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An investigation into the effectiveness of the design and enforcement of Nigeria's anti-gas flaring law and policy regimes, and the considerations of measures that could improve environmental regulatory compliance.

MOHAMMED, J.I.

2022

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An Investigation into the Effectiveness of the Design and Enforcement of Nigeria's Anti-gas Flaring Law and Policy Regimes and the Considerations of Measures that Could improve Environmental Regulatory Compliance

Jamilu Ibn Mohammed

An Investigation into the Effectiveness of the Design and Enforcement of
Nigeria's Anti-gas Flaring Law and Policy Regimes and the Considerations of
Measures that Could improve Environmental Regulatory Compliance

By

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Abstract

Since the discovery of the commercial hydrocarbon deposit in 1956, Nigeria's petroleum industry's activities have dramatically increased. The industry now contributes an average of two million barrels of crude oil daily to the global oil market. However, while bringing this development, the industry has become a source of misery for the oil-producing host communities, whose survival is endangered by the scourge of pollution from associated gas flaring. Associated gas (AG) flaring is widely acknowledged as a significant contributor to greenhouse gas emissions, negatively impacting the environment and economy. Given its adverse effects, governments of oil-producing nations and industries have a responsibility to end flaring. Nevertheless, only a few such nations have significantly reduced flaring, while in most other jurisdictions like Nigeria, flaring continues to rise with increased oil production. In this regard, this study critically investigates the appropriateness and effectiveness of the design and enforcement of anti-gas flaring laws and the policy regimes currently operating in Nigeria.

The study provided a general overview of the research context and emphasised the role of effective law and policy regimes in reducing flaring in Nigeria. It critically analysed and addressed the following key issues: the role of appropriately designed anti-gas flaring law and policy regimes, the effectiveness of regulatory enforcement, and the institutional characteristics of an effective flaring regulatory agency, among others. It also addressed other relevant factors which affect flaring volumes like penalties, incentives, and the effects of contractual rights in addressing AG flaring issues. The study argues that Nigeria currently has appropriately designed law and policy regimes, but the enforcement is ineffective. The study finds several reasons that have led to the ineffectiveness and recommends measures that would help the country end gas flaring. The study suggests that oil-producing nations should design and establish clear and precise policies and legislation with independent regulatory agencies to avoid interference and conflict of interest. It also recommends adequate penalties and incentives to encourage effective enforcement of the AG flaring regulations.

Keywords: Petroleum, Gas flaring, Laws, Regulations, Policies, Design, Enforcement, Appropriate, Effective, Nigeria.

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List of Abbreviations

ACHPR	African Charter of Human and People’s Rights
AER	Alberta Energy Regulator
AG	Associated Gas
BSCF	Billion Standard Cubic Feet
b/pd	Barrell per day
CAQDAS	Computer-Assisted Qualitative Data Analysis Software
CCA	Classical Content Analysis
CCA 2021	Climate Change Act, 2021
CASA	Clean Air Strategic Alliance, Alberta-Canada
CDM	Clean Development Mechanism
CDM-AG	Clean Development Mechanism – Associated Gas Projects
CO ₂	Carbon Dioxide
DA	Discourse Analysis
DEA	Department of Environmental Assessment
DPR	Department of Petroleum Resources
DGSO	Domestic Gas Supply Obligation
ECOWAS	Economic Community of West African States
EIA	Environmental Impact Assessment
EOR	Early Oil Recovery
EPA	Environmental Protection Agency (United States)
ERA	Environmental Rights Action
FEPA	Federal Environmental Protection Agency
FEC	Federal Executive Council

FGN	Federal Government of Nigeria
FMEEnv	Federal Ministry of Environment
FOE	Friends of the Earth
GACN	Gas Aggregation Company of Nigeria
GGFRP	Global Gas Flaring Reduction Partnership
GT	Grounded Theory
HRW	Human Rights Watch
IEA	International Energy Agency
IOCs	International Oil Companies
KP	Kyoto Protocol
LFN	Law of Federation of Nigeria
LNG	Liquified Natural Gas
MEND	Movement for the Emancipation of Niger-Delta
MOL	Ministry of Labour, Norway
MOSOP	Movement of the Survival of Ogoni People
MPE	Ministry of Petroleum and Energy, Norway
MPR	Ministry of Petroleum Resources, Nigeria
NAG	Non-Associated Gas
NASS	National Assembly
NCCC	National Council on Climate Change
NCS	Norwegian Continental Shelf
NDDC	Niger Delta Development Commission
NEP	National Energy Policy, 2003 Nigeria
NESREA	National Environmental Standards and Regulations Enforcement Agency

NGO	Non-Governmental Organisation
NGMP	Nigeria Gas Master Plan
NGP	National Gas Policy, 2017 Nigeria
NMDRA	Nigerian Midstream & Downstream Petroleum Regulatory Authority
NOSDRA	National Oil Spills Detection Regulatory Agency
NPD	Norwegian Petroleum Directorate
NURC	Nigeria Upstream Regulatory Commission
OGP	International Association of Oil and Gas Producers
PA	Paris Agreement
PDO	Plan for Development of Operation
PIA	Petroleum Industry Act
PIB	Petroleum Industry Bill
PIO	Plan for Installations and Operations
PSA	Petroleum Safety Authority, Norway
SD	Sustainable Development
SPDC	Shell Petroleum Development Company
TSCF	Trillion Standard Cubic Feet
TSGP	Trans Sahara Gas Pipeline Project
TPA	Third Party Access
UNEP	United Nations Environment Program
UNFCCC	United Nations Framework Convention on Climate Change
US-EIA	United States Energy Information Agency
WAGP	West African Gas Pipelines Project
WB	World Bank

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Dedication

This thesis is dedicated to my late parents, Alhaji Gambo Lawan Nguru and
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May their souls continue to rest in peace, Amin!

CHAPTER ONE – General Background of the Study

1.1 Introduction

Gas flaring during oil exploration and production is a serious environmental problem and resource management failure facing the world today. It has been estimated that oil and gas-producing nations have flared between 140 -170 bcm since 1990 (*see figure 1.1 below*). This is a significant waste of valuable resources that could be put to productive use to support oil-producing nations' economies. There are many reasons for continued gas flaring globally, and one of such major reasons unearthed by the World Bank is the lack of appropriate and effective anti-gas flaring regulations that could help end the practice of flaring. Therefore, the rationale for carrying out this study is to investigate whether Nigeria's anti-gas flaring law and policy regimes have been appropriately designed and effectively enforced to achieve the country's objective of ending gas flaring and unlocking gas potentials.

Consequently, this chapter introduces the study's general background, subdivided into different but interrelated parts. The first part provides the gas flaring overview and trends, the way forward on routine flaring and the role law, policy, and regulatory regimes could play in ending AG flaring. While laying the background for the study, the next parts present the study's aim, central question, objectives, significance, and contribution to the body of knowledge. The next part introduces the links between the concepts and theories chosen in analysing the appropriateness and effectiveness of Nigeria's anti-gas flaring law and policy regimes. The penultimate part introduces the methodology and methods that the study adopted in analysing the regimes and explains the rationale and the study's fundamental concepts. The final part discusses the plan and structure of the thesis.

1.2 General Overview, Trends, Impacts, and the Way Forward for Gas Flaring Around the Globe

1.2.1 General Overview

Natural gas is sometimes produced as a by-product of oil extraction known as 'associated gas' (AG). Without appropriate and effective law and policy measures, operators normally choose to use the gas on-site, reinject it into the reservoir, or release it as methane into the atmosphere.¹ Releasing the gas directly into the atmosphere is often preferred for the operators because it's cheaper.² Thus, this process is known as 'flaring or venting', in which the produced AG is not put to any productive use. Technically, gas flaring is the controlled combustion of natural gas for operational, safety, or economic reasons.³ In other words, it is the controlled burning of natural gas, either AG or non-associated gas (NAG), that takes place during production and processing activities. There are many reasons why flaring became necessary for upstream activities. The two most notable reasons are operational and safety or economic reasons, especially when there is no market nearby or where economic factors require early oil production before natural gas capture.⁴

Operational and safety flaring is generally short-term low volume and necessary to ensure safe operating practices. This flaring category could be captured and stored as a safety hazard and is often released for safety reasons.⁵ The other category i.e., for economic reasons relatively flares large volumes of AG, either temporarily or long-term, and has a severe economic and environmental impact. This category of flaring is generating the most concern around the globe and is,

¹ The World Bank, *Guidance on Upstream Flaring and Venting Policy and Regulation* (2009), Global Gas Flaring Reduction (a Public-Private Partnership), March 2009 Washington DC.

² Ibid

³ Intergovernmental Panel on Climate Change, "The Report of the Working Group 1 of the IPCC, Survey for Policy Makers." (IPCC. 2001). The act of flaring releases many air pollutants into the atmosphere, including greenhouse gases, methane, carbon dioxide, and other volatile organic compounds which harm the environment and human health.

⁴ The US Department of Energy, 'Natural Gas Flaring and Venting: States and Federal Regulatory Overview, Trends and Impacts,' Report compiled by the Office of Oil and Natural Gas and the Office of Fossil Energy, June 2019.

⁵ Ibid.

therefore, the primary focus of this study.⁶ In short, the flaring of this category may continue persistently if it is not tackled by appropriate law and policy measures.⁷ Since 2009, the World Bank has reported that this category of flaring continues unabated due to many factors that cut across regulatory and non-regulatory measures. Thus, prominent reasons include the limited legislative, regulatory, and contractual frameworks for AG and NAG, ineffective fiscal terms, an underdeveloped domestic gas market, limited investment in gas utilisation projects; and multiple stakeholders' lack of coordinated actions.⁸ Therefore, it may be suggested that both NAG and AG flaring could be reduced or perhaps prevented using appropriately designed laws and policies and effectively enforced regulatory regimes.

1.2.2 Global Gas Flaring Trend

At present, there seems to be a level of uncertainty as to the actual volume of natural gas flares annually around the globe. Several commentators, including Gervet find that the main source of uncertainty was the withholding of information by the flaring nations.⁹ The International Energy Agency (IEA) also found that a lack of monitoring equipment and limited oversight makes it difficult to quantify the amount of gas flaring precisely.¹⁰ The 2020 flaring release based on the Global Gas Flaring Reduction Partnership's (GGFRP's) satellites estimates that global flaring has decreased by 5% (i.e., from 150 billion cubic metres (bcm) in 2019 to 142 bcm).¹¹ However, the decrease could be attributed to an oil production decline of almost 8% in that year. For years, the gas flaring trend has usually increased whenever oil production rises and decreases with production decrease. For instance, when oil production increased in the last two years, the global flaring

⁶ Ultimately, large long-term volumes of AG flaring are proving unsustainable and economically unjustifiable, requiring appropriate and effective law and policy measures to end the practice.

⁷ The US Department of Energy (n. 4).

⁸ The World Bank (n. 1)

⁹ Bruno Gervet, 'Gas Flaring Emissions Contributes to Global Warming' (2007), *Renewable Energy Research Group, Lulea University of Technology*.

¹⁰ International Energy Agency (IEA), *Flaring Emissions – Monitoring and Reporting Flaring Volumes*. Tracking Report June 2020. Available at: < <https://www.iea.org/reports/flaring-emissions> > accessed 25/03/2021.

¹¹ The World Bank, 'Global Gas Flaring Tracker Report' . Published 28th April 2021.' Available at: < <https://www.worldbank.org/en/topic/extractiveindustries/publication/global-gas-flaring-tracker-report> > accessed 21/09/2021.

also increased by 3.2 (i.e., from 145 billion bcm in 2018 to 150 bcm in 2019).¹² Equally, when there was an increase in oil production in 2018, gas flaring increased from 140.5 bcm in 2017 to 145 bcm.¹³ Data Analytics Business Brainwave quantified the global monetary value loss to gas flaring in 2018 as \$16.4 billion.¹⁴ In contrast, PwC estimates the monetary value loss at \$20 billion that year. Nigeria alone lost \$762 million out of the global loss in the year, around 4% of the total global loss.¹⁵

Furthermore, the US energy outlook in 2004 projected that global annual emissions would increase by 60% from 1990 to 2025 because of the likely increase in oil and gas production.¹⁶ The year 2020 witnessed a dramatic turning point, with oil demand dropping by 4.5%, gas by 2.3%, and emissions from energy use decreasing by 6.3%: the largest decline since 1945.¹⁷ Nevertheless, it is indisputable that as of 2020, the total amount of gas flared globally remains approximately in line with 1990 levels (*see figure 1.1 below*). An empirical study by Elvidge et al. observed that between 1990 and 2010, flaring remained mostly unwavering, around 140-170 bcm. Even though it fell by around 19% from 2005 to 2008, an achievement led by gas flaring reduction in Russia and Nigeria, it was observed that oil production declined in both countries. Therefore, it could likely be the primary reason gas flaring also dropped within that period.¹⁸

¹² The World Bank, 'Global Gas Flaring Reduction Partnership - Published Estimates from satellite data 2019'. Available at: <<https://www.worldbank.org/en/programs/gasflaringreduction#7>> accessed 04/09/2020.

¹³ Statista, 'Oil Production World Wide from 1998 to 2020'. Available at: <<https://www.statista.com/statistics/265203/global-oil-production-since-in-barrels-per-day/>> accessed 21/09/2021. Thus, oil production increased from 92.568 million barrels per day (b/d) in 2017 to 94.852 million b/d in 2018. Therefore, there was also gas flaring.

¹⁴ Energy Reporter, 'Flaring burned enough gas in 2018 to power every UK home', dated 17/09/2019, accessed 29/03/2020

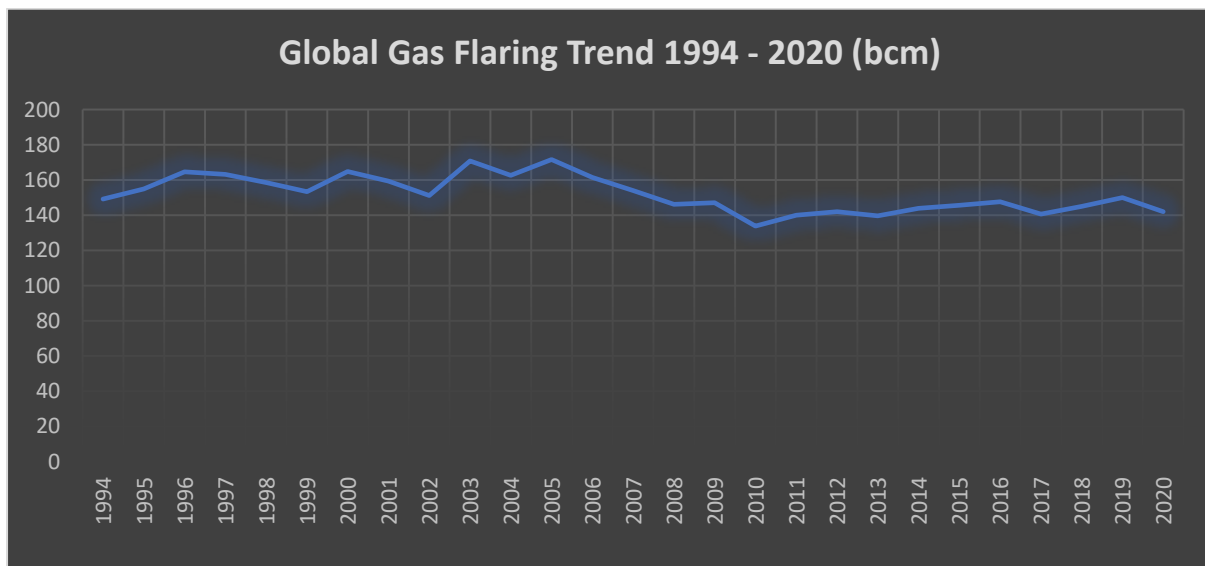
¹⁵ PwC, 'Assessing the Impact of Gas Flaring on the Nigerian Economy' (2019) PricewaterhouseCoopers Publication. Available at: <<https://www.pwc.com/ng/en/assets/pdf/gas-flaring-impact1.pdf>> accessed 05/09/2020

¹⁶ The United States Energy Information Administration (The US-EIA), 'Annual Energy Outlook 2004: With Projections to 2025' DOE/EIA-0383 (2004) US Department of Energy.

¹⁷ BP 'Statistical Review of World Energy 2020', 70th Edition pp 1-5. This is the largest emission decrease since the end of World War II, as the imposition of lockdowns around the world decimated transport-related demand. As BP review suggested, this rate of decline in emissions last year is similar to what the world needs to average each year for the next 30 years to be on track to meet the aims of the Paris Agreement.

¹⁸ Christopher D. Elvidge et al, 'A Fifteen Year Record of Global Natural Gas Flaring Derived from Satellite Data' (2009), 2 *Energies Journal* at 595-622.

Figure 1.1: Global Gas Flaring Trend 1994 – 2020.



Data Source: NOAA & GGFR Satellites.¹⁹

Overall, *figure 1.1* shows that the amount of gas flared worldwide has remained largely constant within the range of 140 and 170 bcm from 1994 to 2020. Though there was some decrease in gas flaring between 1999 to 2002, it increased by more than 10% from 2002 to 2005 and then declined for three consecutive years before rising again in 2009. Accordingly, from 2010 to the present, the flaring volumes remain stagnant at 140-150 bcm. Therefore, effective flaring reduction policies, complementary regulatory actions designed to remove international and domestic market barriers, and effective enforcement of the flaring regulations would help bring the volumes down. As the World Bank suggested, this is especially important for projects that use associated gas where the economics are often marginal. In such cases, easing the market’s constraints can usually change investments from marginally negative to marginally positive.²⁰

¹⁹ NOAA, National Centres for Environmental Information, 'Global Gas Flaring Estimates – Global/Country Results 1994-2010. Available at: <https://ngdc.noaa.gov/eog/interest/gas_flares.html> accessed 29/03/2019 also ibid (n 11). The set of data were obtained based on satellite tracking. The estimates were based on Defense Meteorological Satellite Program Operational Line Scan System (DMSP-OLS) and Moderate Resolution Imaging Spectroradiometer (MODIS) satellite measurements.

²⁰ 'The Global Gas Flaring Reduction Initiative' report on consultation with stakeholders at the Global Gas Flaring Reduction Initiative Conference, held on 15-16 April 2002 at the Holmenkollen Park Hotel in Oslo, Norway.

1.2.3 Nigeria's Gas Flaring Trend

Gas flaring in Nigeria's petroleum industry is not an uncommon issue; over the years, the country has preferred oil production to gas. Therefore, gas was only incidental to the exploration and production of oil, which is why the country had previously witnessed persistent gas flaring in large volumes. Though there are discrepancies in reporting the flared gas in Nigeria, it is irrefutable that a considerable volume is still flared in the country. Recently, Nigeria accepted that it's not adequately monitoring the AG's volumes and that in a real sense, the gas flaring volume is much higher than what the oil companies are reporting.²¹ Consequently, studies have investigated the gas flaring trend in Nigeria. For instance, Madueme's study investigated the flaring trend between 1965 to 2008. The study finds that flaring activities were significantly lower before the '80s than from the '80s to 2008.²² Similarly, other studies by Sonibare & Akeredolu, and Malumfashi both argue that though the percentage of gas utilisation had increased from 1970 to 2008, the flaring volume remained high.²³ The trend continues until the present time, though the figure fluctuates in recent years; nevertheless, a considerable amount is still flaring despite the recorded progress.

Nigeria has achieved significant progress over the past 15 years, reducing its gas flaring volumes by 70 per cent in 2020 (*see figure 1.2 below*).²⁴ Nevertheless, a study by Hassan and Kouhy that investigated factors responsible for fluctuations in carbon dioxide (CO₂) emission due to gas flaring in Nigeria discovered that the progress recorded resulted from factors other than effective regulations. The duo

²¹ Dr Ibe Kachikwu is Nigeria's former Minister of State for Petroleum Resources, and made the remark at the Gas Competence Seminar titled 'Towards Ending Gas Flaring and Unlocking Gas Potential in Nigeria', organised by Nigeria in collaboration with the World Bank and International Gas Union, held at Abuja on 13-14 December 2016.

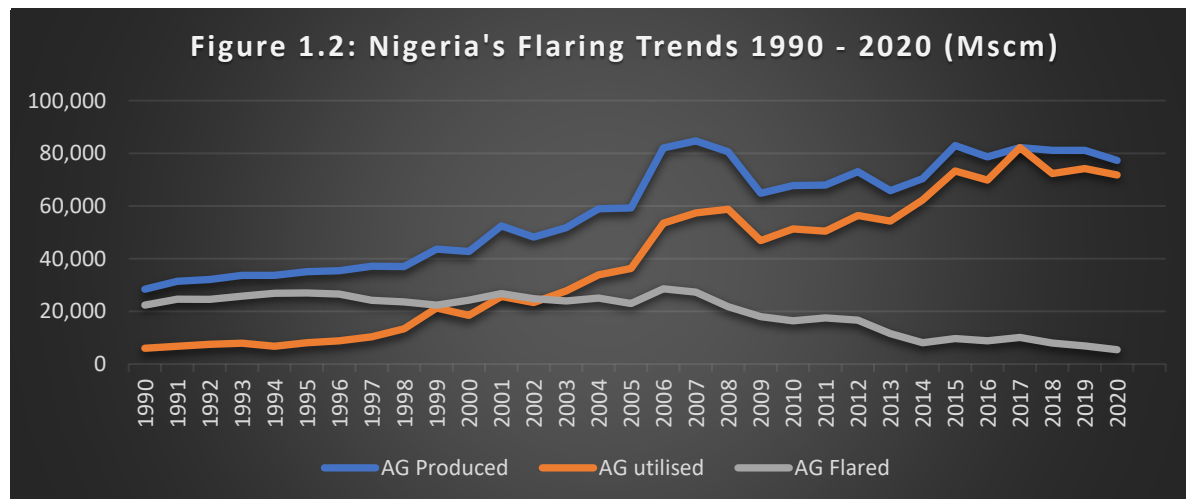
²² Dr Stella Madueme, 'Economic Analysis of Wastages in the Nigerian Gas Industry' (2010), 2 (4) *International Journal of Engineering Science and Technology* at 618-624.

²³ J.A Sonibare & F.A Akeredolu, 'Natural Gas Domestic Market Development for Total Elimination of Routine Flares in Nigeria's Upstream Petroleum Operations' (2006), 34 *Energy Policy* at 743-753, and Garba I. Malumfashi, 'Phase-Out of Gas Flaring in Nigeria by 2008: The Prospects of a Multi-Win Project' (2008), *National Petroleum Corporation Publication*.

²⁴ Nigeria was the world's largest gas flaring country in 2004 and is now the seventh largest country in the world. This shows considerable progress, but a lot still needs to be done to rid the country of gas flaring entirely like Norway and other successful jurisdictions. See Gervet (n 9).

maintains that Nigeria's anti-gas flaring regulations have an insignificant impact on the documented reduction.²⁵ The study concludes that the failure of Nigeria's flaring regulations to make a meaningful impact on the reduction so far recorded exposes the weakness of the country's anti-gas flaring legal regime and its attendant inefficient enforcement mechanisms.

Figure 1.2: Nigeria's Trend showing AG produced, utilised, and flared (mscm)



Data Source: NNPC archived data.²⁶

Figure 1.2 data was obtained from the NNPC archived data source. Although the data were initially computed using the standard cubic metres model between 1964 to 2003. From 2004 upward, the country started computing it using the standard cubic feet model. Therefore, to be uniform in reporting the data, the data from 2004 to 2020 were converted into standard cubic metres. A common conversion formula of 0.0283168466 was used in multiplying the given standard cubic feet into the metre.²⁷ While it is worth celebrating that figure 1.2 shows that gas flaring has been declining in Nigeria modestly, the trend seems relatively slow, weak, and far from irreversible. Therefore, a concerted effort is required to curtail gas flaring due to its negative impact on the global environment.

²⁵ Aminu Hassan and Reza Kouhy, 'Gas Flaring in Nigeria: Analysis of Changes in its Consequent Carbon Emission and Reporting' (2013), 37 *Accounting Forum* at 124-134.

²⁶ Nigerian National Petroleum Corporation, 'Annual Statistics Bulletin' available at <[Annual Statistics Bulletin \(nnpcgroup.com\)](https://www.nnpcgroup.com/Annual-Statistics-Bulletin)> accessed 29/09/2021. The data from 1990-1997 were provided in abstract as there was poor management of information on the actual of volumes of the produced, utilised and flared gas at the time. Madueme (n 22).

²⁷ See <https://byjus.com/cubic-foot-to-cubic-meter-calculator/> and <https://www.thecalculatorsite.com/conversions/liquidvolume/cubic-feet-cubic-meters.php>.

1.2.4 Negative Impacts of Gas Flaring

It is generally acknowledged that flaring contributes significantly to the concentration of greenhouse gas (GHG) emissions and, therefore, contributes to global warming.²⁸ As *figure 1.1* shows, global gas flaring remains persistently high and thereby negatively impacts the climate system. It wastes potentially valuable resources and contributes as much to the atmosphere's GHG concentration, thus adding considerably to climate change.²⁹ The Intergovernmental Panel on Climate Change (IPCC) observed that global gas flaring is a major source of black carbon, which causes global warming, has adverse effects on the environment and affects the health of local communities. It also raises a broad spectrum of sociopolitical and even human rights-related consequences. Consequently, flaring practices have been adjudged to be a challenging environmental pollution facing today's global environment.³⁰

Similarly, another IPCC report finds that recent GHG emissions are particularly problematic and the highest in global history. The report estimates that the magnitude of methane emissions from flaring could contribute to climate change over 25 times as much as other sources in the next 100 years.³¹ Although some gas flaring nations like Norway, Alberta Canada, and the UK provided some effective regulatory measures to deal with the hazardous waste, there is still significant concern about the volumes of gas flared in many other oil-producing nations like Nigeria. Consequently, the negative impacts of flaring on the environment and human health, as economic waste: Nigeria's sociopolitical and human rights-related issues are examined below.

²⁸ Ibid IPCC 2001 (n 3).

²⁹ The World Bank, *Guidance on Upstream Flaring and Venting Policy and Regulation'* (2009), Global Gas Flaring Reduction (a Public-Private Partnership) March 2009 Washington DC

³⁰ IPCC, 2001(n 28).

³¹ IPCC, 'AR5 Synthesis Report: Climate Change 2014' (2014). This Synthesis Report is based on the reports of the three Working Groups of the Intergovernmental Panel on Climate Change (IPCC), including relevant Special Reports. It provides an integrated view of climate change as the final part of the IPCC's Fifth Assessment Report (AR5) 2014.

1.2.4.1 Gas Flaring as an Environmental and Health Problem

The World Bank observed that gas flaring is a global environmental issue and one of today's most challenging types of environmental pollution. The process releases methane and CO₂ directly into the atmosphere.³² Therefore, the environmental problems caused by flaring are more global, regional, and local. It, therefore, has severe effects on both oil-producing and non-oil-producing nations and is projected to worsen during the 21st century.³³ According to the US-EPA, the effects are enormous and not well summarised by a global warming potential.³⁴ A recent empirical investigation by Ismail and Umukoro on the environmental and health impacts of gas flaring in Nigeria observed the likely magnitude and extent of pollution across the Niger-Delta. The study finds that these pollutants cause acidity and temperature increase, directly affecting the environment and human health.³⁵

Furthermore, studies by Abdulkadir et al. and Ajugwo observed that the effect of flaring on Nigeria's Niger-Delta environment is highly challenging. This is because a large quantity of CO₂ is released, which gives rise to atmospheric contaminants that acidify the soil and thus deplete its nutrients. It also damages lakes and streams as well as vegetation.³⁶ A study by Julius shows that flaring alters the area's vegetation, replacing it with stubborn elephant grasses that thrive in a very harsh environment and lead to low crop yields.³⁷ As a result, Iyiola and Oyewa's study shows a 100% total loss of crops around flare sites within 100-200 meters, 40% within 1 kilometre, and 25% within 2 kilometres.³⁸ Besides, the Federal

³² The World Bank, 2009 (n 1).

³³ Mohammad Soltanieh et al., 'A review of Global Gas Flaring and Venting Impact on the Environment: Case Study of Iran' (2016), 49 488-509.

³⁴ The United States Environmental Protection Agency (the US-EPA) Report to US Congress – March 2012.

³⁵ Ismail Olawalwe Saheed and G.E Umukoro, 'Global Impact of Gas Flaring' (2012), 4 (4) *Energy, Power Engineering*, 290-302.

³⁶ M. Abdulkadir, A. G Isah and Y. Sani, 'The Effect of Gas Flaring on the Environment and its Utilization (A case study of selected villages in Niger-Delta area of Nigeria)' (2013), *Journal of Basic and Applied Scientific Research*, and Anslem O. Ajugwo, 'Negative Effects of Gas Flaring: The Nigerian Experience' (2013), 1 (1) *Science and Education Publishing*.

³⁷ Oseji Otutu Julius, 'Environmental Impact of Gas Flaring within Umutu-Ebedei Gas Plant in Delta State, Nigeria' (2011), *Archives of Applied Science Research – Scholars Research Library*.

³⁸ S. Iyiola and M. Oyewa, 'Gas Flaring, Transportation and Sustainable Energy Development in the Niger-Delta Nigeria' (2011), 33 (1) *Ecology Journal*.

Government of Nigeria (FGN) also acknowledged the environmental effect of AG flaring in its initial national statement to the UNFCCC.³⁹

Besides its adverse environmental effects, flaring negatively impacts human health due to exposure to the emitted hazardous pollutants. Orimoogunje et al. found that such pollutants cause negative health impacts, including cancer, neurological diseases, deformities in children, lung damage, and skin problems.⁴⁰ Kindzierski's study also finds that flaring emissions cause some adverse changes in haematological parameters, leading to anaemia, pancytopenia, and leukaemia diseases.⁴¹ Some of these health challenges have also occurred here in the UK, where the Environmental Regulator received around 1,400 complaints from people living in areas surrounding the flaring sites. Some complaints included breathing difficulties, headaches, sore eyes, and concerns about the communities' rare and common cancers. The UK Regulator had issued a final warning letter to the operators (ExxonMobil and Shell), requiring an immediate stop to the flaring, describing it as "preventable and unacceptable".⁴²

Moreover, a study carried out in the Niger-Delta, Nigeria, found that the harmful effect of the byproducts of AG flaring is linked to low birth weight, anaemia, bone marrow damage, decreased immune system, and internal bleeding.⁴³ Correspondingly, a recent study by Olusegun et al. revealed that improper management in Nigeria's petroleum sector has harmfully impacted human health and the environment of the Niger-Delta. Therefore, the study recommended that the FGN should review the country's anti-gas flaring laws, ensure effective

³⁹ Federal Republic of Nigeria, *Nigeria's First National Communication Under the UNFCCC* – November 2003. The country acknowledged that "gas flaring and the resultant problems of ecosystem heat stress, acid rain, and acid precipitation have prompted the destruction of freshwater and forest resources in the coastal area of the country".

⁴⁰ O.O.I. Orimoogunje et al, 'Perception on Effect of Gas Flaring on the Environment' (2010), 2 (4) *Research Journal of Environmental and Earth Sciences*, Soltanieh et al. (n14).

⁴¹ W.D Kindzierski, 'Importance of Human Environmental Exposure to Hazardous Air Pollutants from Gas Flares' (2000), 8 *Environmental Review*.

⁴² Angie Brown, 'Mossmorran: Almot 1,400 Complaints Over Chemical Plant's Flaring', BBC Scotland, Edinburgh and East Reporter, 30th August, 2019. Available at: <<https://www.bbc.co.uk/news/uk-scotland-edinburgh-east-fife-49523673>> accessed on 02/09/2019.

⁴³ Emeka Ojjiagwo et al., 'Economics of Gas Flaring to Wire Technology Applied in Gas Flare Management' (2016), 19 (4) *An International Journal of Engineering and Science Technology*.

implementation of flare-out policy, and provide adequate funding for regulators to deal with violators appropriately.⁴⁴

1.2.4.2 Gas Flaring as an Economic Waste

Apart from its adverse effect on the environment and human health, AG flaring causes a monumental waste that any serious government cannot tolerate. This is because such gas could support economic growth and progress. The UNDP and the World Bank have observed that the overall global wastage from gas flaring and venting amounted to about \$30.6 billion annually (about \$3 billion was estimated to have been lost annually through flaring in Sub-Saharan Africa). Nigeria alone loses almost \$2.5 billion annually, amounting to 75% of the total loss in Sub-Saharan Africa.⁴⁵ Farina argued that the gas wasted in Nigeria can be utilised for enough electricity generation to solve the Nigerian electricity problem; in contrast, more than 60% of Nigeria's population lacks reliable electricity access.⁴⁶ The World Bank also finds that Nigeria's annual gas flaring wastage is sufficient to generate more than twice the country's electricity needs.⁴⁷ The global gas flares could provide enough or more than the African continent's current annual electricity consumption.⁴⁸ Therefore, it is submitted that flaring is massive economic sabotage and a waste of potentially valuable resources which could be put to productive use.

1.2.4.3 Gas Flaring as a Sociopolitical Problem

In most oil-producing developing countries, flaring has been the leading cause of insecurity and other social vices. Watt postulated that the continued practice of flaring makes the host communities feel neglected and, as a result, resort to

⁴⁴ Ayejuyo O. Olusegun et al., 'The Impact of Gass Flaring and Venting in Nigeria and Management Options: A Case Study of Oil Producing Areas' (2014), 4 (2) *Journal of Biodiversity and Enviornmental Sciences*, 27-36.

⁴⁵ Energy Sector Management Assistance Program, 'African Gas Initiative Report', UNDP/World Bank Initiative 2001.

⁴⁶ Michael M. Farina, 'Flare Gas Reduction – Recent Global Trends and Policy Consideration' (2011), GE- Global Strategy and Planning.

⁴⁷ The World Bank, UN Human Development Index - Nigeria Economic Report 2013.

