

## AN APPRAISAL OF LEGAL RESPONSES TO GAS FLARING AND GREENHOUSE GAS EMISSION MANAGEMENT IN NIGERIA

**TOSIN EZEKIEL AYO\***

\* LL.B (Hons), BL, LL.M (Aberdeen), Lecturer, Department of Public Law,  
Faculty of Law, Ekiti State University, Ado-Ekiti, Nigeria.

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### ABSTRACT

This paper aims to identify and evaluate the legal responses to the challenges of gas flaring and greenhouse emission management in Nigeria. In Nigeria, there is a need to combat the problem of indiscriminate flaring of gas to provide a safe environment for yet-unborn generations. Gas flaring has resulted in the extinction of species in the environment, and once species are depleted to the point of extinction, they cannot be renewed; as a result, the loss of these plant and animal species will make it difficult for future generations to meet their needs. As a result, it is critical to protect these resources to ensure long-term development. In the face of pollution and environmental degradation, maintaining the environment will be a difficult and debilitating challenge to the ecosystem. Exploration of oil and gas has therefore become an environmental albatross in the Nigerian oil and gas industry. The discharge or flaring of gases from exploration sites pollutes the air, water, and soil. The overreliance on fossil fuels to power cars, industrial machinery and home energy sources in Nigeria has created a risk for petroleum resources, threatening long-term growth. The paper thus introduces the incidences of gas flaring in Nigeria, highlights a brief review of opinions and scholars' perspectives on the subject and the overview of the challenges of gas flaring and greenhouse gas emission in Nigeria, and explores the impacts of gas flaring in the Nigeria Delta area and the Nigerian ecosystem. The paper finds that there are a number of challenges with the operation, administration and content of the existing legal frameworks and mechanisms available to combat gas flaring and greenhouse gas emissions in Nigeria and there is a need for improvement, to ensure they engender proper clean-up and remediation. The paper concluded by stating that there exists a need to strike a healthy balance between economic development and sustainable development and this can only be achieved if there is a political will on the part of the Nigerian federal government to enforce its anti-gas flaring laws to guarantee energy security and ensure a safe, clean, and healthy environment for all and sundry in Nigeria whilst giving recommendations on the need for effective management, capture, re-use and conversion of flared gases into a power-lean-and-clean project and the regulation/administration of greenhouse emission in Nigeria.

**Keywords:** Appraisal; Responses; Gas flaring; Emission; Management; Niger Delta; Nigeria.

### 1.0 INTRODUCTION

Nigeria has the highest proven gas reserves in Africa, with 5.675 billion cubic metres of gas and approximately 200.41 trillion cubic feet of natural gas. The country's oil reserves are 36.972 billion barrels, which means that the gas reserves are 900 times higher than its oil reserves. However, gas flaring has been a problem in Nigeria's oil and gas industry. Nigeria's

economy lost NGN 233 billion (USD 295,783,015.00) to gas flaring [1]. Most developing oil and gas producing countries suffer the deleterious effects of gas flaring, which has caused damage to the environment and human health, and the loss of aquatic life [2]. Gas flaring in the Nigeria Petroleum industry is a major factor in greenhouse gasses emission and it is responsible for climate change. Gas flaring is the burning of associated gas that emanates from the extraction of crude oil during oil and gas exploration activities [2]. No doubt Nigeria is endowed with large deposit of crude Oil yet still flare a large percentage of petroleum during the stage of transformation into consumable uses despite the fact that the country still faces generation of power challenges. However, flared gas has occasioned the loss of billions of dollars in revenue to the Federal Government of Nigeria [3].

In the vast legal purview, gas flaring is an impediment to the fundamental human right to life and dignity in human person which thus constitute a gross violation of the provisions of section 33 and Section 34 as provided in the 1999 Constitution of the Federal Republic of Nigeria (as amended).

Pollution of the environment through incessant gas flaring has made the environment unsafe and unhealthy, inhabitable and threatened the right to life and dignity of the human person as enshrined in the 1999 Constitution of the Federal Republic of Nigeria (as amended). The Niger Delta region of Nigeria was in fact rated as one of the most polluted communities in the world, with over 2.5 bcf of gas flared daily and over 2,000,000 tonnes of crude oil spilled till date in the community [4].

