NET-ZERO EMISSIONS IN NIGERIA

In view of the need to promote sustainable development, Nigeria operates under a defined legal framework on climate change. This framework is comprised of international instruments and domestic legislations.

4.1 International Framework

United Nations Framework Convention on Climate Change (UNFCCC): The Convention was adopted by the United Nations in 1992 at the United Nations Conference on Environment and Development (the Rio Earth Summit) and entered into force in 1994. The goal of the convention is to prevent dangerous human interference with the global climate system, primarily by stabilizing greenhouse gas concentrations. The convention has been ratified by 198 countries in the world, including Nigeria.³⁰ Nigeria became a signatory to the convention in 1992 and ratified it in 1994, thereby becoming a party to the convention. The UNFCCC mandates its embers to meet annually at the Conference of Parties, which serves at the ultimate decision making body of the parties to the convention.

Paris Agreement: The Paris Agreement was adopted in 2015 at the 21st Conference of Parties to the UNFCCC (COP 21). The aim of the agreement is to fight climate change through nationally determined

²⁹ AA Idowu, SO Ayoola, AI Opele and NB Ikenweiwe, 'Impact of Climate Change in Nigeria' (2011) 2(2) *Iranica Journal of Energy & Environment* 145–152 <https://www.researchgate.net/publication/228459699> accessed 11 May 2025.

³⁰ United Nations Climate Change, 'What Is the United Nations Framework Convention on Climate Change?' (2025) <https://unfccc.int/process-and-meetings/what-is-the-united-nations-framework-convention-on-climate-change> accessed 11 May 2025.

contributions (NDCs) which are the national plans of each party to the treaty to reduce GHG emission. A key objective of the treaty is the aim to keep global temperature rise below 2°C and limit temperature increase to 1.5°C above pre industrial levels. Although the treaty is binding on member states, the NDCs are non-binding. Under the treaty, parties are mandated to submit and update their NDCs every 5 years, show consistent progress over time, and strive to achieve net-zero by the second half of the twenty-first century. At COP26 in Glasgow, Nigeria pledged to reach net-zero by 2060.³¹

4.2 Domestic Framework

Climate Change Act, 2021: The Climate Change Act is the principal legislation on climate governance in Nigeria. It was signed into law after COP21 (PwC,)Signed into law following the Glasgow Climate Pact, the Act establishes the National Council on Climate Change (NCCC), with the mandate to coordinate sectorial targets for GHG emissions, administer the Climate Change Fund, and formulate policies and programmes on climate change. The Council is headed by the President who serves as the Chairman and the Vice President who serves as the Vice Chairman. The Act also establishes the Climate Change Fund to be funded by grants, donations, and fines from non-compliant entities to GHG limits and directives of the NCCC.

The Act adopts the spirit of the Paris Agreement by mandating the Ministry of Environment and Ministry of Budget and National planning to set a carbon budget which treaty to reduce GHG emission. A key objective of the treaty is the aim to keep global temperature rise below 2°C and limit temperature increase to 1.5°C above pre industrial levels. It also sets 2050–2070 as the official target for the country to reach net-zero, which is in line with the Nigeria’s agreement under the Parts Agreement. Another significant feature of the Climate Change Act, 2021 is its

³¹ G Shehu, 'At COP26, President Buhari Pledges Net-Zero Emissions by 2060, Says Nigeria Will Maintain Gas-Based Energy Transition' (2021) The State House, Abuja <https://statehouse.gov.ng/news/at-cop26-presiden-buhar-pledges-net-zero-emissions-by-206-says-nigeria-will-maintain-gas-based-energy-transition/> accessed 11 May 2025.

provision for carbon taxes and emissions trading mechanisms, by mandating the NCCC to work with the Federal Inland Revenue Service to develop a carbon tax system. Carbon taxes and emissions trading are to be paid into the Climate Change Fund. This is in tandem with the practice in developed countries where these serve as a tool to incentivize emissions reductions while addressing challenges like carbon leakage. For example, Nigeria's approach draws from the European Union's cap-and-trade model, which imposes limits on emissions while allowing flexibility for companies to trade allowances.

