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LEGAL THRESHOLD IN THE BRAKING OF THE CARBON CURVE TO EFFECTIVE VEHICLE EMISSION REGULATION IN NIGERIA

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Abstract
The Nigerian transport sector accounts for a significant share of carbon emissions. Studies show that this is a worldwide trend as transport accounts for approximately 14% of global greenhouse gas emission. The major sources of this disturbing phenomenon are emissions emanating from motor vehicle exhaust. These emissions pose health and environmental challenges on a daily basis. Given this effect, carbon reduction strategies have become increasingly imperative. Nigeria has made little but adequate provisions to curb this problem. Research shows that despite the adequacy of these provisions, the problem persists. The authors therefore examined relevant legal provisions on the control of automobile emission and argued for the need to harvest legislative and regulatory framework aimed at containing the shortcomings in vehicle emission regulations. The paper revealed significant gaps like weak enforcement and institutional overlaps. The authors therefore maintained that the problem of vehicular emissions required an effective and comprehensive reform strategy, capable of embracing the establishment of a centralized body to oversee vehicular emission regulations in Nigeria. The paper recommended that by addressing identified barriers Nigerian can significantly reduce her carbon footprint, thereby halting the brakes in the Nigerian carbon curve.

Keywords: carbon reduction, vehicle emissions, health hazards, reform strategy, carbon curve.

1. Introduction

Nigeria possesses an extensive and dynamic transport sector that significantly contributes to the nation's economic advancement and societal development.[1] Boasting of a populace exceeding 200 million people and a landmass covering 923,768 square kilometres, Nigeria's transportation system comprises of a matrix of roads, railways, shipping ports, airways and inland waterways.[2] A crucial enabler of trade, mobility and connectivity,[3] this vast network primarily facilitates the movement of goods, people and services across the nation. Connecting urban centres with rural areas and supporting various industries, including agriculture, manufacturing and commerce.[4]

However, even though the transport sector is crucial for the nation's economy, it is has been identified as a major contributor to greenhouse gas (GHG) emissions worldwide.[5] According to the Intergovernmental Panel on Climate Change, transportation accounts for approximately 14% of global GHG emissions, with light-duty vehicles being the predominant source.[6] Several studies[7] have shown that motor vehicle exhaust releases smog,[8] but most predominantly carbon dioxide (CO2).[9] Carbon dioxide intensifies the impact of climate change with a global contribution of about 7.3 billion metric tons of emissions in 2020 alone.[10] These emissions are linked to a number of diseases including respiratory and cardiovascular diseases such as asthma

[1] C.E Akujor, 'Decarbonisation of the Transport Sector in Nigeria' *Environmental Health Insights* [2022] 16, 1-7.
[2] A.O Oluwakoya and S.D Ogundipe, 'Spatiotemporal Correlation Between Railway Transport Development and Land Use Romanian Journal of Transport Infrastructure' *Romanian Journal of transport*, [2021] 10 (2), 1-19.
[3] A.O Oluwakoya, 'A comprehensive assessment of transportation emissions in Nigeria: Trends, drivers, and impacts' *African Journals Online: Proceedings of the Nigerian Academy of Science*,[2024] 16(1), 61-71.
[4] Ibid.
[5] Akujor, supra.
[6] Hannah Ritchie, Pablo Rosado and Max Roser, 'CO_2 and Greenhouse Gas Emissions.' *Our world in Data* (United Kingdom 2023) < CO2 and Greenhouse Gas Emissions - Our World in Data> accessed 29 January 2025.
[7] A.A Adeyanju, 'Effects of Vehicular Emissions on Human Health' *Journal of Clean Energy Technologies* [2018] 16 (6) 411-420; F.I Abam and G.O Unachukwu, 'Vehicular Emissions and Air Quality Standards in Nigeria' *European Journal of Scientific Research*, [2015] 34(4) 550-560.
[8] Smog is a noxious mixture of gases and particles, primarily ground level ozone (O3) and particulate matter.
[9] M.O Raimi and T.V Odubo and A.O Omidiji, 'Creating the Healthiest Nation: Climate Change and Environmental Health Impacts in Nigeria' *Sustainability in Environment* [2021] 6 (1) 61-122.; S.B Adekunle and M.F Alokpa, 'An Overview of Buhari's Economic Recovery and Growth Plan 2017-2020'*African Research Review* [2018] 12 (3), 25-37.
[10] Akujor, supra

and lung cancer.[11] The World Health Organization (WHO) estimates that approximately 460,000 people die prematurely each year as a result of exposure to these harmful gases.[12]