The Niger Delta region represents an interesting paradox: an extreme mix of economic prosperity owing to the successful operation and profit-making activities of foreign investors and multinational oil companies which are carrying out oil and gas exploration and production on the one hand and a simultaneous environmental degradation and social decay on the other hand: with repeated incidences of oil spillage, gas flaring, uncontrolled pollution of the marine environment, unbridled violence, environmental injustice, threat to wild life, threat to human life, human rights abuse, absence of basic social amenities, lack of access to potable water, and death of marine fish, the Niger Delta Community is one of the most polluted communities in Africa.[5] According to CNN, the Niger Delta is one of the most polluted places on the planet with more than 6800 recorded oil spills, accounting for about 9 million to 13 million barrels of oil spilled. In times past, oil spillage has been a recurrent problem in the Niger Delta. In the Ogoni Community of Rivers State in the Niger Delta for instance, between 1976 and 1980 alone, it was reported that over 1,336,875 barrels of crude oil was spilled in about 784 incidents.[6] There are several forms of environmental degradation in the Niger Delta ranging from air pollution gas flaring causing ozone layer depletion, thermal pollution (heat emission), sound, noise, land degradation, oil spillage but this work will be focusing on the environmental protection laws relating to oil pollution in the Niger Delta and the challenges leading to the ineffectiveness of Nigeria's regulatory agencies in enforcing them.

The Department of Petroleum Resources of Nigeria's former Director, Mr. Osten Olorunsola stated that Nigeria's oil reserves stood at a whopping 36 billion barrels of oil, 5.018 billion barrels for condensates, 92.6 trillion cubic feet of associated gas and 90.150 trillion cubic feet for non-associated gas as at January 2012 [7] . Nigeria with its daily production capacity of

over 2.5m b/d is still OPEC's 5th largest oil reserve member, producing about 55% of the total West Africa's production capacity.[8]

This paper aims to identify the legal responses to the challenges of gas flaring and greenhouse emission management in Nigeria. The paper is divided into six (6) sections, with the introduction to gas flaring in Nigeria. Section 2 considers the methodology, section 3 contains a brief review of opinions and scholars' perspectives on the subject and the overview of the challenges of gas flaring and greenhouse gas emission in Nigeria, analyses specifically gas flaring in Nigeria's oil industry, including the reasons for gas flaring in Nigeria, the impacts of gas flaring in the Nigeria Delta area and the Nigerian ecosystem. Section 4 considers the existing legal frameworks and mechanisms available to combat gas flaring and greenhouse gas emissions in Nigeria and the need for improvement, clean-up and remediation efforts, section 5 contains the recommendations and the need for effective management, capture, re-use and conversion of flared gases into a power-lean-and-clean project and the regulation/administration of greenhouse emission in Nigeria and section is the concluding remarks.

## 2.0 METHODOLOGY

This paper adopted a library-based doctrinal legal research method with conceptual legal analysis. It further reviewed existing literature to explore the topic from the various authors' views and perspectives. This paper relies on both primary and secondary sources of law, such as the constitution, statutes, judicial precedents, international conventions and treaties, and online materials, and peer-reviewed journals that are relevant to gas flaring and environmental law are analysed and subjected to contextual and content analysis. The justification for using the method was to establish the trustworthiness of the findings on gas flaring in Nigeria. The paper focuses on examining the legal instruments, the existing institutional agencies available under the Nigerian enabling laws to the accomplishment of a habitable ecosystem while processing, manufacturing and transforming raw petroleum into consumable uses.

## 3.0 A REVIEW OF LEGAL SCHOLARS' Opinions and Views on Gas Flaring and Greenhouse Emission

It is noted that the effect of greenhouse gasses emission such as nitrous oxide, (N<sub>2</sub>O), water vapour, (H<sub>2</sub>O), methane, (CH<sub>4</sub>), carbon dioxide (CO<sub>2</sub>) contributes greatly to the destructions of the living habitats whether terrestrial, aquatic leading to loss of biological diversity. Although, several legal machineries have been put in place to protect the environment and still the major problem is the lack of enforcement. The environmental effect of gas flaring and greenhouse gases emissions has been an issue of utmost contention among scholars from diverse fields of study, due to its deleterious effects on the ecosystem, aquatic resources, and human health. Hence the need for this paper to capture gas flaring as a menace threatening sustainable development in Nigeria, thus, constituting adverse challenge to human health and the living environment of Nigeria.

It is worthy of note that gas flaring is prevalent in Nigeria due to the failure of the federal government to stringently enforce the anti-gas flaring legislation in the country, but more importantly, her failure to proffer the much-needed legal panaceas to the menace, which the instant legal writing intends to swiftly address [9].

Oluwasoye and Odinaka maintain in their article titled “Environmental Risk of Gas Flaring in Nigeria: Lessons from Chevron and Ilaje Crisis” that gas flaring in the Niger Delta is illegal and that Chevron should make efforts to reduce the impacts of gas flaring in the communities where they operate. According to the study, Chevron has carried out a natural gas project in the Western Niger Delta and Escravos areas, a project that is said to cost USD 2.4 billion (NGN1,908,000,000,000.00) [10].