⁴⁸ The World Bank, 'New Data Reveals Uptick in Global Gas Flaring' Press Release December 2016.

militancy and pipe vandalization.⁴⁹ The Niger-Delta militants in Nigeria usually cite the unwillingness of the government to stop gas flaring as the major reasons for their continued destruction of oil and gas facilities, oil production sabotage, and the kidnapping of expatriates.⁵⁰ Besides, the campaign to end AG flaring in Nigeria has given birth to many pressure groups like the Movement for the Emancipation of Niger-Delta (MEND) and the Movement for the Survival of Ogoni People (MOSOP). This is in addition to other non-governmental organisations campaigning against the oil companies' destructive activities, like Human Rights Watch (HRW), Environmental Rights Action (ERA), and Friends of the Earth, etc.⁵¹

1.2.4.4 Gas Flaring as a Breach of Human Rights

Environmental pollution has real practical human rights implications in the form of environmental destruction and degradation, as well as physical abuses carried out by the oil companies through their local agents and the Government. A joint study by Climate Justice Programme/Environmental Rights Action reported a link between agitation to end gas flaring and various unlawful arrests, detention, killings, and maiming of the locals who oppose the practice of flaring by industry players.⁵² Another HRW systematic investigation into human rights abuses by oil companies in Nigeria with the backing of Nigerian government security forces found a correlation between the human rights violations and the agitation for a polluted-free environment in the host communities.⁵³ In the celebrated case of *Gbemre V. Shell*,⁵⁴ the Nigerian federal high court held that gas flaring violates

⁴⁹ Michael J. Watt, *Contested Communities, Malignant Markets, and Gilded Governance: Justice, Resource Extraction, and Conservation in the Tropics*, in Charles Zerner, *People, Plants, and Justice: The Politics of Nature Conservation* (CUP, 2000) 21-82.

⁵⁰ Marcus O. Edino, Godwin N. Nsofor and Leonard S. Bombom, 'Perception and Attitudes Towards Gas Flaring in Niger-Delta, Nigeria' (2009) *Springer*.

⁵¹ Mark Olise and Tonye Nria-Dappa, 'Overcoming Nigeria's Energy Crises – Towards Effective Utilisation of Associated Gas and Renewable Resources in the Niger Delta' (2009), *Social Action Briefing* No. 2.

⁵² The Climate Justice Programme & Environmental Rights Action, 'Gas Flaring in Nigeria: A human Rights, Environmental and Economic Monstrosity' (2005), ERA and the CJP Joint Publication.

⁵³ Bronwen Manby, *The Price of Oil – Corporate Social Responsibility and Human Rights Violations in Nigeria's Oil Producing Communities* (1999), Human Rights Watch. The violation of the host communities' human rights is partly because of the agitation by the locals to pressurise the oil companies to end the AG flaring.

⁵⁴ *Jonah Gbemre & Others v Shell Petroleum Dev. Company of Nigeria & Others* Suit NO: FHC/CS/B/153/2005, Federal High Court, Benin City Division, Judgment of 14/11/2005.

the host communities' human rights under the Nigerian constitution and ACHPR.⁵⁵ Although the court ordered the stoppage of gas flaring, gas flaring is still happening in Nigeria, and therefore a strategy to end the practice is required.

1.2.5 The Way Forward

Having examined the significant trends of flaring worldwide and their negative impact, especially in developing countries, the question may now be raised: what is the way forward? How could the flaring nations avoid the negative impact of flaring highlighted above? In other words, is there any appropriate and effective way to end this gas flaring problem? The answer to these questions is simple: AG utilisation could be an appropriate and effective solution because it could potentially reduce GHG emissions and simultaneously improve the flaring nations' economies. Guven et al. find that there are principally three alternative routes for AG utilisation. Firstly, the AG could either be reinjected into the reservoir to maintain pressure and enhance oil recovery or stored in underground formations. Secondly, it could be used for energy in the production facility or nearby facilities. Thirdly, it could be collected, cleaned, and sold (e.g., LNG or LPG).⁵⁶ These three routes serve as alternatives to utilisation and management for oil-producing nations.⁵⁷

Consequently, choosing any of the alternatives above depends on many factors: for instance, the strategic location of the industry and its proximity to the international market; the upstream conditions such as field characteristics and the oil-to-gas ratio; offset opportunities downstream for the recovered AG; as well as the energy demand of the production facility. Nevertheless, the overall success of the alternatives would largely depend upon the law and policy regimes creating an enabling environment to achieve these alternatives.⁵⁸ Therefore, gas flaring nations need to develop appropriate anti-gas flaring laws and policy regimes that

⁵⁵ See also the case of Social and Economic Right Action Center (SERAC) AND Center for Economic and Social Rights (CESR) V Nigeria 155/96. Available at: < <http://caselaw.ihlda.org/doc/155.96/view/>.> accessed on 21/08/2018.

⁵⁶ Buzco B. Guven et al., *Gas Flaring and Venting: Extent, Impacts and Remedies* (James A. Baker III Institute For Public Policy of Rice University, 2010).

⁵⁷ Ibid.

⁵⁸ Atle Chr. Christiansen and Torleif Haugland, 'Gas flaring and Global Public Good' (2001), FNI Report Submitted to the Norwegian Ministry of Foreign Affairs.

would provide an enabling environment for IOCs to invest in gas utilisation projects.⁵⁹ Accordingly, this overview provides a background to the current study and its associated problems. The overview was undertaken to give a platform from which to discuss the study's background and problem statements.

1.3 The Need for an Appropriate and Effective Regime

The World Bank suggested that the essential structures of any anti-gas law and policy regimes should be determined by each country's environmental and economic needs, objectives, and unique circumstances.⁶⁰ Therefore, the legal, fiscal, contractual, and regulatory frameworks governing the regime of a country must be designed in such a manner to encourage inward investment in AG reduction and utilisation projects.⁶¹ However, such regimes' success would largely depend on not only how appropriately it was designed but how effectively enforced⁶². Ackerman and Hassler, Kamieniecki, Vogel, Gunningham, Kagan, and Thornton have all suggested that the design of an environmental law regime must undoubtedly reflect the outcome of a struggle between the affected and organised interests. As such, businesses' interests must be considered while designing a regime to induce compliance with environmental law, regulations, and standards. Therefore, designing an appropriate anti-gas flaring legal regime under today's competitive circumstances is a challenging task that requires recognition and the accommodation of many diverging interests. In particular, the regime's objectives must capture the interests of the host government, the oil companies, the host communities, and all other industry stakeholders.⁶³

⁵⁹ The World Bank, *Guidance on Upstream Flaring and Venting Policy and Regulation'* (2009), GGFRP March 2009 Washington DC.

⁶⁰ The World Bank 2009 (n 1).

⁶¹ The World Bank, *Regulation of Associated Gas Flaring and Venting: A Global Overview and Lessons'* (2004) Global Gas Flaring Reduction (a Public-Private Partnership), Report Number 3 Washington DC.

⁶² Ibid.

⁶³ Bruce A. Ackerman and William T. Hassler, *Clean Coal/Dirty Air: Or How the Clean Air Act Became a Multi-Billion Dollar Bail-out for High-sulphur Coal Producers and What should be done about it*, (Yale University Press, 1981) 166; Sheldon Kamieniecki, *Corporate*

Furthermore, besides having an appropriately designed regime, effective enforcement should also be considered an essential element of the regime.⁶⁴ This is because no matter how appropriate the regime's design may be, the objective can only be realised if the regime is effectively enforced. The effective enforcement of environmental regulations is crucial for proper environmental management because legislation and regulations are only as good as their enforcement.⁶⁵ The World Bank's panel of experts believes that enforcement is a vital element of gas flaring regulation. Regardless of the design's appropriateness, the regime is unlikely to be effective unless regulatory breaches are identified and effectively enforced by the regulator.⁶⁶ Doing so may not only ensure and encourage compliance with the gas flaring prohibition laws and regulations; it may also induce oil companies to adopt environmentally responsible measures which are not even required by the law.⁶⁷

Consequently, it is suggested that gas flaring nations need an appropriately designed but effectively enforced anti-gas flaring regime to capture all stakeholders' interests in the industry. The anti-gas flaring laws and policies should be designed and enforced in such a way that would encourage oil companies to end flaring. As one such country, Nigeria has a policy objective of ending gas flaring and unlocking gas potential by 2020 (now shifted to 2030).⁶⁸ Therefore, it is submitted that for Nigeria to achieve this policy objective, the country needs effective and efficient anti-gas flaring laws and policy regimes. Such

America and Environmental Policy: How often does Business get its Way? (Stanford University Press 2006) 197; David Vogel, 'The Hare and the Tortoise Revisited: The New Politics of Consumer and Environmental Regulation in Europe' (2003) 33 (4) *British Journal of Political Science* 557-580; and Neil Gunningham, Robert A. Kagan and Dorothy Thornton, *Shades of Green: Business, Regulation and Environment* (Stanford University Press 2003) 20.

⁶⁴ Cary Coglianese and Catherine Coursy, 'Environmental Regulation' in Peter Cane and Herbert M. Kritzer, *The Oxford Handbook on Empirical Legal Research* (Oxford University Press 2010), 449-455.

⁶⁵ Liping Fang, Keith W. Hipel and D. Marc Kilgour, 1994 'Enforcement of Environmental Laws and Regulations: A Literature Review', in Keith W. Hipel and Liping Fang, *Stochastic and Statistical Methods in Hydrology and Environmental Engineering*. Water Science and Technology Library, vol 10/2. Springer, Dordrecht, 3.

⁶⁶ The World Bank 2009 (n 1).

⁶⁷ Coglianese and Coursy, (n 64).

⁶⁸ The country has a policy objective of ending gas flaring and unlocking gas potentials by 2020, and this objective is contained in a policy document known as 'The Federal Republic of Nigeria, Ministry of Petroleum Resources – National Gas Policy – Nigerian Government Policy and Actions 2017'.

regimes must be appropriately designed and effectively enforced to capture all stakeholders' interests in the industry. In a nutshell, it should be regimes capable of protecting the oil-producing environment and attracting more investment to utilise the country's vast AG and NAG reserves without jeopardising the interest of any stakeholder in the industry.

1.4 Statement of the Problem

Notwithstanding the above-stated regime's features, contemporary events unfolding in Nigeria's petroleum industry have called into question the appropriateness and effectiveness of Nigeria's anti-gas flaring law and policy regime.⁶⁹ This is because an appropriately designed and effectively enforced regime is expected to end routine flaring, protect the oil-producing environment from the flaring's adverse effect, and encourage investment in AG utilisation projects. However, the reverse is the case in Nigeria's industry. Duruigbo aptly described the country's petroleum industry situation as pathetic and horrible. He laments that the gas is still being flared in Nigeria, and the deadlines for ending it keep on shifting: each time the country imposes standards, penalties, and deadlines, nothing good seems to come out of it.⁷⁰ Nigeria had in 2014 issued a statement permitting oil companies to continue flaring AG until 2020. According to all the stakeholders, 2020 was the feasible year for the flare-out deadline.⁷¹ However, the year 2020 has passed, and gas is still flaring in Nigeria.

Industry observers have long argued that an appropriately designed anti-gas flaring regime is expected to end gas flaring and attract substantial investment in utilisation projects.⁷² However, several efforts made by Nigeria to end AG flaring

⁶⁹ The Nigerian Government has been trying to end gas flaring over the years, with the flare out deadlines been repeatedly postponed. The most recent deadline had been December 2012. See Adeola Yusuf, 'FG Plans Another Shift for 40 Year-Old Gas Flaring Deadline – Legal Loophole Created as Flaring Deadline Expires', *Daily Independent of Nigeria*, 09/06/2014.

⁷⁰ Emeka Duruigbo, 'The World Bank, Multinational Oil Corporations and Resource Course in Africa' (2005), 26 (1) Pa. J. Intl. Econ L.

⁷¹ Jamilu Ibn Mohammed, 'Comparing Nigeria's Legal Framework for Combating Gas Flaring with that of Norway: Lessons for Nigeria' (2016) 2(9), *Imperial Journal of Interdisciplinary Research* 1252-1256.

⁷² Uchennan Jerome Orji, 'Moving from Gas Flaring to Gas Conservation and Utilisation in Nigeria: A Review of the Legal and Policy Regime' (2014), *OPEC Review* 149.

through both regulatory and non-regulatory measures have proved unsuccessful⁷³ For instance, it has introduced various laws that expressly prohibit AG flaring and imposed fines as a penalty for violating the laws.⁷⁴ Malumfashi observed inter alia that the anti-gas flaring law and regulations were inherently flawed as oil companies preferred to pay the fine and continued with the flaring.⁷⁵ The penalties increased in the 1990s but remained ineffective as oil companies considered gas flaring the best economic option.⁷⁶ The country later introduced fiscal incentive packages for AG utilisation; however, none of these legislative efforts was good enough to deter oil companies from flaring.⁷⁷ The oil companies preferred paying the paltry fines and continuing with flaring rather than utilising it. They argue that it is financially riskier for them to utilise AG and that the incentive packages were inadequate to encourage investment in gas utilisation projects.⁷⁸

The country recently made a significant effort to combat AG flaring when it passed the controversial Petroleum Industry Bill (PIB).⁷⁹ The new legal framework repealed the Associated Gas Re-injection Act 1979, among others, and thus became the current significant legal framework regulating gas flaring in Nigeria.⁸⁰ The development aimed to improve transparency and accountability, end gas flaring, and promote gas utilisation, among other objectives. Additional amendments relating to gas flaring are still pending, without any certainty as to whether they will be passed or withdrawn to avoid duplication. This legislative uncertainty regarding having a firm and stable legal regime has created uncertainty and confusion about the future of the country's petroleum industry

⁷³ Garba I. Malumfashi, 'Phase-Out of Gas Flaring in Nigeria by 2008: A Prospect of Triple Advantage' (2008) *National Petroleum Corporation Publication*

⁷⁴ Petroleum Act, 1969, Petroleum (Drilling and Production) Regulations, The Petroleum Amendment Decree 1973.

⁷⁵ Ibid Malumfashi (n 73).

⁷⁶ The Associated Gas Re-Injection (Amendment) Decree 1985.

⁷⁷ Associated Gas Framework Agreement (AGFA) 1992 and Nigerian Liquefied Natural Gas (Fiscal, Incentives, Guarantees and Assurances) Act LFN 2004.

⁷⁸ Mark Olise and Tonye Nria-Dappa, 'Overcoming Nigeria's Energy Crises – Towards Effective Utilisation of Associated Gas and Renewable Resources in the Niger Delta', Social Action Briefing No.2 2009.

⁷⁹ The Nigerian President on 16 August 2021 assented the long-awaited Petroleum Industry Bill and now the *Petroleum Industry Act, 2021*. The key aspect on gas flaring is Chap. 2 Part II, addressing a range of issues concerning the administration of upstream operation and environmental management.

⁸⁰ *The Petroleum Industry Act, 2021 S. 310*.

and the sustainability of business under the threat of any proposed radical legislative changes.⁸¹

Apart from the legal regime's controversy, enforcing the laws and regulations is the primary challenge for the country's petroleum industry. Enforcement is a critical element for gas flaring regulation. Regardless of how appropriate the legal regime is, it is unlikely to bring any meaningful results unless the regulatory breach is identified and energetically pursued by the regulator.⁸² The main objective of enforcement is to ensure compliance with the laws and regulations by oil companies.⁸³ However, the FGN had alleged that the oil companies are falsifying AG flaring data to avoid penalty payment.⁸⁴ Kachikwu (Nigeria's former petroleum resources minister) alleged that the country is not adequately monitoring the AG's volumes: in an actual sense, it is much higher than what the oil companies are reporting.⁸⁵ Kachikwu further assured that the country would, by 2017, deploy technology to measure the actual volumes of the flares' gas as they could no longer rely on figures from the oil companies.⁸⁶

Nevertheless, the year 2017 has since passed, while gas flaring has continued unabated in Nigeria. There was also no available information that the country has deployed technologies to monitor and report the volume of the flares' gas. Therefore, it could be argued that the current anti-gas flaring regimes have been constrained by many challenges, thereby raising a question about the appropriateness of its design and the effectiveness of its enforcement processes. The challenges also questioned whether the current regime could help the country to achieve its policy objective of ending gas flaring and unlocking gas potential by 2030.

⁸¹ Goddy Egene, 'Petroleum Industry Bill and Nigeria's Capital Market' in Henrietta O. Otokunefor, *Nigerian Petroleum Industry, Policies and Conflict Relations - Annotated Articles and Bibliography* (1st edn Malthouse, 2014), Volume 2 Page 265.

⁸² Coglianesse and Coursy (n 64).

⁸³ Ibid.

⁸⁴ Chris Bignell, 'Gas Flaring in the News – December/January 2017'. Available at: <<https://www.fluenta.com/news/flaring-in-the-news/gas-flaring-in-the-news-december-january/>> accessed on 28/01/2018.

⁸⁵ Ibid Kachikwu (n 21).

⁸⁶ Ibid.

1.5 Aim and Objectives

Following the problem statement review and considering stated Nigeria's policy objective by 2030,⁸⁷ this study aims to critically investigate whether the country's anti-gas flaring law and policy regime are appropriately designed and effectively enforced to achieve the country's objective. The study aims to identify the regime's critical challenges and recommend measures that could improve the regime. In doing so, the following specific objectives were set to be achieved by the study:

1. To critically review international and regional law and policy regimes relating to atmospheric and air quality pollution to assess their impacts on emission reduction and ascertain whether they obligate gas flaring nations, including Nigeria, to end gas flaring because of its negative effects on climate change.
2. To critically evaluate Nigeria's anti-gas flaring law and policy regimes and their enforcement processes to identify any deficiencies and challenges and examine their inability to establish effective compliance with the ideal of zero flaring and environmental sustainability.
3. To critically assess whether strengthening the current regulatory approach or devising a new approach would sustain environmental-friendly behaviour and make all stakeholders bound by their responsibilities.
4. To critically assess the extent to which the Nigerian Government, the oil companies operating in Nigeria, and other stakeholders perceive how the requirements of the laws regulating gas flaring could be complied with.
5. To recommend reforms that will address the identified deficiencies and challenges in order to strengthen the anti-gas flaring regimes.

⁸⁷ The country has a policy objective of ending gas flaring and unlocking gas potentials by 2020, and this objective is contained in a policy document known as 'The Federal Republic of Nigeria, Ministry of Petroleum Resources – National Gas Policy – Nigerian Government Policy and Actions 2017'.

1.6 The Study's Question

Generally, research questions are useful in as much as they ask questions that can be linked directly with a study's objectives. Research questions are mostly derived from the aim and objectives of the study and are generated from the research problem. Therefore, a research question helps narrow the focus on researchable areas within the study's scope.⁸⁸ Consequently, the study's problem statement, *heading 1.4*, and the aim and objectives, *section 1.5*, have raised a broad spectrum of questions that this study will seek to answer. As such, the principal question addressed in the study is:

"How appropriate and effective are the design and enforcement of Nigeria's anti-gas flaring law and policy regimes?"

1.7 Theory and Concept of the Study

This study views the phenomenon from socio-legal perspectives, and it is highly recommended that a researcher conducting socio-legal research has a working knowledge and guidance of law theories and concepts, just as sociologists and political scientists are also expected to be familiar with sociological and political theories. Theory and concept guide research paths and offer the foundation for establishing credibility. Though these terms seem similar, they are slightly different in concept and their roles in the research inquiry. Whereas a theoretical framework provides a general or broader set of ideas within which a study belongs. The conceptual framework refers to a researcher's specific or narrower ideas in their study⁸⁹.

Nevertheless, both frameworks make research findings more meaningful and acceptable to the research field's theoretical constructs and ensure generalisability⁹⁰. They assist in stimulating research while ensuring the extension

⁸⁸ John W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (4th edn, SAGE publication 2014), Chapter 7 at 129.

⁸⁹ Dickson Adom et al, 'Theoretical and Conceptual Frameworks: A Mandatory Ingredients of a Quality Research' (2018) 7(1) *International Journal of Scientific Research*

⁹⁰ Ibid

of knowledge by providing direction and stimulus to the research inquiry. Imenda overemphasizes that both the theoretical and conceptual frameworks give life to research⁹¹. Consequently, unless otherwise stated, the reference hereunder will generally be a theoretical framework because the framework consists of concepts and, with their definitions and reference to relevant scholarly literature, the existing theory used for one's study⁹².

1.7.1 Justification

Ideally, the theoretical framework justifies the research question by showing how the question arises from the gaps or tensions in existing research. Thus, it supports a descriptive or explanatory question, advancing possible explanations or causes that need to be investigated in empirical work⁹³. However, in legal research, theoretical frameworks are not often addressed; even if they are, it is generally in the context of methodological discussions⁹⁴. This is because legal research is generally driven by current doctrinal debates or legal practice developments. The mere fact that there is a problem in the current state of positive law is enough justification for doing research⁹⁵. This argument has led some scholars like Westerman to argue implicitly that the theoretical framework for a legal scholarship is the current legal system itself⁹⁶. Other scholars like Vranken contend that it is broader than the legal system and, thus, should have a perspective on the legal system⁹⁷. Consequently, whatever viewpoint one decides to agree with, it is now common that legal researchers enjoy the guidance

⁹¹ Sitwala Imenda, 'Is There a Conceptual Difference Between Conceptual and Theoretical Frameworks?' (2014) 38(2) *Journal of Social Science*:185-195

⁹² Richard A. Swanson, *Theory Building in Applied Disciplines* (San Francisco, CA: Berrett-Koehler 2013) page 1 -3

⁹³ Sanne Taekema, 'Theoretical and Normative Framework for Legal Research: Putting Theory into Practice' (2018) *Law and Methods* DOI 10.5553/REM/.000031

⁹⁴ Ibid

⁹⁵ Ibid

⁹⁶ Pauline Westerman, (2011). 'Open or autonomous? The debate on legal methodology as a reflection of the debate on law'. In Mark Van Hoecke (Ed.), *Methodologies of legal research: Which kind of method for what kind of discipline?* (Oxford: Hart) pp. 87-110.

⁹⁷ J.B.M Vranken, J.B.M. (2011). 'Methodology of legal doctrinal research: A comment on Westerman'. In Mark Van Hoecke (Ed.), *Methodologies of legal research: Which kind of method for what kind of discipline?* (Oxford: Hart) pp. 111-121

of a theoretical framework, especially when the research approach is socio-legal and the researcher intends to gather empirical data, among others⁹⁸.

A socio-legal study is an interdisciplinary approach to analyses of the law, legal phenomena, and relationships between these and broader society. Both theoretical and empirical work is included in the socio-legal study. The perspectives and methodologies in socio-legal studies are drawn from the humanities and the social sciences⁹⁹. Galligan provides two ways in which legal theory could be relevant to socio-legal research. Firstly, it can test the factual basis on which theories are based. Secondly, a researcher can rely on the *concepts and ideas* of legal theory in making critical analyses and framing questions for the research.¹⁰⁰ Therefore, taking the Galligan suggestion in context, Taekema recommended that a more concrete way to discover a framework in legal research is to look for policy aims because policies are the point of departure for legal reform¹⁰¹.

Consequently, in the context of this study, it is primarily essential to stress that the policy aim of Nigeria's anti-gas flaring legal regime was used as building blocks for a theoretical framework¹⁰². The study adopted Friedman's *concept of legal effectiveness*, which suggested law can only be 'effective' if it achieves the goals (i.e., policy aims and purposes) for which it was adopted¹⁰³. The concept was

⁹⁸ Lisa Webley, 'Qualitative Approaches to Empirical Legal Research' in Peter Cane and Herbert M. Kritzer, *The Oxford Handbook on Empirical Legal Research* (Oxford University Press 2010) 926 and also Lisa Webley, 'Stumbling blocks in empirical legal research: Case study research', (2016) *Law and Method*

⁹⁹ As Coglianesse and Coursy (n 64) strongly argued, since environmental regulation in general normally concerned relationship between individual, law and society certainly, this makes it substantively an important research area more appropriate for socio-legal research.

¹⁰⁰ Denis J. Galligan, 'Legal Theory and Empirical Research', in Peter Cane and Herbert M. Kritzer, *The Oxford Handbook of Empirical Legal Research* (Oxford University Press, 2010) 976 -1001.

¹⁰¹ Ibid Taekema (n 93). Thus, there is always an explicit or implicit aim and purpose behind an existing law or a new law. These aims or purposes are sometimes integrated into the legal text or become part of the standard interpretation in case law.

¹⁰² The Nigeria's policy objective - 'ending gas flaring and unlocking gas potentials'.

¹⁰³ Thus, for clarity, it is pertinent to state here that in socio-legal studies, the study of legal effectiveness differs from one another. At one extreme is 'impact study', and 'implementation study' at the other. A socio-legal researcher may undertake an impact study where a discernable statute or a case law that is unambiguously declarative of a

adopted to provide valuable insights, guidance, and understanding in assessing the effectiveness of Nigeria's anti-gas flaring legal regime. Thus, a combined critical evaluation of the regime's aim, along with the concept of effectiveness as a guiding theory, may lead to valid and dependable research findings.

1.7.2 Definition of the Concept

The definition of the concept of legal effectiveness has been the subject of intense debate among various disciplines. Legal theorists, political scientists, sociologists, administrative scientists, and economists have all added their views to this debate. However, regardless of this complexity, socio-legal scholars have opined that it is critically essential to evaluate the effectiveness of a legal regime before introducing a new one or amending an existing one, especially at a time when policymakers appear to be fashioning laws arbitrarily that are ineffective, purely symbolic, or even supportive of status quo¹⁰⁴. Researching the literature on the term 'effectiveness' reveals that it is sometimes substituted for terms such as 'efficiency', 'efficacy', 'competency', 'cost-effectiveness', and 'evidence-based practice'.¹⁰⁵ Therefore, to acknowledge diverse perspectives on the concept, especially since this study is socio-legal, the study reviews and conceives a definition of legal effectiveness that draws mainly upon socio-legal theories and other related disciplines, all of which provide the relevant elements for conducting the research.

From political scientists' point of view, the law is how the government or political authority organises itself. Therefore, it is not only the product of politics but also

specific law or policy is the 'measuring rods'. However, where that statute or case law is considerably more ambiguous, or its impact may not be measured, socio-legal research may undertake "implementation study". Thus, the study chose to round between the "implementation" and "impact study" of the anti-gas flaring regime in order to evaluate the degree of the design and enforcement of the regime, as well as compliance by all actors. As Black argued, when the core meaning of a statute is clear, "impact study" is well appropriate to show whether the law has been enforced. See Donald J. Black, 'The Boundaries of Legal Sociology' (1972) 81 (1086) *Yale Law Journal*

¹⁰⁴ Verena Zoppie, *Anti-Money Laundering Law: Socio-Legal Perspectives on the Effectiveness of German Practices* (International Criminal Justice Series, 2017) Springer, 10

¹⁰⁵ Lawrence M. Friedman, *The Legal System: A Social Science Perspective* (Russel Sage Foundation, 1975) 45 and Erol Digiusto, 'Effectiveness of Public Legal Assistance Services' (2012) Discussion Paper 16 *Justice Issues*

constitutive of politics¹⁰⁶. Underdal posited that neither the legal nor the political system could be understood or studied in isolation.¹⁰⁷ Therefore, legal effectiveness from this perspective is straightforward and depends on the broader political order or regime category. Underdal pointed out that the effectiveness of a particular order or regime depends upon how well that order or regime achieves the goals it was designed to accomplish. An order is minimally effective if it has a positive causal impact on these goals.¹⁰⁸ Schmelzle argues that the more effective a political order or establishment is, the more legitimate it is, and the more legitimate it is, the more effective it becomes.¹⁰⁹

Schmelzle suggests that analysis of the effectiveness of legal order should belong to a broader category of policy analysis and that the policymaking process should be rational and geared towards achieving its stipulated objectives¹¹⁰. Therefore, typologies of policy analyses geared towards revealing the effectiveness of the legislation and interpreting tension between legislators, enforcers, and other players are considered while conducting this research. This study focuses on investigating the effectiveness of the anti-gas flaring legal regime. Thus, its effectiveness cannot be separated from the impact of Nigeria's whole environmental policy relating to hydrocarbon activities.

While adding their voices to the debate, Administrative Scientists also use the *concept of efficiency* instead of effectiveness. For Leisner, while effectiveness looks at the outcome of applying the law, efficiency refers to the optimal relationship between the goals achieved and the means employed¹¹¹. Another type of efficiency, according to Leisner, is 'efficiency regardless of the purpose', which refers to entire legal frameworks and not only individual statutory provisions. Thus, a regime is efficient if it functions optimally, notwithstanding its effects,

¹⁰⁶ Arild Underdal, 'The Concept of Regime Effectiveness' (1992), 27(3) *Cooperation and Conflict* 227 - 240.

¹⁰⁷ Ibid

¹⁰⁸ Ibid

¹⁰⁹ Cord Schmelzle, 'Evaluating Governance: Effectiveness and Legitimacy in Areas of Limited Statehood', Paper Presentation at Freie Universität Berlin, *SFB Governance Working Paper Series No. 26 of November 2011*.

¹¹⁰ Ibid

¹¹¹ Ibid Zoppie (n 104) pp 13 culled from Leisner W (1971) *Effizienz als Rechtsprinzip*. Mohr Siebeck, Tübingen

because its purpose consists of its mere existence¹¹². While not exhaustive, any opinion on the efficiency of law according to this perspective also provides information on the effectiveness. Therefore, assessments of the efficiency of the anti-gas flaring regimes contribute to the broader socio-legal evaluation of effectiveness.

Evaluating the concept of legal effectiveness from the economic point of view could also have added advantages, even though many non-economist scholars view economic analysis of the law with skepticism.¹¹³ This has become necessary because of the environmental regulations' connection with the economy of oil-producing nations.¹¹⁴ For instance, the economy of many oil-producing developing nations depends mainly on the hydrocarbon they produce. Posner has argued that the economic analysis of legal effectiveness is based on the so-called 'efficiency criterion.' The criterion emphasises that the primary objective of a legal instrument must be efficient and that the rules must be assessed for their ability to provide incentives to maximise society's aggregate benefits.¹¹⁵

While from a socio-legal perspective, one of the most common definitions of legal effectiveness by socio-legal scholars is the one advocated by Friedman¹¹⁶. Friedman defines law as 'effective' only if it achieves its adopted goals. He defines effectiveness as the 'power to make an intended result occur' or 'the capacity to produce effects'.¹¹⁷ Similarly, Allot aligns with Friedman when viewing the effectiveness of law as to whether a particular provision fulfils its purposes.¹¹⁸ However, Geiger, a leading socio-legal scholar, looks at it from the perspective of compliance rates. For Geiger, the effectiveness of a law is measured quantitatively. While employing a mathematical formula, Geiger concludes that the law is effective only if the subjects comply with it and ineffective when they do otherwise

¹¹² Ibid see also Mauricio Garcia-Villegas 'Symbolic Power Without Violence? Critical Comments on Legal Consciousness Studies' (2003) 16 (4) *International Journal for the Semiotics of Law* 363–393.

¹¹³ Louis Kaplow and Steven Shavell, 'Economic Analysis of Law', in A.J. Auerbach and M. Feldstein, *Handbook of Public Economics*.

¹¹⁴ Anna Rita Germani, 'Environmental Law and Economics in U.S. and E.U.: A Common Ground? (2004), *Centre for Financial and Management Studies, SOAS*.

¹¹⁵ Richard A. Posner, *Economic Analysis of Law* (Little, Brown Boston 1972).

¹¹⁶ Ibid Friedman (n 105) pp 45.

¹¹⁷ Ibid

¹¹⁸ Antony Nicholas Allot, *The limits of law* (Butterworths Law, 1980) pp. 28 & 233.

and continue the proscribed conduct or behaviour.¹¹⁹ Nevertheless, Geiger's view has been criticised by scholars because the theory does not provide other variables that can influence subjects' behaviour.

For instance, in rejecting Geiger's theory, Friedman argues that some laws are respected not because they are perceived as being right but because there are no other alternatives. It is better to have them than to have no rules at all.¹²⁰ Therefore, a high compliance rate might not mean that the law is effective, so a high deviance rate does not necessarily make the law ineffective.¹²¹ Similarly, Black and Noll argue that frequent rule violations are not indisputable evidence that the rule has not had any impact, and thus, full compliance does not necessarily translate to a higher impact.¹²² Blankenburg also argues that partial non-compliance might lead to achieving the functions of a legal act better than full compliance in some instances, as some rules do not achieve their social goals only through compliance.¹²³ For instance, traffic rules imposing speed limits aimed at reducing or eliminating car accidents may sometimes be ineffective, especially when compliance by all the drivers may cause many more accidents or slow traffic. Therefore, those rules would be ineffective due to their inability to demonstrate their social functions¹²⁴.

Friedman further argues that compliance and deviance, as advocated by Geiger's theory, may be controversial when applied to environmental law discipline because Geiger defines the concept as the 'two poles of a continuum. Deviance and compliance do not exist as a concept; instead, they are merely social definitions of what is compliant and what is deviant, particularly concerning environmental law, where the concept may be problematic.¹²⁵ For instance, as

¹¹⁹ Theodor Geiger, *Vorstudien zu einer Soziologie des Rechts*, 1987, culled from Zopper *ibid* p10. Thus, compliance and deviance behaviour are the processes through which, and the conditions under which, a sanction or penalty may be applied to particular deviance categories.

¹²⁰ *Ibid* Friedman (n 105).

¹²¹ There are instances where higher compliance frustrates the objectives of the law, as for example cases of high compliance of traffic rules where it causes an accident.

¹²² Donald J. Black, 'The Boundaries of Legal Sociology' (1972) 81 (1086) *Yale Law Journal*. *And* *Ibid* Zoppie (n 104).

¹²³ Erhard Blankenburg, 'Research Concept for the Study of Implementation' (1985) 2(2/3) *Journal of Sociology of Law*.

¹²⁴ *Ibid*

¹²⁵ *Ibid* Friedman (n 105) pp 47.

Friedman has tried to suggest, the reality is that violation of gas flaring prohibition law may not necessarily be translated as deviant behaviour. This is particularly true when flaring becomes necessary for operational or other recognised and acceptable purposes (*see section 1.2.1*). Therefore, ideas of what constitutes deviance could be understood from different perspectives and could come from many actors' points of view. For example, it could come from communities who are the victims, the government as policymakers; the regulators who impose the law; or the oil companies who are the operators.

Therefore, considering the arguments above¹²⁶, it could be suggested that an evaluation of the effectiveness of any legal rule cannot be limited to deviance and compliance alone, especially regarding environmental regulations of the upstream sector. The sector is overly complicated and characterised by a high uncertainty about whether the rule could encourage or hamper production. This would affect the policy objectives for which the law was established. For example, the central objective of the new Nigeria Gas Flare Regulations 2018 is 'to minimise the environmental and social impact caused by flaring natural gas and *create social and economic benefits from gas flare capture*'. Thus, the objective of the law is not only to minimise the flaring but also to create economic benefits for the country. Therefore, Friedman's perspective of legal effectiveness could best fit the study on environmental regulations.