Globally it has become imperative to address emissions, prompting nations to re-evaluate and reform their policies. Countries have enacted laws aimed at controlling emissions often inspired by international agreements.[13] Like most developing countries, Nigeria struggles in aligning its legal and institutional frameworks with International commitments.[14] It has however in line with the Paris Agreement, committed to reducing its GHG emissions by 2030.[15]

In order to achieve its National Determined Contributions (NDCs) under the Paris Agreement emission reduction in the transport sector must be a main target for the Nigerian Government. Hence, there must be a continuous evaluation of the legal framework for vehicular emission control till the ultimate goal of carbon emission reduction is achieved.

2. The nature and scope of Nigerian Carbon Curve and Vehicular Emission Landscape

As Nigeria experiences rapid urbanization and population growth,[16] it has conversely resulted in a spike in the demand for petroleum-based fuels to satisfy the energy demand from the increasing number of vehicles available in Nigeria today.[17] The National Bureau of Statistics estimates that there existed about 11.8 million vehicles in Nigeria in 2018. This was made up of commercial (57.70%), private (40.98%), Government and diplomatic vehicles (1.32%).[18] The number increased to 13 million by April 2021.[19]

[11] E..O. Enakireru and G.W. Ekakitie, 'Appraisal of the Legal Framework and Regulation on Automobile Emissions: Nigeria Perspectives,' [2024] 4(3) 1-19.
[12] Ibid.
[13] See for instance, The Kyoto Protocol to the UNFCC which has had lasting impacts on nationals laws of several countries.
[14] Gideon Odionu, *Mitigation of Greenhouse Gas Emissions from Gas Flaring in Nigeria: Perspectives on Law and Regulation* (LLM Dissertation of the College of Law University of Saskatchewan, Canada 2018)
[15] Ibid.
[16] Abam and Unachukwu, supra
[17] C. Emeke and C. Nwaozuzu and A. Nteegah, 'A Techno-Economic Analysis of Using Natural Gas as Alternative Transport Fuel in Nigeria' *Journal of Energy Technology and Environment* [2023] 5 (2), 187 – 201.
[18] Akujor, supra
[19]Rosemary Iwunze, '77% of Vehicles on Nigeria's Roads Unisured – NIA'. *Vanguard* (Nigeria 11 May 2021) <77% of vehicles on Nigeria's roads uninsured — NIA - Vanguard News> accessed January 25, 2025.

The problem with this volume is that in Nigeria majority of the vehicles used are second hand,[20] poorly maintained and with poor engine performance.[21] Research has shown that the low prices of these vehicles often creates high demand for them in developing regions like Africa, but there is a compromise to the low cost. They are often poor quality and would fail roadworthiness tests in the advanced countries exporting them.[22] Until December 2016, when vehicles older than 15 years were banned, there was no limit to the age of vehicles imported into Nigeria and vehicles emitting large amounts of noxious gases were a common sight on many roads.[23]

Other contributory factors to vehicular emissions are, low quality fuel, poor traffic regulation and most important to this study inadequate implementation of automobile emission standards and regulations.[24]This situation is critical as the demand for transportation is projected to rise.[25] Studies have equally shown the highly polluted aerial view of urban centres such as Lagos, Abuja and Port Harcourt, where there is often chronic traffic congestion.[26]

One of Nigeria's long term climate objectives is to limit the economy's carbon intensity prompted by global decarbonisation targets.[27] Yet, Nigeria's energy transition is not linear as there are often contradictory policies on energy transition. This therefore makes one wonder whether the low carbon international commitments are merely rhetorical actions or just international posturing.[28]

