

**APPRAISING THE PRINCIPLES OF SUSTAINABLE DEVELOPMENT AND PHASE-OUT
OF GAS FLARING IN THE OIL AND GAS SECTOR IN NIGERIA
UNDER THE PETROLEUM INDUSTRY ACT 2021***

Abstract

The exploitation of oil and gas should be based on the principle of sustainable development as anchored on the Brundtland's Report of the World Commission on Environment and Development (WCED) 1987, as the 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' The Report is made up of four concepts; the need for States to preserve their natural resources for the benefit of future generations, the exploitation of the natural resources in a prudent manner, the equitable use of these resources having regards to the strategic interests of other States and, the need to integrate economic issues in the economic plan of States. It is in response of these principles that Nigeria has formulated laws and regulations on the phase out of gas flare in the oil and gas sector. Prominent among these laws are the Constitution of the Federal Republic of Nigeria 1999 (as amended) the Petroleum Industry Act, 2021, the Gas Flaring (Prohibition and Punishment Act, 2009, the Gas Flare (Prevention of Waste and Pollution) Regulations 2018, and the recently passed Climate Change Act, 2021. Nigeria also has ratified some international treaties and agreements such as the United Nations Framework Convention on Climate Change (UNFCCC), 1992, the Kyoto Protocol, 1997 and the Paris Agreement on Climate Change, 2015 among others. Nigeria has ratified or domesticated some of these treaties on sustainable development to end gas flare in the oil and gas sector. The objective of the research therefore was to appraise the principle of sustainable development in the oil and gas sector and to assess whether the existing legal frameworks are capable of phasing out gas flare in the oil and gas sector as well as meeting the opportunities in investment in gas utilisation. The doctrinal approach was adopted and reference was made to text books, journal articles, internet sources and other materials in the analysis. It was found that despite the existence of a robust legal framework on the subject matter, Nigeria has failed to take advantage of investment opportunities in carbon trade due to lack of capacity, technology, finance and the political will to enforce these laws and regulations. It is hoped that the recently passed Petroleum Industry Act, 2021, the Gas Flare (Prevention of Waste and Pollution), Regulations 2018 and the Climate Change Act, 2021 will go a long way in minimising the continued flaring and venting of gas in Nigeria. It is recommended that Nigeria should implement a gas commercialisation utilisation plan in tandem with international reality.

Keywords: Clean Development Mechanisms, Sustainable Development, Climate Change, Gas Flaring and Venting, Emissions, Greenhouse Gases

1. Introduction

The issue of continuous gas flaring in the oil and gas sector is significantly contributing to the emission of greenhouse gases (GHGS) with devastating impacts on the Nigerian environment, especially in the Niger-Delta where there is massive exploitation of petroleum resources. It is on record that the flaring of gas has affected the indigenous communities' livelihood and health. There is the urgent need to exploit our mineral resources in a sustainable manner to balance development and environmental protection, that will meet the developmental needs of the present generation without compromising the ability of future generations to meet their own needs¹ That principle with regards to the oil and gas sector is to ensure efficiency in resource management, which encompasses the concept of equity, resilience and efficiency.² Based on the principle of sustainable development, the intervention of laws and regulations becomes imperative to negative alternatives due to market failures and to ensure corporate responsibility towards environmental protection.³ Furthermore, the role of the law and regulation is to curb environmental pollution and minimise over dependence on natural resources.⁴ These will in turn promote clean energy sources; promote technological innovation and foreign direct investment (FDI).⁵ It is against this background of sustainable

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¹ Brundtland Report, *World Commission of Environment and Development (WCED), Our Common Future*, Oxford University Press, 1987 p5.

² SE Kokoi, 'Sustainable Management of Nigeria's Oil Wealth: Legal Challenges and Future Directions' (2016) 7 *Journal of Sustainable Development, Law and Policy*. p 135

³ S Stavropoulous, *et al* 'Environmental Regulation and Industrial Competitiveness: Evidence from China' (2018) *Journal of Applied Economics*, 50 (12) 1378-1394

⁴ *ibid* 1382

⁵ B Yuang & Y Zang 'Flexible Environmental Policy, Technology and Sustainable Development of China's Industrialisation: The Moderating Effect of Environmental Regulatory Enforcement; (2019) 243 *Journal of Cleaner Production*, 118543

development and other international principles that Nigerian laws and regulations should be anchored for the promotion of economic sustainability and environmental protection.

2. Conceptual Clarifications

Sustainable Development

According to the Brundtland Report, sustainable development is the development that meet the needs of present without compromising the ability of future generations to meet their own needs. This is further elaborated in the Rio Conference on Environment and Development (UNCED) that ‘environmental protection shall constitute the development process and cannot be considered in isolation from it’⁶

Climate Change

According to Myneni ‘... climate is what you expect, weather is what you get...’⁷The UNFCCC, define climate change as a ‘change which is attributed directly or indirectly to human activities that alter the composition of global atmosphere and which is the addition to natural climate variability observed over comparable actual periods.’⁸The United State Environmental Protection Agency (EPA) defines climate change as follows:

Climate change reflects a change in the energy balance of the climate system, which changes the relative balance between incoming solar radiation and outgoing infrared radiation from earth. When this balance changes it is called ‘radioactive forcing’ and the calculation and measurement of radioactive forcing is one aspect of science of climatology. The process that causes such changes are called ‘forcing mechanism’⁹

Emissions

According to UNFCCC, emissions mean ‘the release of greenhouse gases and/or their precursors into the atmosphere over a specified area and period of time’¹⁰.