Olanrewaju Fagbohun in his book: *The Law of Oil Pollution and Environmental Restoration: A comparative Review*, stated that almost every ecosystem and primal culture that has had the misfortune of being exposed to oil exploration and production has been disrupted and, in some instances, suffered irreversible ruin. He mentioned the destruction of several mangrove forests, associated extinction of wild life species, the indiscriminate flaring of noxious fumes and gases into the atmosphere, the destruction of complex animal communities, indigenous populations and the killing of protesters from both non-oil and host oil companies who are averse to the continued pollution and degradation of their environment as examples of the ills suffered.[11]

This current study however intends to conceptualize the damning situation by examining the legal responses which aims at curbing gas flaring and management of Greenhouse emission in Nigeria.

### **3.1 An Overview of the Challenges of Gas Flaring and Greenhouse Gas Emission in Nigeria**

Nigeria and nine, (9) other countries are allegedly responsible for 75% of global gas flaring and the country is ranked the seventh position among the top 10 gas-flaring nations, with a 10% upsurge in gas-flaring intensity between 2012 and 2021 [12]. Nigeria flares a higher percentage of its associated gas, thereby occasioning a loss of national revenues for economic and developmental projects in the country. Gas flaring is a colossal waste of an invaluable natural resource that could either be used for commercial purposes, such as generating electricity, or be conserved by re-injecting it back into the reservoir [13]. Besides, gas flaring has disastrous impacts on oil-producing communities-people’s health, environment, means of livelihood, and agricultural production. It has contributed extensively to global warming and impacts the environment through the emission of carbon dioxide, black carbon and other environmental pollutants. It has squandered invaluable energy resources that could be utilized for the improvement and sustainable growth of Nigeria. To this end, this paper shall consider the legal frameworks established by the Nigerian government to ameliorate the degradation caused to the living environment through the process. It will therefore be pertinent to briefly discuss some preliminary issues like the causes of gas flaring in the Nigerian oil and gas industry.

### **3.2 Reasons alluded as Responsible for Gas Flaring in the Oil and Gas Industry in Nigeria.**

#### **3.2.1 Emergency Reasons**

By virtue of section 104 of the Petroleum Industry Act 2021, "a licensee, lessee, or marginal oil field operator can only flare or vent gas in the event of an emergency, where exemption has been granted by the Commission and where such flare is the acceptable safety practice under the regulation". One of the reasons for flaring gas is that it may aid in the elimination of waste

products from chemical manufacturing processes and to let go of injurious fumes and gases that can cause damage when captured in isolation. This is hoped by drafters of the Act as capable of promoting the safe burning of volatile organic compounds.

### **3.2.2 For Lack of Transport Infrastructure and Absence of Nearest Utiliser**

Often times than not, gas is flared where oil fields are far from the nearest utiliser, and where gas transport infrastructure is insufficient, oil firms often flare gas where such oil fields have an insignificant quantity of associated gas in the location or site and where re-injection to the field is not practicable.

### **3.2.3 To Prevent Excessive Pressure on Firms' Industrial Plants**

Typically, gas may also be flared to prevent the overpressure of oil firms' industrial plant equipment by releasing these gases to reduce the chance of an explosion. This release is often authorized in line with health, safety and environmental concerns and protocol and the flaring is often controlled and done in isolated areas with less contact hours and exposure of the population and primal community.

### **3.2.4 Undersized Areas of Oil and Gas Production Areas and Huge Costs of Gas Capture**

Another prominent reason for gas flaring is that oil production locations are undersized and are spread over a sizeable geographical area. Capturing and utilising the associated gas by oil firms is perceived as costly; therefore, the associated gas is routinely flared [14]. It is however noted that the local market of gas is yet to be fully developed in Nigeria and consumers are often not willing to pay an appropriate price for gas that is commensurable with the cost of processing the associated gas and transporting it to the market for sale [15]. This has led to the operators' preference for flaring gas as wasted by-product over and above re-injecting it for the use and benefit of the gas-using Nigerian public.

### **3.2.5 Negligence and Accidental Discharges due to Lack of Infrastructural Maintenance Culture**

Apart from the above, there are some causes of gas flaring that are not intentional but may be due to negligence on the part of the oil and gas licencees and operators, and they are as follows: inadequate infrastructure for capturing and transporting associated gas; the lack of maintenance and replacement of old gas pipelines that convey gas products, thereby resulting in leaking and rusting of such pipelines, leading to flaring of the stored gas; failure of regulatory institutions to combat illegal oil refinery activities such as oil and gas bunkering and pipeline vandalism; and various illicit oil activities that have occasioned gas flaring and oil spillage that contaminate the environment.