[20] Popularly refered to as 'Tokunbo.'
[21] Adeyanju, supra
[22] P. L Atime, 'State and the Development of the Automotive Industry in Nigeria: Bridging the Gaps' *Nigerian Journal of Political & Administrative Studies,* [2023] 6(2), 280-302.
[23] N. M. Ezeigwe and ors, 'Characterization and Quantification of Vehicular Emissions in Abuja Municipality–Implications for Public Health,' *Nigerian Medical Journal* [2024] 65(3), 276-291
[24] Adeyanju, supra
[25] Ibid.
[26] C.J. Oguche and A.Y Boniface, 'Environmental Challenge of Vehicular Pollution in Nigeria: An Overview' *International Journal of Research in Human Resource Management,* [2021] 3(1) 40-43.
[27] The Federal Government of Nigeria [2018] *First Biennial Update Report (BUR1) of the Federal Republic of Nigeria under the United Nations Framework Convention on Climate Change (UNFCCC).*< Nigeria.Biennial update report (BUR). BUR 1. | UNFCCC> accessed 25 January 2025.
[28] A. S. Okoh, 'End of fossil fuel economy: Weathering the storm of transition to post-fossil society in Nigeria' *World Review of Science Technology and Sustainable Development, [2019] 15(3) 197-213.*

3. Frameworks on vehicular emission control in Nigeria

It will be quite apt to say that legislation is critical to effective environmental management and governance.[29] It is therefore important to outline some of the instruments on the regulation of vehicular emissions, and they include the following:

3.1 The 1999 Constitution of the Federal Republic of Nigeria[30]

The 1999 Constitution is the foundation for emission control in the country. It states in section 20 that 'the State shall protect and improve the environment and safeguard the water, air and land, forest and wild life of Nigeria.'[31] The provisions of Sections 33 and 34 which guarantee rights to life and human dignity, respectively, have regularly been implied to appertain to the need for a healthy environment to give these rights their ultimate effect.[32] However, these provisions are affected by the age long debate of non-justiciability or otherwise of the environmental objectives embodied in section 20 of the Nigerian Constitution. Fundamental objectives and directive principles are instrumental in providing environmental norms. These norms enable environmental protection and are intended to guide the decisions of the government, yet they may not directly be judicially enforceable.[33] This position of non-justiciability was upheld in the cases of *Attorney-General of Ondo State v Attorney General of the Federation*[34] and *Donald Morebishe & 2 ors. v Lagos State House Of Assembly*.[35] Nevertheless, in the case of *FRN v Anache,*[36] it was held that the non-justiciability inferred by section 6 (6) (c) is not absolute because the subsection provided a leeway by the use of the words

[29] D. Ogunkan,'Achieving Sustainable Environmental Governance in Nigeria: A Review of Policy Consideration'. Urban Governance Journal (2022) (2)(1) 212-220.
[30] The 1999 Constitution of the Federal Republic of Nigeria (As amended)
[31] J. Ezeanokwasa, 'Air Pollution Control in South-East Zone of Nigeria As A Sine-Qua-Non For Sustainable Development in the Zone: Legal Evaluation',*International Review of Law and Jurisprudence* (2), (2020), 51.
[32] Environmental Law Research Institute, 'A Synopsis of Laws and Regulations on the Environment in Nigeria. <https://elri-ng/*environmental- law- policies- in- nigeria* />. accessed 2 April 2024.
[33] Bishop Okogie (Trustee of Roman Catholic Schools) and Others v. Attorney General of Lagos State (1981) 2 NCLR 337 CA; Adewole v Jakande (1982) 1 NCLR; Attorney General of Ondo state v Attorney General of the Federation and Others [2002] FWLR (Pt 3) 1972; Attorney General of Lagos state v Attorney General of the Federation and 35 Others [2003] 12 NWLR (Pt. 833) 1.
[34] JELR 56203 (SC).
[35] 3 WNR 134 2003.
[36] 14 NWLR Pt. 1-90.

"…except as otherwise provided by this constitution." As observed by Niki Tobi (JSC), this therefore leaves a flicker of hope for the justiciability of section 20 in Nigeria.

3.2 The National Environmental Standards and Regulations Enforcement Agency Act [37]

This Act repealed the Federal Environmental Protection Agency Act (FEPA) 1988.[38] It provides authority to ensure compliance with environmental laws both local and international, on environmental sanitation and pollution prevention and control through monitory and regulatory measures.[39] Section 7 of the Act gives a long list of functions. Section 7(h) for instance assigns the agency the duty of enforcing environmental regulations and standards on air pollution through compliance monitoring. Section 21(1) authorizes the agency to initiate actions towards protecting the ozone layer. Pursuant to the power given to the Minister of the environment by section 34 of the Act to make regulations for the achievement of the purpose of the Act, regulations have been made in relation to automobile emission control.