Gas Flaring and Venting

The World Bank defines gas flaring as ‘an anthropogenic activity involving wasteful emission of greenhouse gas that causes global warming. Natural gas flaring occurs when unwanted or combustible gas and liquids are burnt using elevated vertical stack or chimney on oil rigs or crude oil wells. Venting is the direct release of natural gas into the atmosphere’¹¹

‘Associated gas’ means (a) ‘Natural gas’ commonly known as gas-cap which overlies and is in contact with crude oil in a reserve; and (b) ‘Solution gas’ dissolved in crude oil in a reservoir and emerging from the fluid as pressure drops.¹²

‘Decommissioning or abandonment’

Means the approved process of cessation of operations of crude oil and natural gas wells, installations, plant and structure, including shutting down an installation’s operation and production, total or partial removal of installations and structures where applicable chemicals and all such other materials handling, removal and disposal of debris and removed items, environmental retraction of the area after removal of installations, plants and structures.¹³

‘Frontier basin’ means basins

Where hydrocarbon exploration activities have not been carried out or previously oil and gas have not been made or an area that is undeveloped and include Anambra, Dahomey, Bida, Sokoto, Chad and Benue trough or as may be declared by the commission through regulation.

⁶UD Ikoni, *An Introduction to Nigerian Environmental Law* (Malthouse Press Ltd Zaria Nigeria 2010) p.247

⁷ SR Myneni, *Environmental Law* (Asia Law House, Hyderabad, India 2010)p. 58

⁸ Article 1 UNFCCC, 1992

⁹ US (EPA) Environmental Protection Agency Glossary of Climate Change Terms, (1996) available at <<http://www.gov/climatechange/glossary.html#f>>accessed >12thApril, 2023

¹⁰ Article 1 (4) UNFCCC, 1992

¹¹World Bank 1995, Defining an Environmental Development Strategy for the Niger-Delta, *SI World Bank Report* Number 14266. Volume 1. 56

¹² 1 S 318 PIA, 2021

¹³ ibid

3. Legal Framework on the Oil and Gas Sector in Nigeria

Constitution of the Federal Republic of Nigeria 1999 and other Extant Enactments

International principles have laid down the procedures to be adopted by developing countries to implement economic development and exploitation of mineral resources in an equitable and environmentally prudent manner. There are existing legislation and regulations in Nigeria which if faithfully implemented can meet the criteria set by the treaties. Some of the local statutes are: The Constitution of the Federal Republic of Nigeria 1999, which vests all minerals in the Federal Government¹⁴. By the express provisions of the Constitution, all extant laws in the oil and gas sector must be consistent with the provision of the Constitution for their validity for instance, the NESREA has the power to regulate environmental matters, excludes the ‘oil and gas’ Sector in its purview¹⁵. The Petroleum Act, provide guidelines for regulation on operations for the prevention of air and water pollution¹⁶ and Petroleum Refining Regulations make regulation for control of pollution of the environment by requiring managers of refineries to take measures and control pollution of the environment. It further makes any contravention punishable with a fine of N100 or imprisonment of 6 months.¹⁷ The National Oil Spill Detection and Response Agency (NOSDRA) empowers the agency to ensure compliance and report any oil spillage within twenty four hours or pay the sum of ₦500,000 per day for failure to report¹⁸. Despite these laws and regulation, gas flaring seems to continue due to noncompliance with the international treaties’ mechanisms, whose guiding principles are for parties to ‘stabilise the emissions of GHGS at a level that will prevent dangerous anthropogenic interference with the climatic system’ which is well documented in the principle of ‘common but differentiated responsibilities’¹⁹. These principles according to Bodansky, urged industrialised countries to reduce the emission of carbon waste stored in the atmosphere using the precautionary approach by structuring the parties responsibilities that scientific uncertainty should not justify inaction.²⁰

Other legislation by Nigeria which has failed to end gas flaring are the Associated Gas Re – Injection Act, which prohibits without lawful permission any oil and gas company from flaring gas in Nigeria.²¹ The Gas Flaring (Prohibition and Punishment) Act, did not end gas flaring in Nigeria despite stiffer penalties and time lines.²² This failure is attributed to the reluctance and willful failure by Nigeria to put up legislation for gas emission reduction projects with a budding market for gas utilisation, carbon emission trade in accordance with the Kyoto Protocol and the Paris Agreement, which according to Hamilton, represents ‘the most complex and ambitious international treaty process ever attempted.’²³ Nigerian should make laws and regulations that will give regulators in the sector the biting teeth to enforce regulations, with the aim of ending gas flaring and other devastating environmental impacts associated with it. California, Japan and New-Zealand have well-structured legal and institutional frameworks to drive their environmental protection policies and regulations.²⁴ In Nigeria, the Carbon Credit Development for Flare Reduction Projects, lists major constraints to ending gas flare to include: under developed market for gas and allied products, low gas and products prices, lack of electricity infrastructure, difficulties in securing project funding for gas tank lines, power distribution, transmission, generation and supply.²⁵ Another attempt by Nigeria in reducing gas flare is in Nigeria’s Nationally Determined Contribution (NDC) to the Paris Agreement on Climate Change.²⁶ The policy seeks to promote carbon pollution reduction and gas flaring by the year 2030, by feeding industrial cluster with centralised gas supply and to use it for transportation and power generation as a substitute for gas fired generation for diesel generators²⁷. The regulation of gas flare in the oil and gas sector under the Act prohibits without a license lease

¹⁴ Section 4 Second Schedule of the CFRN 1999 (as amended)

¹⁵ Section 7(c) NESREA Act, 2007

¹⁶ Section 9(1) (b) Petroleum Act, 2004

¹⁷ Regulation 43(3) and 45 Petroleum Drilling and Regulations 1990

¹⁸ Section 6(2), 7 National Oil Spill Detection Response Agency Act, 2006

¹⁹ Article 2 UNFCCC, 1992;

²⁰ D Bodanski ‘The United Nations Convention on Climate Change: A commentary’ *Yale Journal of International Law* (1993) 451-452

²¹ Section 3 of the Associated Gas – Injection Act, 2004

²² The legislation failed to stop Gas flaring by 2010

²³ C. Hamilton ‘Building on Kyoto’ 4 *New York Review* 91, (2007) p96

²⁴ The Global Warming Solution Act, 2006 California USA, Article 3 of the Law Concerning Measures to Cope with Global Warming 1988 of Japan, has provisions for climate change impact, adaption and mitigation. Article 3, 4, 6 and 8 of the Climate Change Response Act, 2002 of New-Zealand has provisions for emission trade, grant of licenses etc.