## **3.3 Addressing the Gas Flaring and Greenhouse Gas Emission Debacle in the Nigerian Oil and Gas Industry**

In Nigeria, there is a need to combat this problem of indiscriminate flaring of gas to provide a safe environment for yet unborn generations. Gas flaring has resulted in the extinction of species in the environment, and it is important to note that once species are depleted to the

point of extinction, they cannot be renewed; as a result, the loss of these plant and animal species will make it difficult for future generations to meet their needs. As a result, it is critical to protect these resources to ensure long-term development. In the face of pollution and environmental degradation, maintaining the environment will be a difficult and debilitating challenge to the ecosystem. Exploration of oil and gas has therefore become an environmental albatross in the Nigerian oil and gas industry.

The discharge or flaring of gases from exploration sites pollutes the air, water, and soil. The overreliance on fossil fuels to power cars, industrial machinery and home energy sources in Nigeria has created a risk for petroleum resources, threatening long-term growth. Consequently, the Nigerian government's failure and inability to rely on alternative energy sources such as solar, tidal and hydro power has forced the country to rely largely on fossil fuel for energy. Nigeria should therefore follow in the footsteps of western and better developed countries that have previously embraced alternate energy sources. Sustainable development which entails the utilization of renewable energy sources is hereby advocated.

Achieving sustainable development goals thus implies a balance of environmental and economic objectives. No doubt, gas flaring releases highly toxic substances such as methane, carbon dioxide, nitrogen oxides, and sulphides into the atmosphere, along with carcinogenic substances such as benzo(a) prone and dioxin. It is however noted that these compounds are very toxic to human health [16].

Greenhouse gas management on the other hand entails measuring emissions and gaining an insight into their sources, including setting realizable goals for reducing emissions and working holistically to develop a strategic action plan to meet the set targets and consequently implementing and monitoring the plans set towards achieving the reduction of emission targets. Similarly, since emissions management mostly means energy conservation or efficiency measures, reducing the incidences of gas flaring and effectively managing the emissions of greenhouse gases like methane, CH<sub>4</sub>.

#### **4.0 Legal Responses to Gas Flaring and Greenhouse Emission Management in Nigeria-Highlighting the Existing Legal frameworks and Mechanisms available to combat the Incidences of Gas Flaring.**

The Nigerian Government in response to the effects of gas flaring and greenhouse emission management has over time developed legal frameworks and institutions to combat the deleterious tendencies on the Nigerian ecosystem. The frameworks include;

##### **1) The 1999 Constitution of the Federal Republic of Nigeria.**

The Nigeria Constitution is the fons et origo which is otherwise regarded as the supreme norms of our jurisprudence, from which other laws derive their validity. It is the supreme legislative document that directs the affairs of both the government and the governed in Nigeria. Section 1(1) of the constitution thus provides for the supremacy of the constitution and Section 1(3) provides that where any other law is inconsistent with the provisions of the constitution, such other law shall be void to the extent of its inconsistency.

Notable of mention is the provisions of Chapter 2 which provides for the Fundamental Objectives and Directive Principles of State Policy, though non-justiciable as stipulated under Section 6(6)(c).

Section 20 states that “the state shall maintain and improve the environment and safeguard the water, air, and land of Nigeria, as well as the forest and wildlife.” In reality, the afore quoted sections are not enforceable as a result, does not guarantee significant environmental protection against gas flaring in Nigeria.

## **2) The Petroleum Industry Act 2021.**

The Petroleum Industry Act 2021 specifically in section 102(1)(a)(b)(2)(3)(a)(b)(4)(5)(6) of the Act requires a licensee or lessee who engages in upstream and midstream petroleum operations to, within one (1) year of the effective date or six months after the grant of the applicable license or lease, submit for approval an environmental management plan regarding projects that require an environmental impact assessment to the Nigerian Midstream and Downstream Petroleum Regulatory Authority, (NMDPRA). Section 103(1)(2) of the Act thus provides for a financial contribution to an environmental remediation fund set up by the Authority for the restoration or management of negative environmental impacts of the license or lease, being a prerequisite for the award of the oil license or lease and before the approval of the environmental management plan by the prescribed authority.

Similarly, section 104(1)(2)(3)(4) of the Act provides that a licensee, lessee, or marginal field operator can only flare or vent natural gas in the case of emergency, an exemption granted by the Commission as an acceptable safety practice established under this regulation. Under section 107 of the Act, a licence or lessee can flare where it is required for facility start-up or strategic operational reasons such as testing the gas equipment or plant, and failure would occasion a fine as prescribed by the Commission, which shall be paid in the same manner as royalties to the government by oil firms. It should be noted that the fine is not eligible for cost recovery or tax deductibility. The fees received as gas-flaring penalties are however billed to be utilized for environmental remediation and relief of the host communities of the settlers on which the fines are imposed. The penalties prescribed by the Flare Gas (Prevention of Waste and Pollution) Regulations are to be complied with by defaulting oil firms.