Environmental Impact Assessment Act (EIAA): Although not strictly on climate action, the EIAA was enacted to ensure sustainable development in the Nigeria. The Act provides that public and private institutions must conduct an evaluation on the environmental impact of any project it seeks to undertake before commencing operations. Additionally it mandates that institutions seeking to undertake projects with potential significant impact on the environment, like petroleum exploration and petroleum, must write to the Nigerian Environmental Protection Agency, for the Agency to conduct an independent assessment on the likely effect of such project on the environment, in addition to conducting its personal assessment. In conducting an environmental impact assessment on an offshore project, the operator must take into consideration key factors such as the likely or potential environmental impacts of the oil field. It must also identify and describe the measures available to mitigate adverse environmental impacts of such offshore projects. The Act encourages transparency by allowing public copies of these assessments to be made available to the public for criticism by interested parties. The purpose of these criticisms is to enable the Agency decide on the environmental impact of a project before granting approval to such project.

Nigerian Energy Transition Plan (NTP): The NTP was launched in 2022 by the Federal Government in furtherance to its commitment to achieve net-zero by 2060. The NTP sets out a plan to reduce Nigeria's GHG, by ensuring a clean energy transition across 5 sectors which are responsible for 65% of Nigeria's total emissions. Thus although energy sector is responsible for less than 50% of Nigeria's emissions, the use of

energy across 5 economic sectors accounts for 65% of Nigeria's emissions. To reduce emissions in the power sector, the ETP aims to transition from fossil fuels to renewable sources of power generation by investing primarily in solar plants. The ETP also seeks to curb the use of petrol and diesel generators which contribute to emissions. To reduce emissions, in oil and gas, the ETP seeks to curb gas flaring, ensure efficient flaring and promote the use of carbon capture utilization and storage. In the Industry sector, the ETP will ensure energy efficient processes especially in cement and production while shifting to zero-emission fuels. In transport, dies and fuel powered vehicles will be jettisoned for electric vehicles. To enable the transition in cooking, firewood and charcoal will be substituted for cleaner alternatives like liquefied petroleum gas and electric stoves.

5: IMPEDIMENTS TO ACHIEVING NET-ZERO IN NIGERIA

5.1 Regulatory and Institutional Weaknesses

The enactment of the Climate Change Act, 2021 and launch of the Nigerian Energy Transition Plan and Nigerian Energy Calculator 2050 (NECAL), signal Nigeria's desire to fight climate change and achieve net-zero. However, gaps in the established regulatory framework impedes the goal for achieving net-zero. This is evident in the omission of aviation and international shipping from the transportation sector plans in the ETP. Given that airplanes are significant contributors to GHG emissions and Nigeria has a vibrant domestic air travel network, the removal of these key variables, especially aviation, weakens Nigeria's ability to achieve a **comprehensive emissions reduction strategy**.³²

Additionally, there is no clear-cut roadmap on achieving net-zero in agriculture and forestry, both of which are significant emitters of GHGs. These gaps in the regulatory framework, and weak enforcement of mandates in the Climate Change Act, particularly on Ministries, Departments and Agencies to develop and implement sectorial strategies for achieving net-zero, impedes the efficiency of climate action in Nigeria.

³² Ibid

5.2 Economic and Financial Constraints

One of the most pressing challenges in achieving net-zero in Nigeria is the high cost of capital, which stifles both domestic and international investments in climate projects. The capital intensive nature of these projects is exacerbated by the depreciation of the naira in recent years which has driven up the cost of **import-dependent renewable energy components**. This is particularly problematic for project developers who generate revenue in naira but must service debts in foreign currencies. The unpredictable exchange rate fluctuations make it difficult to meet repayment obligations, further discouraging investors from financing climate initiatives. Moreover, Nigeria's fiscal constraints, largely due to its mounting debt obligations, severely limit the resources available for climate action. Currently, over 80% of government revenue is allocated to debt servicing, leaving little fiscal space for investments in sustainability projects. This heavy reliance on debt-financed climate investments is unsustainable and hinders long-term planning for climate mitigation and adaptation efforts.³³