²⁵ Nigeria, Carbon Credit Development for Flare Reduction Guidebook (ICF International, 2006) p 17

²⁶ Nigeria approved its Intended Nationally Determined Contributions to the Paris Agreement on the 26 of November, 2015 prior to ratifying the Paris Agreeent on December, 2015

²⁷ Nigeria’s INDC (n3)

or marginal field operations, any gas flaring and venting except in cases of emergency, exemption or safety practice.²⁸ Violations of the provisions render a person or corporate body liable to pay the fines as stipulated by the regulations.²⁹

Regulation of Gas Flare under the Petroleum Industry Act 2021

The general objectives of the regulation are: to reduce environmental and social impact caused by gas flaring, protection of the environment, conservation of natural resources to create social economic benefits from gas flare capture.³⁰ The regulation empowers the Federal Government of Nigeria to take all gas flare free of charge and without paying any royalty.³¹ The Ministry of Petroleum is authorised to select applicants to take gas flare on behalf of government through a competitive bid process and utilise same for commercial purposes³² Successful bidders or permit holders are expected to submit gas flare data within a stipulated period upon request failing which they are liable upon conviction to pay penalties for providing inaccurate or incomplete data.³³ The violation of the provision of gas flare data is the payment upon conviction, a fine of ₦50,000 and imprisonment term not exceeding 6 months or both.³⁴ In order to take stock of gas flare, permit holders are expected to install metering equipment on every gas flare facility except, where it is required for a start-up or strategic operational reasons including testing³⁵ A permit holder is expected to hold a license for a specified period and submit a ‘natural gas flare elimination and monetisation plan’³⁶ The Minister is empowered to revoke licenses for the following reasons: (a) non-compliance with the terms and conditions of the permit (b) provisions of false or inaccurate information (c) failure to secure a bond for a terminated or replacement of lease within a specified period (d) where the company is dissolved or bankrupt and; (e) where the contract is terminated.

4. Institutional Framework under the PIA 2021

In order to promote sustainable development and business efficacy in the oil and gas sector in Nigeria, the Petroleum Industry Act,³⁷ established two bodies for governance of the regulatory and fiscal framework in the oil and gas industry by empowering the Minister to formulate monitor and administer governance policy in the sector.³⁸ The Act established the Nigerian Upstream Petroleum Regulatory Commission with the responsibility for technical and commercial regulations to ensure compliance with all laws and regulations.³⁹ There is a provision for the Nigerian Midstream and Downstream Petroleum Authority,⁴⁰ with a further provision that: ‘The Minister shall within six months from the commencement of this Act, cause to be incorporated under the companies and Allied Matters Act, a limited liability company which shall be called NNPC Limited’⁴¹ In order to commercialise the affairs of the oil and gas sector, a joint stock company is to be incorporated to run the affairs of the sector in a profitable manner, declare dividends and retain 20% of the profit.⁴² In terms of administration and management of the sector, it will be based on the principles of good governance, transparency, and sustainable development in compliance with the Environmental Impact Assessment Act 2004 to minimise the negative impact on the environment.⁴³ In realisation of the objectives of the law, licensees are required to meet international best practices, right of way, health and environmental safety as well as efficient and economic use of facilities.⁴⁴ In respect to the development of natural gas market scheme for gas supply and hydro-carbon tax for upstream onshore, shallow water and deep offshore, the taxation shall be 30% of profit from crude mining lease from offshore and shallow water, and 15% for onshore and shallow water prospecting lease.⁴⁵ Nigeria will need to muster the political will to implement its revised laws and policies to achieve the twin objectives of sustainable development and environmental protection.

Host Communities Development

Another innovation under the PIA, is the requirement that settlers the exploration and production companies shall set up that Communities Development Trust (HCDDT), by contributing 3% of their annual operating expenditure the

²⁸ S 104 PIA, 2021

²⁹ Regulation 1 (a-d) of the Flare Gas (Prevention of Waste and Pollution) Regulations 2018.

³⁰ Ibid

³¹ Ibid Regulations 2 (1)

³² Ibid Regulation 3 (1) (2)

³³ Ibid Regulation 4 (1) (2)

³⁴ S 105 (1) PIA, 2021

³⁵ Ibid S 106 & 107

³⁶ Ibid S 108

³⁸ *Ibid*, Section 3 (1)

³⁹ *Ibid* Section 4

⁴⁰ *Ibid*, Section 29

⁴¹ *Ibid*, Section 53

⁴² *Ibid*, Section 65

⁴³ *Ibid*, Section 67 and 102

⁴⁴ *Ibid*, Section 111 (3)

⁴⁵ *Ibid*, Section 128

immediately preceding financial year to the host communities.⁴⁶ All settlor shall submit request to the NUPRC outlining their area of operations, proposed host community, the proposed Board of Trustee (BOT) and the draft constitution of the HCDT. The appointed BOT shall be registered under the Companies and Allied Matters Act.⁴⁷ There is a requirement for need assessment of the communities within 12 months after the grant of a lease or licence or 12 months after the first annual contribution of an existing lease. The development plan shall be prepared based on the need assessment.⁴⁸ Lastly, there is the provision for the submission of annual report to NUPRC from the HCDT, which shall contain a year audited account, list of proposed projects for subsequent years, status of ongoing projects and the cost of each individual project.⁴⁹