Furthermore, section 106(1) provides for the installation of metering equipment by the licensee or lessee in every facility where natural gas may be flared or vented before the commencement of petroleum production, and non-compliance attracts a fine that the Authority may prescribe.

Under section 107 of the Act, a licensee or lessee producing natural gas shall, within 12 months after the effective date, submit a natural gas flare elimination and monetization plan to the Nigerian Midstream and Downstream Petroleum Regulatory Authority, (NMDPRA) in conformity with the regulations formulated under the Act.

Apart from all these provisions, the Petroleum Industry Act 2021 which is the legal, governance, regulatory and fiscal framework for the Nigerian Petroleum industry and the development of host communities provides copiously for abandonment, decommissioning and disposal of offshore installations in Nigeria coastal areas. Thus, even when the gas is out of use, it should be properly decommissioned rather than flared.

Section 232(1) of the Act [17]<sup>1</sup> provides that:

*'the decommissioning and abandonment of petroleum wells, installations, structures, utilities, plants and pipelines for petroleum operations on land and offshore shall be conducted in accordance with*

- (a) Good international petroleum industry practice; and
- (b) guidelines issued by the Commission or Authority, as the case may be, provided that the guidelines shall meet the standards prescribed by the international maritime organisation on offshore petroleum installations and structures'.

It should be noted further that the Petroleum Industry Act 2021 dedicates Chapter 3, section 234-257 to Host communities' development, comprising the objectives and regulation of the host communities, the incorporation of the host communities' development trust fund, failure to incorporate the host community trust fund, the objectives of the trust fund, the sources of revenue of the trust fund, the board, composition and management of the trust and allocation of funds, et al, ostensibly to cater to the environmental effect of oil and gas pollution to the coastal community, in which gas flaring is an integral part. But since the Act was recently passed in the year 2021, its effect and applicability remain yet untested.

### **3) Environmental Impact Assessment Act 1992 Cap E12, LFN 2004.**

The Environmental Impact Assessment Act aims at protecting the environment by assessment of the potential impacts whether positive or negative of a proposed project on the natural environment. The Act aims to promote sustainable development and use of the natural resources of the environment. The Act encourages the implementation of appropriate policy in all federal lands, states and local government areas, consistent with all laws and decision-making processes through which the goal and objective as stated in its provisions. Thus, when any oil company, firm or operator is about to embark on any oil and gas development project that might inadvertently occasion the flaring of gas, it is expedient that they obtain an EIA report, so as to assess the extent of damage to be caused, with a view to proffering a minimisation mechanism. How and whether this is done effectively in reality remains a subject of intriguing debate.

### **4) National Environmental Standards and Regulation Enforcement Agency (NESREA) Act 2007.**

The agency was established pursuant to NESREA Act 2007. The agency is charged with the responsibility for the protection of the human environment in Nigeria. An agency like FEPA is a corporate body with perpetual succession and a common seal. NESREA is the enforcement agency for standards, regulations, rules, law, policies and guidelines in Nigeria. The agency shall, subject to the provisions of this Act, have responsibility for the protection and development of the environment, biodiversity conservation and sustainable development of Nigeria's natural resources in general and environmental technology including coordination and liaison with relevant stakeholders within and outside Nigeria on matters of enforcement of

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<sup>1 1</sup> Section 232(1) of the Petroleum Industry Act 2021, Government Notice No. 134.



environmental standards, regulations, rules, laws, policies and guidelines [18]. It is imperative to state that Section 8(f) of the Act set up mobile courts for the speedy trial of those that violate any of its provisions. One of the major weaknesses of the Act, however, is that section 8(g) bars the agency from enforcing hazardous waste regulations in the oil and gas sector. This singular provision renders the Act ineffective regarding the effective administration, regulation and operation of gas flared or indiscriminately released in the coastal community in Nigeria.

## **5) The Niger Delta Development Commission Act 2000 CAP N86 LFN 2004.**

The Niger Delta Development Commission Act 2000 CAP N86 LFN 2004 established the Niger Delta Development Commission (NDDC). The Niger Delta Development Commission was a product of the clamour and agitation of the dwellers from the Nigeria Delta region particularly the riverine area against environmental degradation resulting from the exploratory activities of the oil companies. It is an agency established primarily to address the deleterious consequences of oil and gas production in Nigeria's oil-producing community. Section 7 of the Act stipulates the function of the commission to include the formulation of policies and guidelines for the development of the Niger Delta area and to combat ecological and environmental degradation occasioned by oil exploration and production activities in the area. The Act requires the federal government to contribute 15% of the monthly statutory allocation due to member states to the commission, whilst oil firms are to contribute 3% of their annual budgets to the commission, and member states are to contribute 50% of the ecological fund allocated to them by the government.