1.7.3 Application of the Concept

This section contends that, in the context of evaluating the effectiveness of Nigeria's anti-gas flaring regimes, effectiveness refers to a causal link between an activity and an outcome. As Underdal also suggested that it is common practice to analyse the effectiveness of environmental regimes in terms of the triad of outputs, outcomes, and/or impacts.¹²⁷ Outputs include rules of procedure, regulatory measures, and administrative apparatus created to implement a regime

¹²⁶ On whether the effectiveness of a law would depend upon compliance and deviance rate.

¹²⁷ Arild Underdal, 'Determining the Causal Significance of Institutions: Accomplishments and Challenges' in O.R. Young, L.A. King, and H. Schroeder eds., *Institutions and Environmental Change* (2008, Cambridge: MIT Press) 49-78.

or, as Mitchell put it, to move it from paper to practice.¹²⁸ Outcomes are changes in behaviour on the part of those subject to a regime's provisions that can be attributed in whole or part to the regime's operation.¹²⁹ While impacts include the contributions that a regime makes to solving or at least mitigating the problem that motivated the relevant actors to create the regime in the first place.¹³⁰

Likewise, Digiusto suggested that the key feature of the definition of effectiveness is that it refers to a causal link between an intervention and the desired outcome, whereby it is the intervention, rather than any other factor, that has made the difference¹³¹. For instance, an intervention is effective if it directly increases the likelihood that the desired outcome will occur and if it does this independently of the effects of other concurrent factors. It may also potentially increase the likelihood of that outcome occurring¹³². Therefore, just as the desired outcome or the aim of the intervention is a vital part of the definition of effectiveness, it is also central to the evaluation of the effectiveness of the Design and enforcement of Nigeria's anti-gas flaring law and policy regimes. For this reason, the first step in evaluating the effectiveness of a particular intervention (in such cases, anti-gas flaring laws, regulations, and policies) is to be clear about the project's aim — what it is meant to achieve. Nigeria's policy objective of ending gas flaring and unlocking gas potentials is central in such a case.

However, it is submitted that evaluating a regime's outputs is more straightforward than evaluating its impacts or, in other words, its contributions to problem-solving. Therefore, to understand its impact and avoid any challenge is to ask whether Nigeria's regimes have achieved its elusive objective of ending gas flaring. The answer is simply no; thus, this would make it possible to move beyond the documentation of outputs to investigate the roles that regimes play in solving

¹²⁸ Ronald B Mitchell, *Intentional Oil Pollution at Sea: Environmental Policy and Treaty Compliance* (1994, Cambridge: MIT Press).

¹²⁹ Oran R Young, *The Effectiveness of International Environmental Regimes: Causal Connections and Behavioral Mechanisms* (1999 Cambridge: MIT Press).

¹³⁰ Ronald B Mitchell, 'Evaluating the Performance of Environmental Institutions: What to Evaluate and How to Evaluate It?' in O.R. Young, L.A. King, and H. Schroeder eds., *Institutions and Environmental Change*. (2008, Cambridge: MIT Press) 79-114

¹³¹ Erol Digiusto, 'Effectiveness of Public Legal Assistance Services' (2012) Discussion Paper 16 *Justice Issues*

¹³² Ibid

the unabated gas flaring in the country. Then, attention can be given to identifying what needs to be measured to determine whether that aim has been achieved. In doing so, a model provided by GGFRP was employed to measure the regimes (see *section 2.4*).

Moreover, a distinction between *effectiveness* and *appropriateness* is a common issue that needs to be addressed in this context. This is because it is one thing to establish that a regime is effective in the sense that there is a causal connection between the operations of the arrangement and various outputs, outcomes, and impacts. It is another matter to evaluate the results in terms of well-defined criteria of evaluation or performance standards.¹³³ A significant understanding that has emerged from the analysis of causal mechanisms is that an environmental regime can affect outcomes and produce impacts (effectiveness) through the operation of what has become known as the logic of appropriateness and the logic of consequences¹³⁴.

While according to March and Olsen, the logic of appropriateness points to various mechanisms that influence behaviour in ways that are hard to represent in utilitarian terms (in the context of this study, regulatory regimes). The logic of consequences, by contrast, directs attention to the behaviour of rational actors who find themselves trapped in collective-action problems like the tragedy of the commons (in the context of this study regulatory governance - i.e., institutions). Thus, as Keohane suggested, the essential role of institutions is to influence the actors to alter their behaviour by deploying some combination of incentives (rewards) and punishments (threats)¹³⁵. Young strongly argued that combining these approaches under which collective action and social-practice models operate

¹³³ Ibid Mitchell (n 130) and Underdal (n 106 and 127)

¹³⁴ James G. March and Johan P. Olsen, 'The Institutional Dynamics of International Political Orders' (1998) 52 *International Organization* 943-969.

¹³⁵ Robert O. Keohane, *After Hegemony: Cooperation and Discord in the World Political Economy*. (1984, Princeton: Princeton University Press)

in addressing environmental issues could best be described as *appropriate and effective*.¹³⁶

Consequently, it is submitted that it is only through a study that allows for precise evaluation and assessment of other significant influences on outcomes that effectiveness and appropriateness can be accurately assessed. For this reason, this study that involves appropriate and effective anti-gas flaring measures suggests that appropriateness is about the adequacy of the regimes while effectiveness is about evaluating whether the regimes achieve their elusive objective of ending gas flaring and unlocking gas potentials as their intended outcome. Therefore, it is primarily essential to state that the policy aim of Nigeria's anti-gas flaring legal regime was used as a building block for choosing a theoretical framework for the study. Friedman's concept of "Legal Effectiveness" was selected as a concept to guide the critical analysis. This followed a contextual examination of the arguments regarding selecting frameworks for legal research.¹³⁷

The concept was adopted to provide valuable insights, guidance, and understanding in assessing the *appropriateness and effectiveness* of Nigeria's anti-gas flaring law and policy regimes. Therefore, the researcher believes that a combined critical evaluation of the regime's aims along with the concept of legal effectiveness as a guiding theory may lead to valid and dependable research findings. Digiusto also advised that a researcher should be cautious in selecting an appropriate methodology, as not all research methodologies have the precision required to evaluate effectiveness¹³⁸. Thus, the methodology selected is explained briefly below, but the strengths and weaknesses of different methodologies in measuring effectiveness will be discussed in *chapter five*.

¹³⁶ Oran R. Young, *The Institutional Dimensions of Environmental Change: Fit, Interplay, and Scale*. (2002 Cambridge: MIT Press) and Oran R. Young, 'Are Institutions Intervening Variables or Basic Causal Forces? Causal Clusters vs. Causal Chains in International Society,' in M. Brecher and F. Harvey eds. *Millennium Reflections on International Studies*. (2002 Ann Arbor: University of Michigan Press) 176-191.

¹³⁷ Pauline Westerman, (2011). 'Open or autonomous? The debate on legal methodology as a reflection of the debate on law', in Mark Van Hoecke (Ed.), *Methodologies of legal research: Which kind of method for what kind of discipline?* (Oxford: Hart) pp. 87-110.

¹³⁸ Ibid Digiusto (n 131)

1.8 Methodology and Methods

As the study views the phenomena from a socio-legal point of view. The perspectives and methodologies in this study were drawn from the humanities as well as the social sciences.¹³⁹ Thus, the chosen methodology for this study was primarily a qualitative approach to sociolegal research. Qualitative sociolegal research is mostly used in an attempt to capture and categorise sociolegal phenomena and their meaning. The methods for gathering data include a library-based study of legislation, regulations, national policies, programmes, and institutions active in combating gas flaring in Nigeria and other selected jurisdictions. Additionally, a semi-structured interview was also conducted to gather participants' views, and the data collected were analysed using thematic analysis. While supporting this approach, Prof. Webley suggested that a combination of interview and document analysis in sociolegal legal research is most likely to answer the research questions effectively instead of selecting one single tool (*Chapter five* contains a detailed discussion).¹⁴⁰

There are two main reasons why the researcher chose the sociolegal over the doctrinal approach. First, the study's aim involves the examination of a framework problem and challenges aimed at investigating phenomena with the firm objective of identifying reasons behind specific unfriendly behaviour. Therefore, a qualitative socio-legal approach would be relevant for this purpose. As Coglianese and Coursy argue, since environmental regulation concerns the relationship between the individual, law, and society, this undoubtedly makes it an area more appropriate for sociolegal and empirically driven research.¹⁴¹ Secondly, the study's primary question seeks to understand the appropriateness and effectiveness of the laws and policy regimes in ending gas flaring. Therefore, Moore argued that the sociolegal approach is best suited for this qualitative question which borders on

¹³⁹ As Coglianese and Coursy (n 64) strongly argued, since environmental regulation is general normally concerned with the relationship between individual, law and society, this makes it an important research area more appropriate for sociolegal research.

¹⁴⁰ Lisa Webley, 'Qualitative Approaches to Empirical Legal Research', in Peter Cane and Herbert M. Kritzer, *The Oxford Handbook on Empirical Legal Research* (Oxford University Press 2010) 926.

¹⁴¹ Coglianese and Coursy (n 64).

the nature of law and how it affects and is viewed in society.¹⁴² Coglianesi and Coursy argue that this methodology would be more apt to induce a behavioural change in the businesses targeted by such regulations (see *Chapter five* for detailed discussions).¹⁴³

Furthermore, although the study has drawn from other jurisdictions' experiences, there is no full-scale comparative analysis of Nigeria's anti-gas flaring regimes with a particular jurisdiction. Rather there are occasional references to what is obtainable in jurisdictions like Norway, Alberta-Canada, the UK, and the USA intending to identify the best practices, differences, and lessons that may be drawn from the experience of such jurisdictions. The full-scale comparison was avoided because, as the World Bank suggested, the gas flaring regime is a product of specific circumstances and thus cannot simply be copied from one country to another¹⁴⁴. Nevertheless, because of some level of uniformity across the gas flaring nations, studying these jurisdictions' regimes would help the researcher evaluate Nigeria's regimes' strength and weakness which is critical to achieving one of the research objectives. Hence, in drawing out possible lessons from the evaluation, consideration was given to the consequences of legal transplant bearing in mind that Nigeria is operating on a different legal system, culture, and political system from those countries referred to.

Consequently, it will be safe to say that although the study seeks to review other jurisdictions' legal and policy regimes because of the level of uniformity in the gas flaring nations' regulations. This does not in any way envisage comparative legal research. This is because the theory of legal transplant is not and may never be a possible solution to issues faced by the gas flaring nations. The main reason this study is not choosing comparative legal research or legal transplant lies in one of the earlier arguments that the gas flaring regime is a product of specific circumstances and, thus, cannot be copied from one country to another.¹⁴⁵

¹⁴² S.F Moore, 'Law and Social Change: The Semi-Autonomous Social Field as an Appropriate Subject of Study' (1973), 7 *Law and Society Review* 719-746.

¹⁴³ Coglianesi and Coursy (n 64).

¹⁴⁴ The World Bank 2009 (n 1)

¹⁴⁵ Ibid

1.9 Significance and Originality of the Study

Evaluating the effectiveness of a given environmental legal system as a whole or in part is an integral component of broader government policy cycles and planning processes.¹⁴⁶ Therefore, the Nigerian Government recognises that gas flaring is an environmental problem. As such, the country has lately devised a policy for ending gas flaring and unlocking gas potential by 2030. Dovers argues that sound environmental policy processes must be based on a recurrent process with four significant stages: problem-framing, policy design, policy implementation, and policy monitoring and evaluation.¹⁴⁷ Nevertheless, an integral part of the more comprehensive policy process and planning cycle is policy implementation, monitoring, and evaluation. Therefore, evaluating the appropriateness and effectiveness of Nigeria's anti-gas flaring law and policy regimes would be significant and would make an essential contribution to the legal system, continually evolving in response to new information. Just as the environment, society, and life are continuous and constantly changing, this is an ongoing and challenging task with no certain ending.

Furthermore, laws, regulations, and policies are currently made explicitly to treat routine flaring in Nigeria. However, sociolegal studies into the appropriateness and effectiveness of these instruments are scarce. The current study maintains that there appears to be a vacuum in terms of literature explicitly applying critical evaluations and assessments of Nigeria's anti-gas flaring law and policy regime as a whole. Consequently, it is the researcher's opinion that a holistic study of this nature is required to investigate and review each segment of the regime individually and collectively. In other words, the legislative, fiscal, contractual, and regulatory frameworks and policy measures need to be studied together since each aims to achieve a similar objective: ending gas flaring and unlocking the country's gas potential. As suggested by the World Bank, designing an appropriate

¹⁴⁶ In the study context, a 'policy' is a position taken and communicated by the Government that recognises a problem and states, in general, the measure to tackle such a problem.

¹⁴⁷ Stephen Dovers, *Environment and Sustainability Policy: Creation, Implementation and Evaluation* (Federation Press, 2005).

flaring regime requires a comprehensive cooperative approach that encompasses both punitive and incentivising measures.¹⁴⁸

Likewise, there is currently limited empirical research investigating the appropriateness of the design and enforcement of Nigeria's anti-gas flaring legal regime. Conversely, a fundamental goal of the empirical study of the design and enforcement of environmental law has been to enlighten how the design of a new law or the amendment of the existing one by the appropriate authorities would sustain environmental regulatory compliance.¹⁴⁹ The researcher believes that empirical research is needed to critically review and evaluate the different types of law, regulatory instruments, and enforcement strategies that could trigger law-making and enforcement strategy reform. In this regard, Coglianese and Coursy suggest that empirical legal research could offer such a precise and clear reform agenda rather than any doctrinal research for environmental regulations. Therefore, a recommendation for legal reform is one of the ultimate objectives of this study (*see section 1.5 above*).

¹⁴⁸ The World Bank 2004 (n 61).

¹⁴⁹ Coglianese and Coursy (n 64).

1.10 Plan of the Study

The study plan outlines the structure of the thesis from the introduction to the conclusion and is broken down into seven chapters (see *figure 1.3* below). The current chapter (i.e., *chapter one*) presents an overview of pertinent issues relating to global gas flaring, its impact on the global environment, and the way forward, thus giving the general background of the study. The study's aim, objectives, and significance are also discussed in the chapter. The chapter further explains why this study is essential and outlines the study's originality and significance of the study to the body of knowledge. The chapter also briefly discusses the theoretical framework, methodology, and methods used in the study.

Chapter two presents a general review of air quality and atmospheric emissions regulation resulting from oil and gas operations around the globe. This chapter reviews the international and regional frameworks for emissions control. The chapter also discusses international voluntary organisations active in global gas flaring reduction. As such, the constituents of an appropriate and effective gas flaring regime based on the model provided by GGFRP are discussed. A review of three different areas, law, policy, and institutions, are also discussed in this chapter. The review is used to meet objective 1 of the study. In addition, the chapter informs the review process relating to chapter three, which deals chiefly with Nigeria's anti-gas flaring regime.

Chapter three critically reviews Nigeria's anti-gas flaring law and policy regimes. The chapter thoroughly reviews the laws and policies explicitly devised for combating gas flaring in the country. It highlights the various reforms that have taken place since the start of the petroleum operation regarding routine flaring. This is done with a general discussion of Nigeria's legislative, fiscal, contractual, and regulatory frameworks and policies governing gas flaring. The chapter also reviews the enforcement of the regime and questions its effectiveness. It finally highlights the successes and challenges facing the country's law and policy regimes. The chapter contributes to meeting the second objective set for the study. It also helps to frame the interview questions used in the study.

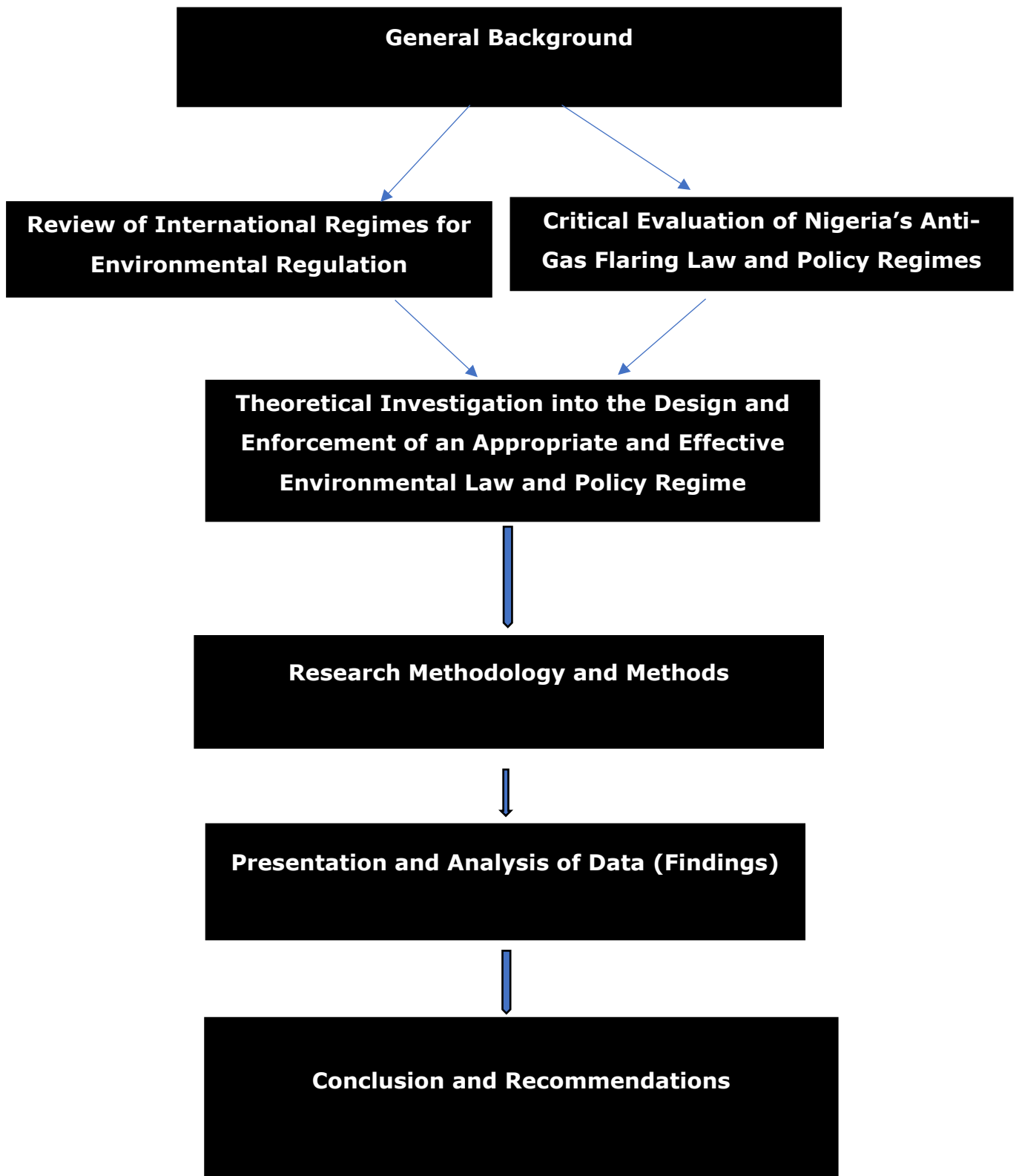
Chapter four reviews the various tested approaches for designing and enforcing appropriate and effective environmental law and policy regimes based on available global models and the general factors influencing the design of an environmental regime. The chapter similarly explores an alternative approach to designing and enforcing an appropriate and effective regime. This is followed by the reasons for adopting a suitable approach for designing and enforcing an ideal anti-gas flaring regime. Justification for not adopting other approaches which could be used as alternative regimes is also discussed in this chapter. This review is used to meet objective 3 of the study as informed by the review process relating to chapter three.

Chapter five presents the research methodology and methods of the study. The chapter discusses the conceptual framework adopted for the study. It begins with an in-depth review of the concept of legal effectiveness, highlighting its meaning and application to the study. The justification for not adopting other concepts is also given. The chapter discusses the philosophical assumptions, research methods, and instruments chosen for the study. It also discusses the analysis package used in the study.

Chapter six presents the interview responses and discusses the analysis of the interview-based data collected using thematic analysis with the help of Nvivo. The respondents' overall view of each variable is analysed and interpreted accordingly. A summary of the findings and a discussion of the results are provided in this chapter. The chapter is designed to meet objective 4 of the study.

Chapter seven, the concluding chapter, concludes the thesis by summarising the study's overall findings. Recommendations were given to meet objective 5 of the study. The chapter also discusses the significant limitations of the study and suggests possible future research in the area. The chapter finishes by analysing the contribution of the study, and the researcher's final thought is given.

Figure 1.3 - Thesis Structure



CHAPTER TWO – The Review of International and Regional Frameworks on Air Quality Standard and Atmospheric Protection – The Genesis of Nations' Anti-Gas Flaring Law and Policy Regimes?

2.1 Introduction

The atmosphere is the largest single natural resource and the most vital to the survival of all living things. Therefore, the degradation of the atmosphere should be a matter of concern to everyone, especially the United Nations, as a single global body established to achieve cooperation in solving global problems. Nevertheless, it seems that there is still no coherent legal framework explicitly addressing the protection of the atmosphere. Even though there are international conventions, agreements, and commitments to protect our global environment in general, few affect the atmosphere. Although it is not in the scope of this chapter to present an extensive detailed review of all existing instruments, the chapter focuses on a critical review of the international and regional regimes related to hydrocarbons-related greenhouse gases (GHG), encouraging oil-producing nations to reduce emissions.

Against this background, the chapter first discusses applicable international and regional instruments relating to air quality and atmospheric protection. The chapter critically evaluates the relevance of these instruments to the practice of routine flaring to see if they confer an obligation on oil-producing countries, Nigeria included, to combat the menace of AG flaring. Secondly, the chapter then examines global cooperation and initiatives aimed at reducing gas flaring, headed by multiple parties. Thirdly, the chapter then considers appropriate legal and policy regimes currently in use in other jurisdictions that are best international practices. Thus, the consideration applies in assessing Nigeria's anti-gas flaring regimes to ascertain if they comply with international best practices. In essence, chapter two provides a platform to critically evaluate Nigeria's response as a signatory of the said instruments and initiatives in terms of the domestic legislation, policy, and institutional arrangements to eliminate gas flaring in the next chapter (i.e., chapter three).

2.2 The International Framework on Air Quality Standard and Atmospheric Protection and Sustainable Development

Generally, while there are some international instruments on environmental protection, neither a single international nor regional instrument is explicitly adopted to protect atmospheric emissions from routine flaring. This makes the global effort to fight gas flaring very difficult, if not impossible. According to the few instruments relevant to atmospheric protection in general, nations are committed to protecting the atmosphere by exercising due diligence in taking appropriate measures, under the applicable rules of international law, to prevent, reduce, or control atmospheric pollution and degradation.¹⁵⁰ Sand and Wiener suggest that though there is no international instrument explicitly in place to ensure atmospheric protection from gas flaring emissions, an inference can sometimes be drawn from existing international instruments as conferring an obligation on oil-producing countries to reduce emissions from petroleum activities within their jurisdiction because of the adverse effects on the environment and impact on the climate system.¹⁵¹ Therefore, the relevant instruments are examined below to see whether they obligate oil-producing countries to end gas flaring emissions, though other early instruments could also serve as the genesis of later instruments.

2.2.1 The Genesis of the Regime on Air Quality and Atmospheric Protection

The early international instruments adopted mainly concerned conserving valuable species, such as fisheries and birds. There is little attention to natural resource extraction activities and their environmental impacts. As Gao has rightly observed, this is not to say that the earlier instruments are irrelevant, but their application to petroleum activities and their effect on air quality standards is limited.¹⁵² Thus, the international focus on environmental protection could be argued to surface

¹⁵⁰ Peter H. Sand and Jonathan B. Wiener, 'Towards a New International Law of the Atmosphere?' (2016), 7 *Goettingen Journal of International Law* 195-223.

¹⁵¹ Ibid.

¹⁵² Zhiguo Gao, *Environmental Regulation of Oil and Gas* (Kluwer Law International, 1998) 9.

with the famous arbitral award in the classical case of *Trail Smelter Arbitration*.¹⁵³ The arbitral tribunal held that "no state has the right to use or permit the use of its territory in such a manner as to cause injury or fumes in or to the territory of another or the properties or persons therein".¹⁵⁴ The award resulted from an inference from the doctrine of "*sic utere tuo ut alienum non laedas*" (meaning 'use your property in such a way that it does not affect the use of another's property').

The decision in *Trail Smelter* is highly regarded as a landmark decision in the history of environmental law and is considered the basis for the subsequent development of international environmental law. It has become a rule of customary international law.¹⁵⁵ Perez argues that subsequent to the adverse nature of the GHG emissions released during flaring and its impact on climate change, the decision in *Trail Smelter* can be argued to impose an obligation on oil-producing countries to minimise or eliminate gas flaring.¹⁵⁶ This suggestion can also be rational because emissions and other pollutants sometimes transcend into neighbouring jurisdictions and avoiding causing transboundary harm to neighbours (an obligation under international customary law) can be very difficult. Therefore, *Trail Smelter* can be argued to oblige oil-producing nations to end routine flaring.¹⁵⁷

The United Nations (UN) later adopted the development brought by *Trail Smelter* in the 1972 conference popularly known as the *Stockholm Declaration*.¹⁵⁸ The parties to the conference declared that "States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the

¹⁵³ *United States v Canada* (1941) RIAA III, p1905.

¹⁵⁴ International Court of Justice arbitral decision in *Trail Smelter's* case, *ibid*.

¹⁵⁵ Gao (n 152).

¹⁵⁶ Franz Xaver Perrez, 'The Relationship Between "Permanent Sovereignty" and the Obligation Not to Cause Transboundary Environmental Damage' (1996), 26 *Environmental Law J.* pp1190-1211.

¹⁵⁷ David B. Hunter, *International Environmental Law Sources, Principles, and Innovations* (1st edn Routledge Hand Book 2014) 124.

¹⁵⁸ Declaration of the United Nations Conference on the Human Environment, 16 June 1972.

limits of national jurisdiction".¹⁵⁹ This principle was seen as the first effort of the UN to incorporate environmental issues associated with the exploitation of natural resources into international frameworks. Although the declaration was not regarded as binding to international treaties for being within the 'international soft law' family, its impact on petroleum activities is highly felt and relevant.¹⁶⁰ Consequently, it could be suggested that it was not until 1979 that atmospheric emissions and climate change became an international issue and thus recognised as a serious environmental problem at an international level.

The World Climate Conference in 1979 further explored how climate change might affect human activities. It appealed to the United Nations to take necessary measures to prevent potential human-induced changes in climate that might be averse to the well-being of humanity.¹⁶¹ The conference also endorsed the establishment of the World Climate Programme (WCP) under the joint responsibility of the World Meteorological Organisation (WMO), the United Nations Environment Programme (UNEP), and the International Council of Scientific Unions (ICSU).¹⁶² Thereafter, intergovernmental conferences focusing on how nations could mitigate the impact of climate change were held between the 1980s and early 1990s. The conference participants included policymakers and environmentalists, and they addressed policy issues and global actions, among other subjects.¹⁶³ However, the conferences were conducted to review and consolidate the responsibilities placed upon the UNEP and the WMO under a joint panel - known as the Intergovernmental Panel on Climate Change (IPCC).¹⁶⁴

¹⁵⁹ Ibid Principle 21; see also Rio Declaration, Principle 2.

¹⁶⁰ Goa (n 152) 23.

¹⁶¹ World Climate Conference – A Conference of Experts on Climate and Mankind (WCC-1) Geneva, Switzerland 12-23 February, 1979.

¹⁶² Ibid.

¹⁶³ United Nations Environment Programme - Information Unit for Conventions (IUC) 'Climate Change Information Sheet 17 – The International Response to climate Change: A History'. Available at: < <https://unfccc.int/cop3/fccc/climate/fact17.htm> > accessed 21/0/2020. The key events were the Villach Conference (October 1985), the Toronto Conference (June 1988), the Ottawa Conference (February 1989), the Tata Conference (February 1989), the Hague Conference and Declaration (March 1989), the Noordwijk Ministerial Conference (November 1989), the Cairo Compact (December 1989), and the Bergen Conference (May 1990).

¹⁶⁴ Ibid: the IPCC was given the mandate to assess the state of existing knowledge about the climate system and climate change; the environmental, economic, and social impacts of climate change; and the possible response strategies.

Following a rigorous survey of the worldwide scientific and technical literature vetted by experts and government officials, the IPCC published its first assessment report. The report confirmed the scientific evidence for climate change due to human-induced activities and encouraged governments to base their policy decisions on the available information.¹⁶⁵ Even though the report contested whether the climate system is changing and whether the change is due to anthropogenic activities, it has influenced some decisions by policymakers and the general public. Likewise, the report became the basis for negotiations on the UNFCCC.¹⁶⁶

Therefore, it could be suggested that while the decision in *Trial Smelter* and the *Stockholm Declaration* only laid the foundations for contemporary environmental policy (the basis for the international regime), the Earth Summit at Rio de Janeiro that gave birth to the UNFCCC could be the starting point for the adoption of the first international legal regime, explicitly regulating emissions from petroleum activities. Thus, while recognising states' rights to exploit their resources, the participants at the summit declared that it must be conducted in such a manner as to reduce and eliminate "unsustainable patterns of production and consumption."¹⁶⁷ Consequently, the next two sections critically review the UNFCCC in line with the principle of sustainable development as the chosen legal tool to guide the analysis. It assesses the relevance of UNFCCC to emissions reduction and how the parties to the convention complied with their commitments to emission reduction.

¹⁶⁵ Ibid.

¹⁶⁶ For instance, some world-recognised scientists were negating the efforts on the basis that the climate has always been changing from time immemorial, and thus to assert its current projected changes on human activities is quite ridiculous. See Richard S. Lindzen, 'The Climate Science Isn't Settled – Confident Predictions of Catastrophe are Unwarranted', Updated November 30, 2009 *The Wall Street Journal*; see also Marc Morano, 'MIT Climate Scientist Dr. Richard Lindzen Rips UN IPCC Report: 'The latest IPCC Report has Truly Sunk to Level of Hilarious Incoherence – Its Quite Amazing to See the Contortions the IPCC has to go Through in Order to Keep the International Climate Agenda Going', *Climate Depot Exclusive* September 28, 2013. Lindzen argued that "in attributing warming to man, they fail to point out that the warming has been small, and totally consistent with there being nothing to be alarmed about".

¹⁶⁷ Rio Declaration on Environment and Development, declared at Rio de Janeiro on 3–14 June 1992, Principle 8.

2.2.2 The Principle of Sustainable Development

Although the limit to carrying out developmental activities regarding the need to protect the environment has been traced to ancient history and traditions.¹⁶⁸ Nevertheless, from the preceding discussion under section 2.2.1, the milestone for developing sustainable hydrocarbon extraction arguably arose from Trial Smelter's case and the Stockholm Declaration 1972. These have both laid the foundation for considering environmental and developmental issues together.¹⁶⁹ Sustainable development (SD) has been defined as the "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".¹⁷⁰ SD may be divided into three parts, the environmental, the social, and the economic, known as the triple bottom line.¹⁷¹ As examined above, *section 1.2.4*, gas flaring poses a triple-bottom-line risk to the global, regional and local environment and the host nations' economy. Therefore, there is a need to operationalise the concept of SD in upstream activities through legally enforceable principles.

SD requires that collective consideration of environmental, social, and economic concerns should guide the integrated decision-making process as regards the exploration and production of hydrocarbon.¹⁷² It's a fact that SD will not be achievable in any significant way without the considerable prevention of pollution from hydrocarbon extractions, and gas flaring has been proven to be a significant contributor¹⁷³. Pollution prevention is a vital component, and its application to hydrocarbon extractions contributes a significant step toward achieving sustainable operations¹⁷⁴. Therefore, to achieve SD, air quality standards and

¹⁶⁸ Fabian Ajogwu and Oscar Nliam, *Petroleum Law and Sustainable Development* (2014 1st ed., Centre for Commercial Law Development) Pp 114

¹⁶⁹ Ibid

¹⁷⁰ United Nations, 'Report of the World Commission on Environment and Development: Our Common Future' United Nations document A/42/427, Pp 37

¹⁷¹ Dave Newport et al, 'The "Environmental Sustainability" Problem – Ensuring that Sustainability Stands on Three Legs' (2003) 4(4) International Journal of Sustainability in Higher Education 257 - 263

¹⁷² Ibid Ajogwu and Nliam (n 168) Pp 120

¹⁷³ Ibid IPCC 2001 (n 3) and IPCC 2014 (n 31).

¹⁷⁴ Ibid

atmospheric protection shall constitute an integral part of the extraction process and cannot be considered in isolation.¹⁷⁵

Ajogwu and Nliam suggested the effort at pollution prevention requires a unified, integrated approach to prevent or at least minimise emissions into the air, water, or soil contamination to achieve a high level of environmental protection. The duo maintained that such an approach would ensure the global environment is pollution-free and sustainable hydrocarbon extraction sufficient to realise Sustainable Development Goals (SDGs).¹⁷⁶ Nevertheless, hydrocarbon extractions significantly contribute to the concentration of GHG emissions into the atmosphere. Gas flaring, particularly as a by-product of hydrocarbon extraction, has increasingly become a topical issue because of its significant contribution to this regard.¹⁷⁷ As said earlier, the gas flaring problems are more global, regional, and local. It is global because the process releases GHG emissions directly into the atmosphere, which causes global warming. It can be felt not only by the realising jurisdiction but at least regionally. It is local because it severely affects oil-producing nations' economies and is projected to worsen during the 21st century.¹⁷⁸ Thus, GHG emissions have a severe impact on climate change and have the effect of limiting the countries to achieve their SDGs target. This growing global concern led to enacting an international instrument to tackle this problem.¹⁷⁹ Therefore, the next section will examine this framework and assess its applicability to the gas flaring reduction that significantly contributes to climate change.

¹⁷⁵ See also Principle 21 Stockholm Declaration and Principle 4 Rio Declaration

¹⁷⁶ Ibid Ajogwu and Nliam (n 167) Pp 121

¹⁷⁷ Leon Moller, 'The governance of oil and gas operations in hostile but attractive regions: West Africa' (2010) 28(4) *International Energy Law Review*, Pp 110-122

¹⁷⁸ Intergovernmental Panel on Climate Change (2014) 'AR5 Synthesis Report: Climate Change 2014' IPCC's Fifth Assessment Report (AR5) 2014.