Environmental Management Plan

In order to promote sustainable development and environmental protection the PIA require the submission of respects of projects to ascertain their impact on their impact on the environment. The plan shall be submitted within 12 months upon the grant of a licence or lease.⁵⁰ The licencees or leases are required to pay a prescribed financial contribution to the Environmental Remediation Fund (EFF) established by the commission for rehabilitation or management of negative environmental impacts.⁵¹ The amount to be paid by the leasee or licencees depends on the size of operations and the environmental risk.⁵²

5. Challenges of Implementing the Phase-out of Gas Flare in the Oil and Gas Sector in Nigeria

Some of the challenges Nigeria will likely face in implementing sustainable development in the oil and gas sector which will ultimately end gas flaring and promote investments envisage by the Petroleum Industry Act, are:

Legal and Policy Hurdles

In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it⁵³. The UNFCCC on the other hand has made reference to sustainable development as standard setting for mitigation and adaptation as follows:

The parties have right to and should, promote sustainable development policies and measures to protect the climatic system against human – induced change should be appropriate for the specific condition of each party and should be integrated with national development programmes taking into account that economic development is essential for adopting measures to address climate change⁵⁴.

The challenges in implementing these legal instruments are that the regulations on sustainable development in the oil and gas sector in Nigeria fall below the internationally accepted standards as laid down by the treaties because legislation against gas flaring and other environmental hazards are hardly ever enforced in Nigeria and the courts are always reluctant to give verdicts against emitters. The case *Gbemve v. Shell BP and Ors*⁵⁵ is illustrative of the frustration the plaintiffs had to go through to enforce their rights to a clean and favourable environment free from gas flaring and other environmental harm. In that case the plaintiffs with the help of Friends of the Earth (FOE), sought a declaration to end gas flaring in their communities. The court held that the continuous gas flaring in the community violated the plaintiffs' right to a healthy environment and human dignity. The defendant instead of abiding by the judgment filed an appeal thereby frustrating the plaintiffs' quest for a healthy environment. The Constitution of the Federal Republic of Nigeria, as it stands does not guarantee environmental protection as a fundamental human right and all attempts to enforce environmental protection regimes have been met with stiff opposition. The NESREA Act, which for all intent and purpose is made for the enforcement of environmental protection excludes the oil and gas sector in its purview.⁵⁶ The position is somewhat different in India and other countries like Costa Rica, which have provisions that guarantee environmental rights and sustainability.⁵⁷ In India, judicial activism has gone some steps

⁴⁶ S 234 PIA, 2021

⁴⁷ *ibid* S 235 (4)

⁴⁸ *ibid* S 236

⁴⁹ *ibid* S 255

⁵⁰ S 102 (1) (a) (2) (3)

⁵¹ *ibid* S 103 (1)

⁵² *ibid* S 103 (2)

⁵³ Principle 4 of the Rio Summit, 1992

⁵⁴ Article 3(4) UNFCCC, 1992 available at <<https://unfccc.int/essential-background/convention/background/item/1353.php>> accessed on 25th April, 2023

⁵⁵ Unreported suit No FHC/CS/8/153/2005 per Nwakire J. where the decision of the Benin High Court compelling the defendants to stop gas flaring activities in the Niger – Delta was frustrated by the defendants in collusion with top government officials and oil companies

⁵⁶ Section 7 (c) NESREA Act, 2007.

⁵⁷ Article 21 of the Constitution of India 1948, Article 50 Constitution of Costa Rica, 1994, Article 66(1) of the Constitution of Portugal have all made elaborate provisions for environmental rights.

further to make far reaching provisions on environmental protection. In the cases of *Rural Litigation and Entitlement Kendra v. State of Uttar Pradesh*⁵⁸ and *Chhetriya Pardushan Mukti Sangarsh Samiti v. State of Uttar Pradesh*⁵⁹ the Indian Supreme Court gave land mark judgments by recognising a pollution free environment as part of the right to life under Article 21 of the Indian Constitution.

Apart from making the environment justifiable under the Constitution of the Federal Republic of Nigeria, environmental issues like climate change, gas flaring, oil spillage and pipelines vandalism are hardly ever enforced even though there are regulations on these issues. The provisions of the repealed laws in the oil and gas sector failed to squarely address these issues in the sector and oil companies therefore found it cheaper to flare gas and pay penalties rather than the costly alternative of ending gas flaring through sustainable projects⁶⁰. Another impediment is that the Constitution of Nigeria has placed the mines and minerals, including oil fields, oil mining, geological survey and natural gas on the exclusive legislative list.⁶¹ The implication is that only the Federal Government of Nigeria can legislate or regulate on the oil and gas sector to the exclusion of all other tiers of government. This is explicit in the Constitution which provides as follows:

Notwithstanding the foregoing provision of this section, the entire property in and control of all minerals, mineral oils and natural gas in under upon any land in Nigeria or in, upon the territorial waters and Exclusive Economic Zone of Nigeria shall vest in the Government of the Federation and shall be managed in such manner as may be prescribed by the National Assembly.⁶²