According to Fagbohun [19], inadequate funding, lack of technical capacities to carry out clean-up and remediation activities, graft and corruption are however the major challenges of the commission due to incessant delay in releasing the approved budget.

## **6) The Ministry of Niger Delta.**

The Ministry of Niger Delta was set up in September 2008 to address the region's developmental and environmental challenges. The Niger Delta Development Commission is under the ministry of Niger Delta as an agency. The ministry is saddled with the responsibility of planning and administering development programmes that will alleviate the problems of the region. This Ministry would have been effective in tackling the challenges of gas flaring but for the usual operational challenges, nepotism appointments, and repeated incidences of graft and corruption that allegedly permeate many government establishments.

## **7) Criminal Code Act CAP. C38 LFN 2004**

The Criminal Code Act is the penal legislation applicable to the southern part of Nigeria. Sections 245 and 247 forbid any action "that vitiates the atmosphere in any area to make it poisonous to the health of individuals in general inhabiting or carrying on business in the neighbourhood or walking along a public way..." Any perpetrator faces a six, (6)-month prison sentence. This is largely inadequate as most defaulters of gas flaring are artificial persons- oil operators which cannot be stricto sensu 'imprisoned' in that sense. Even in the unlikely event that the veil is lifted, it is the industry workers at the lower rung of the operational ladder who invariably let out the flared substances that would be imprisoned, rather than the directing will and mind of the company, whom are mostly expatriates and foreigners. This provision equally

contains another major flaw of its own. For instance, the wrongdoer can only be punished if the vitiation is harmful to human health. It remains to be seen how scientific, medical and ecological evidence can be rightfully adduced successfully to pin a harmful effect on the health condition of victims on the vitiation of the atmosphere in any coastal or non-coastal area.

## **8) Associated Gas Reinjection (Continued Flaring of Gas 1984) Regulation.**

The aim of the Associated Gas Reinjection (Continued Flaring of Gas 1984) Regulation is to re-inject all gas produced in connection with oil and not utilized in an industrial project. Defaulters are thus billed to forfeit the concession granted in the field where gas is flared, and repair and ensure restorative action on the reservoir where gas is flared [20]. A major drawback to this legal framework is that it is not just a mere prescriptive regulation with no compelling force of law, but how the restorative action is to be embarked upon was not specifically spelt out by the regulation.

## **9) The Nigeria Gas Master Plan 2008.**

The Nigeria Gas Master Plan 2008's aim is to promote the use of gas in the local market and to position the country competitively in the global export gas markets to boost Nigeria's economy and guarantee sustainable energy security by exterminating gas flaring in Nigeria. This is however a master plan and policy initiative, with no enforcement paradigm of law.

## **10) The Nigeria Gas Flare Commercialization Programme 2017.**

The Nigeria Gas Flare Commercialization Programme 2017 is a policy of the Nigerian federal government that aims to reduce the environmental and social impact of gas flaring in Nigeria for the protection of the environment, prevention of waste of natural resources, and the creation of social and economic benefits from gas or captured gas [21]. It is obligatory to take up all gas assigned to be flared without any cost implication and the gas is to be sold at a competitive auction sale. A permit or licence is however to be obtained in order to access the flared site and take up flared gas.

## **11) The Climate Change Act 2021**

In November 2021, Nigeria through the National Assembly passed the Climate Change Act. The Act seeks to achieve a drastic low greenhouse gas emission, a green and sustainable environmental growth and development, by statutorily providing the legal framework to set a target to attain a net zero emission target between year 2050 and year 2070. [22] Consequently, the carbon footprint reduction policy predicated on the Act and in line with the nation's Nationally Determined Contributions, (NDC), submitted to the United Nations' Framework Convention on Climate Change, UNFCCC is pegged at 20% by year 2030, comparable to current levels, with the potential to cut emissions by as much as 45% with the help of the international community. [23]

The other relevant Nigerian Acts and Treaties that would not be specifically discussed in this paper include the Evidence Act LFN 2004; Energy Commission of Nigeria Act No 62, 1979; Environmental Guidelines and Standards for the Petroleum Industry in Nigeria, 1991 as amended in 2002; Exclusive Economic Zone Act 1978; the now repealed Federal