3.3 National Environmental (Control of Vehicular Emissions from Petrol and Diesel Engines) Regulations, 2011[40]

This is one of the regulations made pursuant to sections 34 of the NESREA Act. The purpose of this regulation is to restore, preserve and improve the quality of air. The standards contained therein, provide for the protection of the air from pollutants, as well as, take into account amongst others:

> (a) Citizens right of access to clean air; (b) Reducing and preventing air pollution through the improvement of the quality of automobiles that operate on the road way; and (c) Improve the health of Nigerians especially in the urban areas with high incidence of air pollution due to increased number of automobiles that ply the roads.[41]

Regulation 8 (1) of the regulation provides that, "every petrol engine which is in use or in operation or is capable of being operated shall not emit visible smoke from the exhaust pipe".

[37]The National Environmental Standards and Regulations Enforcement Agency (Establishment) (Amendment) Act, 2018.
[38] Decree 58 of 1988
[39] Ibid, at Section 7
[40] Section I No. 20, Gazette No 47. Vol. 98 of 17th May, 2011
[41] Regulation 1 of the National Environmental (Control of Vehicular Emissions from Petrol and Diesel Engines)

The regulation also provides for yearly Vehicular Emission Testing of all vehicles in Nigeria.[42] In the light of punishment, the regulation states in Regulation 10 that any person whose vehicle has undergone an emission test and is in violation shall be issued a prohibition order. Such order shall be visibly attached to the windshield of the prohibited vehicle.[43] By Regulation 12 the owner of such prohibited motor vehicle shall ensure that the prohibition order is not in any way obscured, rendered illegible or removed except with the written approval of the Agency.[44]

However, enforcement of the provisions of this regulation remains inconsistent. This Regulation is not known to the average man. No one has been held accountable since its enactment, nor has any official been deployed to monitor roads or highways.[45]

3.4 National Environmental (Air Quality Control) Regulations, 2021[46]

The purpose of this regulation is to improve the nation's air quality, which is in line with the citizen's right to clean air as provided by the Constitution.[47] By regulation 18 a person shall not import or assemble two stroke engines of any kind for use in Nigeria. This is however not the case as two stroke engines are still being imported in bulk into the shores of the country.

This regulation reinforces the provisions of the National Environmental (Control of Vehicular Emissions from Petrol and Diesel Engines) Regulations, 2011, as it provides in Regulations 16 that Emissions from road vehicles shall be in accordance with the provisions of the National Environmental (Control of Vehicular Emissions from Petrol and Diesel Engines) Regulations, 2011.

[42] Ibid, Regulations 9 (2) (b)
[43] Ibid, Regulation 11
[44] 'Agency.' in this instance is the NESREA.
[45] Enakireru & Ekakitie, supra
[46] FRN Vol. 108
[47] See Regulation 1(1) of the National Environmental (Air Quality Control) Regulations, 2021.

4. Impact of Enforcement Agencies on Automobile Emissions

Institutional or regulatory agencies refer to administrative enforcement. It is one of the important environmental law enforcement mechanisms. It is usually done by way of the regulatory agencies compelling compliance to environmental laws. The agencies issue orders to implement emission control laws.

4.1 National Environmental Standards and Regulation Enforcement Agency[48]

This Agency was established as a body corporate.[49] It is saddled with the responsibility of evolving environmental technology, including coordination and liaison with relevant stakeholders within and outside Nigeria on matters of enforcement of environmental standards, regulations, rules, laws, polices and guidelines.[50] Section 7 of the Act provides that the Agency shall enforce compliance with laws on environmental matters. The Agency is also obliged to coordinate and liaise with stakeholders within and outside Nigeria, on matters of environmental standards regulations and enforcement.[51]

The NESREA Act further provides in Section 7(h) the authority to enforce compliance through monitoring, the environmental regulations and standards on noise, air, land, seas, oceans and other water bodies other than in the oil and gas sector. Also the NESREA has the power to enforce environmental control measures through registration, licensing and permitting systems other than in the oil and gas sector.[52]