Nigeria should put in place regulations under the Petroleum Industry Act, by taking a cue from Canada, where there are robust legal frameworks in her gas flaring policy like the Turner Gas Flaring, 1932. The Alberta Petroleum and Natural Gas Conservation Board, the Upstream Industry Petroleum Industry and Flaring, Incinerating and Venting Policy, 2006 and the Oil and Gas Conservation Act, 2000, with tremendous success in reducing gas flaring reduction. In Alberta Province of Canada, regulations have led to a drastic reduction in gas flare by 80.4% from 1996 – 2010 thereby, reducing more than eight million tone of carbon dioxide equivalent⁶³. The reasons for the significant reduction in gas flaring in Canada, unlike Nigeria is that, gas flaring is governed by both federal and provincial legislations like Canada oil and Gas Operation Act, Canada New Foundland Atlantic Accord Implementation Act, Canada – Nova Scotia Offshore Petroleum Resources Accord Implementation Act, which governs the technical and operational aspects at the national level⁶⁴. At the provincial levels, gas flaring and venting have been an alternative in Alberta since 1926, laws such as the Turner Gas Flaring Act 1932⁶⁵ Alberta Petroleum and Natural Gas Conservation Board 1938, the Oil and Gas conservation Act, 2000 have been in place to compliment the national laws with significant reduction in gas flaring to a minimum level in Canada⁶⁶

Technology and Finance

Access to finance and technology are stumbling blocks to ending gas flare in the oil and gas sector in Nigeria.⁶⁷ Gas flare out policies by International Oil Companies IOCs, should be in tandem with the United Nations Code of Conduct for Transnational Corporations (TNCs) which provides that ‘Transnational Corporations and other business enterprises shall provide a safe and healthy working environment as provided by the relevant international instruments and national legislations as well as international human right’⁶⁸. The Constitution of the Federal Republic of Nigeria, 1999 has by implication supported the financing of flare out policies by providing that: the state shall harness the resource of the nation and promote national prosperity in an efficient, dynamic and self-reliant economy.⁶⁹ Pursuant to the objectives of the constitution, Nigeria has invested in a number of independent power projects in conjunction with foreign firms. Four power plants for gas-fired reciprocating power plants are located in Ikorodu Ilupeju, in Lagos and Afam Integrated Gas and Power project by Shell BP is designed for 650 MW to national grid.⁷⁰ The employment of

⁵⁸ (AIR 1988 SC 2187)

⁵⁹ (AIR 1991 SC 40)

⁶⁰ GGFR (2004) Guidance on Upstream Flaring and Venting: Policy and Regulation available at <<http://site resource world bank.org/INTGGR/Resources/for-policy-regulations-giudance.pdf>> accessed 2nd May, 2023

⁶¹ Part 1 Second Schedule, CFRN 1999 No 24, item 39

⁶² S 44 (3) CFRN, 1999

⁶³ O Irekpitani; Phasing Out Gas Flaring in Nigeria (2010) available at <<https://webcache.googleusercontent.com/search?accessed>> accessed 5th May, 2023

⁶⁴ Ibid

⁶⁵ C Bigrell, Flaring Regulation Series: Canada (2016) <http://www.fluenta.com/news/flaring_regulations_series-canda/> accessed 6 May, 2023

⁶⁶ Ibid

⁶⁷ U D Ikoni, *An introduction to Nigerian Environmental Law* (Malt house press Ltd Zaria Nigeria (2010) p 247.

⁶⁸ Article 7 Draft UN Code of TNC, 1983

⁶⁹ Section 16(1)(a) Constitution of the Federal Republic of Nigeria 1999 (as amended)

⁷⁰ A Ade ulu (2009) Nigeria Gas Police, available at <<https://odufirinadefulu.com/document/Nigeria%20,gas%20,Police.pdf>> accessed on 7th May, 2023.

finance and technology is to facilitate low carbon technologies and interventions in the oil and gas sector, with the aim of reducing flaring of natural gas and the use of more efficient and cost-effective methods of oil explorations. The problems of finance and technology transfer are that most of the funds and technology in the oil and gas industry are foreign based and tied to western industrialised economies with very minimal local participation; sometimes as joint venture partnership. In order to achieve the objectives of minimising gas flaring in Nigeria, funding and technology transfer are key in reducing gas flare, expansion of natural gas as feed stocks for industrialisation and economic diversification. This will increase foreign exchange and at the time develop local content for indigenous oil firms. Under the Petroleum Industry Act, metering equipment to be used for measuring flaring and venting of gas shall be manufactured, operated and calibrated in conformity with the standard set by the Commission which shall include; (a) burnt technologies (b) guide lines on the location of flaring stacks (c) limit on smoke, heat, noise generation and; (d) health and safety of workers on site.⁷¹ Failure to install metering equipment shall require the payment of the sum of \$2.50 per 28.317 standard cubic metres as penalty or revocation or suspension of operating license for violating the regulations.⁷²

Capacity Building

Capacity building is key in ending gas flare in the oil and gas sector in Nigeria. The aim of capacity building is to promote cooperation, training and building human and national capacities for the oil and gas sector in tandem with the Kyoto Protocol which provides that:

Parties shall cooperate to promote at the international level, and where appropriate using existing bodies, the development and implementation of education and training programmes including the strengthening of national capacity, building in particular human and institutional capacities and the exchange or secondment of personnel of trained experts in this field particularly developing countries, and facilitate at national levels public awareness of, and public access to information on climate change... through the relevant bodies of the convention.⁷³

The Constitution of the Federal Republic of Nigeria by implication provides that: the foreign policy objective shall be:

- a. Promotion and protection of national interest...
- b. Respect for international law and treaty obligations as well as seeking settlement of international disputes by registration, mediation, conciliation, arbitration and adjudication, and
- c. Promotion of a just world economic order.⁷⁴