¹⁷⁹ Ajogwu and Nliam (n 167) Pp 170

2.2.3 The United Nations Framework Convention on Climate Change

Generally, the starting point to review the international legal regime(s) relevant to emissions from petroleum activities is from the recent 1990s to date.¹⁸⁰ As stated earlier, the UNEP and WMO Second World Climate Change Conference in 1990 called for a framework treaty on climate change. The UN General Assembly approved the start of the treaty negotiations in December of that year. Following deliberations between the Intergovernmental Negotiating Committee for the UNFCCC and delegates from 150 countries, a finalised version of the convention surfaced and was adopted on 9th May 1992.¹⁸¹ This convention, also called the climate convention, is the first international effort with some significance in the petroleum industry. The global efforts to minimise emissions from hydrocarbon activities concluded with many nations ratifying the UNFCCC, including oil-producing and non-producing nations. By ratification, oil-producing nations' obligation to end flaring assumes a new dimension from the climate change perspective. As stated earlier, flaring releases enormous volumes of GHG emissions, which are responsible for global warming and thus have been argued to impact climate change. Nigeria and other major emitters like Russia and the US were parties to the convention, and both have ratified them.¹⁸² While the US has ratified this convention, it failed to ratify its protocol.¹⁸³ The convention aims to prevent dangerous human interference with the climate system.

The ultimate objective of the UNFCCC is to stabilise GHG emissions "at a level that would prevent dangerous anthropogenic interference with the climate system".¹⁸⁴ Thus, to achieve this objective, the UNFCCC required all its parties to develop national inventories of emissions and formulate and implement regional and

¹⁸⁰ UNFCCC and its protocol are the only international instruments directly related to GHG emissions from petroleum activities. AG flaring emanates from petroleum activities, contributes much to the GHG emission concentration, and thus causes global warming among other adverse effects.

¹⁸¹ The United Nations Framework Convention on Climate Change entered into force on 21 March 1994. Today, it has near-universal membership as 197 countries have ratified the Convention and are called Parties to the Convention.

¹⁸² Nigeria signed the UNFCC on 13 June 1992 and ratified it on 29 August 1994; Russia signed the UNFCC on the 13 June 1992 and ratified it on 28 December 1994; and the United States signed the UNFCC on 12 June 1992 and ratified it on 15 October 1992.

¹⁸³ The United States signed the UNFCC on 12 June 1992, ratified it on 15 October 1992 and also signed the Protocol on the 12 November 1998.

¹⁸⁴ Ibid article 2.

national programmes to reduce emissions. According to the convention, all developed/industrialised countries must take measures to limit GHG emissions below the 1990 level.¹⁸⁵ The burden of these countries is based on the recognition that they are majorly responsible for the current high level of GHG emission concentration in the atmosphere.¹⁸⁶ However, not in that category, Nigeria was only required to comply with the convention's requirements within its finance, workforce, and technology capabilities. Therefore, this implies that Nigeria is not legally obliged but instead should phase out measures to mitigate AG flaring, a major source of GHG emissions in the country, as declared by the Nigerian authorities.¹⁸⁷

However, considering the substantial emissions resulting from flaring, Malumfashi has argued that there could be an obligation on all gas flaring nations that are parties to this convention to end routine flaring.¹⁸⁸ However, the problem with this argument is twofold. Firstly, the UNFCCC can hardly be said to expressly confer an obligation on its contracting parties to end flaring. Its ultimate purpose is to stabilise it from attaining a dangerous level.¹⁸⁹ Secondly, the binding obligation to reduce emissions under the convention only applies to the developed/industrialised nations under annexe 1: Nigeria and other major flaring countries are not among them.¹⁹⁰ Therefore, it is suggested that UNFCCC did not precisely place an obligation on the AG flaring nations, including Nigeria, to end gas flaring, and such an obligation could not be explicitly inferred under the convention.

¹⁸⁵ Ibid article 4.

¹⁸⁶ Ibid preamble to the UNFCCC.

¹⁸⁷ The Federal Republic of Nigeria, '*Nigeria's First National Communication under the United National Framework Convention on Climate Change*', the Federal Ministry of Environment November 2003.

¹⁸⁸ Ibid Malumfashi (n 73): this is notwithstanding the developed/industrialised vs developing dichotomy provided by the convention.

¹⁸⁹ Ibid UNFCCC (n 119).

¹⁹⁰ Ibid.

2.2.4 The Kyoto Protocol

The Kyoto Protocol (KP) is an international agreement linked to the UNFCCC, which commits its parties by setting internationally binding emission reduction targets. The Protocol places a more substantial burden on developed nations under the principle of "common but differentiated responsibilities" to reduce their emissions.¹⁹¹ The KP sets out a firm schedule for reducing GHG emissions in annexe 1 countries (at least 5% below the 1990 level) and the targets are to be met within an agreed commitment period: 2008-2012.¹⁹² The targeted period has already elapsed, and therefore, its success or failure is not the focus of this study. Although the KP considered that developing, non-annexe 1 countries are not responsible for climate change. It required them to assist developed countries in meeting their targets. For instance, gas flaring nations like Nigeria, Norway, and Russia have signed and ratified the protocol.¹⁹³ However, the US, considered one of the major emitters, failed to ratify the KP.¹⁹⁴

The KP devises three methods to attain the UNFCCC's ultimate objective. These methods are emissions trading - known as 'the carbon market';¹⁹⁵ clean development mechanism (CDM);¹⁹⁶ and Joint Implementation (JI).¹⁹⁷ The CDM was one of the gas flaring reduction tools, and Nigeria, a non-annexe 1 country, was involved in various CDM projects even after the KP commitment period.¹⁹⁸ The broad goal of the CDM mechanism was to assist developing countries in achieving sustainable development and helping developed countries meet their emission reduction commitment under Article 3 of the UNFCCC.¹⁹⁹ Thus, the idea to integrate CDM as one of the AG flaring reduction tools came about because

¹⁹¹ See UNFCCC, article 4.

¹⁹² Kyoto Protocol, article 3.

¹⁹³ Nigeria signed the Protocol on 11 March 1999 and ratified it on the 10 December 2004.

¹⁹⁴ The Kyoto Protocol – Status of Ratification. Available at: <[The Kyoto Protocol - Status of Ratification | UNFCCC](#)>

¹⁹⁵ Ibid article 17.

¹⁹⁶ Article 12 Kyoto Protocol.

¹⁹⁷ Article 6 Kyoto Protocol 1997.

¹⁹⁸ Department of Climate Change – Federal Ministry of Environment, 'Registered CMD Projects in Nigeria'. Available at: <<http://climatechange.gov.ng/division/mitigation/cdm/registered-cdm-projects-in-nigeria/>> accessed on 24/02/2020; and GGFR, 'GGFR Kicks Off Fourth Phase, Aims to Scale Up Flaring Reduction', GGFR News Flare Issue No. 14 September 2012-June 2013.

¹⁹⁹ Article 12 Kyoto Protocol.

CDM was established as a flexible mechanism under KP to promote projects aimed at reducing GHG emissions. Therefore, since AG flaring is one of the significant sources of emissions, projects based on improving AG utilisation are eligible for qualification due to their GHG emissions reduction potential.²⁰⁰ Even though there were initial uncertainties and resistance about the AG-CDM projects' eligibility, it was later resolved that they were eligible under the KP. There was no legal barrier whatsoever under the KP that disqualified their eligibility.²⁰¹

Despite such challenges, there are AG-CDM projects specifically designed to reduce AG flaring in Nigeria. Pillay's study examined such projects' effectiveness in achieving KP's objective. The study examined a sample of 10 projects and 4 of which were AG utilisation projects. The primary objective of the AG utilisation projects was to reduce emissions through the recovery of AG from the Kwale Oil-Gas Processing Plant, Pan Ocean plant, Asuokpu/Umutu Marginal Field located in block OML 38, Obodugwa and neighbouring oil fields.²⁰² The study found that the projects showed a clear 90% goal of AG flaring reduction, and the benefits were classified as direct.²⁰³

Likewise, a study by Akinyele et al. that investigated AG-CDM projects in Nigeria for Potential emissions mitigation, among others, found that the projects were effective in helping to reduce the volumes of gas that would otherwise flare. The study finally suggested that another possible way of reducing Nigeria's GHG emissions is by promoting the utilisation of AG and other renewable energy resources.²⁰⁴ Furthermore, Mohammed's study that reviewed the effectiveness of AG-CDM projects for eliminating emissions in Nigeria's petroleum industry found that the projects were effective and contributed to some AG reduction in the country. Mohammed suggested that Nigeria could achieve its policy objective of

²⁰⁰ The World Bank – GGFR, 'Regulatory and CDM Capacity Building Workshop', sponsored by GGGFR, 15-16 March 2004 .

²⁰¹ The World Bank, 'The Current Methodologies: Applicability and Scope', CDM workshop on Gas Flaring, Amsterdam, December 3, 2008.

²⁰² Surendran Pillay, 'An Assessment of Clean Development Mechanism Project Contribution to Sustainable Development in Nigeria' (2016) 15 (6) *International Business and Economics Research Journal* 315-328

²⁰³ Ibid

²⁰⁴ Daniel O. Akinyele et al, 'Clean Development Mechanism Projects for Developing Countries: Potential for Carbon Emissions Mitigation and Sustainable Development' (2014) *Eighteenth National Power Systems Conference (NPSC)*, 2014, pp. 1-6

ending gas flaring by providing all needed facilitation to realise more AG-CDM investments.²⁰⁵

Consequently, these projects as examined have effectively contributed to reducing emissions from gas flaring is contentious.²⁰⁶ The CDM's effectiveness in reducing actual greenhouse gases was measured by comparing the estimated certified emission reductions from CDM projects against the actual greenhouse gas emission reduction.²⁰⁷ Therefore, KP could not be said to have made a high contribution to global emissions reduction because the most significant emitters, the US and China, did not participate. The US cites an excuse that the emissions target will affect its economy and that the KP was 'fundamentally flawed' for exonerating developing countries from binding emissions reduction commitments.²⁰⁸

The KP opens up a new panorama in global efforts for AG flaring reductions by giving industrialised nations some flexibility in meeting their emission reduction targets.²⁰⁹ The CDM projects' main objectives were to aid developing countries in achieving cost-effective emissions reductions and environmental sustainability. However, whether KP has achieved its reduction target during the trial period is contentious. Nigeria's ongoing CDM-AG flaring projects would reduce GHG emissions, improve efficiency, and increase access to cleaner energy. This is because the success of any international regime and commitment largely depends on domestic measures introduced by its signatories.

²⁰⁵ Sani Damamisau Mohammed, 'Clean development mechanism and carbon emissions in Nigeria' (2020) 11(3) *Sustainability Accounting, Management and Policy Journal* 523-551

²⁰⁶ Michael Le Page, 'Was Kyoto Climate Deal a Success? Figures Reveal mixed Results' (2016) *NewScientist* of 04/06/2016; and Igor Shishlove et al, 'Compliance of the Parties to the Kyoto Protocol in the First Commitment Period' (2016), 16(6) *Climate Policy*.

²⁰⁷ Surendran Pillay, 'An Assessment of Clean Development Mechanism Project Contribution to Sustainable Development in Nigeria' (2016), 15(6) *International Business & Economics Research Journal*.

²⁰⁸ Daniel Bodansky, 'U.S Climate Policy After Kyoto: Element for Success' (2002), *Policy Outlook*.

²⁰⁹ ICF International, *Nigeria: Carbon Credit Development to the Flare Reduction Projects – A Guide Book* (Triple 'E' System Associates Ltd 2006), Mechanism Phase II Report Submitted to the United Nations Industrial Development.

2.2.5 The Paris Agreement

Like KP, the Paris Agreement (PA) was also built upon the UNFCCC and mapped a new course in the global climate change effort for the first time. The Agreement brought all nations together into a common cause to undertake ambitious efforts to combat climate change with enhanced support to assist developing countries in meeting UNFCCC objectives.²¹⁰ The PA involved all the parties to the UNFCCC, although the US withdrew during the Trump administration but later rejoined the Agreement.²¹¹ As a party to the UNFCCC, Nigeria has signed and ratified the Agreement at its early stage.²¹² The Agreement's fundamental aim was to strengthen the global response to the threat of climate change by keeping global temperatures well below a 2 degrees Celsius rise (⁰C), i.e., above pre-industrial levels, and with further efforts to limit the temperature increase to 1.5⁰C.²¹³ It also aims to strengthen the ability of countries to deal with the impacts of climate change through appropriate financial flows, new technology, and an enhanced capacity-building framework. The Agreement also provides enhanced transparency of action and support through a more robust framework.²¹⁴

The PA requires all contracting parties to put forward their best efforts through nationally determined contributions (NDCs), pursue domestic measures to achieve them, and strengthen these efforts in the years ahead.²¹⁵ This includes requirements that all Parties regularly report on their emissions and implementation efforts and form individual actions to update and enhance the NDCs. The parties also agree to come together (global stocktake) every five years to assess the collective progress toward achieving the Agreement's

²¹⁰ United Nations Climate Change: Paris Agreement – Status of Ratification. Available at: < <https://unfccc.int/process/the-paris-agreement/status-of-ratification> > Nigeria has signed the Agreement on 22/09/2016 and ratified it 16/05/2017, see < <https://unfccc.int/node/61130> > accessed on 24/02/2020.

²¹¹ On his first day in office, President Biden signed an Executive Order to bring the United States back into the Paris Agreement.

²¹² United Nations Climate Change: Paris Agreement – Status of Ratification. Available at: < <https://unfccc.int/process/the-paris-agreement/status-of-ratification> > Nigeria has signed the Agreement on 22/09/2016 and ratified it 16/05/2017, see < <https://unfccc.int/node/61130> > accessed on 24/02/2020. The Agreement entered into force on 4 November 2016, and 189 out of 197 parties to UNFCCC have so far ratified it.

²¹³ Ibid article 2.

²¹⁴ Ibid article 9-11 & 13.

²¹⁵ Ibid article 4.

purpose.²¹⁶ The Agreement further requires developed countries to lead by undertaking absolute economy-wide reduction targets. In contrast, developing countries are encouraged to continue enhancing their mitigation efforts and move toward economy-wide targets over time regarding their peculiar national circumstances.²¹⁷ It also aimed to support developing and vulnerable countries (annexe 1) to realise their national objectives.

Nigeria communicated its first NDCs to the UNFCCC secretariat in compliance with the Agreement on 28th November 2018. The NDCs aims to strengthen the enforcement of gas flaring restrictions and work to end gas flaring as a mitigation measure to combat global warming.²¹⁸ The country agreed to an unconditional 20% reduction of gas flaring by 2030. The FGN has also committed to achieving its target by implementing anti-gas flaring laws and policies. For instance, the FGN identifies that enforcing gas flaring restrictions and developing Gas-to-Power Plants at gas flare sites require further improvement.²¹⁹ The FGN is optimistic that these measures would help the country realise its policy objectives of ending gas flaring and unlocking gas potential by 2030.

However, despite its high ratification and the plaudits it received, the PA has been criticised by some renowned climate scientists. They claim that it would be politically and economically impossible to cut emissions below 2°C, as anticipated by the Agreement. For instance, a robust global warming alarmist, Hansen, has described the PA as worthless words and wishful thinking that could not be of any effect as long as fossil fuels appear cheaper. Hansen told *The Guardian* that all the parties have done is agree there was a problem in 1992 and agreed again in 2015 without ever acknowledging what is required to solve it. For Hansen, “promises like Paris do not mean much. It is a hoax that governments have played on us

²¹⁶ Ibid (the first 5 Years Conference took place in Glasgow 2021).

²¹⁷ Ibid.

²¹⁸ 186 parties have submitted their first NDCs target but only three parties so far submitted their second NDCs target. <<https://www4.unfccc.int/sites/ndcstaging/Pages/Home.aspx>> accessed 03/05/2020

²¹⁹ Nigeria’s Intended Nationally Determined Contribution – Submitted to the COP-UNFCCC in Preparation for the Adoption of Climate Change Agreement at the Paris Conference on Climate Change, December 2015. Prepared by the Nigerian Federal Ministry of Environment, Abuja on 27 October 2015.

since the 1990s".²²⁰ Similarly, while criticising the Agreement, Grubb has claimed that few regard the PA's goal as a realistic prospect because no politician would be prepared to take the costly measures required by the Agreement. As Grubb argues, "All the evidence from the past 15 years leads me to conclude that actually delivering 1.5°C is simply incompatible with democracy".²²¹

The Emission Gap Report 2019 observes that global GHG emissions need to fall by 7.6% every year until 2030 to stay below 1.5°C, but they are currently projected to keep rising.²²² Therefore, this report and several testimonies and criticisms by well-renowned scientists led the UN to reassess the emissions reduction target. The UN suggests that even if countries meet their commitments under the PA, the world is heading for a 3.2°C global temperature rise over pre-industrial levels, leading to even wider-ranging and more destructive climate impacts.²²³ Therefore, this will undoubtedly negate the essence of the Agreement and will indeed hinder the effective actualisation of the PA's goals.

Furthermore, an empirical study by Elvidge et al. that assesses the potential role of the PA in mitigating the gas flaring emissions under specific-NDC targets also supports the UN position. The study finds that countries could only provide less than 2% of the emission reduction target presented in their NDCs. This is 1.86% for unconditional and 1.46% for total NDC reduction targets.²²⁴ The study concludes that gas flaring reduction has a low potential to meet NDC targets in higher projected emissions countries such as Russia, the USA, and possibly

²²⁰ *The Guardian*, 'Ex-NASA Scientist: 30 Years On, World is Failing Miserably to Address Climate Change', 19 June 2018. Available at: < <https://www.theguardian.com/environment/2018/jun/19/james-hansen-nasa-scientist-climate-change-warning> > accessed on 25/02/2020. James Hansen was the expert who gave the climate warning in 1988 at the United States Senate testimony.

²²¹ Michael Grubb – Professor of International Energy and Climate Change at the University of College London at the International Conference: '1.5 Degrees: Meeting the Challenge of the Paris Agreement', 21-22 September 2016, Keble College Oxford, United Kingdom. See <<https://www.thegwpf.com/climate-scientists-shoot-the-messenger/>>

²²² UN Environment Programme – Emissions Gap Report 2019 of 26 November 2019. Available at: < <https://www.unenvironment.org/resources/emissions-gap-report-2019> > accessed on 25/02/2020.

²²³ UN News, 'UN Emissions: World on Course for More than 3 Degree Spike, Even If Climate Commitments are Met', 26 November, 2019, *Climate Change*.

²²⁴ Christopher D. Elvidge et al., 'The Potential Role of Natural Gas Flaring in Meeting Greenhouse Gas Mitigation Target' (2018), 20 *Energy Strategy Reviews* 156-162.

Nigeria.²²⁵ In contrast, the study finds that three countries, Yemen, Algeria, and Iraq, could meet more than 100% of their unconditional NDC targets from gas flaring reductions, with Iran and Gabon meeting more than 90% of their unconditional targets from upstream gas flaring.²²⁶ Thus, to achieve the PA's objective, gas flaring nations and the most significant emitters need to take drastic measures and develop a mix of reduction sources to achieve their NDCs' targets. Failure to do so means that the 1.5°C goals will be out of reach before 2030.²²⁷

At the U.N. Climate Action Summit 2019, 107 countries, including Nigeria stated their intentions to strengthen their NDC targets by 2020 as required under the PA, representing 15% of global emissions. However, only 11 countries have updated their NDCs by submitting their targets by mid-2022.²²⁸ Thus, not a single country among the G7 countries or the worst-performing polluters on the planet (like Russia, the US, Nigeria, and the EU) have updated their targets. Most G7 countries and the most significant polluters only stated their intention to update their NDC by 2020.²²⁹ On the other hand, Norway and countries that have already updated their 2020 NDCs represent less than 0.5% of global emissions.²³⁰ As Mohammed pointed out, Norway could not even be counted as a gas flaring nation as it flares only 0.01% on a global scale.²³¹

Consequently, observers like Hansen, Grubb and Nicolle argue that the PA did not achieve its commitments fully, and Nicolle attributed this failure to two reasons. Firstly, the commitments were voluntary and non-binding, and secondly, there was little agreement on how they should be achieved. The PA is mainly symbolic

²²⁵ Even though the study did not specifically include Nigeria in the assessment, the country falls within the countries with higher projected emissions like Russia and the US, and has a 20% unconditional target.

²²⁶ Ibid Elvidge et al.

²²⁷ Inger Anderson – UNEP Executive Director Ibid UN News (n 154).

²²⁸ The Paris Agreement and Nationally Determined Contribution. Available at: <[Nationally Determined Contributions \(NDCs\) | UNFCCC](#)> accessed 12/04/2022.

²²⁹ Ibid (n 153).

²³⁰ Climate Watch, '2020 NDC Tracker'. Available at: <<https://www.climatewatchdata.org/2020-ndc-tracker>> accessed on 12/04/2022.

²³¹ Jamilu Ibn Mohammed, 'Comparing Nigeria's Legal Framework for Combating Gas Flaring with that of Norway – Lessons for Nigeria' (2016), 2(9) *Imperial Journal of Interdisciplinary Research* at 1252.

and non-binding because it does not formally come into effect until 2020.²³² Therefore, a concerted effort is required: all hands must be on deck to ensure that the global initiatives and commitments contribute significantly towards achieving the aim of the Paris Agreement.

2.2.6 The Glasgow Climate Pact 2021

The World gathered in Glasgow for Cop 26 between October and November 2021 based on the PA commitment, where the parties agree to come together every five years to assess the collective progress towards achieving the Paris Agreement's purpose.²³³ Whilst there is a lot of focus on methane, including the impressive announcement by nearly 90 countries to cut methane emissions by 30% by 2030, gas flaring was somewhat overlooked.²³⁴ This is despite previous countries' commitment to reducing gas flaring, including it in their intended NDCs. Rather, only a handful of countries have updated NDCs emissions targets, making the current UN GHG emissions projection around 5 billion tonnes lower by 2030-equivalent to more than ten years of current UK emissions.²³⁵ The parties also agreed to revisit and strengthen their current 2030 emissions targets, and a new Work Programme on mitigation ambition was created to hold an annual high-level event in 2022. The Pact also drives further action on long-term strategies and establishes the need for countries to take concerted and immediate efforts to deliver on their commitments.²³⁶ Consequently, reducing gas flaring, a major source of GHG and methane emissions, should be a priority for the participating countries of the Pact.

However, despite these bold commitments to reduce flaring since the PA in 2015, global gas flaring increased by 3% in 2019 but later decreased due to a reduction

²³² William Nicolle, 'Could an Upcoming Climate Summit Become the Next Paris Agreement?', 1 October, 2019, *Prospect*. Available at: <<https://www.prospectmagazine.co.uk/other/climate-change-news-uk-glasgow-2020-summit>> accessed on 25/02/2020.

²³³ *The Paris Agreement*, article 14.

²³⁴ Kate Abnett, Valerie Volcovici and Ilze Filks, 'Nearly 90 Countries Join Pact to Slash Planet-warming Methane', *Reuters* 2 November 2021.

²³⁵ The United Nation, COP 26 – The Glasgow Climate Pact. UN Climate Change Conference, UK 2021. Available at: <https://ukcop26.org/wp-content/uploads/2021/11/COP26-The-Glasgow-Climate-Pact.pdf> accessed 23/11/2021.

²³⁶ *Ibid.*

in production because of the COVID-19 pandemic. Consequently, failing to tackle flaring would diminish the aims of the PA to limit global temperature rise and avoid the worst impacts of climate change, as discussed earlier. Although there are voluntary initiatives both at a regional and global level for environmental regulation, their impact is mostly limited. In contrast to the global initiatives, there is hardly any regional regime in the African continent explicitly regulating air quality and atmospheric pollution, emissions from upstream activities, or suffice it to say, routine flaring. Therefore, the following heading will review the most relevant regional regimes in the African continent concerning emissions from petroleum activities.

2.3 The Regional Regime on Air Quality and Atmospheric Protection

Generally, a regional regime for environmental protection should be no less effective than the international regime. Thus, it can level the playing field by providing a minimum base for environmental regulation and an additional mechanism to supplement nations' domestic efforts, which are at best inadequate and ineffective.²³⁷ Using a regional approach to regulate environmental pollution resulting from natural resource exploitation is not new. For instance, for a long time, the North Sea region has been governed by one regional regime or the other aimed at preventing pollution from oil-related activities.²³⁸ The first was the 'Bonn Agreement' signed in 1969 following a significant release of oil from a grounded vessel. Later, other conventions were signed, culminating in the adoption of the OSPAR Convention.²³⁹

²³⁷ Carlos J. Moreno, 'Oil and Gas Exploration and Production in the Gulf of Guinea: Can the New Gulf Be Green' (2009), 31(2) *Houston Journal of International Law* 419-467. For instance, the OSPAR Convention requires its parties to publish discharge data, which can allow neighbouring nations and other NGOs to exert an indirect influence on national enforcement.

²³⁸ Sergei V. Vinogradov & Jay Paul Wagner, 'International Legal Regime for the Protection of the Marine Environment Against Operational Pollution from Offshore Petroleum Activities' in Zhiguo Gao, *Environmental Regulation of Oil and Gas Industry* (edn. 1998), 93, 106.

²³⁹ Convention for the Protection of the Marine Environment of the North-East Atlantic, Sept. 22, 1992, 32 I.L.M. 1069 (Hereinafter OSPAR Convention).

Sand has firmly argued for the regional approach to environmental protection as the best method for protecting a continent from environmental harm relating to petroleum activities. This is because the effects of pollution are usually felt on a regional basin level; nevertheless, as opposed to the international situation, no single regional instrument in the African continent explicitly concerns air quality and atmospheric pollution or harm resulting from petroleum activities.²⁴⁰ There is, therefore, a complete absence of a regional instrument regulating petroleum activities in Africa. Although the continent has endorsed two significant instruments that could be argued to have obligated the contracting parties to prevent atmospheric pollution. Therefore, the reviews will be limited to only these instruments because Nigeria is a party to them.

2.3.1 The Abidjan Convention and its Protocol

The 1981 Abidjan Convention is known as the Convention for Cooperation in the Protection, Management, and Development of the Marine and Coastal Environment of the West, Central, and Southern Africa Region.²⁴¹ The Convention works hand-in-hand with the OSPAR convention within the framework of the UNEP Programme of regional seas and action plans, which covers 18 regions. The convention's main objective is to protect the marine environment, coastal zones, and related internal waters falling within the jurisdiction of the state parties.²⁴² The parties to the Convention (including Nigeria since March 1981) agree to take all necessary measures to prevent, reduce, combat, and control pollution from or through the atmosphere, among others.²⁴³ Articles 4 & 9 of the Convention are the most relevant provisions that implicitly reference air quality and atmospheric emissions from oil and gas operations.

²⁴⁰ P.H Sand, 'The Rise of Regional Agreement for Marine Environment Protection' (1988), 39(2) *International Digest of Health Legislation* 499-511.

²⁴¹ The Convention was adopted on 23 March 1981 in Abidjan, Côte d'Ivoire and went into effect on 5 August 1984. In 2008, the contracting parties agreed to amend the title of the Abidjan Convention and the Protocol to: "Convention for Cooperation in the Protection, Management and Development of the Marine and Coastal Environment of the Atlantic Coast of the West, Central and Southern Africa Region and Protocol Concerning Cooperation in Combating Pollution in Cases of Emergency."

²⁴² According to Article 16 of the Convention, the parties include states within the Western, Central and Southern African region which have lately joined and become parties to the Convention.

²⁴³ *Ibid* article 9.

Therefore, article 4 states, "The Contracting Parties shall, individually or jointly as the case may be, take all appropriate [action] to prevent, combat and control pollution of the Convention area and ensure sound environmental management of natural resources." Meanwhile, article 9 states that "The Contracting Parties shall take all appropriate measures to prevent, reduce, combat and control pollution in the Convention's area resulting from or transported through the atmosphere." Consequently, one may argue that the combined wording of these provisions obliges member states to prevent, reduce and combat the practice of AG flaring within the Convention jurisdiction, being a major source of emissions to the atmosphere.

While the language of general obligations under Article 4 is vague, the expressions 'all appropriate measures' and 'best practicable means' are general and without any further provision to define these terms.²⁴⁴ Nevertheless, without anything to the contrary, the use of the word "shall" in the wording of both provisions is enough to argue as conferring an obligation on the contracting parties to end flaring. In other words, the word 'shall' in the provisions may suggest a mandatory requirement for all contracting parties to take all appropriate measures to prevent and control emissions from gas flaring that pollute the atmosphere of the parties to the Convention. This is notwithstanding that each member state may argue quite different interpretations of what "appropriate measures" means.

Likewise, the Convention also contains other provisions besides Articles 4 & 9 that could be argued to affect pollution from oil and gas operations. For instance, Article 13, titled "Environmental Impact Assessment," requires its parties to conduct an environmental assessment for any activity that may potentially cause substantial pollution or significant harmful changes to the environment during the planning stage.²⁴⁵ It further requires them to develop and manage policies and guidelines that will assist them in minimising the harmful impact of oil and gas operations on the Convention area.²⁴⁶ Moreover, the state parties are also collectively required

²⁴⁴ Ibid article 4. By contrast, the OSPAR Convention uses general terms such as "best available techniques" and "best environmental practice", but later goes on to define what these terms mean. Ibid OSPAR Convention at 1098-1099.

²⁴⁵ Ibid Abidjan Convention Article 13.

²⁴⁶ Ibid.

to develop a procedure for disseminating information concerning assessing the activities of any potential environmental effects.²⁴⁷

Following a slow start, the Convention had now taken on an accelerated dimension when the parties, while aware and mindful of the value of oil and gas resources to their economies and the impact on climate change,²⁴⁸ recently adopted four major Protocols aimed at improving the management of coastal areas and the marine environment.²⁴⁹ Additionally, while declaring its full support for the Protocols and their implementation, the UNEP opined that they would play an integral role in implementing SDGs in the Convention area (especially the oil and gas and LBSA protocols).²⁵⁰

Conclusively, the Abidjan Convention and its Protocols have now provided a legal framework for regional environmental action concerning oil and gas operations in general. However, to adequately address all possible environmental harms from petroleum operations, a specific protocol is required to expand on the language of Article 9 of the Convention.²⁵¹ As Moreno suggests, the most effective way would be to choose an existing regional protocol in place anywhere or a set of industry guidelines dealing with petroleum operations as a blueprint that can be modified to meet the needs of the African region.²⁵²

²⁴⁷ The potential environmental effects should be considered in any planning activity entailing projects within its territory, particularly in coastal areas.

²⁴⁸ As well as the international commitment to address the greenhouse effect, which resulted in the adoption of the UNFCCC, the Kyoto Protocol and the Paris Agreement. See Preamble to the amended Convention.

²⁴⁹ The Protocols were adopted and endorsed on 2 July 2019 by the Abidjan Convention in Yamoussoukro, the Republic of Côte d'Ivoire. The four Protocols are: The Grand-Bassam Protocol on Pollution from the "Land-based sources and activities (LBSA)"; the Malabo Protocol on "Environmental norms and standards related to offshore oil and gas activities (Offshore protocol)"; the Pointe Noire Protocol on "Integrated coastal zone management (ICZM)"; and the Calabar Protocol on "Sustainable mangrove management".

²⁵⁰ United Nation Environment Programme (UNEP), 'New Abidjan Convention Protocols to Transform Continent's Ocean Governance', UNEP Statement July 12, 2019. Available at: < <https://abidjanconvention.org/new-abidjan-convention-protocols-transform-continents-ocean-governance> > accessed 11/03/2020.

²⁵¹ It is the provision of the Convention that deals with atmospheric pollution in general, and thus could be expanded to deal with GHG emissions from these activities (especially gas flaring as a major environmental pollution within the contracting states).

²⁵² Ibid Moreno (n 237). It would also need to address all the environmental issues associated with the treatment of associated gas from the licensing stage to the exploration and production cycle (from licensing as well as refining and transportation, among other things).

2.3.2 The African Charter on Human and People's Rights

The African Charter on Human and People's Rights (hereinafter referred to as the Charter)²⁵³ is concerned with protecting human rights within the African continent. The Charter has been ratified by most African countries, including Nigeria.²⁵⁴ This legal framework is relevant in the current discussion because, as discussed in chapter one, gas flaring harms the environment and health and violates human rights. Additionally, an already established precedent under the Charter prohibited the practice of AG flaring in Nigeria.²⁵⁵ Thus, the combined provision of Articles 21 and 24 of the Charter has been interpreted by the African Commission on Human and People's Rights as conferring an obligation on Nigeria to take every appropriate measure to end AG flaring and other oil pollution sources within its jurisdiction.²⁵⁶ The commission in *SERAC & CESR vs Nigeria* had ruled that gas flaring infringes on the people's rights of oil-producing Niger-Delta communities in Nigeria.²⁵⁷ The commission further appeals to the FGN to protect the communities' environment, health, and livelihoods.²⁵⁸

Moreover, a federal high court judge in Nigeria has also taken a similar position with the African Commission on Human and People's Rights. In the decided case of *Gbemre vs Shell Petroleum Development Company of Nigeria Ltd & 2 Others*, the plaintiff suing a class action on behalf of the Iwherekan community in the Niger-Delta filed the suit at the Federal High Court, challenging the practice of gas flaring in the Niger-Delta by the oil company.²⁵⁹ The court declared that gas flaring

²⁵³ Came into force on 21 October, 1986.

²⁵⁴ African Commission on Human and People's Rights, History of the African Charter. Available at: <http://www.achpr.org/instruments/achpr/history/>.> accessed on 18/08/2019.

²⁵⁵ See *Gbemre vs Shell Petroleum Development Company of Nigeria Ltd & 2 Others*.

²⁵⁶ While recognising the contracting parties' right to exploit and dispose of their natural resources, the combined cautioned that it should be exercised without prejudice to the obligation imposed by the principle of international law. It also recognised the right of the African people to a satisfactory general environment favourable to their development. See *art 21(3) & 24 ACHPR*.

²⁵⁷ *Social and Economic Right Action Center (SERAC) and Center for Economic and Social Rights (CESR) V Nigeria 155/96*. Available at: < <http://caselaw.ihrda.org/doc/155.96/view/>.> accessed on 21/08/2019.

²⁵⁸ Ibid.