Environmental Protection Agency Act, CAP 131, LFN 1990, Now Act 2004; Federal Environmental Protection (Amendment) Act, 1988; Harmful Wastes, (Special Criminal Provisions, etc) Act, LFN 2004; Harmful Wastes (Special Criminal Provisions) Decree 1988; Hydrocarbon Oil Refineries Act 1965; International Convention on Oil Pollution Preparedness, Response and Cooperation 1990. Others include the Land Use Act, CAP 202, LFN 2004; the Motor Spirit (Returns) Act 1990; Land Use (Validation of Certain Laws) Act 1990; Mineral Oils (Amendment) Act, the 1958 National Environmental Protection (Effluent Limitation) Regulations 1991; National Environmental Protection (Management of Soil and Hazardous Wastes) Regulations 1991; National Environmental Protection (Pollution Abatement in Industries and Facilities Generating Wastes) Regulations 1991; the National Oil Spill Detection and Response Agency (Establishment) Act, 2006; the Nigerian National Petroleum Corporation Act 1977; the Oil and Gas Export Free Zone Act 1990; Oil and Gas Pipeline Regulations 1995; Oil in Navigable Waters Act 1968; Oil in Navigable Waters Regulation 1968; Offshore Oil Revenue (Registration of Grants) Act 1971; Oil Pipelines Act 1990; Oil Terminal Dues Act 1969; Petroleum (Drilling and Production) Regulations 1969 now CAP 350, LFN 2004; the Petroleum Act 1969; Petroleum Control Act 1967; Petroleum Production and Distribution (Anti-Sabotage) Act 1975; Petroleum Refining Regulations 1974 ; Petroleum Regulations 1967; Petroleum Technology Development Fund Act 1973; Petroleum Training Institute Act 1972; Resolution 16, Article 90, OPEC June 1968; Rio Declaration Article 16 and the United Nations General Assembly Resolution 1803 (XVII) 'Permanent Sovereignty over Natural Resources' December 14, 1962

## 5.0 RECOMMENDATIONS

It is therefore strongly recommended that the Associated Gas Reinjection (Continued Flaring of Gas 1984) Regulation which is a regulatory guideline to re-inject all gas produced in connection with oil and not utilized in an industrial project should be enacted as an Act with a more compulsive force of law. The provision that defaulters are to forfeit the concession granted in the field where gas is flared, and repair and ensure restorative action on the reservoir where gas is flared should be amended to include punitive sanctions for the oil and gas operators and directors and the mode, manner and procedure for the restorative action should be specifically spelt out.

There is an urgent need to enact an Anti-Gas Flaring Prohibition Act to guide against the indiscriminate and irresponsible flaring of gas in the Niger Delta community.

There should be a strategic and purposive upstream transformation in the oil and gas industry in order to improve carbon emission strategy that delivers lower carbon gas emission and a higher value production.

It is suggested that the Criminal Code be amended to extend the severity of punishment to be meted out on gas flarers and to the Directors of the oil and gas companies, whilst the requirement of proof of causing harm to the victim should be removed as flaring of gas alone should be sufficient to prove culpability.

Constitutional amendment to make Chapter Two of the 1999 constitution justiciable is hereby advocated to ensure the maintenance and improvement of the environment and safeguarding of the water, air, and land of Nigeria, as well as the forest and wildlife.

Official graft and corruption must either be discouraged or punished, so that the impunity that allows the unpunished proliferation of gas flaring and indiscriminate carbon emission can be promptly addressed.

A concerted policy implementation plan must be swiftly hatched by the Nigerian government to reduce greenhouse gas emissions by making power on-site with renewable energy focus and encouraging the proliferation of other climate-friendly energy resources like solar water-heating mechanisms, small scale wind turbine energy generation models, installation of rooftop solar panels and powering fuel cells by natural gas, geothermal energy and or natural gas supply.

It is further recommended that Nigeria should learn from other developed nations of the world who are leading the trade in capturing their gas, rather than flaring it and converting same into power-lean-and-clean projects and energy solutions for gas-powered vehicles, electric power generation and cooking gas sources for many homes.

## 6.0 CONCLUDING REMARKS.

There is an urgent need for stringent policies or laws on the conversion of flared gas for domestic use of gas to decline the global carbon emissions to the atmosphere, thereby reducing the adverse effects of climate change and increasing electricity generation in Nigeria to meet national demands and avert revenue loss owing to gas flaring and oil spillage in the oil and gas industry. The government must also not allow oil firms to conduct their operations in a way that endangers human life. Unsustainable exploitation of extractive resources undermines the sustainability of oil and gas resources; therefore, there is a need for a healthy balance between economic development and sustainable development to be struck, and this can only be achieved if there is a political will on the part of the federal government to enforce its anti-gas flaring laws to guarantee energy security and ensure a safe, clean, and healthy environment for all and sundry in Nigeria [24].