The implication of the constitutional provision is that Nigeria is in agreement with the rest of the world that it will encourage integration and international cooperation in promoting economic development in a sustainable manner. In realisation of these notable goals, there are a number of legislation that seek to give life to the idea of sustainable development. It is in furtherance of these objectives that NESREA provides for the creation of public awareness in environmental management.⁷⁵ Capacity building is key in obtaining carbon credits for flare reduction projects and designing innovations with potentials to reduce gas flaring and address issues like how carbon trading can improve economic viability of gas reduction projects⁷⁶. The PIA should be able to address the hanging issues of capacity building, gas commercialisation and other issues such as emission trading bottle necks that were left unaddressed by previous Nigerian local legislation⁷⁷. Another gap in capacity building is with regard to research and development (R and D), which is very crucial in the sustainable development process in the oil and gas sector. Under the Nigerian Oil and Gas Industry Content Development Act, consideration for any activity in the oil and gas industry must be first given to Nigerian local operators. This provision covers all aspects in the award of oil blocks, oil field licenses, letting licenses and all projects.⁷⁸The Act further provides for first consideration for employment and training of Nigerians, with clauses for research and development plan and support for technology transfer.⁷⁹As plausible as the law seek to improve local content in the oil and gas sector, in practice, it is very difficult or near impossible to implement the provisions of the law in favour of Nigerians because most of the operations in the oil and gas sector require competent technical expertise that may be very difficult to fill by Nigerians. The requirement for registration of patents and other relevant foreign technologies in Nigeria may be so stringent that it will be difficult to use the local content and expertise in the highly sophisticated and technological advanced oil and gas exploration sector in Nigeria.

⁷¹ Regulation 20 (1) (2)

⁷² *ibid* Regulation 21 (g) (2) and (22) (a)–(c)

⁷³ Article 5(3), 13 Kyoto Protocol 1997, Article 1, 10 UNFCCC, 1992

⁷⁴ Section 19(a) and (e) Constitution of the Federal Republic of Nigeria 1999 (as amended)

⁷⁵ Section NESREA Act, 2007

⁷⁶World Bank Global Gas Flaring Reduction Partnership available at <siteresources.worldbank.org/EXIGG-FR/Resources/GGFR_brochure_PDF> accessed 9th May, 2023

⁷⁷ M. Nachmany 'Climate Change Legislation in Nigeria' (2015)2 available at <<http://www.Ise.ac.uk/GrathamInstitute/WP-content/uploads/2015/05/NLGER/A.Pdf>> accessed 9th May, 2023

⁷⁸ Section 2 of the Nigerian Oil and Gas Industry Content Development Act, 2004

⁷⁹ *Ibid*, Section 28 (1) (2) 29, 30, 36 and 37

Environment and Human Health

Environmental and human health Factors that affect the effective implementation of flare out policies in the oil and gas sector in Nigeria which can be summarised as follows: Gas flaring can aggravate the emission of greenhouse gas as a result of continued gas flaring in Nigeria. It has been scientifically proved that the continuous gas flaring can cause acid rain due to continuous emission of sulphur dioxide and nitrogen oxide. It is capable of affecting agriculture as the soil nutrients are depleted due to acidification by the composites of chemical substances such as oxides of nitrogen, carbon, and sulphur⁸⁰. Other deleterious impacts of gas flaring on the environment are the production of soot on buildings and the soil which contaminates the land. Roaring from gas flaring activities and thermal pollutions can cause environmental damage and degradation while toxin from gas flaring can cause a wide range of health issues ranging from leukemia and other blood related disorders. Communities within the affected areas are most likely affected by health risks including, premature deaths, respiration illnesses, asthma, cancer and other adverse health conditions⁸¹

6. Prospects of Implementing Flare-Out Regulations in the Oil and Gas Sector in Nigeria

The overall benefit of regulating the oil and gas sector is to improve the economic wellbeing of Nigerians and to promote environmental protection and sustainable development. Apart from obsolete laws, there are inhibiting factors such as, the lack of political will and the reluctance of the multinational corporations to implement the laws and regulations in Nigeria. The international oil companies would rather prefer to pay fines and penalties while still exhibiting the business as unusual practice thereby negating the balancing act between economic development and environmental sustainability. The prospects of implementing legislation on the oil and gas in Nigeria will be examined under three perspectives: economy, environment and sustainable development.

Economic Perspective

The prospect of any legislation on gas flaring should be targeted at achieving economic growth through carbon neutral path.⁸²The overall goal of a low carbon society is to ensure that economic development should be carried out in such a way and in a manner that will contribute to global efforts to reduce greenhouse gases in the atmosphere and mitigate global emissions. The economic perspective is a market-based approach that is price-based, right based and voluntary based. The right based approach which uses the cap-and-trade system works hand in hand with prescriptive regulation which can restrict the use of natural resources or a harmful product from a natural resource.⁸³ Cap in trade mechanism, include conservation tenders, green infrastructure incentives and environmental offsets. Price based approach occur when government imposes a price or tax on emissions. This system imposes obligations on firms to figure out ways of reducing emission and ensure investments technologies in order to reduce emissions.⁸⁴ Under PIA, a licensee, leasee or producer is expected to submit a ‘natural gas flare elimination and monetisation plan’ to the Commission and payment of fees from time to time as specified by the commission for data prying, data leasing and award fee for permit to access flare gas.⁸⁵ The payment for gas flare in a mining area or marginal field are \$2 per 28.317 standard cubic metres irrespective of whether the flaring is routine or non-routine for 10,000, or more barrels of oil per day. Where less than 10,000 barrels of oil is produced per day from a marginal field, the payment shall be \$.50 per 28.317 standard cubic metres.⁸⁶ Environmental offset ensure that all hazards associated with a hazard like gas flaring are run against positive gains. Other economic or market-based mechanisms are conservative banking and green infrastructure programme. Conservative banking work through the sale of credits to companies most likely to cause environmental damage and the proceeds are used for environmental restoration and rehabilitation.⁸⁷Green infrastructure is governed by incentives to encourage climate-friendly programmes which may be in the form of grants and installations.⁸⁸

⁸⁰Ajugwu, Anslom O (2013) ‘Negative Effects of Gas Flaring: The Nigerian Experience’ *the Environmental Pollution and Human Health Journal*, 1 (1), 6-8

⁸¹ Uchenna Jerome Orji (2014) ‘Moving Gas to Gas Conservation and Utilisation in Nigeria: A Review of the Legal and Policy Regime’ *OPEC Energy Review* 38(2), 149-183

⁸²Mulugelta, Faruke ‘Deliberating on Low Carbon Development; (2010) 38:2 *Energy Policy Journal* 7546

⁸³K Mac Eachern, ‘Market-based Instruments with the Green Economy’ (September, 2013) Online Conservation on tario, available at <<https://conervation.c/tileadmin/pdf/policy-priorities-section/Green-Economy-Literature-Review.pdf>> p3 retrieved on 9th May, 2023.