²⁵⁹ *Gbemre vs Shell Petroleum Development Company of Nigeria Ltd & 2 Others* (2005) FHC/B/CS/53/05. Available at:< <http://climatecasechart.com/non-us-case/gbemre-v-shell-petroleum-development-company-of-nigeria-ltd-et-al/>> accessed 09/02/2020. See also *Oronto Douglas vs SPDC Nig. Ltd & Others (1988) LCN/0053(CA)*.

is unconstitutional as it violates the guaranteed fundamental rights of life and dignity of human persons provided in the Nigerian Constitution and the African Charter on Human and People's Rights. The court further ruled that the oil companies must stop flaring gas in the Niger-Delta.²⁶⁰

It is suggested that the combined decisions in these landmark cases brought under fundamental human rights without anything to the contrary could be argued to have conferred on Nigeria and other oil-producing countries in Africa an obligation to end AG flaring, which is considered harmful to the people's environment and infringes their human rights.²⁶¹ The decisions can also be assumed to support the provisions of the international instruments cited above under *section 2.2*. Consequently, on this basis, it can be suggested that flaring in Nigeria is a violation that can be challenged both regionally under regional instruments and internationally under various international instruments. This could also lead to further international debates about the need to provide regional and international legal frameworks to combat flaring and rigorous global initiatives. As it stands, there is only one notable initiative established explicitly for this purpose, and the next heading will review such an initiative.

²⁶⁰ Ibid.

²⁶¹ See notes 84 & 87 and the articles 21 & 24 of the Charter.

2.4 Global Initiative for Gas Flaring Reduction

For many years, the World Bank (WB) Group has provided technical assistance and advice to countries seeking options on regulatory and institutional frameworks for natural gas utilisation. The WB specifically advises on gas master planning, domestic gas sector development, and liquefied natural gas import and export strategy.²⁶² It also supports gas-fired power plants and Partial Risk Guarantees (PRG) to encourage power and gas sales and help improve gas distribution systems' efficiency.²⁶³ Therefore, in line with these stated roles, the WB in the year 2002 assumed a new global leader in gas flaring reduction by initiating and launching the Global Gas Flaring Reduction Partnership (GGFRP) at the World Summit on Sustainable Development held in Johannesburg, South Africa.²⁶⁴

The GGFRP is a public-private initiative that supports the efforts of oil-producing countries and companies to increase the use of associated natural gas to reduce flaring and venting. The GGFRP has 35 participants involving the 17 governments of oil-producing countries (including Nigeria), and 12 multinational oil companies, some of which are currently engaged in oil exploration and production activities in Nigeria. It also consists of 3 multilateral organisations chaired by the World and three countries (the United States, Canada, and Germany) will be joining in 2023.²⁶⁵ The main objectives of the GGFRP are to reduce Co₂ emissions from wasteful and undesirable gas flaring and venting practices through stakeholder facilitation, policy change, and project implementation. The GGFRP partners have established a collaborative Global Standard for gas flaring reduction, which

²⁶² The World Bank/GGFRP, 'Global Gas Flaring Reduction – A Public Private Partnership'. Available at: <<https://www.worldbank.org/en/programs/gasflaringreduction/about#:~:text=The%20World%20Bank's%20Global%20Gas,production%20sites%20across%20the%20world.>> accessed on 18/08/2019.

²⁶³ The World Bank Guarantee Products: International Development Association Partial Risk Guarantee. Available at: <http://siteresources.worldbank.org/INTGUARANTEES/Resources/IDA_PRG.pdf.> accessed on 28/02/2020.

²⁶⁴ Climate Initiatives Platform, 'Global Gas Flaring Reduction Partnership'. Available at: <http://climateinitiativesplatform.org/index.php/Global_Gas_Flaring_Reduction_Partnership> accessed on 28/02/2020.

²⁶⁵ BP (United Kingdom), Chevron (USA), Eni (Italy), Exxon Mobil (USA), Shell (Netherlands), Statoil (Norway) and Total (France) are among the 13 oil companies that signed the initiative and all are currently in Nigeria flaring associated gas. The initiative also includes other European Union states and the European Bank for Reconstruction and Development, with the World Bank as the lead partner.

provides a framework for governments, oil companies, and other key stakeholders to consult and take collaborative actions, expand project boundaries, and reduce barriers to AG utilisation. The collaboration is established through policy change, country-specific interventions, commercialisation of AG, stakeholder facilitation, and project implementation.²⁶⁶

In collaboration with the United Nations, the GGFRP had in 2015 launched the '*Zero Routine Flaring by 2030*' initiative, which the partners endorsed and agreed to make the best effort through an expanded programme and results-focused approach.²⁶⁷ The WB is optimistic: this initiative will be an integral component of the path to ending routine flaring globally and also help to achieve the PA's goal of limiting global warming to well below 2°C.²⁶⁸ However, before this initiative, other initiatives were endorsed since establishing the GGFRP without realising their stated objectives fully. For instance, there was the 2013-2015 Phase-4 Initiative, to which 30 partners (including Nigeria) contributed \$10 million.²⁶⁹ Nigeria benefitted from this initiative through a pilot project to build local stakeholders' capacity, partly by undertaking a 'learning by doing' approach.²⁷⁰ Though it has established a global standard that provides a framework for governments, companies, and other key stakeholders to consult with each other, the initiative does not realise its potential as fully as anticipated.²⁷¹

²⁶⁶ The World Bank, 'Global Gas Flaring Partnership (GGFR) – Partners'. Available at: <<https://www.worldbank.org/en/programs/gasflaringreduction#4>> accessed on 28/02/2020.

²⁶⁷ The Nigerian Government endorsed the initiative in June 2016. By endorsing the initiative, the country has committed to providing a legal, fiscal, regulatory, as well as operating environment which is conducive to upstream investments. The country was also required to commit to the development of viable markets for utilisation of gas and the infrastructure necessary to deliver gas to these markets. The country's efforts should be to ensure that routine flaring at existing oil fields ends as soon as possible, and no later than 2030. See The World Bank, '*Zero Routine Flaring By 2030*'. Available at: <<https://www.worldbank.org/en/programs/zero-routine-flaring-by-2030#4>> accessed 02/05/2020.

²⁶⁸ The World Bank, '*Zero Routine Flaring by 2030*'. Available at: <<https://www.worldbank.org/en/programs/zero-routine-flaring-by-2030>> accessed on 28/02/2020.

²⁶⁹ The World Bank/GGFR, '*GGFR Kicks Off Fourth Phase, Aims to Scale up Flaring Reduction*' Working Paper Issue No. 14 September 2012-June 2013.

²⁷⁰ ICF International, '*Nigeria: Carbon Credit Development for Flare Reduction Projects* (ICF Consulting Ltd and Triple 'E' Systems Associates Ltd).

²⁷¹ Ibid.

Notwithstanding the challenges, GGFRP is currently the only international initiative that explicitly considers AG utilisation as an essential process for reducing GHG emissions, which is the ultimate objective of the UNFCCC and its Protocols. The GGFRP has subsequently established several activities to promote AG use and accelerate flaring reduction investments.²⁷² Its project aims to support national governments and the petroleum industries to reduce AG flaring and venting. This support, as stated above, includes aiding and giving advice about policies and regulatory and institutional frameworks for natural gas utilisation. The GGFRP believes that pilot projects will be instrumental in defining and furthering AG reduction.

In providing the support, the GGFRP, in collaboration with its partners, developed a model framework for the upstream flaring and venting policy and regulation, based upon experiences and lessons learned in the flaring reduction regulation of the champion countries.²⁷³ The framework guides gas flaring nations' anti-gas flaring law and policy regimes in the following four areas: upstream oil and gas legislation (the legislative framework), the contractual framework, the fiscal framework, and the regulatory framework.²⁷⁴ These four areas are interdependent and constitute essential elements for the success or otherwise of any flaring regime. Therefore, the following diagram illustrates the relationship each has with the others, and, as GGFRP suggests, this could serve as best practices and models for practical application.²⁷⁵

²⁷² GGFRP, *Monitoring and Reporting Guidelines for Flare Reduction CDM Projects*, prepared by the Oil and Gas CDM/JI Methodology Group Report No. 2.

²⁷³ Champion countries according to the policy document are those such as Algeria, Canada, Norway, the United Kingdom, and the United States.

²⁷⁴ The World Bank 2009 (n 1).

²⁷⁵ *Ibid* page 5.

Figure 2.1: Constituents of a typical anti-gas flaring law and policy regime

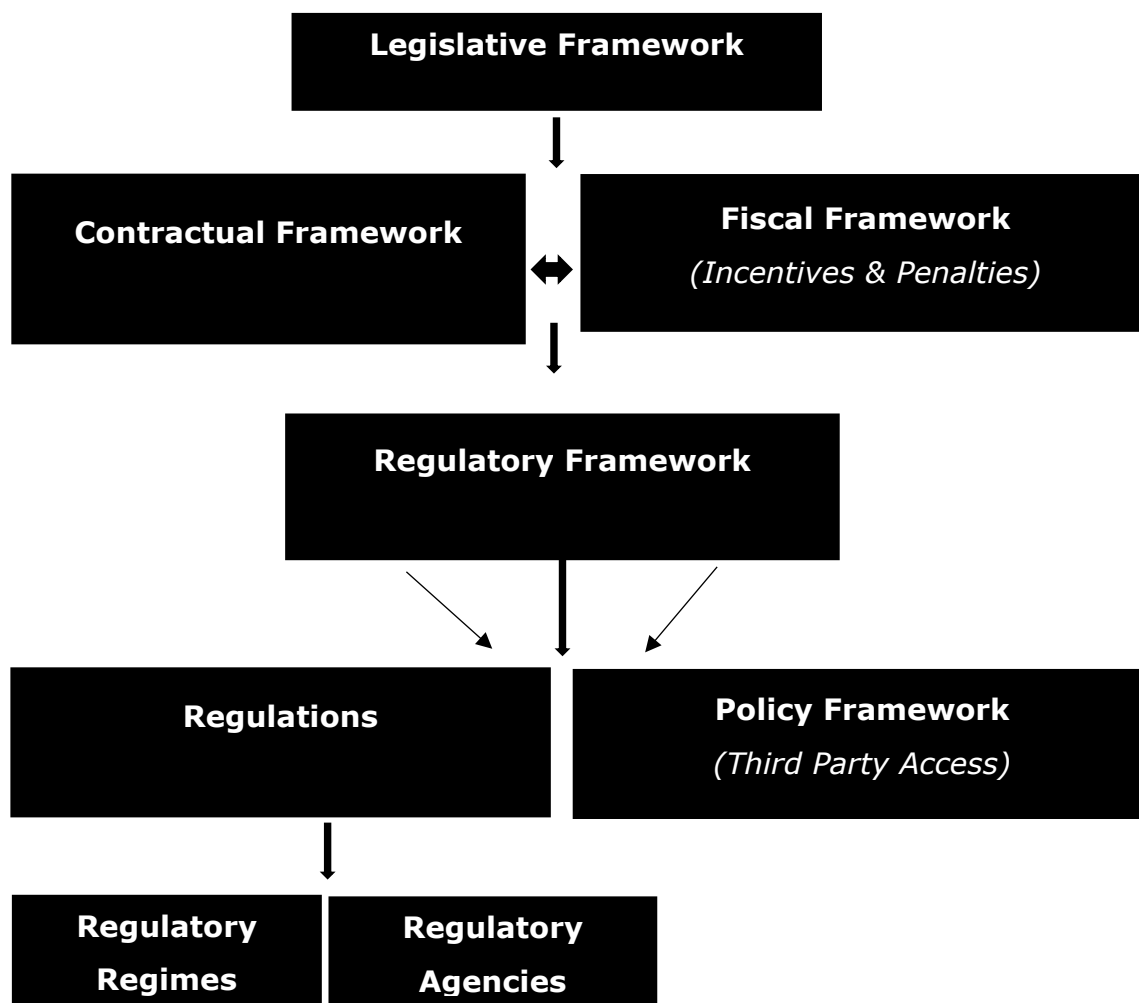


Table 2.1: Essential elements of Regulatory Regimes and Regulatory Agencies

Regulatory Regimes	Regulatory Agencies
<ul style="list-style-type: none"> - Definition Boundaries - Approval - Economic Evaluation - Measuring & Reporting - Monitoring & Enforcement - Public Disclosure 	<ul style="list-style-type: none"> - Clarity of roles and objectives - Autonomy - Participation - Accountability - Transparency - Predictability

The above diagram illustrates the interdependence of four major constituent elements (legislative, fiscal, contractual, and regulatory framework) that a robust anti-gas flaring regime needs for optimal performance. In principle, natural

resource environmental policies form within the spectrum of these elements and provide a basis for establishing relevant legislation to ensure that gas flaring and venting policies are efficient and effective.²⁷⁶ Therefore, the legal powers concerning the treatment of gas flaring can either be embedded in primary legislation, i.e., a legislative framework (for instance, petroleum laws), a contractual framework, or a secondary instrument, i.e., regulatory frameworks such as regulations, codes, licenses, and guidelines (secondary legal instruments).²⁷⁷ For effectiveness, the treatment of AG must be explicitly addressed in the legislative framework. The framework should determine how all aspects of the industry are regulated and treated fiscally through incentives and penalties, or contractually through production contracts and licenses.²⁷⁸ However, for flexibility, the legislative framework should only lay out the fundamentals and allow the regulatory framework to provide detailed provisions specified by the industry regulator. This will enable changes in specific regulations to be made more quickly.²⁷⁹

On the other hand, the contractual framework specifies the rights and obligations of the venture's partners to utilise the AG. The WB has observed that most of the oil-producing countries' petroleum agreements are often unclear regarding the treatment of the AG at this stage.²⁸⁰ At the same time, the fiscal framework specifies the economic approach to handling AG utilisation. Host governments typically use two forms of fiscal stimuli to promote flare gas utilisation: incentives and penalties. These fiscal stimuli can also be introduced into the contractual framework and a fiscal system.²⁸¹ Using these stimuli in both frameworks could even be more effective as they can often be tailored more specifically to individual

²⁷⁶ The World Bank - Global Gas Flaring Reduction public-private partnership ('GGFRP'), 'Regulation of Associated Gas Flaring and Venting: A Global Overview and Lessons from International Experience' Report No. 3 of April 2004.

²⁷⁷ Ibid.

²⁷⁸ The World Bank, 'Guidance on Upstream Flaring and Venting Policy and Regulation', *Global Gas Flaring Reduction Partnership*, Washington D.C. March 2009.

²⁷⁹ Ibid.

²⁸⁰ Ibid page 5.

²⁸¹ Ibid.

circumstances, discriminating for example between fields that are remote from existing infrastructure and those near potential markets.²⁸²

Finally, the regulatory framework is the fourth and most crucial element of any anti-gas flaring regime. The WB believes that effective regulation is essential for proper AG utilisation and the success of any anti-gas flaring regime.²⁸³ There are two critical elements in an anti-gas flaring regulatory framework: the regulatory regime (which concerns the practical policy design) and the regulatory agency (which undertakes effective monitoring with the credible threat of enforcement). Thus, a regulatory regime establishes what is regulated and how (*see figure 2.1 above*).²⁸⁴ While the design of the regulatory framework matters, the WB advises that enough emphasis should be placed on monitoring and enforcement, for most of the regulatory failure was primarily a failure of monitoring and enforcement.²⁸⁵

The WB panel also argues that enforcement is a crucial element of the regime, and thus a dedicated/empowered institution should typically perform a regulatory function. Therefore, regardless of the design, the regime is unlikely to bring the expected results unless the regulator identifies and effectively enforces the regulatory breach. This regulatory agency may come either in the form of a standalone regulatory body or a department in a relevant ministry.²⁸⁶ Nevertheless, whatever the form of the regulatory agency, it should be independent of influence from the oil and gas industry operators, politicians, and other stakeholders (*see Table 2.1 above*).

²⁸² Ibid page 6.

²⁸³ CFA Society United Kingdom, 'Effective Regulation' (2011), Position Paper available at: < <https://www.cfauk.org/-/media/files/pdf/pdf/5-professionalism/3-research-and-position-papers/effective-regulation.pdf> > accessed 13/03/2020.

²⁸⁴ Regulatory rules and procedures should preferably be outlined in secondary rather than primary legislation, or as a standalone document to facilitate the changes in specific regulations which may be necessary over time.

²⁸⁵ The World Bank 2009 (n 1).

²⁸⁶ For example, the Energy Resource Conservation Board (ERCB), Alberta, Canada, provides a good example of a standalone regulatory body. The Licensing and Consents Unit of the Department of Trade and Industry in the United Kingdom and the Norwegian Petroleum Directorate, as well as the Interior Department's Minerals Management Service in the United States, are perfect examples of departments in the relevant ministry.

2.5 Evaluation and Consideration

This chapter has critically reviewed contemporary global and regional issues around air quality and atmospheric protection. This is an aspect of environmental regulation needed to establish the genesis of countries' environmental laws and policies regarding the treatment of gas flaring. The contemporary issues discussed are primary global concerns of oil-producing countries and public/private organisations and constitute the main agendas of the United Nations. This chapter has argued that, although neither an international nor regional instrument specifically prohibits AG flaring, inferences can be made about the existing regional instruments as conferring an obligation on oil-producing developing nations of the African continent to end gas flaring within their jurisdiction. Similarly, in light of the substantial GHG emissions from AG flaring within the oil-producing countries that are parties to the UNFCCC, this chapter revealed that there might also be an implied obligation for the UNFCCC parties to minimise AG flaring.

However, the revelation led to two arguments: firstly, UNFCCC can hardly be said to expressly confer an obligation on its contracting parties to end flaring. Its ultimate purpose is stabilising and preventing it from attaining a dangerous level. Secondly, the UNFCCC's binding obligation to reduce GHG emissions is only applicable to annexe 1 countries, which does not include Nigeria and some major flaring nations. Therefore, the harmless argument is that while parties under annexe 1 might have a moral obligation to end gas flaring under the UNFCCC, there is no precise and clear obligation on non-annexe 1 countries.²⁸⁷ Nevertheless, Trail Smelter's decision to avoid causing transboundary environmental harm to neighbours could be argued to have placed such an obligation under other international frameworks. This is because emissions and other pollutants from flaring sometimes transcend into neighbouring jurisdictions.

²⁸⁷ However, the regional instruments studied have remedied the deficiencies of the international instruments. Both the Abidjan Convention and the African Charter could be suggested to have implicitly imposed an obligation on Nigeria to end gas flaring because of adverse effects on the environment and violation of the host-communities' rights.

It can be suggested to impose an obligation on Nigeria and other oil-producing countries under international customary law to minimise or eliminate gas flaring.

Furthermore, the PA's regime could not be said to be internationally effective as regards emission reduction because of how the commitment was stipulated i.e. it's a more state-focussed approach. Thus, the distributive character of the PA's authority is such that its effectiveness or ineffectiveness is substantially a matter of national law and national public law in particular, and as such States have to domesticate it for it to be effective. Likewise, the NDCs as the principal mechanism by which the PA anticipates that its ambitions might be realised were not largely adhered to by the States. Thus, observers argued that even if parties meet their existing NDCs pledges global emissions will continue to rise steadily. By 2030, UNEP estimates, emissions will be 27% and 38% higher than is needed to limit warming to 2C and 1.5C, respectively (*see the discussion in section 2.2.5*).

Consequently, this suggests that at an international level, apart from international customary law, no instrument imposes an obligation on Nigeria and other oil-producing developing nations to end flaring. The effect of this argument could be subject to various interpretations and deniability. Likewise, it would be difficult to impose responsibility on gas flaring countries due to uncertainties about the exact volumes each country emits from its various emission sources. Therefore, the study turned to a regional approach to examine whether this exists. The chapter critically reviews the current regional frameworks and voluntary commitments made by oil-producing nations, including Nigeria, as conferring an obligation on them to end gas flaring. It has shown that regional instruments have a crucial role in ending GHG emissions' release into the atmosphere. Therefore, a regional approach to environmental regulation could fill in the gaps left by the current global environmental law regimes regarding atmospheric emissions from gas flaring practices.

This chapter critically argued that the regional approach would benefit the African region, especially the oil-producing countries in the area. Therefore, it is suggested that the African region develop and implement a protocol for hydrocarbon activities under the Abidjan Convention as the best way forward. The protocol should address all the environmental risks associated with petroleum operations. This effort would support and strengthen the UNFCCC's overall goal of

protecting the global environment. Moreover, the GGFRP framework model (see *figure 2.1 and table 2.1*) should guide oil-producing nations in designing robust anti-gas flaring regimes for optimal performance. According to the GGFRP, using fiscal stimuli (penalties and incentives) in both the contractual and fiscal frameworks could be more productive and useful in reducing routine flaring as they can often be tailored more specifically to individual circumstances. Similarly, the WB is concerned that not enough emphasis is being placed on monitoring and enforcement, an aspect that will be critically evaluated in the next chapter.

2.6 Conclusion

This chapter concludes that the success or otherwise of any international or regional framework and nations' adherence to voluntary commitments internationally and regionally depends mainly upon the domestic measures introduced by oil-producing nations. As such, the international and regional instruments and voluntary commitments reviewed above are not exceptions. Therefore, it is suggested that the burden lies on oil-producing nations to ensure effective implementation and enforcement of the relevant laws and policies. As a result, the appropriate regulatory measures are necessary to balance the nations' economic development and environmental protection objectives.

It is further suggested that oil-producing nations must ensure that their environmental objectives and policies relating to flaring and venting are updated and in line with global best practices to achieve environmental goals effectively and efficiently. Accordingly, most oil-producing nations have signed relevant international and regional instruments while establishing domestic legislation that often gives relevant regulatory institutions legal powers to carry out regulatory functions and environmental policies. Nigeria is also a signatory of all the international and regional instruments reviewed in this chapter. Therefore, the country is obliged to do everything within its power to ensure it keeps to its commitment. Consequently, the next chapter will critically review Nigeria's anti-gas flaring law and policy regimes. It will also review the country's anti-gas flaring contractual and regulatory frameworks in line with the constituent elements illustrated by the GGFRP.

CHAPTER THREE – General Review of the Design and Enforcement of Nigeria’s Anti-Gas Flaring Law and Policy Regimes - An Evaluation

3.1 Introduction

The relevant international and regional instruments for air quality and atmospheric pollution reviewed in the previous chapter have more or less laid the genesis of most oil-producing nations’ laws and policy regimes for regulating pollution resulting from petroleum operations. Therefore, this chapter critically evaluates Nigeria’s anti-gas flaring law and policy regimes' appropriateness and effectiveness of the enforcement processes. In this regard, the chapter starts with an overview of Nigeria's petroleum industry. It then critically evaluates the efforts by Nigeria to end gas flaring using various laws and policies, thereby examining the appropriateness of these laws and policies thereof. The chapter then assesses the effectiveness of the enforcement processes of such laws and policies. Ultimately, it highlights the gap - successes, challenges, and the inability of current Nigeria’s anti-gas flaring regimes to establish effective compliance with the ideal of zero flaring and environmental sustainability – this is to meet objective 2 of the study.

3.2 Overview of the Operations in Nigeria's Petroleum Industry

Nigeria's petroleum industry has been well-rounded in successful exploration and production activities since the beginning of its first commercially viable discovery. The exploration activities in Nigeria began in 1908, but not until 1956 that a commercially viable discovery was made.²⁸⁸ The discovery was made at Oloibiri Niger-Delta, with a modest production rate of 5,100 barrels per day (b/pd).²⁸⁹ Since then, the industry has continued to enjoy significant growth up to the present times. Current data shows Nigeria is the largest economy and the wealthiest oil resource centre in Africa, as its oil reserves have recently risen rapidly.²⁹⁰ The 2022 statistic estimates that the country has equal to 2.2% of the world's proven oil reserves. Thus, this has placed the country in the world's top ten and has the second-largest oil reserves in Africa.²⁹¹

Although Nigeria has established itself as a leading producer of crude oil, the country has abundant proven gas reserves. The country's natural gas reserves are at more than 206 trillion standard cubic feet (TSCF), and the FGN intends to grow it to 600 TSCF.²⁹² The country's current gas production is at 12 billion scf, including the AG produced in crude oil production. The country estimated proven natural gas reserves are equivalent to 2.7% of the world's gas reserves, making it the ninth-largest in the world and the largest in Africa.²⁹³ Nigeria is currently the largest oil producer and the fourth-largest liquefied natural gas (LNG) exporter in

²⁸⁸ Zhiguo Gao, *Environmental Regulation of Oil and Gas* (Kluwer Law International, 1998) 11 and George Sampson Akpan, 'The Failure of Environmental Governance and Implications for Foreign Investors and the Host State – A Study of the Niger Delta Region of Nigeria' (2005) 3 *OGEL*

²⁸⁹ Yinka Omorogbe, *Oil and Gas Law in Nigeria: Simplified* (1ST edn Malthouse Press 2003) 2

²⁹⁰ The country is considered the world's 10th largest reserves at about 37 billion barrels and the 6th largest in reserves and daily production within the OPEC. see OPEC, Annual Statistical Bulletin 2021, accessed 18/03/2022

²⁹¹ World Population Review, 'Oil Reserves by Country 2022' available at: < <https://worldpopulationreview.com/country-rankings/oil-reserves-by-country> > accessed 18/03/2022. Nigeria's current average daily production is over 1.5 million barrels.

²⁹² The Guardian, 'Nigeria to Grow Gas Reserves to 600 Trillion Cubic Feet' 9th December 2021 available at: < <https://guardian.ng/news/nigeria-to-grow-gas-reserves-to-600-trillion-cubic-feet/> > accessed 18/03/2022

²⁹³ British Petroleum (BP), 'Natural Gas - Statistical Review of World Energy 2021' 70th Edition, accessed on 18/0/2022

Africa.²⁹⁴ In 2021, Nigeria accounted for 25% of Africa and 2.2% of the total world crude oil production, and 1.78% of global gas production.²⁹⁵

The above figures clearly show the dominant role of Nigeria's petroleum industry on the global stage and within the African continent and the industry's influence on the country's economy. Even though the sector is now less than 10% of the overall country's GDP because of the current FGN diversification policies, it significantly contributes to Nigeria's economic growth. The industry accounted for about 90% of the country's real gross earnings.²⁹⁶ The sector has contributed about 65% of the Government revenue and 88% of Nigeria's foreign exchange earnings.²⁹⁷ Although 2020 witnessed an unfortunate event due to the COVID-19 pandemic, the NNPC reported that the country's crude oil and condensate production was 644,362,369 barrels, giving a daily average of 1.76 million b/pd. This was lower than the 2019 production by 12.36%.²⁹⁸

In the gas sector, 2,729.1 bscf of natural gas was produced. This also shows a decrease of 4.74% compared with 2019 production of 2,864.93 bscf. The country claimed that of the quantity of natural gas produced, 92.92% was utilised, and only 7.08% was flared. Nevertheless, even if the figures for the utilised gas are accurate, a substantial part of the produced natural gas was still flared. The AG flaring began at the commencement of production in 1956 when 95% of the total gas produced was flared.²⁹⁹ Up to the present time, a substantial part of Nigeria's gas production is being flared because of a lack of appropriate and effective laws and policy regimes for ending gas flaring, among others (*see figure 1.2 for Nigeria's gas flaring from 1994 to 2020*).

²⁹⁴ The International Energy Agency (IEA), 'Nigeria's Key Energy Statistics, 2018' available at: <<https://www.iea.org/countries/Nigeria>> accessed on 11/02/2020 last updated @EIA2020.

²⁹⁵ Ibid. This shows an increase from the previous years.

²⁹⁶ Nigerian National Petroleum Corporation, 'History of the Nigerian Petroleum Industry' available at: <<https://www.nnpcgroup.com/NNPC-Business/Business-Information/Pages/Industry-History.aspx>> accessed on 11/02/2020

²⁹⁷ Wale Ajayi, 'Nigerian Oil and Gas Update' KPMG Insights of the 23 April, 2019

²⁹⁸ Nigerian National Petroleum Corporation (NNPC), *2020 Annual Statistical Bulletin* Corporate Planning and Strategy Division NNPC ASB 2020 – 1st Edition

²⁹⁹ Ibid

3.3 The Making and Design of Nigeria's Anti-gas Flaring Legal Regime

The term 'legal regime' in a generic form means a system of rules and regulations governing something created, established, or founded by law. Thus, it could also be summarily understood as a framework of legal rules and regulations.³⁰⁰ Consequently, this study used the term to mean the framework of legal rules, regulations, and policies for treating associated gas in Nigeria.³⁰¹ As it's the responsibility of host governments to design anti-gas flaring legal regimes and for the oil companies to comply with them, Nigeria, upon discovery of commercially viable petroleum resources in 1956, considered Command and Control (CAC) as a form of regulatory model to regulate petroleum activities in the country. At the time, no law or policy was explicitly made to combat flaring. Gas flaring regulations could only be construed under the 1999 Nigerian Constitution (as amended) and the Petroleum Act 1969. The Constitution only recognised pollution control in general terms. It accordingly provides under the fundamental objectives and directive principles of a state policy provision that; "The State shall protect and improve the environment and safeguard the water, air, and land, forest, and *forest and wildlife of Nigeria*".³⁰² Following this directive, the Nigerian government enacted laws and policies dealing with environmental and air quality control issues.

As Nigeria comprises federating units, different environmental laws operate at the federal and state levels.³⁰³ However, the power to make laws and regulations

³⁰⁰ See Black's Law Online Legal Dictionary, 2nd edn available at:< <https://thelawdictionary.org/regime/>>, Reverso Online Dictionary, Available at:< <https://dictionary.reverso.net/english-definition/legal+regime>> and USLegal.Com available at:< <https://definitions.uslegal.com/l/legal-regime/>>, accessed on 16/07/2017

³⁰¹ The World Bank 2009 (n.5), Thus, the essential structures of any country's gas flaring law and policy regime is determined by that country's environmental and economic objectives, as well as its unique circumstances The legal, regulatory, fiscal, and contractual frameworks governing the gas flaring regime of one country cannot merely be copied from that of another since the gas flaring regime is a product of specific circumstances

³⁰² The Nigerian Constitution 1999 (as amended), s 20. The Constitution of the Federal Republic of Nigeria 1999 succeeded the 1979 Constitution, which in turn succeeded the 1963 and 1960 Constitutions. All previous constitutions had similar provisions regarding ownership of oil/minerals and the protection of the environment.

³⁰³ The different States which make up the Federal Republic of Nigeria each have their own state assemblies which are responsible for passing laws regarding such state. The national

relating to natural resources is within the Federal Government of Nigeria's (FGN) exclusive control. As such, only the FGN and the National Assembly (NASS) have the power to make laws and policies regarding petroleum activities and environmental protection. Consequently, the provision of section 44(3) of the Constitution states that "*Notwithstanding the foregoing provisions of this section, the entire property in and control of all minerals, mineral oils and natural gas in under or upon any land in Nigeria or in, under or upon the territorial waters and the 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.*"

Therefore, pursuant to the above power given to the NASS under the Constitution, the *Petroleum Act*, being the first Act regulating petroleum activities in Nigeria's industry, was passed in 1969.³⁰⁴ Section 1 of the Act adopted the provision of section 44(3) cited above by placing the entire ownership and control of all petroleum in the Federal Republic of Nigeria. While section 1(2) of the Act further clarifies that the land referred to includes land covered by water under Nigeria's territorial waters of Nigeria, the continental shelf, or the Exclusive Economic Zone (EEZ). Thus, Nigeria declares and exercises landward and offshore petroleum authority under these provisions within its jurisdiction.

Therefore, it could be understood that the *Petroleum Act* was the primary basis for laws and policies regulating petroleum activities in Nigeria. The Act did not explicitly contain a provision for the treatment of AG. But it gave the petroleum minister the power to make regulations relating to licenses and other matters to which issues relating to the prevention of pollution to the atmosphere are included.³⁰⁵ Consequent to the power, a *Regulation* was made in 1969 by the then minister of petroleum resources that had less or no impact on gas flaring.³⁰⁶ The Regulation required the oil companies to submit to the Minister any feasibility

assembly is responsible for passing laws regarding the federation as a whole and it is usually the case that where there are conflicts between the National laws and the state laws, the national law shall prevail. In addition to federal and state laws, local governments are empowered to make bye-laws to cover their jurisdiction.

³⁰⁴ Cap 350 Laws of the Federation of Nigeria (LFN) 1990; and, Cap P10 LFN 2004.

³⁰⁵ Ibid s 9 (1) (b) & 12

³⁰⁶ *Petroleum (Drilling and Production) Regulations (L.N. 69 of 1969).*

study, programme, or proposals for the utilisation of the AG that has been discovered in their licensed area not later than five years after the commencement of the production.³⁰⁷ Although the Regulation has been gazetted, the oil companies saw the requirement as non-obligatory.³⁰⁸

Furthermore, the *Regulation* did not prescribe any penalty for non-compliance. There were also no measures to discourage flaring before or after submitting the required feasibility study or programme for gas utilisation. The Regulations merely required oil companies to submit a feasibility study or programme for gas utilisation and nothing more.³⁰⁹ Consequently, one might argue that an oil company could engage in AG flaring before or after submitting the required feasibility study or programme for gas utilisation without penalty. Likewise, the wording of the Regulation that “*the Licensee or lessee of an Oil Mining License shall not later than five years after the commencement of production, submit to the Minister of Petroleum Resources, a feasibility study...*” can be seen as express permission for the oil companies to flare AG for five years without any scrutiny.³¹⁰

Therefore, it is submitted that the *Regulation* could not be described as effective as it was neither adhered to by the oil companies nor enforced by the Nigerian government.³¹¹ In any event, the *Regulation* was inherently flawed as regard AG flaring. Consequently, it could be suggested that until 2021, the Petroleum Act 1969 was the primary law regulating petroleum activities, and there was practically no effective legal regime for combating gas flaring in Nigeria until 1979. In 1979, the country laid the first legal regime establishing frameworks for treating AG in the country. Consequently, the following critical evaluation will be on such frameworks while relating their appropriateness and effectiveness to the GGFRP’s model discussed in *section 2.4*.