By the provisions of section 30(1) of the NESREA Act the chief enforcer as mentioned under the Act is an "officer" of the Agency. An officer of the agency also has the power to enter and search for the purpose of conducting inspection.[53]

According to Atsegbua,[54] the phrase 'authorized authorities or officer,' which appears in several places of the Act, can be reasonably interpreted to mean, in addition to Agency representatives,

[48] [Hereafter the NESREA]
[49] Section 1 of the NESREA Act 2007
[50] Ibid, at S. 2
[51] Section 7 of the NESREA Act 2007
[52] Ibid Section 7(j)
[53] Elkanah Ebiaye Simon, Environmental Pollution in Nigeria: Legal and Institutional framework for Control, unpub. (Graduate LLM Dissertation, Oba Erediauwa College of Law Igbinedion University, Okada 2021)

any Police officer who holds a rank higher than Inspector of Police or any Custom officer who can enforce the Act.[55]

This is not un-plausible as some of the functions of the Police as set out in the Police Act include, enforcement of all laws and regulations with which they are charged as well as collaboration with other agencies to take any necessary actions to persons in distress.[56]

4.2 The Federal Road Safety Commission

The Federal Road Safety Commission was established in the year 1988. It is regulated by the Federal Road Safety Commission Act 2007. The Federal Road Safety Commission (Establishment) Act, 2007 repealed the Federal Road Safety Commission Act of 1990.[57] By section 6 (h) of the FRSC Act of 2007, the commission shall make regulations in relation to the registration, licensing and the road worthiness of vehicles. Section 5 (i) of the Act prohibits the emission of smoke and visible vapour, sparks, ashes and grit from vehicles. The Act also provides for a fine of 5,000 only for excessive smoke emission from vehicles.[58] It is important to note that the aforementioned provisions are not being implemented in Nigeria as of today.

[54] L. Atsegbua and I. Aigbe 'An Appraisal of the Mechanisms of Enforcement of Environmental Laws in Nigeria' *University of Ibadan Law Journal* (4) (2014) 56-75.
[55] Section 37 of the NESREA Act 2007
[56] Section 4 of the Nigerian Police Act 2020
[57] Cap 141 LFN 1990
[58] See the provisions of fines as stipulated in the second schedule of the Federal Road Safety commission Act.

5. Challenges and Prospects to vehicular emission regulation in Nigeria

It is appropriate to consider the challenges and prospects in the management of vehicular emission in Nigeria.

A. Challenges

i. Out-dated legislations

Most of Nigeria's emission regulations are based on standards that lag behind international best practices. The adoption of Euro III standards, while progressive, is still below the Euro VI standards implemented in many developed countries. This discrepancy allows for the continued use of high emission vehicles.

ii. **Enforcement deficiencies**

Enforcement agencies like NESREA and the Federal Road Safety Corps (FRSC) are continuously saddled with the challenge of resource constraints, limiting their ability to monitor and penalize non-compliant vehicles. Corruption and lack of training further undermine enforcement efforts. High-sulphur fuels (150ppm) worsen emissions, yet the NNPC has delayed adopting 50ppm standards. As seen in the case of *Centre for Oil Pollution Watch v. NNPC*[59]. The court mandated NNPC to comply with ECOWAS low-sulphur fuel standards but implementation has been slow due to refinery inefficiencies and corruption.

iii. Institutional overlaps and coordination barriers

Multiple agencies share responsibilities for vehicular emission control, leading to overlaps and inefficiencies. For instance, while NESREA sets emission standards, the FRSC handles vehicle inspections and the Vehicle Inspection Officers (VIOs) conduct roadworthiness tests. Lack of coordination among these bodies hampers effective regulation. This overlap leads to bureaucratic inefficiencies.