⁸⁴J A Aldy & R N Stavins ‘The Promise and Problems of Pricing Carbon. The History and Experience (2012) 21.2 *Journal of Environment and Development*

⁸⁵ S 108 PIA, and Regulation 11

⁸⁶ Regulations 13 (1) and (2)

⁸⁷J A Atd and RN Starvins (n75)

⁸⁸ibid

Environmental Perspective

The right to a healthy environment has been incorporated in many constitutions the world over as an enforceable right.⁸⁹ In Nigeria, environmental right is non-justiciable by virtue of its constitutional provisions.⁹⁰ The African Charter on Human and People's Rights, enjoined member states to provide and guarantee a healthy environment.⁹¹

Prior to the passing of the PIA the Department of Petroleum Resources (DPR) which was mandated to regulate the oil sector and formulate law and policies for efficient gas utilisation to garner more exchange earnings. The provision of penalty payment under DPR could hardly end gas flaring as the oil companies were prepared to pay penalties which was less stringent than investment in gas flare commercialisation projects. Thus, in *Mobil Production Company Unlimited v Federal Inland Revenue Services*,⁹² The Tax Tribunal's decision to deduct tax as punishment for flaring did not minimise gas flaring by oil companies in Nigeria. Legislations should be aimed at projects that will promote investments in green technology, carbon market which will provide funds for innovative technology. This will in turn provide foreign direct investment, employment generation and transfer of innovative modern technology that will end gas flaring in the Nigerian oil and gas sector. Apart from projects, effective legislations and enforcement can go a long way in ensuring the end of gas flaring. Take the case of Canada where the Oil and Gas Conservation Act, provides for the regulation of wasteful operations in gas development including gas flaring as follows: the gas is gathered, processed, if necessary, marketed or stored for future venting, or beneficially injected into an underground reservoir. It also extends to the surface or underground storage in excess of storage facilities, or market demand for it.⁹³ In the Province of Alberta, Canada, the Upstream Petroleum Industry Flaring Guide, provides guidelines for gas flaring and venting, gas management, flare permits, measuring and reporting of flared and vented gas. These regulations and measures have reduced gas flare in Alberta by 72%.⁹⁴

In the United Kingdom, the oil and gas sector as far as flaring is concerned is subject to stricter regulations. Gas flaring in the upstream oil and gas activities occurs only in extreme circumstances to promote safety in operations thereby reducing gas flaring to a significant level.⁹⁵ Presently, in the UK, the energy Act and the Petroleum Act are legislation that regulate the environment. These enactments have given rise to series of legislation and agencies that regulate gas flaring. There are two main gas flaring agencies in the UK, the Oil and Gas Authority (OGA) and the Department of Business Energy and Industrial Strategy (BEIS). The former, is vested with the power to issue gas flaring consents by decommissioning of offshore oil and gas and environmental legislation enforcement free from interference from the Crown and the Secretary of State Department of Energy and Climate Change.⁹⁶ The latter formulates climate policies in the UK under the regulatory power of the Secretary of State⁹⁷. There are also several policies on UK Emissions Trading Scheme (UKETS) which enables her to fulfill her commitment to mitigating gas flaring.⁹⁸ Even though the series of examples in Canada and UK may have their inherent shortcomings, the application of these laws and regulations have to some extent regulated gas flaring in their jurisdiction and Nigeria can learn from the experience of these countries as they are all Commonwealth member countries and can by and large engage in joint venture and contract sharing agreement as oil producing states. Apart from Canada and the UK where there are transparent regulatory frameworks on gas flaring, Saudi Arabia and other oil producing States with vast natural gas reserve are governed by the holy Quran and the Kingdoms Basic Law of Governance.⁹⁹ The Kingdom's national oil company Aramco ensures that every oil company installs gas recovery system with a zero gas discharge technology.¹⁰⁰ Saudi Arabia implements a strict gas metering system which utilise 109.4 billion cubic metres of gas annually to satisfy its domestic use.¹⁰¹ In Norway, the Norwegian Petroleum Directorate and the Ministry of Petroleum and Energy Regulates the Mid-stream which flares less than 2 cubic metres for every barrel of oil produced by putting in place a zero tolerance for gas flaring policy and efficient legal and regulatory and non-regulatory measures with access to both domestic and international gas markets to enhance gas utilisation.

⁸⁹Article 12(1) Chapter 2 and Article 33(1) and (5) of the Constitutions of South Africa and Ghana Respectively

⁹⁰Article 24, African charter on Human and People's Right Ratification Act, 2004

⁹¹(2017) All FWLR 543

⁹² S I of the Oil and Gas Conservation Act 2000, Canada

⁹³ Directive 060 (2016) available at <<https://www.aerica/documents/directive/Draft-Directives-060.pdf>> accessed 10th May, 2023

⁹⁴Ibid, Section 7 of Directive 060

⁹⁵World Bank, Top 30 Flaring Countries 2013-2016; Online World Bank available at <<https://www.worldbank.org/en/pngram/gas-flaring-reduction>> retrieved 11th May, 2023