Another major obstacle is the inadequacy of green fiscal incentives. While the Nigerian government eliminated consumer fuel subsidies in 2023, which, in theory, could have leveled the playing field for low-carbon investments, the sudden removal led to economic disruptions, including a sharp increase in transportation and energy costs. Without sufficient policies to prevent extreme hardships during the transition the resulting instability may deter investments in renewable energy and sustainable infrastructure. Additionally, Nigeria's fiscal policies still favor fossil fuel industries over green alternatives. While renewable energy equipment has been exempted from value-added tax (VAT) since 2021, batteries for solar panels—the most expensive component of solar systems—are not included in these exemptions.³⁴ The absence of

³³ S Stout, I Gupta, A Balm and C Meattle, *Landscape of Climate Finance in Nigeria 2024* (Climate Policy Initiative 2024) <https://www.climatepolicyinitiative.org/wp-content/uploads/2024/10/Landscape-of-Climate-Finance-in-Nigeria-2024.pdf> accessed 11 May 2025.

³⁴ *Ibid*

comprehensive green fiscal policies reduces investor confidence and limits the attractiveness of the renewable energy sector.

5.3 Technological and Infrastructure Deficiencies

Nigeria's **national electricity grid** remains largely unstable, making the large-scale deployment of **solar and wind energy** impractical without significant upgrades. The ETP aims to curb the use of petrol and diesel generator by ensuring stable power supply driven by investments in renewable energy sources to meet the energy demand in the country. However, the inability of Nigeria's current power sector to meet the energy demand in Nigeria, is exemplified in the collapse of the national grid on 12 occasions in 2024 despite the continued use of petrol and diesel generators in the country.³⁵

The implementation of Nigeria's net-zero plans is also inhibited by the dearth of technological skill needed to execute the initiatives contained in the ETP. For instance, the transition from petrol and diesel powered vehicles to electric vehicles as contained in the ETP is hindered by a lack of necessary infrastructure, mechanical expertise, and technical skill needed to operate and maintain them.³⁶ Likewise, the need for technologies like **Carbon Capture and Storage (CCS)**, and the absence the **technical expertise and research funding** necessary to locally meet this need, poses a challenge.

5.4 Socio-Political and Cultural Barriers

Climate literacy remains low among the general population in Nigeria. In 2020, only about 40% of Nigerians were aware of the existence

³⁵ A Sulaimon, 'National Grid Collapses 12th Time in 2024' Punch (2024) <https://www.google.com/amp/s/punchng.com/just-in-national-grid-collapses-12th-time-in-2024/?amp> accessed 11 May 2025.

³⁶ J Okamagba, 'Nigeria Not Ready for Electric Vehicles – Autogig CEO' Punch (2024) <https://punchng.com/nigeria-not-ready-for-electric-vehicles-autogig-ceo/> accessed 11 May 2025.

of climate change.³⁷ Harmful practices such as bush burning, illegal dumping of refuse, use of poorly maintained vehicles, and the use of petrol and diesel generators. Climate illiteracy and the lack of will by the majority to shift from these harmful environmental practices impedes climate action.

It is also noteworthy that Nigeria's economy is heavily oil & gas reliant. The continuing discussions about the rehabilitation of government owned refineries and expansion of fossil fuel operations, signal a lack of urgency in transitioning to clean energy. Similarly, the **operational commencement of the Dangote Refinery** raises questions about the feasibility of achieving **80% electric vehicle adoption and the complete abandonment of petrol and diesel powered generators**.

6. PATHWAYS TO SUSTAINABLE COMPLIANCE IN NIGERIA

6.1 Strengthening Legal and Institutional Frameworks

In accordance with the provisions of the Climate Change Act, 2021, it is important that Ministries, Departments and Agencies formulate clear net-zero mandates in their sectors. Enacting clear and enforceable net-zero mandates for industries. A key step towards net-zero is the enactment of specific emissions reduction targets by the NCCC through act of delegated legislation. Drawing from the provisions of the Scottish Climate Change Act, 2019, interim reduction goals should be set either by an amendment to the Climate Change Act, 2021, or through an NCCC directive. This will enable the country gauge progress and ensure it fulfils the aim of achieving net-zero by 2060.