## REFERENCES

- 1) Ismail, O.S.; Umukoro, G.E. Global Impact of Gas Flaring. *Energy Power Eng.* 2012, 4, 290–302
- 2) Nwamaka, I. Gas Flaring in Nigeria, an Abridgement of Human/Fundamental Right. *Research Gate.* 2016. Available online: <<https://www.researchGate.net/publication/317076913>> accessed 5th October, 2023
- 3) Iyorakpo, J.; Odibikuma, P.W. Impact of Gas Flaring on the Built Environment: The Case of Ogba/Egbema/Ndoni Local Government Area of Rivers state. *Niger. Eur. Sci. J.* 2015, 11, 11. Available online: <<https://eujournal.org/index.php/esj/article/view/6232>> accessed 5th October 2023
- 4) Oil Exploration and Spillage in the Niger Delta of Nigeria <<http://www.iiste.org/Journals/index.../1868.html>> Accessed 20th October, 2023
- 5) Nigerians Angry at Oil Pollution Double Standards- CNN.com <<http://www.cnn.com/.../Africa/.../nigerdelta.html>> Accessed 28 October, 2023
- 6) Ogbuiwe A.E, 'Compensation and Liability for Oil Pollution in Nigeria' [1985] JPPL 23
- 7) DPR Oil and Gas Profile. <[http://www.dprnigeria.com/in\\_the\\_news.html](http://www.dprnigeria.com/in_the_news.html)> Accessed 12th October, 2023

- 8) Olanrewaju Fagbohun, *The Law of Oil Pollution and Environmental Restoration: A comparative Review* (Odade Publishing 2010)
- 9) Ito, E.E.; Ify, L.U. Impact of Gas Flaring on Biodiversity in Niger Delta, Nigeria. *Niger. J. Sci. Environ.* 2017, 15, 147–154
- 10) Olujobi, O.J.; Olusola-Olujobi, T. Nigeria: Advancing the Cause of Renewable Energy in Nigeria's Power Sector through its Legal Framework. *Environ. Policy Law* 2020, 50, 433–444
- 11) Olarenwaju Fagbohun, *The Law of Oil Pollution and Environmental Restoration: A Comparative Review* (Odade Publishing 2010)
- 12) Vesalon, L.; Cre, tan, R. Mono-industrialism and the Struggle for Alternative Development: The Case of the Rosia Montana Project. *Tijdschr. Econ. Soc. Geogr.* 2013, 104, 539–555
- 13) Olujobi, O.J. The Legal Sustainability of Energy Substitution in Nigeria's Electric Power Sector: Renewable Energy as an Alternative. *Prot. Control Mod. Power Syst.* 2020, 5, 32
- 14) Eboh, M. Despite Scarcity of Fund, Nigeria Flares 461 bn Gas in 2019. *Vanguard News reports*. Available online: <<https://www.vanguardngr.com>> accessed 5th October, 2023.
- 15) Olujobi, O.J. The Legal Sustainability of Energy Substitution in Nigeria's Electric Power Sector: Renewable Energy as an Alternative. *Prot. Control Mod. Power Syst.* 2020, 5, 32.
- 16) Goldenberg, J. *Rural Energy in Developing Countries*. In *World Energy Assessment: Energy and the Challenge of Sustainability*; United Nations Development Programme (UNDP): New York, NY, USA, 2000
- 17) Section 232(1) of the Petroleum Industry Act 2021, Government Notice No. 134.
- 18) Section 2, National Environmental Standards and Regulations Enforcement Agency Act 2007.
- 19) Olarenwaju Fagbohun, *The Law of Oil Pollution and Environmental Restoration: A Comparative Review* (Odade Publishing 2010)
- 20) Associated Gas Reinjection (Continued Flaring of Gas 1984) Regulation. Available online: <https://placng.org/i/wp-content/uploads/2019/12/AssociatedGasReinjectionAct.pdf> accessed 15th October, 2023
- 21) The Niger Delta Development Commission Act 2000 CAP N86 LFN 2004.
- 22) Greenhouse Gas Management Program Overview- NREL <<https://www.nrel.gov/docs.pdf>> Accessed 20th October, 2023
- 23) Nigeria Commits to Cutting GHG Emissions by 20% by 2030. <<https://www.climatecard.org>> Accessed 20th October, 2023
- 24) Ishaya, A. Nigeria: The Commercialization Programme: A Win-Win Situation? 2018. Available online: <<https://www.mondaq.com/nigeria/oil-gas-electricity/689396/the-nigerian-gas-flare-commercialization-program>> Accessed 15th October, 2023.