⁹⁶Section 1 (2) Schedule 1 (3) Energy Act, 2016 UK

⁹⁷Ibid, Schedule 1

⁹⁸O. Enabulele et al 'Addressing Climate Change due to Emission of Green House Gas Associated with Oil and Gas Authority: Market Based. Regulation to the Rescue in Maria Alexandra Gonzalez-Perez (eds) *Climate Change and Agenda for Sustainable Development* (Wales, Emerald Group Publishing Ltd 2017) at 53

⁹⁹ Article 14 and 15 of the Kingdom Basic Law of Governance

¹⁰⁰ F Gerner et al 'Gas Flaring and Venting: A Regulatory Framework and Incentive for Gas Utilisation' (2004) view point. Available at <<https://openknowledge.worldbank.org/handle/10986/112537>>accessed on 10th May, 2023

¹⁰¹ Ibid

Sustainable Development Perspective

The over exploitation of fossil fuel and natural resources has given rise to the need to preserve our national resources for present and future generations. The need to preserve our natural resource is not only because they are exhaustible but also because they can trigger unprecedented environmental damage. The modern principle of sustainability is vested in the Brudland Commission Report¹⁰² entitled ‘our common future’ which defines the concept of sustainability as: ‘A development that meets the needs of the present without compromising the ability of future own need’. The concept is also elaborated in the 1992 Rio UN Conference on Environment and Development (UNCED) as follows; ‘environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it’¹⁰³. Sustainable development is a foundation for intergenerational equity which encourages the efficient use of mineral resources and harmonise the co-existence of man and nature thus enabling the global community and states to give recognition to the conception in enforcing environmental litigation. Thus, in *Imperial Oil v Quebec (Minister of the Environment)*. The court in Canada held that: To encourage sustainability development ‘the polluter pays principle’ assigns polluters the responsibility for remedying contamination for which they are responsible and imposed on them the direct immediate costs of pollution. At the same time, polluters are asked to pay more attention to the need to protect eco-systems in the course of economic activities.¹⁰⁴The concept has been recognised by the international climate regimes where signatories are enjoined to implement legislation to curb emission on the principles of *common but differentiated responsibilities*.¹⁰⁵

6. Conclusion and Recommendations

Nigeria has a long history of gas flaring starting from when the oil was discovered in commercial quantities in the Niger-Delta. Although, Nigeria has ratified many treaties in the sector, its regulations have failed to end these environmental impacts. There is a need to put in place laws and regulations to minimised gas flaring and venting as it is done in the UK and other jurisdictions that are oil producers. Such legislations will achieve the reforms in the industry in a manner that will protect the environment, boost domestic production and sustainable development in Nigeria to meet global standards. The pertinent questions are: Why do countries like Canada, UK and Norway have low level of gas flaring while Nigeria has excessive gas flaring? Why is Saudi Arabia Aramco Master Gas System Strictly implemented in contrast to the Nigerian Gas Master Plan? The laws and regulations in the oil and gas sector in Nigeria are hardly ever implemented due to factors ranging from obsolete law, lack of technology, finance, corruption and the lack of political will to enforce them. In the course of analysing the Petroleum Industry Act 2021, the following findings were made:

1. The implementation of PIA is hampered by section 20 of the Constitution of the Federal Republic of Nigeria, 1999 unlike India, Costa-Rica and Portugal where environmental protection is a fundamental right.
2. Section 44 (3) of the CFRN, 1999 vest ownership of all minerals, mineral oil and natural gas exclusively in the federal government of Nigeria unlike Canada, where ownership of mineral resources is divided between the federal, provincial, aboriginal and private ownership.
3. NESREA, as an environmental regulator lacks the power to make regulations for oil and gas sector in Nigeria by virtue of section 7 thereof.
4. The fiscal, legal and regulatory framework governing gas utilisation in Nigeria is inefficient and weak unlike the United Kingdom of Saudi Arabia where the Aramco Master Gas System is effective, strict and environmentally friendly.
5. The installation of gas flare reduction and elimination technologies as envisaged by PIA and other regulations are yet to effectively reduce gas flaring in Nigeria as it is the case in Norway where less than 2 cubic metres of gas is flared for every barrel of oil produced.
6. The penalties for gas flaring in Nigeria are less severe compared to the United Kingdom where the penalties are unlimited fines, imprisonment, and revocation of operating licence.

In the Light of the above findings, the following measures are necessary:

1. Section 20 of the Constitution of the Federal Republic of Nigeria, 1999 should be amended to make the environmental objectives justiciable as it is done in countries like India, Costa-Rica and Portugal where environmental protection is a fundamental right.
2. Section 44 (3) CFRN, 1999 and the Minerals Act, 2004 should be amended to vest ownership of minerals, oil and natural gas in the federal, states, and local government areas as it is the case in Canada where ownership of minerals is unbundled and vested in the federal, provincial, aboriginal and even individuals.
3. The NESREA Act, particularly S.7 should be amended to include the oil and gas sector in its purview.

¹⁰²R. Emmas, ‘The Concept of Sustainable Development: Definitions and Defining Principles’ online brief for GDSR 2015, available at <<https://sustainabledevelopment.un.org/content/document/5839GDSR%202015SD/Concept-Definition-rev.pdf>> retrieved on 11th May, 2023

¹⁰³Ibid, Principle 4.

¹⁰⁴(2003) Section 58 at 23 per Justice Le Bel

¹⁰⁵ Principle 3 of the Rio Declaration on Environment and Development 14th June, 1992

4. The PIA, 2021 should be amended particularly S 108 on Natural Gas Flare Elimination and Monetisation Plan to reflect the position in Saudi Arabia where the Aramco Master Gas System is strictly used to eliminate gas flare and at the same time commercialise it.
5. The penalties under PIA and its regulations should be made severe as it is done in Saudi Arabia and Norway where regulatory and non-regulatory measures are in place to encourage zero tolerance for gas flaring with severe sanctions against violators.