³⁰⁷ Ibid Regulation 43

³⁰⁸ Uchenna Jerome Orji, ‘An appraisal of the legal frameworks for the control of environmental pollution in Nigeria’ (2012) 38 (2) *Commonwealth Law Bulletin* p. 331

³⁰⁹ Ibid

³¹⁰ G. Adeniji, ‘Approaches to Gas Flare Reduction in Nigeria’ (2012) *Global Forum for Gas Flare Reduction*

³¹¹ Malumfashi (73)

3.3.1 Legislative Framework

The World Bank (WB) observed that legislation for AG treatment should be clear, precise, comprehensive, and unambiguously designed. In Nigeria, the 1979 *Associated Gas Re-injection Act*³¹² was the first legislative framework established explicitly for regulating AG flaring. The Act required oil companies to prepare and submit to the minister programmes for AG utilisation or re-injection³¹³ and expressly set the 1st of January 1984 as the deadline for the cessation of gas flaring³¹⁴ with a forfeiture of the concession and license as a likely penalty for non-compliance.³¹⁵ The Act further empowered the minister to issue certificates in exceptional situations to an oil company to continue flaring gas if such a company pays the sum prescribed by the Minister.³¹⁶

The Act prescribed a penalty including the likely forfeiture of licence/concession for flaring without written approval from the petroleum minister after the stated 1st January deadline.³¹⁷ The Act also empowered the minister to withhold all or part of any entitlements due to the violators to upset the cost of implementing a desirable re-injection scheme, the repair or restoration of any reservoir in the field in accordance with good oil-field practice.³¹⁸ Thus, from the Act's provisions, it is glaringly evident that Nigeria has entrenched a CAC regulatory approach to deal with routine flaring in the country. The approach generally seeks to command businesses not to do something by passing a law that makes that thing illegal and then delegating authorities to enforce such law through imposing fines or penalties on violators.³¹⁹

However, this approach was criticised as being inappropriate for regulating gas flaring. For instance, Orji criticised the outright fixed deadline for the cessation of

³¹² Decree of 1979, (now *The Associated Gas Reinjection Act* Cap 26 L.F.N 1990/Cap A 25 L.F.N 2004)

³¹³ Ibid Sec 2 see also Preamble to the Act

³¹⁴ Ibid Sec 3 (1) Ibid

³¹⁵ Ibid Sec 4 (1)

³¹⁶ Ibid Sec 3

³¹⁷ *The Associated Gas Reinjection Act* Cap A 25 L.F.N 2004, sec 3 & 4

³¹⁸ Ibid sec 4 (2)

³¹⁹ Jody Freeman and Charles D. Kolstad, 'Prescriptive Regulations versus Market-Based Incentives' in Jody Freeman and Charles D. Kolstad, *Moving to Market in Environmental Regulation: Lessons from Twenty Years' Experience* (Oxford Scholarship Online, 2007).

AG flaring without recognising the lack of required supporting infrastructure as a request to compel gas utilisation by the 'threat of a stick'.³²⁰ Additionally, Orji further argued that, apart from making provision for the submission of feasibility reports by oil companies interested in natural gas production and the penalty for failure to cease AG flaring, the Act made no mention anywhere of any other related penalties for gas flaring.³²¹ Orji's argument indirectly suggests that the law does not make gas flaring illegal; instead, it requires oil companies to comply with the requirement for submitting a feasibility study or programme for AG utilisation.

Omorogbe similarly argued that the forfeiture of concession/license as the likely penalty for AG flaring was too rigorous.³²² Equally, the blanket power given to the minister to issue a certificate/permit for continued flaring if he is satisfied that gas re-injection is not feasible could also be seen as express permission for oil companies to flare gas.³²³ This is because the Act merely grants the minister power to issue a permit without strictly setting out criteria for granting such permits neither limiting the circumstances for the grant nor prescribing the permissible limit of AG volumes to be a flare. Nevertheless, considering the substantial economic loss due to flaring and its adverse effects on the affected communities, one could argue in favour of the penalty imposed as justifiable. It was submitted that this Act would have effectively curbed AG flaring in Nigeria if not for the problem of infrastructure and funding.

Consequently, it became apparent that the 1979 Act could not achieve its stated objectives as oil companies could not comply with the deadline, and flaring has continued routinely. Thus, the then petroleum minister signed a new *Regulation* relaxing the prohibition in 1985 subject to certain conditions.³²⁴ The 1985

³²⁰ Uchenna Jerome Orji, 'Moving from Gas Flaring to Gas Conservation and Utilisation In Nigeria: A Review of the Legal and Policy Regime' (2014) *OPEC Energy Review of June 2014* 149 - 183

³²¹ Ibid

³²² Yinka Omorogbe, 'An Appraisal of Nigerian Natural Gas Legislation' (1985) 4(2) *Oil and Gas Law and Taxation Review* 51

³²³ *The Associated Gas Reinjection Act 1979* s 3(2)

³²⁴ *The Associated Gas Re-Injection (Continued Flaring of Gas) Regulations* of 1st January 1985. These conditions include; (a) where more than 75% of the produced gas is efficiently utilised or conserved; (b) where the produced gas contains more than 15% impurities (such as N₂, H₂S, and CO₂.) that would render the gas unsuitable for industrial purposes;

Regulation re-assured the petroleum minister's blanket power to permit flaring in appropriate cases outside the specified conditions.³²⁵ Accordingly, just like the 1979 regime, the 1985 *Regulation* has been criticised for not paying much attention to very salient issues on gas flaring. Omorogbe revealed that, by the time it came into force, it had exempted 86 out of 155 fields from the anti-flaring provision.³²⁶ At the same time, the remaining fields were subjected to paltry penalties making it far more economical for the companies to flare than to utilise or re-inject gas.³²⁷

Therefore, when it became noticeable to the FGN that the combined effect of the 1979 regime and 1985 *Regulation* could not provide a meaningful solution, the country then resorted to an economic regulatory approach by amending the Act.³²⁸ As an alternative to CAC, the approach, as suggested by Denny, represents a new pragmatic approach to environmental regulation.³²⁹ For a century, economists have argued that policymakers should take advantage of the approach in designing environmental regulations.³³⁰ The economic approach has become more frequent and widely accepted by policymakers as a reasonable way to tackle environmental externalities.³³¹ Thus, the country realised the importance of having an economic approach in the mix of its environmental regulation when, in 1990, it resorted to penalty-based and incentive-based fiscal regimes. Thus, the following headings review the regimes creating such fiscal frameworks currently operating in the country.

or (c) where an on-going utilisation programme is interrupted by equipment failure (provided that, such failures are not considered too frequent by the Minister and that the period of anyone interruption is not more than three months). (d)The fourth condition is where the ratio of the volume of gas produced per day to the distance of the field from the nearest gas line or possible utilisation point is less than 50,000 SCF/KM. It is not technically advisable to re-inject the gas in that field. See s. 1 (a-d)

³²⁵ Ibid s. 1(e)

³²⁶ Ibid Omorogbe, (n 289) 59

³²⁷ Ibid

³²⁸ The *Associated Gas Re-injection (Amendment) Act* 1985 Decree No. 7 of 1985

³²⁹ Ellerman A. Denny, 'Are Cap-and-Trade Programs more environmentally effective Than Conventional Regulation? In Freeman and Kolstad (n 318)

³³⁰ The economic approach's perspectives are mainly economists, but lawyers' perspectives will also be considered particularly when assessing the efficiency of this instrument and its legal implication. See Nancy kete, 'Environmental Policy Instruments for Market and Mixed market Economies' (1994) 4 (1) *Utilities Policy Journal* 5-18

³³¹ Ted Gayer and John K. Horowitz, *Market-based Approaches to Environmental Regulation* (Now Publishers, 2006) 2

3.3.2 Fiscal Framework

Appropriate design and effective implementation of a fiscal framework could help reduce environmental pollution and create more economic benefits. However, the WB has found that many oil-producing developing nations failed to benefit from that due to their inappropriate fiscal design and inefficient implementation.³³² As one of such nations, Nigeria realised that its initial regulatory approach for the AG treatment was not yielding the desired result and could not induce compliance. The country then resorted to both penalty-based and incentive-based fiscal frameworks to supplement the hitherto CAC approach. Prowse viewed that, for Nigeria to achieve its elusive goals of ending gas flaring, the government must promote a fiscal framework to encourage AG utilisation projects.³³³

3.3.2.1 Penalty-based Fiscal Framework

The penalty-based fiscal system charges a fee in fines or taxes on the pollution that firms generate, offering a straightforward approach to price negative environmental externalities. For instance, charges are imposed on activities that cause external damage, and since businesses would now bear those costs directly, they are motivated to reduce pollution.³³⁴ Pigou argued that pollution charges incentivise firms to reduce pollution and thereby economise on its environmental use.³³⁵ However, Critics of this system suggest that it could only encourage pollution sources to reduce pollution but could not assure that the goal would be achievable.³³⁶ Nevertheless, Nigeria realised the importance of this system when after recognising that the objective of ending flaring is not achieved, it resorted to this framework by passing a *Regulation* that introduced gas flaring charges.³³⁷

³³² The World Bank 2009 (n 1)

³³³ Nick Prowse, 'Natural Gas in Nigeria' (2006) 4 (3) *OGEL*

³³⁴ Maureen L. Cropper and Wallace E. Oates, 'Environmental Economics: A Survey' (1992) 30 (2) *Journal of Economic Literature* 675 - 740

³³⁵ Arthur Cecil Pigou, *The Economics of Welfare* 1920 (4th edition MacMillan, London 1932)

³³⁶ Winston Harrington and Richard D. Morgenstern, 'International Experience with Competing Approaches to Environmental Policy: Result from Six Paired Cases' in Freeman and Kolstad (n 319)

³³⁷ *The Associated Gas Re-injection (Amendment) Act* 1985 Decree No. 7 of 1985. see also Adeniji, G., 2012. Approaches to Gas Flare Reduction in Nigeria, Global Forum (Global Gas

The *Regulation* introduced a penalty of two kobos (N0.02k) per 1000 standard cubic feet (scf) of gas flared at any place where a permit to flare was not granted.³³⁸ The amount was later increased to N0.50 per 1000 scf in 1990³³⁹ and N10.00 per 1000 scf in 1998³⁴⁰ and lastly increased to \$3.50 per 1000 scf in 2008.³⁴¹ Nevertheless, it is submitted that these fines appear not to have achieved their stated objective as they were too meagre to serve as a deterrent or punishment. They were insufficient compared to the amount Nigeria loses in routine flaring annually.

Omorogbe argued that the penalty was ineffective as it only made it economically wise for oil companies to flare than utilise or re-inject the gas. Omorogbe revealed that Gulf Oil (now Chevron) claimed it was cheaper to flare gas and pay the penalty than utilise it.³⁴² While gas flaring would only cost the company \$1 million, switching from water to gas injection would cost about \$56 million.³⁴³ Similarly, a joint study by the CJP and ERA estimated that the AG flaring penalty payment is significantly meagre - between \$150,000 and \$370,000 (20 million and 50 million Naira) annually. But the country loses between \$500 million and \$2.5 billion to gas flaring annually.³⁴⁴ Thus, one could argue that the penalty only succeeded in monetising routine flaring at a ridiculously cheap rate and made it more economical for oil companies to flare gases rather than harness or conserve them through utilisation or re-injection schemes.

Furthermore, it was also observed that the cost of the gas utilisation project when the *Regulation* was introduced amounted to between \$50 – \$60 million, which is

Flaring Reduction Forum: London, October 24 and 25), p. 4, Omorogbe (n 289) and also Engr. Antigha B. Ekaluo – Deputy Director (Gas Monitoring and Regulation) of the Department of Petroleum Resources – Being a paper presented at the Gas Competence Seminar organised by the Nigeria Ministry of Petroleum Resources, held 13th December, 2016 at Sheraton Hotel & Towers.

³³⁸ Ibid

³³⁹ *The Associated Gas Re-injection (Amendment) Regulation 1990*

³⁴⁰ *The Petroleum (Drilling and Production) Regulation 1998*

³⁴¹ National Domestic Gas Pricing Regulation Pricing 2008

³⁴² Ibid Omorogbe (289)

³⁴³ Ibid Omorogbe (289)

³⁴⁴ The Climate Justice Programme and Environmental Rights Actions/Friend of the Earth Nigeria, 'Gas Flaring in Nigeria: A Human Rights, Environmental and Economic Monstrosity' Published June, 2005 and also see The World Bank, *Regulation of Associated Gas Flaring and Venting: A Global Overview and Lessons'* (2004) Global Gas Flaring Reduction (a Public-Private Partnership) Report Number 3 Washington DC.

incomparably more than the paltry fines imposed for AG flaring.³⁴⁵ Kumanov suggested that it was economically beneficial and comparatively cheaper for oil companies to continue gas flaring by paying the inadequate penalty than implementing a gas re-injection and utilisation programme as envisaged by the 1979 Act.³⁴⁶ Justice Derefaka has recently revealed that Nigeria lost approximately \$10 billion of revenue due to its inability to utilise flared gas.³⁴⁷

To block this monumental wastage, the Nigerian President, in July 2018, in his power as the country's petroleum minister, signed a new legal framework that reviewed the gas flaring penalty.³⁴⁸ The framework was made in exercising power given to the petroleum minister by the 1979 Act and the Petroleum Act.³⁴⁹ The framework has maintained the AG flaring penalty by categorising the oil fields into smaller and larger fields. The field that produces more than 10,000 b/pd was subjected to \$2 per 1000 scf of gas flared, while the field with less than 10,000 b/pd is liable for \$0.50 per 1000 scf of gas flared.³⁵⁰ Likewise, the penalty applies to all cases, irrespective of whether the flaring is routine or non-routine but exempts such fields with the minister's permit.³⁵¹ Moreover, the exemption extends to where the flaring resulted from an act of war, community disturbance, insurrection; storm; flood, earthquake, or other natural phenomena beyond the reasonable control of the producer.³⁵² The FGN is optimistic that this framework will bring more investment into the country's gas market and end flaring.³⁵³

³⁴⁵ Sarah Ahmad Khan, 'Khan *'Nigeria: The Political Economy of Oil'* (OUP, 1994) 162

³⁴⁶ Baurzhan Kumanov, 'Anti-Gas Flaring Regulations and the Law: The History and Recent Developments in Kazakhstan and Nigeria' (2012) 10 (5) *OGEL*

³⁴⁷ Justice Derefaka, Programme Manager National Gas Flare Commercialisation Programme (NGFCP), 'The Monetisation of Gas: Perspectives and Opportunities in Nigerian Gas Industry' Presented at the Nigerian Norwegian Chamber of Commerce (NNCC) Q1 2018 Business Roundtable Seminar held at Lagos Nigeria on 9th April, 2018

³⁴⁸ *The Flare Gas Reduction (Prevention of Waste and Pollution) Regulation 2018* Volume 105 no. 88 of 6th July, 2018 (hereinafter referred to as *The Regulation, 2018*). The framework's main objective is reducing the environmental/social impact caused by gas flaring, protect the environment, prevent waste of natural resources, *Regulation 1*.

³⁴⁹ *The Associated Gas Reinjection Act 1979, Sec 5 and The Petroleum Act 1969, sec 9*

³⁵⁰ *Ibid Regulation 13 Part II*

³⁵¹ *Ibid Regulation 13*

³⁵² *Ibid Regulation 14 (1-2) & 3*

³⁵³ The Regulation also asserts the power and duty of the DPR (now NURC) to request for AG flaring data from a producer while criminalises reporting of inaccurate, incomplete or falsification of flare gas data to the extent that any company or person acting on behalf of the company who do so will be liable to criminal prosecution, *Regulation 2*

However, it is submitted that, no matter how appropriate the design of this regulation may be, the objective of ending gas flaring could only be realised if the regime is effectively enforced.³⁵⁴ Additionally, adequate incentives are required to motivate oil companies to invest in gas reduction and utilisation projects.³⁵⁵ The country realised this when introducing an incentive-based fiscal framework in its regulatory approach. Thus, the next heading reviews the fiscal framework incentivising AG utilisation currently operating in the country.

3.3.2.2. Incentive-based Fiscal Framework

This fiscal framework works similarly with pollution charges or taxes reviewed above to address environmental pollution. Thus, payments in the form of incentives are offered through subsidies to firms to encourage them to engage in behaviours that reduce emissions. The early fiscal incentives regarding flaring in Nigeria were introduced by the amended Company Income Tax Act (CITA) 1998. The CITA provides tax relief to investment opportunities in gas utilisation projects, including an initial three (3) years tax-free period, renewable for two (2) more years.³⁵⁶ The CITA also provides tax-free dividends when the investment capital is in foreign currency or the imported machinery is not less than 30% of the company's equity share capital.³⁵⁷ Alternatively, a 35% investment tax allowance is provided, which shall not reduce the asset's value. Additionally, an accelerated capital allowance after the tax-free period includes a 90% annual allowance with a 10% retention for investment in plants and machinery.³⁵⁸ This is, in addition, also a 15% investment allowance which shall not reduce the value of the asset.³⁵⁹ Similarly, all loans obtained for gas utilisation projects with the approval of the Minister are interest-deductible.³⁶⁰

³⁵⁴ Coglianese and Coursy (64), at 455

³⁵⁵ Mark Olise and Tonye Nria-Dappa, 'Overcoming Nigeria's Energy Crises – Towards Effective Utilisation of Associated Gas and Renewable Resources in the Niger Delta' Social Action Briefing No.2 2009

³⁵⁶ *The Company Income Tax Act, Decree 18 of 1998 and also Decree 30 1999 (now LFN 2004 and Repealed by the CITA 2007 No. 56) Part IV Incentives to Gas Industry, s 39*

³⁵⁷ *Ibid* Thus, the tax-free period starts when the company commences production as certified by the Minister of petroleum resources

³⁵⁸ *Ibid* s 39

³⁵⁹ *Ibid*

³⁶⁰ *Ibid*

The country also introduced the *Nigerian Liquefied Natural Gas (Fiscal Incentives, Guarantees, and Assurances) Act*.³⁶¹ The Act's main objective is to codify fiscal incentives, guarantees, and assurances for investments and projects relating to exploiting and utilising natural gas through the NLG Company.³⁶² Emole has described the introduction of the Act as a bold attempt at creating a fiscal regime for developing and utilising Nigeria's vast natural gas reserves and providing an attractive environment for oil companies to utilise the country's AG, most of which is wasted through flaring.³⁶³ However, a study about the Act's effectiveness ten years after its introduction suggested failure to reduce AG flaring significantly. Idris observed that while the Act had influenced investment in the country's untapped gas reserves, its significant impact on ending AG flaring remain to be seen.³⁶⁴

It became apparent to the FGN that the Act is not yielding the desired results in reducing routine flaring. The country then moved towards strengthening the regime with additional incentives backed by legal force. In consultation with the oil companies, the then-military government introduced the Associated Gas Framework Agreement in 1998. The primary aim of the collaborative framework was to provide additional incentives for investment in AG utilisation projects.³⁶⁵ The framework offers tax holiday incentives and an exemption for all AG utilisation

³⁶¹ Decree No. 39 of 1990 Supplement to Official Gazette Extraordinary No.76 of 30 December 1990, Part A. pp. A591–598 with a retrospective commencement date of 24th of April, 1989 (now L.F.N 2004)

³⁶² The Act granted the Nigerian LNG Company the status of a pioneer company for the purposes of taxation and a tax relief period of 10 years starting from the date of the first commercial delivery of LNG produced by the company to a purchaser. The Act also provides that all interests payable by the company including to third parties, shareholders or subsidiaries of shareholders are tax deductible and further exempts the company and its contractors from the payment of import duties and value-added tax (VAT) with respect to all necessary imports of machinery, equipment and materials for the construction of the LNG plant and ancillary facilities used by the company. *See section 1, 5 and 7 of the Act*

³⁶³ Chijioke E. Emole, 'Nigeria's LNG Venture: Fiscal Incentives, Investment Protection Schemes and ICSID Arbitration' (1996) 8 *African Journal of International and Comparative Law* 169

³⁶⁴ M.N Idris, 'Review on global investment on liquefied natural gas (LNG) projects and development: targeting on reduce flaring, cleaner and energy efficiency' (2012) 2 (8) *Journal of Petroleum and Gas Exploration Research* 148–149, though, the Act has succeeded in encouraging investments in the exploitation and development of non-associated gas in the country.

³⁶⁵ The Finance (Miscellaneous Taxation Provision) Decree of 1998

projects as part of the eligible oil field development.³⁶⁶ Thus, within this framework, some major gas projects such as the Oso condensate project, Escravos Gas Project (EGP)³⁶⁷, LNG project, and the West African Gas Pipeline Project (WAGPP) were initiated and advanced.³⁶⁸

The impact of this framework was shortly realised as the Nigerian LNG Project was accomplished,³⁶⁹ to which Nigeria made its first export of natural gas to Europe in 1999.³⁷⁰ Thus, the framework has influenced a considerable amount of flaring reduction in the country; and serves as a broad-based fiscal incentive for AG utilisation.³⁷¹ However, notwithstanding the accomplishment, it is submitted that the fiscal framework objectives have not been fully achieved, mostly due to many factors. Orji has mentioned some of these factors, including inadequate infrastructure to harness and transport AG from most oil fields to the utilisation plants.³⁷² Moreover, the fact that flaring remained an easy and cheaper option for the oil companies could also be another factor for the continued flaring.

Nevertheless, in the overall context of the AG flaring trend in the country, the framework had influenced some reduction in AG flaring (*see figure 1.2*). Even though a concerted effort is still required, substantial volumes of AG are being flared by the oil companies, and more efforts are needed to end gas flaring. For instance, as suggested by the WB, AG flaring can be addressed through the

³⁶⁶ Ibid, the exemption provided include duty and VAT free importation of machinery and equipment, tax holidays for seven years, etc.

³⁶⁷ The Escravos Gas Project (EGP) which began operations in 1997 was the first major gas project to gather and process associated natural gas in Nigeria. See Center for Energy Economics, Gas monetization in Nigeria, *Case study from New Era in Oil, Gas and Power in Value Creation* (Bureau of Economic Geology, Jackson School of Geosciences: University of Texas, 2003), p. 5

³⁶⁸ B. Adaralegbe, 'Stabilizing fiscal regimes in long-term contracts: recent developments from Nigeria' (2008) 1 (3) *Journal of World Energy Law and Business* 239–246

³⁶⁹ The establishment of the project commenced in 1995 in a JV between the FGN, Shell, Total Agip and Mobil

³⁷⁰ This project led to the exports LNG to the following European buyers: ENEL (Italy), ENAGAS (Spain), Botas (Turkey), Gazde France (France) and Transgas (Portugal). See Olusoga Olapade, 'Effects of Gas Pollution on the Environment' (2003) 4 *OGEL*

³⁷¹ Knut Am and Sigurd Heiberg, 'Public-Private Partnership for Improved Hydrocarbon Recovery – Lessons from Norway's Major Development Programs' (2014) *Energy Strategy Reviews* 1-19

³⁷² Uchenna Jerome Orji, 'Moving from Gas Flaring to Gas Conservation and Utilisation In Nigeria: A Review of the Legal and Policy Regime' (2014) *OPEC Energy Review of June 2014* 149 - 183

provisions of the petroleum agreement. Therefore, the next heading reviews Nigeria's petroleum agreements to investigate if they contain any provision for treating AG flaring.

3.3.3 Contractual Framework

The WB also observed that AG flaring could be regulated when awarding exploration and production licences. At this stage, oil companies may not be subjected to the unilateral imposition of anti-gas flaring regulations, as both parties can negotiate their interests and mutually agree on how to handle the AG discovered in the field.³⁷³ The arrangement, mainly through the provisions of petroleum agreements, is termed the 'contractual approach to environmental regulation' in contrast to the 'legislative or statutory approach'.³⁷⁴ Nevertheless, as Goa suggested, a legislative framework is needed to place a legal obligation on the parties to include in each agreement such conditions relating to the performance of the contract as reasonably necessary to ensure compliance with environmental law and regulations.³⁷⁵ Therefore, legislative backing would be essential to make a contractual framework more robust and adequately complied with, particularly in developing oil-producing countries.

Gao further observed that developing countries have traditionally preferred the contractual mode of environmental regulation to the legislative approach. It was not until the 80's that many countries began to realise the importance of legislation for environmental protection. Many of such countries' contract provisions on environmental protection are inadequate. The only explicit reference is a brief clause requiring operators to conduct cleaning operations in any pollution resulting from the operations.³⁷⁶ The UN also observed that in many developing countries' early petroleum contracts' provisions on environmental protection, the only explicit reference is a brief general clause placing a non-obligatory condition

³⁷³ The World Bank, *Guidance on Upstream Flaring and Venting Policy and Regulation'* (2009) Global Gas Flaring Reduction (a Public-Private Partnership) March 2009 WDC.

³⁷⁴ See heading 3.3.1 above on legislative framework

³⁷⁵ Zhiguo Gao, *Environmental Regulation of Oil and Gas* (Kluwer Law International, 1998) 35. See for instance Regulation 19 (4) *Public Contract (Scotland) Regulations 2015* and the *Procurement (Scotland) Regulations 2016*

³⁷⁶ Ibid

on the operators to conduct their operations in such a manner as to cause minimum social and ecological disruption.³⁷⁷

Furthermore, another study conducted by Gao reveals that developing countries mostly favoured the pattern of the general principle of, or reference to – a brief and weak statement for environmental protection in their model contracts instead of specific conditions for environmental protection.³⁷⁸ Similarly, GGFRP observed that some contractual arrangements between the oil companies and the host governments of some developing countries only vaguely required them to follow good oil practices. Thus, operators often follow their operational procedure based on vague references in their contracts to avoid being found wanting.³⁷⁹ Most oil developing nations' petroleum contracts remain weak, unclear, and ambiguously designed regarding the treatment of gas flaring.³⁸⁰ For example, the Romanian 1996 Model Concession Agreement has introduced generic provisions requiring full compliance with EIA; conduct of operations under generally accepted international best practices; remedies in case of non-compliance, and possible revocation of contract in the event of repeated violation.³⁸¹

Unlike developing countries, developed countries usually update and improve their model contracts, including explicit clauses detailing environmental protection. For instance, Alberta Canada's production sharing contract (PSC) is one of the early contemporary frameworks for regulating routine flaring reduction.³⁸² The *Oil and Gas Conservation Act, 2017* requires that PSCs executed by oil companies must embrace gas application clauses to combat gas flaring and guarantee healthy exploration and production activities.³⁸³ The regulator may not approve a scheme

³⁷⁷ The United Nation Centre on Transnational Corporations (UN-CTC), *Alternative Arrangement for Petroleum Development: A Guide for Government Policy Makers and Negotiators*, UN Docs No. ST/CTC/43 of 1982, p 43

³⁷⁸ Zhiguo Gao, 'International Petroleum Exploration and Exploitation Agreements: A Comprehensive Environmental Appraisal' (1994) 12 *Journal of Environmental and Natural Resources Law* 249

³⁷⁹ The World Bank 2004 (n 61)

³⁸⁰ Ibid Gao (n. 375)

³⁸¹ See *Article XXIII* of the Romanian Model Concession Agreement, 1996. Cull from Gao (n. 375)

³⁸² Ibiroinke T. Odumosu, 'Transferring Alberta's Gas Flaring Reduction Regulatory Framework to Nigeria: Potentials and Limitations' (2007) 44(4) *Alberta Law Review* 836 - 902

³⁸³ *The Oil and Gas Conservation Act*, June 7, 2017, s. 16 (1), 36(1) Chapter O-6.

for oil and gas production as agreed under the PCS unless the lessee satisfies the regulator that any discovered AG will be gathered, processed, if necessary, or injected into the reservoir for storage or any other purpose.³⁸⁴ Moreover, companies must perform gas field optimisation reports on their gas concessions to prevent gas flaring. Though Bindemann observed that non-compliance with the gas field optimisation had not attracted any severe sanction, as no company was sanctioned stringently, the framework is an achievement that requires effective implementation.³⁸⁵ When effectively enforced, this requirement eliminates large volumes of flare gas within the Alberta-Canada jurisdiction.

However, unlike Canada, Nigeria's petroleum model contracts remain unclear regarding the treatment of gas flaring. Nigeria currently operates four contractual regimes; PSCs, joint ventures (JVs), Sole Risk, and Service Contracts, but the PSCs and JVs are more prominent in the country's petroleum industry.³⁸⁶ Nigeria has three PSC models, 1993, 2000, and 2005. Still, none of these models considers the treatment of AG flaring a priority despite the country's position as the largest gas flaring nation in the African continent.³⁸⁷ The FGN had recently acknowledged this failure when it stated that the previous PSCs models were structured more for crude oil than gas development.³⁸⁸

Although the country clarified that the current model incorporated gas utilisation provisions, they do not contain any commercial terms or enforcement mechanisms between the NNPC and the producers or operators.³⁸⁹ Thus, the current PSCs merely state that the contractor should investigate the discovery and submit

³⁸⁴ Ibid s. 38, 39 and 42.

³⁸⁵ Kirsten Bindemann, 'Production-Sharing Agreements: An Economic Analysis' (1999) WPM 25 *Oxford Institute for Energy Studies*

³⁸⁶ The current distribution of Nigerian concessions by lease contract types as of 2018: PSCs constitute 42%, Joint Ventures 34%, Sole Risk Contracts 23% and Service Contracts 1%. See *Department of Petroleum Resources, '2018 Nigerian Oil and Gas Industry Annual Report' Annual Report 2018*, pp. 23

³⁸⁷ Taiwo Adebola Agunleye, 'A Legal Analysis of Production Sharing Contract Arrangements in the Nigerian Petroleum Industry' (2015) 5(8) *Journal of Energy Technologies and Policy*.

³⁸⁸ The Federal Republic of Nigeria – Ministry of Petroleum Resources, 'National Gas Policy – Nigerian Government Policy and Actions 2017' approved by the Federal Executive Council June 28, 2017, and the Ministry of Petroleum Resources, '7 Big Wins Short and Medium Term Priorities to Grow Nigeria's Oil and Gas Industry 2015 – 2019'.

³⁸⁹ Ibid

proposals to develop the discovery in case of any discovery of a viable natural gas quantity. A separate agreement would then be negotiated for the discovered gas development.³⁹⁰ Thus, one may argue that the provision of the PSC only referred to a discovery of NAG instead of AG and therefore could still hold that there was no reference to the AG discovered in the license area. Consequently, this has exposed the inadequacy of Nigeria's contractual regime regarding the treatment of AG discovered in any given licence area.

Ekhaton observed that Nigeria failed to improve its contractual model agreements because the country favoured the CAC regulatory approach for regulating environmental pollution more than any approach.³⁹¹ The observation made by Ekhaton could be reasonable because, over the years, the FGN has seemed to adopt CAC regulatory model to enforce environmental standards. The oil companies have been predominantly allowed free reign in the adoption of safety procedures and pollution control procedures so long as their operations are conducted according to the so-called 'good oil field practice'. Moreover, the country's contractual framework was structured more for crude oil exploration; thus, AG and NAG development and utilisation were incidental to the industry's operations. Therefore, most PSCs and JVs have incorporated only gas utilisation clauses, but they do not explicitly contain terms for AG flaring.

3.3.4 Regulatory Framework

It is generally acknowledged that an effective regulatory framework is essential for proper AG utilisation. The GGFRP observes that an effective regulation involves the appropriate design of policies, rules, and guidelines thoroughly supported by the credible threat of enforcement and supervised by an effective institution.³⁹² The available literature on the effectiveness of the regulatory framework for combating routine flaring emphasises the distinction between what was to be

³⁹⁰ Ibid the National Gas Policy 2017.

³⁹¹ Eghosa Osa Ekhaton, 'Public Regulation of the Oil and Gas Industry in Nigeria: An Evaluation' (2016) 21(1) *Annual Survey of International & Comparative Law* 44

³⁹² Global Gas Flaring Reduction Partnership (GGFRP) 'Guidance on Upstream Flaring and Venting Policy and Regulation' Washington D.C. March 2009 Document No. 82612

regulated – which is the regulatory regime and who is saddled with the responsibility of carrying out the regulation - which is the regulatory agency.³⁹³ Adopting this categorisation of the regulatory framework, the GGFRP developed its model suggesting that effective regulation is composed of two essential elements of flaring regulation: regulatory regimes (i.e., the regulatory content or regulatory design) and regulatory agency (regulatory governance). Both should have a definite and clear role.³⁹⁴

3.3.4.1 The Regulatory Regime

A regulatory regime establishes the contents of what is to be regulated and how it is regulated, and its design may be a prescriptive-based or performance-based approach.³⁹⁵ Thus, to facilitate the changes in specific regulations that may be necessary over time, regulatory rules and procedures should preferably be outlined in secondary rather than primary legislation or as a standalone document.³⁹⁶ The regulatory regime of countries that substantially reduced flaring volume has contained some similarities. For example, Norway and Alberta-Canada have successfully developed their regulatory regime to include the critical elements and key features that contain; *Definitions and Boundaries; Regulatory Approval; Measurement and Reporting; Economic Evaluation, Monitoring, and Enforcement, and Public Dissemination.*³⁹⁷ In compliance with the suggestion made by the WB, policymakers of gas flaring countries have updated their secondary regulations and industry guidelines to incorporate these critical elements needed. For instance, the headings below compare Nigeria’s regulatory regimes with other successful jurisdictions to consider how well they contained the key features suggested by the World Bank.

³⁹³ Brian Levy and Pablo T. Spiller Levy, ‘The institutional Foundations of Regulatory Commitment: A Comparative Analysis of Telecommunications Regulation’ (1994) 10 *The Journal of Law, Economics & Organisation* at 201-246.

³⁹⁴ Ibid GGFRP (n 392)

³⁹⁵ Ibid

³⁹⁶ For instance, Alberta Canada has an excellent example of a dedicated piece of stand-alone regulatory legislation that covers most of the elements of the province’s flare and vent regulatory regime known as “Directive 060 ‘Upstream Petroleum Industry Flaring, Incineration, and Venting’” as recently amended. Release date: May 12, 2020 Effective date: May 12, 2020, unless otherwise indicated Replaces previous edition issued December 13, 2018

³⁹⁷ The World Bank – GGFRP (n 210 & 212) and *Figure 2.1*

I. Definitions and Boundaries

The regulatory regime should define the boundaries to regulate flaring activities. As stated earlier, flaring activities can be divided into continuous (routine) and intermittent. The continuous could be further divided into upsets (unplanned emergencies) and maintenance and tests (planned activities).³⁹⁸ Thus, the regulator's role is to define activities subject to specific flaring regulations. For instance, the regulation should aim to eliminate continuous flares and vents events.³⁹⁹ In contrast, improved operational practices need to address intermittent events to minimise the number and duration of events and the resultant flare and vent volumes.⁴⁰⁰ To this end, Nigeria and most oil producing nation have updated their regulatory frameworks to cater to all the activities identified through the passage of laws, industry guidelines, and standards, some of which will be considered below.⁴⁰¹

II. Regulatory Approval

Prior approval for flaring is a widely used regulatory approach and usually differentiates approval that applies to new and existing installations. Thus, as opposed to existing instantiations, flaring regulations for new facilities are addressed more effectively and at a lower cost, especially during field development planning.⁴⁰² Sequel to this, it is good for the regulator to require all operators to develop AG utilisation options during the design phase and incorporate appropriate gas utilisation facilities during construction. This requirement as field development has been applied in several jurisdictions,

³⁹⁸ IPIECA – Flaring Classification available at: <<https://www.ipieca.org/resources/energy-efficiency-solutions/flaring-and-venting/flaring-classification/>> last reviewed 10 April 2013, accessed 16/05/2020

³⁹⁹ Ibid

⁴⁰⁰ Ibid

⁴⁰¹ See particularly, the recent *Gas Flare (Prevention of Waste and Pollution) Regulations 2018, signed 5th July, 2018, The 'Guidelines For Flare Gas Measurement, Data Management and Reporting Obligations'* issued by the Department of Petroleum Resources 2018 and *The Guidelines For Flare Payment, 2018*. The Guidelines were issued pursuant to the Petroleum Act 1969, the Petroleum (Drilling and Production) Regulations 1969; Refining Regulations 1974 and finally the Flare Gas (Prevention and Waste and Pollution) Regulations, 2018.