[59] 5 NWLR (Pt. 1666) 518 (2019)

iv. Inability to fully utilize new enactments

It is quite unfortunate that landmark legislations like the Climate Change Act of 2021[60] has not been fully utilised. The climate change Act establishes the National Council on Climate Change[61] but does not explicitly address vehicular emissions representing a missed opportunity for sector specific regulation. The fact that regulations have been made under affecting the NESREA since 2011 to tackle automobile emission control, however, the regulation has fallen short of expectation. This means that most of the climate change laws enacted since 2011 could have taken the reins and long tackled the problem.

v. Public awareness and compliance challenges

Many vehicle owners are unaware of emission standards and the health implications of vehicular pollution. This ignorance, coupled with economic constraints, leads to resistance against emission testing and vehicle maintenance. For instance the average Nigerian is unaware of the provisions of National Environmental (Control of Vehicular Emissions from Petrol and Diesel Engines) Regulations, 2011. It is the duty of NESREA to sensitize the public on the provisions of the regulations.[62]

vi. Institutional overlaps and coordination barriers

Multiple agencies share responsibilities for vehicular emission control, leading to overlaps and inefficiencies. For instance, while NESREA sets emission standards, the FRSC handles vehicle inspections and the Vehicle Inspection Officers (VIOs) conduct roadworthiness tests. Lack of coordination among these bodies hampers effective regulation. This overlap leads to bureaucratic inefficiencies.

[60] The Climate Change Act, Act No.21 of 2021
[61] Ibid, at S. 3
[62] Section 7(I) of the NESREA Act

6. Subsisting prospects

There are however, visible prospects and they include the following:

i. FRSC and NESREA Collaboration

In January 2025, the FRSC and NESREA partnered to enhance the implementation of the NVECP. This collaboration focused on incorporating emission standards into driver training and increasing public awareness about the dangers of vehicular emissions.[63]

ii. Ogun State Emission Control Scheme

Ogun State launched a Vehicular Emission Control Scheme in March 2025, mandating emission testing and certification for vehicles. The initiative was aimed at improving air quality and public health by ensuring vehicles meet emission standards.[64]

iii. End-of-Life Vehicle Recycling Regulation

The National Automotive Design and Development Council (NADDC)[65] introduced the ELV Recycling Regulation, in March 2025. This policy seeks to manage the disposal of old vehicles, reducing environmental hazards and promoting recycling.[66]

7. Conclusion and Recommendations

It has been demonstrated that the Nigerian transport sector accounts for a significant share of carbon emissions, while international regime accounted for approximately 14% of global green-

[63] FRSC Publication **'**FRSC and NESREA Join Forces To Tackle Vehicular Emissions, Promote Sustainable Environment' *Federal Road Safety Commission* **(**Nigeria January 30, 2025) <FRSC and NESREA Join Forces To Tackle Vehicular Emissions, Promote Sustainable Environment – FRSC Official Website> accessed March 30 2025.

[64] Gift Oba,'Ogun to Commence Vehicle Emission Control' *Daily Post* (Nigeria February 10, 2025) <Ogun to commence vehicle emission control - Daily Post Nigeria> accessed April 20 2025.

[65] Formerly known as "National Automotive Council & Centre for Automotive Design & Development".

[66] Vanguard, 'FG launches regulation to recycle end-of-life, old vehicles' (Nigeria March 6, 2025) <FG launches regulation to recycle end-of-life, old vehicles - Vanguard News> accessed April 5 2025.

house gas emission. By no stretch, the disturbing phenomenon of emissions is traceable to motor vehicle exhausts. It has also been emphasised that these emissions posed health and environmental challenges to the human race. Notwithstanding the foregoing, effective vehicular emission regulation in Nigeria has been impeded by moribund laws, enforcement challenges, institutional overlaps and public apathy amongst other hindrances. The need to address these barriers must capture a rigorous and comprehensive legal reforms, strengthened enforcement, coordinated institutional efforts, and robust public education. By implementing these measures, Nigeria can make significant strides toward reducing vehicular e missions and achieving its environmental. Update emission standards to align with international benchmarks, such as Euro VI. Introduce incentives for adopting cleaner technologies and penalties for non-compliance. Enhance the capacity of enforcement agencies through training, funding, and technological support. Implement transparent monitoring systems to reduce corruption and improve accountability. Establish a centralized body to oversee vehicular emission regulation, ensuring clear delineation of responsibilities among agencies. Facilitate data sharing and joint operations to streamline enforcement. Launch nationwide awareness programs highlighting the health and environmental impacts of vehicular emissions. Encourage public participation in emission control initiatives through community engagement.

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