Regulators of enhanced GHGs industries should also prescribe mandatory **carbon emissions reporting** for corporations operating within the sector, with **defined penalties** for non-compliance. Additionally,

³⁷ K Garba, 'Climate Literacy in Nigeria: An FBYC Project' Bow Seat (2025) <https://bowseat.org/news/climate-literacy-in-nigeria-an-fbyc-project/> accessed 11 May 2025.

incentives should be provided for industries that surpass sustainability targets, encouraging voluntary emissions reductions.

6.2. Mobilizing Climate Finance and Economic Incentives

One solution to the financial challenges in climate action is the strategic development of a domestic green industry. Nigeria has the potential to localize its green value chains by investing in the manufacturing of solar panels, electric vehicles, and other climate-friendly technologies. This approach would reduce reliance on expensive imports, strengthen local supply chains, and generate employment in green industries. For instance, the expansion of Nigeria's electric two- and three-wheeler market presents a significant opportunity for import substitution. As Africa's largest importer of motorcycles, Nigeria could develop a regional market for locally manufactured electric vehicles, which would not only support climate goals but also stimulate economic growth. Similarly, scaling up net-zero buildings can help address the country's urbanization challenges while creating sustainable jobs. However, for this transition to be successful, Nigeria must adopt financial de-risking mechanisms such as concessional financing, technology transfer, and capacity development programs. Incentivizing private-sector participation through targeted subsidies and favorable tax policies can further accelerate the growth of a domestic green industry.³⁸

Given Nigeria's fiscal constraints, leveraging innovative financing mechanisms is crucial to unlocking climate investment. Stout et.al (2024) proposes several strategies can be deployed to mitigate financial risks and enhance capital inflows into the climate sector.

First, risk mitigation instruments, such as guarantees and first-loss provisions, can help attract private capital by reducing the perceived risks of climate investments. Public financial institutions can play a catalytic role in this regard by offering guarantees that incentivize private lenders to support green projects. Second, local currency financing can help address the exchange rate challenges faced by project developers. Encouraging international financiers to provide funding in naira or

³⁸ Ibid 33

offering currency hedging mechanisms can reduce exposure to currency risks and improve investment stability.

Third, expanding Nigeria's green bond market is another critical pathway for mobilizing long-term climate finance. Since the launch of the country's first sovereign green bond in 2017, the market has grown steadily, with additional issuances by both the government and private financial institutions. Further scaling up this market will enable institutional investors to channel capital into green projects while ensuring transparency and accountability in fund utilization. Finally, consumer financing models such as Pay-As-You-Go (PAYG) schemes can be leveraged to enhance access to renewable energy products for low-income households. By allowing consumers to pay in small installments over time, these models make solar energy systems and other clean technologies more affordable, thereby increasing adoption rates.

The Nigerian government should incentivize **carbon offset projects** such as reforestation and sustainable agriculture by establishing a thriving **compliance carbon market**. Establishing a **transparent carbon credit trading platform** will allow incentivise corporations to invest in emissions reduction projects while meeting regulatory requirements on GHG emissions in their operations.

6.3. Advancing Clean Energy, Agriculture, and Technological Innovation

The government should prioritize **solar mini-grid expansion**, particularly in rural areas where poor power supply is prevalent. To incentivize the use of renewable energy sources by electricity generation companies, public-private partnerships should be undertaken to establish voluntary iREC markets where renewable energy certificates can be traded.

Nigeria must invest in **carbon capture research** through partnerships with **universities, private companies, and international research institutes**. A **national CCS roadmap** should be developed to facilitate the integration of these technologies into oil and gas operations.

6.4. Enhancing Public Participation and Governance

To improve climate awareness, Nigeria should introduce **environmental sustainability education** at **primary, secondary, and tertiary levels**. Public awareness campaigns should also be expanded, using **traditional media, social media, and community outreach programs** to address rural areas.