⁴⁰² As GGFRP suggested, this is true both onshore and offshore, but in particular for the latter due to the typical lack of space on an offshore platform to retrofit additional (gas utilisation) equipment.

including Norway and the US, which do not allow an operator to develop a field until a solution that avoids AG flaring or venting is defined.⁴⁰³

In Norway, for instance, the *1996 Petroleum Activities Act (PAA)* provides that flaring beyond what is necessary to ensure normal operations is not permitted without approval from the Ministry of Petroleum and Energy (MPE)⁴⁰⁴. Thus, oil companies must apply to MPE for a permit to flare AG more than the quantities needed for standard operational safety.⁴⁰⁵ In Norway, the flaring permit can be obtained in three categories: Permit required in connection with the start of production in a new field; Permit necessary for regular operations, and Permit required in connection with operational difficulties.⁴⁰⁶ These permits are issued in the form of a total amount of flared gas per quarter and are limited to what is required for safety reasons to achieve regular operation.⁴⁰⁷ Permit applications must specify the type and level of atmospheric emissions and the technology applied to avoid or reduce flaring. Thus, emission limits are set case-by-case basis, considering relevant and applicable national and regional standards. Moreover, the PAA also recognised the Minister of Petroleum and Energy as the only authority with the final say on the quantity of gas flared and how long the AG flaring will last. Therefore, the volumes of AG flaring cannot exceed the amounts determined by the Minister.⁴⁰⁸

However, in Nigeria, before the enactment of the PIA 2021 (*see section 3.6.1.1 below*), new installations were not initially mandated to submit and implement a feasibility study or programme for gas utilisation because the provision that

⁴⁰³ In Norway, the requirement was issued by the Norwegian Department of Petroleum Resources and in the US it was under the US Interior Department's Minerals Management Service. See

⁴⁰⁴ No. 72 relating to Petroleum Activities, Act of 29 November 1996. Last amended by Act 24 June 2011 No. 38 and translated November 23, 2012 4-4

⁴⁰⁵ Ibid

⁴⁰⁶ These permits linked to temporary difficulties with the export or injection of gas into the reservoir.

⁴⁰⁷ Thomas K. Svensen, Sandra Simonsen and Kristian M Lind, 'Oil and gas regulation in Norway: overview' (2014) Q&A guide to oil and gas regulation in Norway, available at: <<http://uk.practicallaw.com/6-529-5206>> accessed on 08/09/2014. Last updated 04-09-2014

⁴⁰⁸ PA Act s 4-4

hitherto required oil companies to do so applies only to the existing installations.⁴⁰⁹ Moreover, one might even argue that an oil company could engage in AG flaring before or after submitting the required feasibility study or programme for gas utilisation without any penalty.⁴¹⁰ Nevertheless, not until the passage of the 1979 anti-gas flaring regime that a law was made that obligates the existing installations to obtain approval. For instance, the 1979 Act, while declaring the cessation of routine flaring, required that every company shall not later than 1st April 1980 submit a preliminary programme and detailed plans for the utilisation or re-injection of the AG discovered in their field.⁴¹¹

Consequently, the requirements for the existing installations have been adequately covered in the 1979 Act and its attended Regulation. While proscribing flaring without a permit issued by a minister, the Regulation allowed the flaring at the existing installations subject to certain stipulated conditions. These conditions include where more than 75% of the produced gas is effectively utilised, where the produced gas contains more than 15% impurities that render the gas unsuitable for industrial purposes, or where an ongoing utilisation programme is interrupted by equipment failure.⁴¹² The fourth condition is where it is not technically advisable to re-inject the gas because of the ratio volume of the produced gas or the field's distance.⁴¹³

The approach adopted by the two instruments requiring the regulator's prior approval may be appropriate where the number of installations is low but inappropriate when it is higher. The approach is akin to what was obtainable in Alberta, the US, and the United Kingdom (UK). In Alberta, for instance, operators are not required to obtain a permit to flare or vent except for a few well-defined situations, like where the concentration of H₂S in the gas exceeds 5%. However, each operator must invest in a gas utilisation project if its Present Net Value (PNV)

⁴⁰⁹ Petroleum (Drilling and Production) Regulations, 1969. It was amended in 1973, 1979, 1995, 1996 and Petroleum (Amendment) Decree 1996.

⁴¹⁰ G. Adeniji, 'Approaches to Gas Flare Reduction in Nigeria' (2012) *Global Forum for Gas Flare Reduction*

⁴¹¹ See Section 1 -3 Associated Gas Re-injection Act 1979.

⁴¹² The Associated Gas Re-Injection (Continued Flaring of Gas) Regulations of 1st January 1985 sec 1 (a -c)

⁴¹³ Ibid sec 1 (d)

exceeds the industry-wide threshold established by the regulator.⁴¹⁴ In contrast with the UK, each must obtain a permit to reduce intermittent flares and vents if the duration of an event exceeds a certain threshold.⁴¹⁵ Operators in Alaska must seek consent where the volumes exceed 1 million scf p/d, setting a volume-based threshold like Nigeria. Likewise, the US Outer Continental Shelf's framework only requires the operator to seek approval if the duration of intermittent flaring or venting exceeds 48 hours per event or 144 cumulative hours per month.⁴¹⁶

III. Measurement and Reporting

The measurement and reporting requirements evaluate compliance with flaring reduction targets and identify significant flaring sites for investigation. The GGFRP found that, in the past, regulators and industry players did not pay much attention to the accurate volumes of AG flaring because it has often been considered a byproduct that can be disposed of for safety considerations. However, now that the perception has changed, another challenge was how the regulator would develop flare and vent measurement guidelines because of the technical nature of the requirements of measuring AG.⁴¹⁷ The critical challenges for monitoring include substantial changes over a short period in the volumes to be measured, low gas pressure, and the presence of liquids and solids in gas. Although metering equipment like ultrasonic meters addresses many of these challenges, its use should be appropriately justified because of the high cost.⁴¹⁸

Like Measurement requirements, reporting flare and vent volumes is also an integral part of a regulatory regime. Thus, reporting allows the regulator to monitor the operators' compliance with approved flaring and venting levels; identify under-performing assets, for instance, by comparing the performance of

⁴¹⁴ *Directive 060:Upstream Petroleum Industry Flaring, Incineration, and Venting* AER Alberta-Canada. (Hereinafter referred to as *Directive 060*)

⁴¹⁵ Oil and Gas Authority, 'UK Regulatory Framework – ONGA Policy Position (UK Flaring Policy)' available at:< <https://www.ogauthority.co.uk/regulatory-framework/oga-policy-positions>> accessed on 20/04/2020

⁴¹⁶ Venting and Flaring Research Study Report, 'Analysis of Potential Opportunities to Reduce Venting and Flaring on the OCS' (January 2017) Prepared by Argonne Venting and Flaring Research Team, available at:< <https://www.bsee.gov/sites/bsee.gov/files/5007aa.pdf>> accessed on 20/04/2020

⁴¹⁷ The World Bank 2009 (n 1)

⁴¹⁸ Ibid

similar types of assets so that measures can be taken to improve the performance of poorly performing assets. It also helps classify assets warranting a site inspection and monitor flare and vent reduction progress. Some jurisdictions require electronic reporting to ensure that the regulators readily have comprehensive and up-to-date data. For instance, many regimes have developed and successfully implemented guidelines for measuring gas flare volume, and Norway is one of the best examples of such successful jurisdictions.⁴¹⁹

The Norwegian authorities acknowledged that environmental objectives could be achieved if emissions were effectively measured, monitored, and reported. Hence, the Norwegian Petroleum Department (NPD) planned and implemented the activities collaborating with the oil companies. The NPD and Norwegian Oil and Gas (industry players' association) have established a joint "Environmental Web" database for reporting AG flaring emission volumes.⁴²⁰ The NPD requires all Norwegian Continental Shelves (NCS) operators to report emission data directly into the database. Thus, the database allows both the companies and the NPD to analyse emissions from AG flaring, measure them, and then report them to the appropriate database more comprehensively and consistently.⁴²¹

Table 3.1 - The role of the relevant parties in measuring and reporting responsibilities in Norway⁴²²

MEASUREMENT	
OIL COMPANY (FIELD OPERATOR)	REGULATOR (GOVERNMENT)
<ul style="list-style-type: none"> ♣ Operators flaring AG during the operational phase are responsible for establishing the "internal control system (ICS)" to ensure compliance with the Government requirements that include an obligation to check sensor calibration every six months. ♣ The operator is responsible for measuring the amount of AG flared 	<ul style="list-style-type: none"> ♣ NPD would then verify the ICS sets by the field operators to ensure that petroleum activities are carried out following the Government's requirements and objectives and accepted by the oil companies' criteria goals ♣ NPD also observes the application of the equipment that measures the quantity of gas used for flooring and also measures

⁴¹⁹ Regulation Relating to Measurement of Petroleum for Fiscal Purposes and For Calculation of CO2 Tax (The Measurement Regulation) of 1st November 2001

⁴²⁰ NPD, 'The Environmental and Climate Change Consideration in Norwegian Petroleum Sector' (2012) Fact Sheet Publication of 11-04-2012, chapter 9

⁴²¹ NPD, 'The Environmental and Climate Change Consideration in Norwegian Petroleum Sector' (2010) Fact Sheet Publication of 05-07-2010

⁴²² Perrine Toledano, Belinda Archibong and Julia Korosteleva, 'Norway Associated Gas Utilisation Study' (2014) *Columbia Center on Sustainable Investment (A joint centre of Columbia Law School and the Earth Institute, Columbia University)*

through a <i>metering</i> system with an accuracy of plus or minus 5 percent only	fuel consumption and the quantity of gas used for flaring and venting
♣ Field Operators are responsible for keeping emissions inventory and are required to submit the same to the NPD for verification before the 1 st March of each year for tax purposes	♣ It verifies and collects the CO ₂ tax on the NCS and evaluates the oil companies annually to assess the impact of the tax on CO ₂ emissions
REPORTING	
♣ Operators with a flaring permit must operate within the permissible limit and report to the MPE/NPD indicating the amount of AG flared daily.	♣ NPD also has the responsibility of obtaining and evaluating the reports submitted by the field operator
♣ The operator must report the volumes of AG flared every six months for tax purposes as required by the CO ₂ Tax Act	♣ NPD compiles historical emission data annually and prepares forecasts for the activities, including gas flaring and venting.

Similarly, Alberta's Guidelines on flare and vent measurement summarise the issues that need to be considered for selecting and using a measurement option. For instance, the operator may estimate the volumes using technically sound procedures or use metering equipment but encourage metering equipment.⁴²³ The information obtained is published annually by the Alberta Energy Regulator (AER) (formerly Alberta Energy Utility Board - AEUB).⁴²⁴ The public reporting provides positive pressure on the operators to do better to reduce flaring as no one wants to be in the worst position. Consequently, the Nigerian regulator has recently adopted Norway's and Alberta's approaches. There are now provisions under the Gas Flare Regulation 2018 empowering the regulator to issue guidelines for a detailed requirement of measuring and reporting.⁴²⁵

Thus, due to that power, the DPR in 2018 established detailed industry guidelines for gas flare measurement, data management, and reporting obligations⁴²⁶. The Guidelines' main objective is to lay out producers and permit holders' criteria,

⁴²³ *Directive 017:Measuring Requirements for Upstream Oil and Gas, s.4.1 AER May 12, 2020 see also Directive 060 s. 5.5 and s. 3.2*

⁴²⁴ *Ibid s. 6.2 and Directive 060 5.5 (1)*

⁴²⁵ *The Flare Gas (Prevention and Waste and Pollution) Regulations, 2018, Part IV s. 16 - 22*

⁴²⁶ *The 'Guidelines For Flare Gas Measurement, Data Management and Reporting Obligations'* issued by the Department of Petroleum Resources 2018. The Guidelines were issued pursuant to the paragraph 35 (b) of the First Schedule to the Petroleum Act 1969, Paragraph 44 of the Petroleum (Drilling and Production) Regulations 1969; Paragraph 47 Refining Regulations 1974 and finally the Flare Gas (Prevention and Waste and Pollution) Regulations, 2018.

general requirements, and obligations concerning flare gas measurement, data management, and reporting obligations.⁴²⁷ The Guidelines required the three major players of the oil field (i.e., producers, permit holders, and all processing facility operators) to measure the flaring data and report the data correctly based on the guidelines. Thus, the producer must measure AG production per flare site and oil field, AG utilisation, and the flared amount. Similarly, permit holders must measure the flare gas consumption and flare gas volumes vented or flared in their project. So also, operators of the refineries and other processing facilities must measure the amount flared and vented.⁴²⁸

Furthermore, the Guidelines and the Regulations 2018 collectively required the major players to maintain and report a daily record of all AG produced from their oil mining lease (OML) or marginal field within 21 days following the end of each month to the regulator.⁴²⁹ Similarly, the memorandum of the gas flare commercialisation framework has provided details regarding the accuracy and what needs to be measured. The memo states that meters used to measure flare gas must have an accuracy of +/- 3%, which is a much more stringent condition than the 5% typically required (see *table 3.1. above*).⁴³⁰ Moreover, the oil companies must provide monthly data on gas volumes, oil volumes, flow rates, gas-oil ratio, and flow pressure temperature. They must also submit an annual report of all produced, utilised, and flared gas each year by the end of 31st March for the previous year to the DPR (NURC).⁴³¹ The Regulation further specifies an additional penalty of \$2.50 per 28.317scm of gas flared or vented for failure to supply accurate data.⁴³²

Therefore, it is submitted that the combined provisions of the Guidelines, the memorandum, and Regulation 2018 now contain all the specific requirements for successful flaring measurement and reporting regimes. These include reporting assets, content, and frequency in line with the best reporting practices around the

⁴²⁷ Ibid section 1

⁴²⁸ Ibid section 3.1 (a-c)

⁴²⁹ Ibid *Section 4 of the Guidelines (n 373) and sec 16 and Section 4 Regulations 2018.*

⁴³⁰ Nigerian Gas Flare Commercialisation Programme, 'Programme Information Memorandum' January, 2019 (Rev 1) Available at: <<https://ngfcp.dpr.gov.ng/media/1134/ngfcp-pim-rev1.pdf>> accessed 01/05/2020

⁴³¹ Ibid section 17 and article 4

⁴³² Ibid section 19

globe. Besides flare and vent volumes, the provisions also required the major players to accurately report CO₂ equivalent emissions from flaring and venting.⁴³³ However, unlike in Norway and Alberta, the reporting process in Nigeria is not electronic, making it difficult for the regulator to oversee the upstream sector effectively.⁴³⁴ Because electronic reporting systems ensure the regulator has up-to-date and comprehensive data. Nevertheless, the combined provisions have succeeded in streamlining Nigeria's flaring measurement and reporting requirements within the global best-practising regimes.

IV. Economic evaluation

An appropriate regulatory regime would also require producers and field operators to make an economic evaluation of all the available AG utilisation options and to utilise the gas whenever it is economically viable. Where the evaluation is shown to be adequately not feasible, the gas may be flared or vented if unavoidable.⁴³⁵ Even though installing metering facilities can be more expensive for existing fields, many regulatory regimes require operators to install electronic meters to economically evaluate the AG discovered in their fields. In Alberta, for instance, uneconomic means projects with NPV of less than minus 50,000 Canadian dollars.⁴³⁶ In Nigeria, based on Regulation 2018⁴³⁷, the DPR outlines the metering standards that apply to the producers and, in certain circumstances, to the permit holders and facility operators.⁴³⁸ The Guidelines required that meters be installed to measure high-pressure, medium-pressure, low-pressure, and other pressure-associated gas quantities.⁴³⁹ It also explicitly required installing a fiscal meter by

⁴³³ Section 3.3 (c) the Guidelines.

⁴³⁴ Though request for licence and permits could be done electronically using the Department domain known as 'Central Electronic Licensing and Permit System (CELPS)', available at: < <https://elps.dpr.gov.ng/Account/Login> > accessed 01/05/2020

⁴³⁵ The World Bank 2009 (n 1)

⁴³⁶ Directive 60 of the Alberta ERCB

⁴³⁷ Section 16 (3) and 20 of the Regulation 2018. Empowers the regulator to issue a standard on metering and data collections that requires oil companies to use metering technology to evaluate the value of a discovered AG, which shall be subject to DPR's approval

⁴³⁸ See generally Section 3.6 of the Guidelines For Flare Gas Measurement, Data Management and Reporting Obligations

⁴³⁹ Ibid section 3.6 (d)

the producers, permit holders, and facility operators to quantify AG production and AG flare quantities to generate a flare-out penalty.⁴⁴⁰

V. Monitoring and Enforcement

One essential tool for mitigating flaring is adequate monitoring and enforcement procedure, without which regulation will be less effective. Monitoring and enforcement are critical requirements in an effective regulatory regime. Regardless of how well the regime's design is, it will not make any impact unless the regulatory breaches are monitored and enforced. Thus, WB suggests monitoring flaring, and venting volumes is necessary to enforce regulations properly.⁴⁴¹ Typically, the regulator has two corresponding options for monitoring flare and vent volumes; operators' reports and logs or an ad-hoc site inspection. Thus, operators must maintain a written record of all flare and vent records regardless of size and duration and regularly report them to the regulator. The record may be generated electronically or manually depending on how flaring volumes are measured, metered, or estimated. Similarly, ad-hoc site inspections could be used to ensure record-keeping is done as required by regulation. It can also be used to inspect facilities to ensure that appropriate gas measuring equipment is installed where required and to check on methodologies for estimating flaring volumes.⁴⁴²

Moreover, enforcement is also a crucial element of any anti-gas flaring regulation, irrespective of the regime's design; it is unlikely to bring expected results unless regulatory infringements are identified and effectively pursued by the regulator. The World Bank suggests it is an excellent practice to spell out the penalties for non-compliance with the flaring regulations. These can be inserted in either legislative instrument so that operators are aware of the regulator's expectations and enforcement policy. Alternatively, a list of specific non-compliance events can be made under broader categories (such as regulatory approval, economic

⁴⁴⁰ Ibid 3.6 (d) 4

⁴⁴¹ The World Bank 2009 (n 1)

⁴⁴² However, On-site monitoring of venting is generally more challenging than flaring, as vented gas is not visible to the naked eye. A few regulators like the U.S. Mineral Management Service (MMS) and Alberta Energy Resources Conservation Board (ERCB) employ infra-red video cameras that allow otherwise invisible vent streams be "seen".

evaluation, measurement, and reporting) and establish an enforcement level for each event.⁴⁴³ At the same time, the regulator should be fully empowered to execute the actions specified in regulatory documents.

Alberta provides an example of such best practices when it comes to monitoring the enforcement of flaring regulations. The AER has established an 'enforcement ladder system' to address non-compliance with regulatory requirements. The enforcement ladder is based on appropriate responses to the seriousness of the non-compliance. It provides for escalating consequences if timely remedial actions are not taken or if repeat non-compliance occurs.⁴⁴⁴ However, an operator who causes pollution but takes immediate remedial action to control the problem is not subjected to further sanctions by the AER. Thus, in severe cases of blatant disregard for regulations, the AER may order the shutdown of an operator's facilities until the operator complies.⁴⁴⁵

In Nigeria, Gas Flare Regulations 2018 has spelt out the penalties for non-compliance with the requirements, such as measurement and reporting, regulatory approval, and economic evaluation. Thus, the Regulations make it a criminal offence liable upon conviction to a fine of fifty thousand Naira, six months imprisonment, or both for any person who provides inaccurate or incomplete gas flaring data.⁴⁴⁶ Similarly, failure by a producer to prepare, maintain, or submit logs, records, reports, or install metering equipment or even a failure to enter into a connection agreement with a permit holder will be liable to an additional penalty payment of \$2.50 per 1000 scf of gas flared or vented within the OML or marginal field. This penalty will extend for each day the producer fails to meet these requirements.⁴⁴⁷ Moreover, where non-compliance is routine, the Minister may suspend the producer's operations or revoke any OML, or marginal field awarded to the producer.⁴⁴⁸ But where the non-compliance is from the permit holders, the

⁴⁴³ Directive 019 Alberta ERCB is a good example of a regulatory document describing in detail the enforcement actions for different levels of noncompliance.

⁴⁴⁴ Anastasiya Rozhkova, 'International Practices in Policy and Regulation of Flaring and Venting in Upstream Operations - Lessons from International Experience' (2011) GGFR SCM Workshop Washington, DC.

⁴⁴⁵ *Directive 60 s. 3.3 AER*

⁴⁴⁶ *Ibid the Regulation 2018, section 5 Nigeria*

⁴⁴⁷ *Ibid section 21 (1) section 6.1 the Guidelines*

⁴⁴⁸ *Ibid section 21 (2) section 6.1 the Guidelines*

Minister may revoke the company's permits without recourse to any lesser measures.⁴⁴⁹

VI. Public Disclosure of Flaring Data

The relevance and usefulness of public disclosure of emissions from petroleum activities towards achieving environmental goals and policy objectives cannot be overemphasised. Several studies have been carried out that investigated the usefulness of public disclosure in this area, and all proved a vital role in the emissions reduction target. For instance, studies by Clarkson et al., Prado-Lorenzo et al., Rankin et al., and Patten have all acknowledged the relevance of public disclosure of emissions as a bedrock for providing valuation relevant information; an incremental environmental performance, and enhanced firm value.⁴⁵⁰ Consequently, flaring volumes should be made public regularly to ensure the efficiency and transparency of the regulatory process. In Nigeria, the Flare Regulation 2018 requires annual reporting of flare volume.⁴⁵¹ Accordingly, implementing the requirement, the regulator in the country has recently created a system of annual reporting of all flaring and venting breakdown volumes by each operator. The most recent release was in 2020 and contained a detailed report of all the AG produced, utilised, flared, and vented. The annual report also contained the breakdown of the AG utilised and flared by each operation. The NNPC official websites also contained ASB's previous years' AG produced, utilised, and flared from 1997 to 2018.⁴⁵²

⁴⁴⁹ Ibid section 22 and section 6.2 The Guidelines

⁴⁵⁰ Peter M. Clarkson, Xiaohua Fang, Yue Li, and Gordon Richardson, 'The relevance of environmental disclosures: Are such disclosures incrementally informative?' (2013) 32(5) *Journal of Accounting and Public Policy* 410-431; José-Manuel Prado-Lorenzo, Luis Rodríguez Domínguez, Isabel Gallego Álvarez, Isabel-María García-Sánchez 'Factors influencing the disclosure of greenhouse gas emissions in companies world-wide' (2009) 47(9) *Management Decision - Emerald Insight* at 1133-1157; Michaela Rankin, Carolyn, and Dina Wahyuni, 'An investigation of voluntary corporate greenhouse gas emissions reporting in a market governance system.' (2011) 24(8) *Accounting, Auditing & Accountability Journal* at 1037-1070; and Dennis M. Patten, 'The relation between environmental performance and environmental disclosure: a research note' (2002) 27(8) *Accounting, Organizations and Society* at 763-773

⁴⁵¹ *Flare Gas (Prevention and Waste and Pollution) Regulations*, 2018 Part IV s. 17 - 19

⁴⁵² 'Nigeria National Petroleum Corporation, 'Oil and Gas Statistics - Annual Statistics Bulletin' available at <<https://corporation.nnpcgroup.com/Public-Relations/Oil-and-Gas-Statistics/Pages/Annual-Statistics-Bulletin.aspx> accessed on 15/10/2022.

3.3.4.2 Regulatory (Governance) Agencies

A regulatory regime(s) discussed above requires a reliable agency or governance arrangements that are sufficiently robust to provide adequate protection and effective compliance with the ideal of flaring reduction regulation. This view became (and remains) the dominant paradigm within which thinking about regulatory arrangements for any anti-gas flaring law and policy regime espoused by the GGFRP.⁴⁵³ Though there is no generally accepted theory or an international best practice as to who should regulate flaring, and standards that an agency responsible for regulating flaring must be met.⁴⁵⁴ Nevertheless, for a regulatory agency to function effectively, the GGFRP recommended that the agency should first satisfy certain specific criteria. Secondly, the agency should be able to co-ordinate adequately with the other environmental agencies charged with the responsibilities of regulating air quality, CO₂ emissions, and other pollutants that affect the environment⁴⁵⁵.

I. The Specific Criteria for Effective Anti-gas Flaring Regulatory Agencies

There is no international best practice or generally accepted theory on who should regulate gas flaring and venting.⁴⁵⁶ In practice, a dedicated and empowered institution typically performs gas flaring regulation as a standalone regulatory body like the AER – Alberta - Canada.⁴⁵⁷ It could also be a department in a relevant ministry such as the NPD - Norway, the Interior Department's Minerals Management Service in the United States, or the Oil and Gas Authority (OGA) in

⁴⁵³ Levy and Spiller paper (and the regulatory governance-content distinction) drew directly on the work of Douglass North and the new institutional economics of Oliver Williamson. See Levy and Spiller (1994), *Journal of Law, Economics and Organisation* p 463 in the Oliver Williamson and Scott Masten *The Economics of Transaction Costs*. (1999)

⁴⁵⁴ The World Bank 2009 (n 1)

⁴⁵⁵ Ibid, the Criteria include *Clarity of roles and objectives; Autonomy; Participation; Accountability; Transparency, and Predictability*. Consequently, these elements would guide the review of Nigeria's regime in the next chapter.

⁴⁵⁶ Ibid The World Bank 2004 (n 61) In most developed or best-performing countries, institutional responsible for gas flaring and venting regulation are often transparent and effective, unlike developing nations where the institutions are less transparent and conflicting

⁴⁵⁷ Energy regulation in Alberta – Canada is now regulated by the Alberta Energy Regulator (AER). See *generally Responsible Energy Development Act (REDA)* 2013- Alberta

the United Kingdom.⁴⁵⁸ There is no globally accepted best practice for institutions that carry out gas flaring and venting regulations. Nevertheless, whatever the form of the regulatory agency, it is essential to always be independent of the influence of the oil and gas operators and politicians. The World Bank suggested that an agency responsible for carrying out flaring and venting regulations must meet specific minimum criteria to ensure that gas flaring and venting regulations are carried out effectively and efficiently.⁴⁵⁹

These criteria or requirements include the independence of the institutions that carry out gas flaring regulations from the companies they regulate. The agency must also have clearly defined regulatory responsibilities with transparent and enforceable regulatory procedures and operational processes. Similarly, conflicting or overlapping responsibilities among regulating institutions should be avoided. The Agency should also be able to enforce compliance by being adequately staffed and financed. The GGFRP summarised the elements that a competent regulatory agency needs to include; *Clarity of roles and objectives; Autonomy; Participation; Accountability; Transparency, and Predictability.*⁴⁶⁰ Nevertheless, only a few regulatory agencies in specific jurisdictions could have satisfied all the requirements mentioned above.

In Norway, for instance, the NPD is subordinate and a significant advisory body to the MPE. It plays an essential role in the petroleum management system and exercises administrative authority to explore and produce petroleum deposits on the NCS.⁴⁶¹ This also includes stipulating regulations and making decisions

⁴⁵⁸ The OGA became a government company in October 2016, limited by shares under the Companies Act 2006, with the Secretary of State for Business, Energy and Industrial Strategy (BEIS), the sole shareholder. See <https://www.ogauthority.co.uk/about-us/what-we-do/our-history/>

⁴⁵⁹ Global Gas Flaring Reduction Public-Private Partnership (GGFRP), 'Regulation of Associated Gas Flaring and Venting A Global Overview and Lessons from International Experience' The World Bank Report Number 3 - World Bank Group 29554

⁴⁶⁰ The World Bank 2009 (n 1). These are similar to those applicable to regulators of other industries, and lessons learned from these can be useful. See *also* the World Bank Policy Research Working Paper on regulatory effectiveness (WPS 3536, 2005) developed for the electricity industry provides a useful checklist of regulatory criteria.

⁴⁶¹ Norwegian Petroleum Directorate - About Us - Regulations, available at: <https://www.npd.no/en/regulations/> accessed on 25/04/2020 last updated 14/03/2019

according to the petroleum activities regulations.⁴⁶² The NPD also monitors the development of different oil and gas fields for efficiency and safety flaring and venting operations and enforces legislation concerning the CO₂ tax on the NCS.⁴⁶³ The NPD also evaluates applications for annual offshore flaring permits, but the MPE issues the permits.⁴⁶⁴ The NPD strongly believes emissions reductions could most likely be achieved through a robust focus on better-operating routines and fewer unplanned shutdowns.⁴⁶⁵

In Nigeria, before the recent amendment under the new PIA 2021 that established Nigeria Upstream Regulatory Commission (NURC), the DPR was the sole agency charged with regulating petroleum activities in the country.⁴⁶⁶ Like Norway, DPR is a directorate under the Nigerian Ministry of Petroleum Resources. It ensures compliance with petroleum laws, regulations, and guidelines in Nigeria's petroleum industry. It supervises and monitors all operations under licences and leases, including flare and domestic gas supply obligations.⁴⁶⁷ The DPR is also responsible for ensuring that health, safety, and environmental regulations conform with national and international best oil field practices. It also functions as an adviser, advising government and relevant Government agencies on technical matters and policies that may impact the administration and petroleum activities and ensuring accurate and timely payments of Rents, Royalties, and other revenues due to the government.⁴⁶⁸

However, unlike NPD, evaluating DPR's operations suggests a flagrant departure from the criteria for an effective and efficient regulatory agency. It reveals the poor implementation of anti-gas flaring measures. As Orji implied, it is mostly due

⁴⁶² Regulations Relating to Resource Management in the Petroleum Activities (Resources Management Regulation) of 18 June 2001, section 30

⁴⁶³ Regulation Relating to Measurement of Petroleum for Fiscal Purposes and For Calculation of CO₂ Tax (The Measurement Regulation) of 1st November 2001, s 32

⁴⁶⁴ Knut Am and Heiberg (n 371).

⁴⁶⁵ Ibid

⁴⁶⁶ Initially, DPR was a Petroleum Inspectorate under the Nigerian National Petroleum Corporation (NNPC); however, with the re-organisation of the NNPC in March 1988, the inspectorate was exercised from the NNPC and transferred to the Ministry of Petroleum Resources and renamed DPR

⁴⁶⁷ The Department of Petroleum Resources, 'History – Department of Petroleum Resources'. Available at: < <https://www.dpr.gov.ng/history-of-dpr/> > accessed on 24/04/2020

⁴⁶⁸ Ibid

to weak regulatory oversight, a significant barrier to flare reduction in Nigeria. Moreover, DPR appears to have failed to ensure the effective regulation of gas flares due to the lack of requisite technological capacities to monitor the volume of gas flared by oil-producing companies to levy commensurate fines⁴⁶⁹. Thus, Nigeria's former state minister for petroleum resources had previously acknowledged that the country is not adequately monitoring the volumes of the AG flared. According to him, it is much higher than what the companies are reporting in a real sense.⁴⁷⁰

Moreover, other causes of poor regulatory oversight are traceable to impediments arising from weak institutional capacities and the absence of requisite human capabilities. This is further compounded by the DPR's seeming loss of regulatory focus due to the government's apparent lack of political will to effectively tackle gas flaring and the lack of transparency and accountability arising from the flagrant violation of its regulatory responsibilities.⁴⁷¹ Besides, there was insufficient funding⁴⁷², the usual challenges of inconsistency in the government's anti-flare policies, and the absence of support from oil-producing companies. This causes an apparent disconnection of critical links between anti-flare policy formulation and implementation, resulting in poor regulation or outright regulatory failure.

II. Co-ordination among other Environmental Regulators

Regulations issued by the agencies responsible for flaring and venting must be properly coordinated. It should clearly define the roles and responsibilities of the regulators and effective cooperation between other environmental regulatory agencies. Otherwise, overlapping and conflicting responsibilities may complicate

⁴⁶⁹ Orji (n 320)

⁴⁷⁰ Ibid Kachikwu (n 21)

⁴⁷¹ Media Rights Agenda, 'MRA Inducts DPR into 'FOI Hall of Shame' – Thisday' available at: < <https://www.thisdaylive.com/index.php/2018/08/14/mra-inducts-dpr-into-foi-hall-of-shame/>> 14/08/2018 accessed 25/04/2020

⁴⁷² Paul Samuel Tamuno, 'Legal Response to Gas Flaring in Developed and Developing Countries: A Comparative Analysis of Nigeria, United Kingdom and Norway' (Working Research Paper Series No. 2010/14) *International Energy Law and Policy Research Paper Series*

regulatory enforcement.⁴⁷³ In Norway, for instance, the Government exercises executive authority over petroleum policy and answers to the parliament regarding policies. The ministries, underlying directorates, and supervisory authorities assist the government in carrying out its policies.⁴⁷⁴ While flaring regulations, as earlier mentioned, are undertaken by dedicated and empowered NPD in the form of a standalone regulatory body but MPE's department.⁴⁷⁵

The MPE is responsible for the overall management of petroleum resources and regulates the activities of oil companies via guidelines adopted by the parliament of Norway.⁴⁷⁶ Thus, according to the PA Act, AG flaring beyond what is necessary to ensure normal operations is not permitted without approval from the MPE.⁴⁷⁷ Accordingly, oil companies must apply to MPE for a permit to flare AG more than the quantities needed for standard operational safety.⁴⁷⁸ The NPD is subordinate and a significant advisory body to the MPE. It plays a critical role in the petroleum management system and exercises administrative authority in connection with exploring and producing petroleum deposits on the NCS.⁴⁷⁹ This also includes the authority to stipulate regulations and make decisions under the PAA and the Activities regulations⁴⁸⁰.