Additionally, local governments should facilitate **community-led afforestation projects** and support **climate-resilient agricultural practices**. Grant schemes for **smallholder farmers** adopting sustainable techniques should be introduced to ensure **food security amid climate change**.

7. CONCLUSION AND RECOMMENDATIONS

Achieving net-zero emissions in Nigeria is both a legal and developmental imperative, requiring a multifaceted approach that integrates robust legal frameworks, economic incentives, technological advancements, and public engagement. While Nigeria has made commendable efforts through the enactment of the Climate Change Act 2021, the adoption of the Energy Transition Plan, and its commitment under the Paris Agreement, significant challenges persist. These include regulatory gaps, financial constraints, infrastructural weaknesses, and socio-political barriers. Without addressing these issues, the country's 2060 net-zero targets may remain aspirational rather than achievable. Based on the findings the study recommends as follows:

1. **Codification of a Binding Carbon Budget Regime:** Nigeria should enact a dedicated *Carbon Budget and Emissions Allocation Act* to define legally binding annual or biennial carbon budgets across economic sectors to integrate emissions targets into national planning and assign enforceable carbon limits to key sectors like power, manufacturing, oil and gas, and transport sector.
2. **Creation of a Just Transition Commission:** Inaugurate a *Just Energy Transition Commission* as a statutory body under the

Climate Change Act 2021 to facilitate and promote fair transition policies, to disrupt fossil fuel-dependent economy. Its powers should include regulatory review, labour re-skilling oversight, and climate justice enforcement to ensure no host community is marginalised.

3. Mandatory Climate Impact Assessment (CIA) evaluation exercise:

Introduce a mandatory *Climate Impact Assessment Evaluation* to supplement to the Environmental Impact Assessment (EIA) Act 1992 to compel mandatory evaluation report of all major energy infrastructures, extractive, and energy-related projects rigorous assessment of their climate consequences, including mitigation plans, carbon offset schemes, and emissions disclosures.

4. Emission Trading Scheme with Legal Backing: Develop a statutory *National Emission Trading Scheme (NETS)* guarantee industries to trade carbon credits within a regulated national carbon market. This market should be supervised by a body called ‘*Carbon Regulatory Authority*’, with mechanisms for verification, enforcement, and penalties for non-compliance.

5. Green Public Procurement (GPP) Framework: Required all tiers of government to adopt *Green Procurement Regulations* requiring contractors to demonstrate emissions compliance and use of renewable energy technologies in public infrastructure development. This measure would mainstream climate accountability into public budgeting and procurement laws in Nigeria.

6. Incorporation of Climate Change Obligations into Corporate Law:

Amend the *Companies and Allied Matters Act (CAMA) 2020* to require high-emission companies to file annual *Climate Compliance Reports* as part of their financial report disclosures. Where the Directors owe a statutory duty to consider climate risks as part of their fiduciary obligations under the law.

7. Litigation-Driven Enforcement Mechanism and Establishment of Regional Climate Adaptation Courts: Promotion of public interest litigation under the Climate Change Act 2021 by recognising *climate rights* as justiciable and

enforceable under section 20 and expunged the provision of section 6(6)(c) of the 1999 Constitution of the Federal Republic of Nigeria (as amended) thereby allowing NGOs, affected communities, and environmental defenders to sue for climate inaction or non-compliance by government and private actors. Establish specialised *Climate and Environmental Adaptation Tribunals* in Nigeria's six geopolitical zones with jurisdiction over carbon-related disputes, climate finance fraud, and adaptation failures. These tribunals will speed up climate-related adjudication and encourage judicial specialisation.

8. **Harmonisation of Fragmented Environmental Laws:** Integrate climate governance under a unified *Sustainable Energy and Climate Code*, harmonising the Climate Change Act 2021, NESREA Act 2007 (as amended 2018), Environmental Impact Assessment Act 1992, and the Petroleum Industry Act 2021 to eliminate duplication, regulatory confusion, and enforcement fatigue in Nigeria.