⁴⁷³ GGFRP (n 392)

⁴⁷⁴ NPD, The Steering Committee and the Secretariat – Who are We' Publication of 07-07-2011, available at: <<http://www.npd.no/en/publications/reports/oil-for-development-2010/who-we-are/>> accessed on 09/09/2014

⁴⁷⁵ Norwegian Petroleum Directorate (NPD), 'The Environmental and Climate Change Consideration in Norwegian Petroleum Sector' 2012 Fact Sheet Publication of 11-04-2012

⁴⁷⁶ No. 72 relating to Petroleum Activities, Act of 29 November 1996. Last amended by Act 24 June 2011 No. 38 and translated November 23, 2012 PA Act, s 1-2

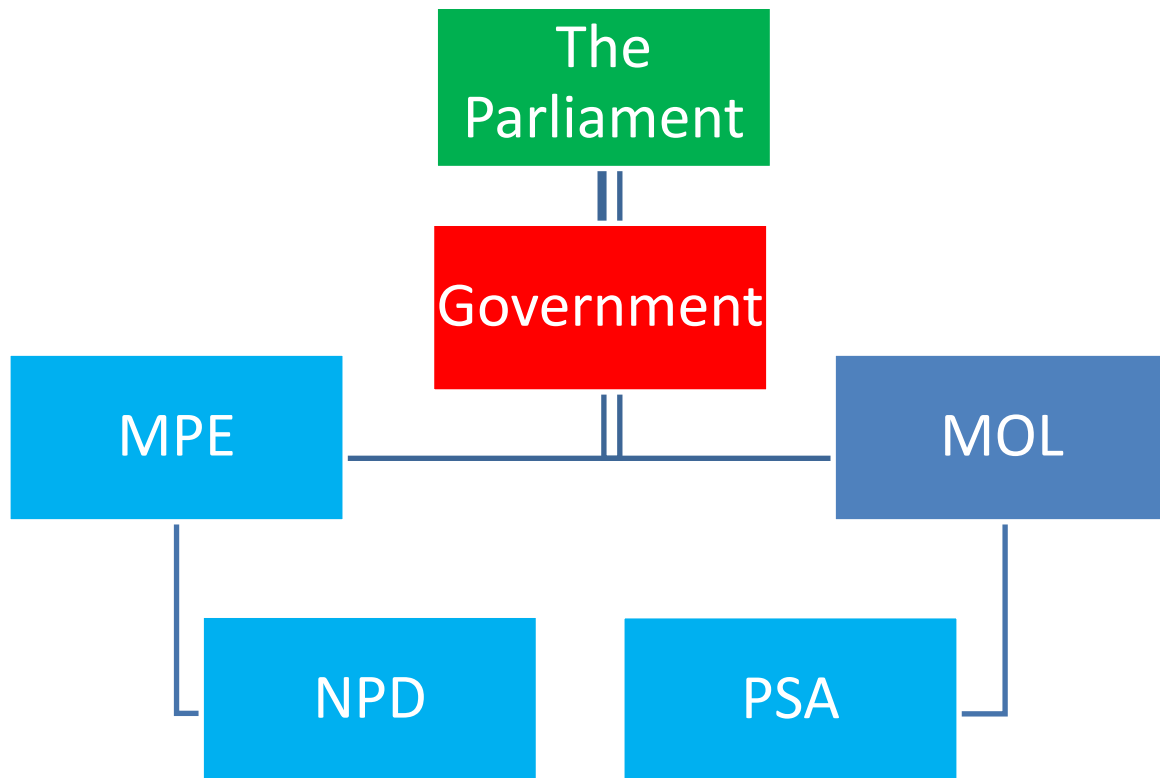
⁴⁷⁷ Ibid 4-4

⁴⁷⁸ Ibid

⁴⁷⁹ Norwegian Petroleum Directorate – About Us, available at: <<http://www.npd.no/en/About-us/>> accessed on 23/08/2014 last updated 07-07-2011

⁴⁸⁰ Regulations Relating to Resource Management in the Petroleum Activities (Resources Management Regulation) of 18 June 2001, section 30

Figure 3.1 - Norway's institutional hierarchy



Consequently, the NPD has the authority to monitor the development of different oil and gas fields for efficiency and monitoring and supervision of flaring and venting operations. It enforces legislation concerning the CO₂ tax on the NCS.⁴⁸¹ The NPD evaluates a request for annual flaring permits directly, and MPE issues the permits.⁴⁸² Similarly, the Petroleum Safety Authority (PSA), an independent government regulator, is responsible for safety, emergency preparation, and the working environment in the Norwegian petroleum industry. Initially, PSA was under the NPD but was separated as activities grew. It is subordinate to the Ministry of Labour (MOL) and not the MPE to create a clear separation between resource management functions and environmental damage, health, and safety concerns.⁴⁸³ The coordination between MPE, NPD, and PSA in Norway has helped eliminate routine flaring. To this date, PSA has investigated many cases associated with AG flaring incidents, among others is the recently concluded investigation of

⁴⁸¹ Regulation Relating to Measurement of Petroleum for Fiscal Purposes and For Calculation of CO₂ Tax (The Measurement Regulation) of 1st November 2001, s 32

⁴⁸² Knut Am and Heiberg (n 371).

⁴⁸³ Ibid

the Visund incident, where the leak occurred right after flaring as expected following an interruption in operations.⁴⁸⁴

In Alberta-Canada, the AER was established by the *Responsible Energy Development Act (REDA)* 2013⁴⁸⁵ to deal with gas flaring. It focused on conserving the flared gas during production activities and sought to establish an equitable regulation concerning its management. The AER ensures the safe, efficient, orderly, and environmentally responsible development of oil and natural gas resources, among others, over their entire life cycle. This includes allocating and conserving water resources, managing public lands, and protecting the environment while providing economic benefits for all Albertans.⁴⁸⁶ Today, the AER is the sole and central regulator of energy development in Alberta from application for exploration, construction and operation, decommissioning, closure, reclamation, and mitigating gas flaring in Alberta.⁴⁸⁷

The AER plays a useful role in the conservation of gas, particularly with the negotiation, publication, application, and enforcement of gas flaring *Directives* within the province of Alberta.⁴⁸⁸ The AER exercises approval, regulating, and advisory functions under specific statutes. The AER's uniqueness is the centralisation of its operations.⁴⁸⁹ Apart from the AER as a sole regulatory agency, the Alberta government also allows industry players' participation and members of public and environmental non-governmental organisations in regulating gas flaring, maintaining air/environmental quality issues, and recommending

⁴⁸⁴ NPD, 'PSA Completes an Investigation into Visund Leak' available at: <<http://www.psa.no/news/psa-completes-investigation-of-visund-incident-article2733-8>> accessed on 09/09/2014

⁴⁸⁵ Energy regulation in Alberta – Canada is now regulated by the Alberta Energy Regulator (AER). The AER has had several names over the years, including the Petroleum and Natural Gas Conservation Board, the Oil and Gas Conservation Board, the Energy Resources Conservation Board (ERCB), the Alberta Energy and Utilities Board and now the AER. See generally *Responsible Energy Development Act (REDA), Statutes of Alberta, 2012 Chapter R-17.3 Current as of December 17, 2014* that established the AER and sets out its mandate, structure, powers, duties, and functions.

⁴⁸⁶ *Ibid Division 3 General Powers, Duties and Functions of Regulator, s. 14*

⁴⁸⁷ *Ibid Part 1 Alberta Energy Regulator Division - Establishment and Governance of Regulator s. 3 Alberta Energy Regulator*

⁴⁸⁸ *Ibid Division 3 s. 14*

⁴⁸⁹ *Ibid*

management actions. For instance, the best example was the establishment of the Clean Air Strategic Alliance (CASA).⁴⁹⁰

As a multistakeholder partnership, the CASA was established in 1994, representing different interest groups from government, industry, and non-governmental organisations. The CASA provides recommendations on policy and regulation to access and improve air quality in Alberta.⁴⁹¹ The CASA process is viewed as productive and includes interested parties, and the consensus built helps forge a strong commitment to implement the resulting recommendations.⁴⁹² Even though CASA is not a legislatively backed alliance, it provides valuable suggestions to the energy regulator, usually implemented in the subsequent regulations and guidelines as appropriate.⁴⁹³

Thus, In 1998, CASA established a solution gas management framework for reducing flaring and venting that included a provincial target to reduce routine flaring emissions. As of 2010, the framework has helped emissions reduction from flaring in Alberta by 397 million Ft³ compared with the 1996-based lime of 1.34 billion Ft³.⁴⁹⁴ Similarly, even the recent amendment of the *Directives 060* was done in consultation with CASA. The AER published that most of the amendments have been developed in consultation with the CASA to eliminate or reduce these activities' likely and detected impacts and ensure that public safety concerns and environmental impacts are addressed before flaring or venting.⁴⁹⁵ Consequently, this shows that Alberta encourages non-governmental and public engagement in

⁴⁹⁰ Ibid

⁴⁹¹ The World Bank, 'Regulation of Associated Gas Flaring and Venting A Global Overview and Lessons from International Experience' the World Bank Report Number 3 - World Bank Group 33

⁴⁹² Randolph P. Angle, 'Industrial Emissions Management' in Eric Taylor and Ann McMillan, *Air Quality Management: Canadian Perspective on a Global Issue* (2013) 196

⁴⁹³ Bruce G. Deorn and Robert Johnson, *Rules, rules, rules, rules: Multilevel Regulatory Governance* (University of Toronto Press, 2006) 295 and also David Osigbemhe Iyalomhe, 'Environmental Regulation of the Oil and Gas Industry in Nigeria: Lessons from Alberta's Experience' (a Dissertation submitted to the Faculty of Graduates Studies and Research, Edmonton Alberta 1998) 100.

⁴⁹⁴ M. Lowey, 'Energy and Environment: Toward Achieving the Balance in Albert' in Kevin E. Percy, *Alberta oil Sand: Energy, Industry and the Environment* (1st edn Elsevier 2012) 38

⁴⁹⁵ *Directive 060, s 1 as amended May 12, 2020*

managing air quality and action plans - an appropriate and effective measure lacking in the Nigerian regulatory framework.

However, there was limited coordination among the regulatory agencies. The country has had overlapping institutions, all regulating AG flaring without proper coordination. Thus, evaluating the coordinating agencies responsible for monitoring and enforcing laws and regulations relating to the AG flaring revealed overlapping and conflicting jurisdiction. The Federal Ministry of Environment (FMENV)⁴⁹⁶ and the DPR were the leading regulatory agencies that monitored and enforced environmental standards and EIA procedures in the Nigerian petroleum industry. However, they enacted distinct Regulations in the same sector.⁴⁹⁷ For instance, the FMENV is responsible for protecting and improving the quality of Nigeria's water, air, land, forest, and wildlife.⁴⁹⁸ It prepares, coordinates, prescribes, and implements standards and regulations for water quality, effluent limitations, air quality, and atmospheric and ozone protection, and monitors and enforces environmental laws and regulations.⁴⁹⁹

The FMENV further consists of two supervisory agencies that impact AG flaring activities: the National Environmental Standard and Regulations Enforcement Agency (NESREA) and the Department of Environmental Assessment (DEA). The DEA is charged with implementing the Environmental Impact Assessment (EIA) Act.⁵⁰⁰ While NESREA is empowered to enforce all environmental laws, guidelines, policies, standards, and regulations (including issues related to GHG emissions) in Nigeria and enforce compliance with all international treaties, conventions,

⁴⁹⁶ The FMENV was established in 1988 and was formerly called FEPA, see The Federal Protection Agency Act 1988, s 1, it was later renamed FMENV by the office of the Secretary to the Government of Federation through, Presidency circular: Ref No. SGF/6/S.22/1 dated 12th October, 1999

⁴⁹⁷ The DPR Environmental Guidelines and Standards for the Petroleum Industry 1991 and the EIA Guidelines for Exploration and Production Projects 1994 under the Federal Ministry of Environment

⁴⁹⁸ The Nigeria Ministry of Environment, '8th National Council on Environment Report' Held at the Umar Musa Yar'adua Indoor Sports Hall, Kaduna on Monday 26th to Friday 30th September 2011

⁴⁹⁹ Ibid see also FMENV website: < <http://environment.gov.ng/?view=featured>.> accessed on the 18/08/2014

⁵⁰⁰ Act No. 86 of 1992.

protocols, and agreements on the environment, to which Nigeria is a party.⁵⁰¹ In effect, petroleum operation related to AG flaring is also subject to the above regulatory institutions, with no clear precedence over the other. Nevertheless, the recent Gas Flare Regulation 2018 has excluded these two agencies from enforcing standards concerning the petroleum industry.⁵⁰²

Consequently, the above lack of coordination has occasioned a jurisdictional conflict between the primary regulator of AG flaring and the two agencies – NESREA and DEA as supervised by the FMENV. There is no doubt this conflict and the duplicity in functions with multiple Guidelines and Standards impede the effective and smooth monitoring and enforcement of AG flaring regulations in the country. Experts have questioned why such an important sector, critical to the nation's economy but notoriously environmentally destructive, will be governed by "softer" laws and regulations.⁵⁰³

Moreover, Okorodudu-Fubara also described the exclusion of NESREA as a deeply questionable move and further entrenched government failures to ensure effective oversight of the oil industry and protect the environment and human rights. He questions why such an important agency responsible for sustainable development and environmental protection would be excluded from enforcing compliance in the country's petroleum sector.⁵⁰⁴ Similarly, Orji contended that the country's dependence on oil revenue for its survival and its complicity in shielding oil companies from environmental regulation and international best practices might be why NESREA was precluded from enforcing anti-flare regulations and other environmental regulations in the country's petroleum industry. He further

⁵⁰¹ The National Environmental Standards and Regulations Enforcement Agency was established in 2007 by the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act (July 2007) 94/92 published in Official Gazette of the Federal Republic of Nigeria, Gazette No. 92, Vol. 94 of July 31, 2007 (hereafter NESREA Act 2007).

⁵⁰² The Gas Flare Regulations, 2018

⁵⁰³ Margaret Okorodudu-Fubara, 'Country report: Nigeria legal developments, 2009–2011' (2012) 1 *IUCN Academy of Environmental Law e-Journal* 170–179.

⁵⁰⁴ Ibid

attributed the re-organisation of the agencies as politically motivated without clear environmental interest attached.⁵⁰⁵

Thus, even though the duplicity in operations has been addressed, the DPR still operates in conformity with the FMENV. The FMENV is involved in extending an advisory role on the DPR. The FMENV has recently played an active role in reviewing the draft *Environmental Guidelines for the Petroleum Industry*. Moreover, both agencies have equal rights to inspect the exploration and production activities where reasonable grounds exist for believing that environmental degradation is occurring. Furthermore, both agencies are competent authorities in managing the EIA procedure. However, such roles were only limited to the advisory, and FMENV cannot exercise any supervisory role on the DPR (now NURC).⁵⁰⁶

⁵⁰⁵ NESREA is responsible for enforcing environmental laws and regulations in Nigeria; however, the agency is precluded from enforcing environmental laws and regulations in the Nigerian oil and gas sector. See sections 7 (g), (h), (j), (i), 8(g), (i), (m), (n) and 24(3) NESREA Act 2007. The enforcement of environmental laws and regulations in the Nigerian oil and gas sector is now mainly the responsibility of the Department of Petroleum Resources, a department under the Ministry of Petroleum. See Uchenna Jerome Orji, 2012. 'An appraisal of the legal frameworks for the control of environmental pollution in Nigeria' (2012) 38(2) *Commonwealth Law Bulletin* 338.

⁵⁰⁶ The DPR Guidelines: <https://www.dpr.gov.ng/dpr-guidelines/> accessed 16/04/2020.

3.4 A Review of the Policy Regimes Enabling AG Utilisation in Nigeria

The Federal Government of Nigeria (FGN) is responsible for establishing an enabling environment in the petroleum sector through policies, regulations, guidelines, and economic measures. Recently, at an international level, and as discussed in chapter two, the FGN has ratified the Paris Agreement and was also a signatory to GGFRP principles for global flare-out by 2030 while committing to a national flare-out target by the year 2030. The FGN's policy objective for gas flaring is to end routine flaring and encourage gas utilisation by 2020. In this regard, the FGN has recently approved National Gas Policy 2017 to enable it to achieve the stated objective. However, before the approval of the 2017 policy regime, the country had earlier approved other regimes for ending gas flaring but without any significant achievement. Consequently, this heading reviews the previous regimes and the current policy to unearth lessons that could improve the current policy regime.

3.4.1 The National Energy Policy 2003

As Nelson arguably contends, the National Energy Policy (NEP) 2003 considered flare-out as one of its core pillars due to the apparent failure of the previous anti-gas flaring legal framework to end AG flaring in Nigeria.⁵⁰⁷ The objectives of this policy, among others, are the elimination of routine flaring by 2008 and the establishment of an economically and environmentally viable gas exploration and production.⁵⁰⁸ The NEP recognised the need to end gas flaring by harnessing AG and NAG for sustainable development. To achieve its objectives, the NEP stressed the need for the country to establish gas infrastructures that would ensure geographical coverage of gas transmission and distribution networks and provides adequate incentives for both indigenous and foreign companies to invest in gas utilisation projects.⁵⁰⁹

⁵⁰⁷ Nii Nelson, 'National Energy Policy and Gas Flaring in Nigeria' (2015) 5(14) *Journal of Environment and Earth Science* ISSN 2224-3216 (Paper) ISSN 2225-0948 (Online)

⁵⁰⁸ The Energy Commission of Nigeria, *National Energy Policy* (The Presidency: Abuja, April 2003), ch. 2 p. 13

⁵⁰⁹ *Ibid* Chap 2 p. 14 - 15

The FGN believed that eliminating gas flaring was critical to the policy's success.⁵¹⁰ Nevertheless, despite all the ambitious strategies, the policy failed to stop gas flaring by 2008. The deadlines for ending flaring in the country kept on shifting up to the current 2020 flare-out target. Duruigbo criticised Nigeria's deadlines as pathetic and horrible, and contended that each time the FGN imposed standards, fines, and deadlines, nothing good seemed to come out of it.⁵¹¹ Although the policy was adequately designed, particularly on the termination of routine flaring, implementation has been a major challenge. Notwithstanding the provisions dealing with the implementation of the policy recognised among others that monitoring the implementation and appropriate regulations, guidelines, incentives, and penalties would discourage gas flaring.⁵¹² However, it failed to ensure that these measures were thoroughly enforced to achieve the desired objectives.

Orji observed that the 2003 policy regime lacked an appropriate legal framework to enhance the implementation and a competent agency to enforce even the not-so-robust legal framework. Ibitoye cited infrastructural deficit as a significant impediment to the policy's success. Ibitoye's study found that the country lacked the required infrastructure to harness and transport the flared gas from oil wells to utilisation points.⁵¹³ Moreover, Nelson cited other reasons, including socio-political issues and continuous insecurity in the Niger-Delta oil-rich area. Nelson further reasoned that the penalties and incentives review were not implemented as promised by the regime. As Nigeria's petroleum industry virtually runs the country's economy, there was the apparent fear that the FGN may lose money needed for the sustenance of the economy if the interests of oil companies are tempered.⁵¹⁴ Similarly, for a long time, kidnappings and pipeline vandalisation have discouraged investment and the inflow of capital into the region and the

⁵¹⁰ Ibid page 75

⁵¹¹ Emeka Duruigbo, 'The World Bank, Multinational Oil Corporations and Resource Course in Africa' (2005) 26 (1) Pa. J. Intl. Econ L.

⁵¹² The NEP ch. 6 on *Energy Planning and Policy Implementation* p. 66 – 67

⁵¹³ Francis Idowu Ibitoye, 'Ending Natural Gas Flaring in Nigeria's Oil Fields' (2014) 7 (3) *Journal of Sustainable Development* 13-22.

⁵¹⁴ Nii Nelson, 'National Energy Policy and Gas Flaring in Nigeria' (2015) 5(14) *Journal of Environment and Earth Science* ISSN 2224-3216 (Paper) ISSN 2225-0948 (Online)

country at large.⁵¹⁵ Consequently, one would be inclined to submit that the socio-political issues, insecurity, and over-dependence on the oil industry have impeded the effective implementation of relevant policies in the country.

Although NEP could have made a remarkable impact in some of its other components, the reality was that the regime's target of eliminating routine flaring by 2008 was not achieved.⁵¹⁶ Thus, it is submitted that one of the primary reasons for its failure was a lack of political will to implement the regime's component on AG elimination and many more reasons mentioned above. If not for this failure, the policy would have been the best that happened to the country's petroleum industry due to its appropriateness in design — coupled with the calibre of government inter agencies involved in the design and management of the regime. It was later observed that the failure of the NEP 2003 to realise its objective of ending gas flaring, among others, led to the swift approval of the National Gas Master Plan in 2008.

3.4.2 The National Gas Master Plan 2008

The National Gas Master Plan (NGMP) was a product of a study carried out by the World Bank at the request of the FGN to help the country achieve its ambitious goal of ending gas flaring and unlocking gas potential.⁵¹⁷ Though the request was made when the government instructed all oil producers to end gas flaring by 2008, NGMP was not endorsed until 2008, when the companies failed to meet the deadline.⁵¹⁸ The NGMP was established to enhance gas infrastructure development and encourage investments in the gas sector. The strategy devised by the NGMP aims to promote a public-private sector partnership for the rapid

⁵¹⁵ Michiko Ishisone, 'Gas Flaring in the Niger Delta: the Potential Benefits of its Reduction on the Local Economy and Environment' (2014)

⁵¹⁶ Musbaudeen O. Bamgbopa and 9 others, 'A Review of Nigerian Energy Policy Implementation and Impact' (2019) *ResearchGate* DOI: 10.13140/RG.2.2.10422.14408

⁵¹⁷ Joint Undp/World Bank, 'Energy Sector Management Assistance Programme (ESMAP) - Nigeria Strategic Gas Plan' Report 279/04 ESM279 p. 2

⁵¹⁸ Nigeria enlisted the IHS Energy Group, to carry out study for the analysis and integration of independent proposals from the IOC's to the Government of Nigeria for gas utilisation projects. The study was carried out in close co-operation with and under the supervision of the World Bank. The Oil and Gas Policy Division of the World Bank has been entrusted with the mission of carrying out the study to define (i) a realistic strategy and (ii) a plan of action to meet this goal, by reviewing first the several gas development plans that each oil company had prepared.

commercialisation of Nigeria's vast natural gas resources for the development and diversification of the domestic economy. The Plan was expected to support gas infrastructure development and eliminate gas flaring.⁵¹⁹ The stated objectives were pursued through the instrumentality of three strategic plans; the Gas Infrastructure Blueprint, Gas Pricing Policy, and Domestic Gas Supply Obligation, as examined below:

i. The Gas Infrastructure Blueprint—the blueprint was developed to provide a roadmap for gas infrastructural development in the country. It aimed to reduce the overall infrastructural deficit and ensure a more flexible power supply to the national grid using NAG and AG that would otherwise be flared.⁵²⁰ The gas grid provides connectivity amongst primary gas reserve sources and the demand centres, thus providing a roadmap for investment in the gas sub-sector and effective utilisation of gas resources in the key sectors of the economy as well as the regional market.⁵²¹ Thus, the blueprint established three gas gathering and processing facilities, including a network of three gas pipeline transmission systems that have resulted in a reduced gas supply cost in Nigeria.⁵²²

ii. The Gas Pricing Policy—the pricing policy aims to create a well-structured and transparent framework for gas pricing at a cost determined by market prices. The policy provides a framework for establishing the minimum gas price that any category of a gas buyer can be charged. Thus, to support the gas pricing policy, a Regulatory framework was issued by the MPR regulating the pricing and supply of gas to the domestic sector.⁵²³ The Regulation categorised Nigeria's domestic market into three groups: the *strategic domestic sector* –the most significant

⁵¹⁹ See Adeniji, S., and Sipasi, S., 2011. Gas regulation in Nigeria. *International Comparative Legal Guide to Gas Regulation*. Legal Group and Ashurst LLP, London, 2011, p. 200. See Gidado, M.M., 2011. Fiscal provisions for gas development and commercialisation under the Petroleum Industry Bill (P.I.B.) 2009. *NIALS Journal of Business Law*.

⁵²⁰ Humphrey Onyeukwu, "Nigerian Gas Masterplan and Policy: Is It a Constrained Energy Policy? (a paper presented at the Nigeria Annual International Conference and Exhibition held, July 31 – August 7 at Tinapa-Calabar, Nigeria) (2010) *Society of Petroleum Engineers*

⁵²¹ Ntufam Fidel Ugbo (Fmr Secretary, Nigeria National Planning Commission/National Economic Council) 'The Gulf of Guinea: The Nigerian Gas Master Plan and Opportunities for the Development Of Gas Infrastructure' Being a Paper Presented at the 16th Gulf Of Guinea Conference (Gog 16) Held at Abidjan, Cote D'ivoire, on 7th November 2013 pp 12

⁵²² Ahmed Adamu and Muttaqha Rabe Darman, 'Economic Analysis of Gas Pipelines in Nigeria' (2017) *Journal of Economics and Sustainable Development*

⁵²³ *The National Gas Supply and Pricing Regulations 2008*, s 6, 7, 8

sector that hugely affects the nation's economy and a multiplier effect. For instance, a sector that generates power for residential and light commercial users. Then the *strategic industrial sectors* - take gas as feedstock to create new products, e.g., fertilisers, methanol, petrochemical plants, and LNG. The third category is the *commercial sector*, which uses gas as industrial fuel like manufacturing industries.⁵²⁴ This categorisation of the domestic market forms the basis for the pricing framework that determines the floor price for the different sectors. The pricing policy also established a Strategic Gas Aggregator Company that manages the demand and supply of gas in the domestic market and aligns the reserves obligation accordingly.⁵²⁵

iii. The Domestic Gas Supply Obligation (DGSO)— the DGSO policy is the first significant attempt by Nigeria to refocus gas for domestic use. The DGSO is an outstanding strategic element of the NGMP as it requires every gas producer to dedicate a specified volume of its total gas production for domestic market consumption.⁵²⁶ It then restricts gas producers from exporting gas except where they meet their domestic gas supply obligation. This measure aims to enhance domestic gas consumption for power generation and industrial activities in the country.⁵²⁷ Like the pricing policy, the DGSO policy has been strengthened with a Regulation issued by the MPR to ensure adequate gas supply for domestic use.

The Regulations empowered the country's energy minister to periodically stipulate the requisite amount of gas that will constitute the DGSO for about 5–7 years by considering the government's aspirations for the domestic economy and ensuring

⁵²⁴ Ibid

⁵²⁵ The Gas Aggregation Company of Nigeria Limited (GACN) was incorporated in Nigeria in January 2010 in line with the statutory requirement of the Nigerian Domestic Gas Supply & Pricing Regulations of 2008 to stimulate the growth of natural gas utilisation in the Nigerian domestic market. The GACN is, therefore, the vehicle for implementation of the Nigerian Gas Master Plan (NGMP) commercial framework. The GACN's responsibilities include processing request from gas buyers, managing allocation of gas to buyers, facilitating GSAA negotiations, managing escrow account on behalf of gas sellers, among other things. See: <http://www.gacn.com/about.php> accessed 17/08/2020

⁵²⁶ Adegbite Adeniji and Sina Sipasi, 'The International Comparative Legal Guide to Gas Regulation: A Practical Cross-Border Insight into Gas Regulation Work' (2011) *Global Legal Group and Ashurst LLP, London*, p. 201.

⁵²⁷ Theresa O. Okenabirhie, 'The Domestic Gas Supply Obligation: Is this the Final Solution to Power Failure in Nigeria? How Can the Government Make the Obligation Work?' (2009) 13 *CEPMLP Annual Review*, p. 6.

that adequate gas resources are dedicated to rapid industrialisation.⁵²⁸ It then obliged gas producers to provide that stipulated volume of their total gas production for domestic market consumption.⁵²⁹ Any producer that violates the DGSO will be liable for a severe penalty to the extent of a fine of \$3.5/ mcf imposed for gas undersupplied or restricted export.⁵³⁰ The policy also sets a penalty of \$3.5/mcf of obligation flared and an additional environmental surcharge of 0.5c/mcf. Similarly, while mandating the gas producers to comply with DGSO or face the prescribed penalty, the Regulation also establishes a department within the MPR that oversees the execution of the Regulation along with the DPR.⁵³¹

The NGMP has been criticised for lacking the backing of an appropriate legal and regulatory framework to facilitate the implementation of its overall objectives. Oyinlola has suggested the non-passage of the Downstream Gas Bill (DGB), which seeks to establish a regulatory framework for the domestic gas sector, and the Gas Fiscal Reform Bill (GFRB) that would help the NGMP with incentives have hindered the realisation of the policy's objectives.⁵³² However, Oyinlola failed to consider that a policy regime could work effectively without necessarily a primary legislative instrument. The World Bank suggests that a secondary instrument sometimes works effectively in these circumstances.⁵³³ As examined above, the three strategic plans of the NGMP were backed by regulatory frameworks to help sustain the policy.⁵³⁴ Thus, the main challenge was the ineffective implementation of the policy.

⁵²⁸ *The National Gas Domestic Supply and Pricing Regulation, 2008 s 6, 7 - 8*

⁵²⁹ Ibid

⁵³⁰ Ibid

⁵³¹ Ibid Ugbo (n 521) pp 15, It's now known as Department of Gas and now operated under same roof with the DPR. Though its unclear whether they are merged as there's limited relevant information to this regards.

⁵³² While the DGB seeks to provide for the regulatory framework for downstream activities including open access principle, establishes the gas regulator to determine the reasonable return for common use facilities like pipelines. The GFRB seeks to de-consolidate gas investment from oil in order to provide a non-discriminatory fiscal regime for all upstream gas players. Bukky Oyinlola, 'Nigeria: *Is the Gas Master Plan a Master Plan?* (2017) *Perchstone & Graeys Lagos* (first published in BusinessDay Newspaper of Thursday, November 27, 2008).

⁵³³ The World Bank, 2009 (n 1)

⁵³⁴ The National Gas Master Plan was approved in 2008, in same year the Nigeria's Minister of Petroleum Resources issued the National Gas Domestic Supply and Pricing Regulation, 2008

Similarly, Oyinlola's further assertion that there was no fiscal framework providing incentives to support the implementation of the policy could not be wholly accurate. Since its inception, the NGMP policy has enjoyed the support of fiscal incentives applicable under the CITA 1998. This CITA provides adequate investment tax reliefs, investment allowance, and tax-free dividends (*this has been covered under chapter 3.3.2.2*). Consequently, with all the incentives provided by the CITA, Oyinlola's claims that the NGMP lacked supportive legal backing could not be factual. As Ige rightly posited, with all the incentives provided for utilising AG and NAG by the CITA, an investor does not need to wait for so-called anticipated changes by the DGB and GFRB.⁵³⁵

Nevertheless, one could argue that the long-term gas supply commitment the oil companies entered into before the passage of the Regulation imposing DGSO has slowed down the realisation of the policy objectives and thus made the policy ineffective. Okenabirhie contended that many gas producers failed to meet their supply obligations under the Regulations due to issues arising from their existing long-term gas supply commitments to foreign consumers.⁵³⁶ Okenabirhie argued that gas developments typically have a longer investment lifespan and slower investment payback than oilfield developments. Therefore, gas producers usually commit to long-term supply contracts to secure their investment. Several producers had already made such long-term supply commitments to foreign buyers for LNG exports. Hence, implementing the DGSO will pressure their long-term LNG supply contracts.⁵³⁷

Moreover, there were also some complaints from the gas producers that they were not consulted before establishing the Regulation, compelling them to commit to DGSO.⁵³⁸ In this regard, Orji observed that the commercially driven price structure was neither discussed nor agreed upon by FGN and the oil companies and thus, resulted in the ineffective enforcement of the Regulations. Therefore, Orji viewed

⁵³⁵ David O. Ige (Group General Manager/ Senior Technical Adviser to the GMD/NNPC), 'The Nigerian Gas Master Plan – Investor Road-Show' being a paper presented at the Investors' Road-Show May, 2008 by the Nigeria National Petroleum Corporation, Abuja, Nigeria.

⁵³⁶ Okenabirhie, (n 527) p. 12.

⁵³⁷ Ibid

⁵³⁸ Ibid Orji (n 320)

that the passage of the anticipated PIB, 2012, would have helped address the issue of price disincentives. Since the Bill provides that a gas supplier is under a duty to provide a reliable gas supply to purchasers upon request, provided that it is economically feasible to do so.⁵³⁹ Similarly, the penalties introduced by the Regulation for failure to comply with the DGSO have also been criticised for being grossly inadequate to serve as a deterrence measure or as sufficient to induce compliance with the gas supply obligation.⁵⁴⁰

Nevertheless, whatever the criticism, it is submitted that the NGMP has succeeded in some respects, particularly in encouraging investment into gas exploration and utilisation activities. Thus, considerable progress has been made within the gas sub-sector as Nigeria's LNG capacity has multiplied. It has now accounted for successfully converting about 119 bcm of AG to exports as LNG and Natural Gas Liquids (NGLs), thus helping to reduce routine flaring from over 60% to less than 25%.⁵⁴¹ Additionally, DGSO is being leveraged as fuel to power Nigeria's economic growth.⁵⁴² New pipeline constructions within the policy framework also help utilise gas that would otherwise be flared, thus making significant contributions to the nation's income. The NLNG company declared that in the last thirteen (13) years (within the NGMP introduction period), over \$13 billion in dividends was paid to the government account. The company has paid over \$18 billion on gas purchases from oil-producing companies, of which the FGN owns 55%-60%. Nigeria's overall earnings from NLNG are now over 70%, comprising the 49% dividend, 30% CIT, and other taxes.⁵⁴³

Another significant improvement introduced by the NGMP policy is the sustenance of the ongoing regional gas projects - the West African Gas Pipeline (WAGP) Project supplying gas to neighbouring West African countries. Along with establishing a new Trans Sahara Gas Pipeline Project (TSGP), which seeks to

⁵³⁹ *The Petroleum Industry Bill, 2012 s 238 (1)a.*

⁵⁴⁰ Ayodele Oni, 'The World Bank/Nigerian Government Partial Risk Guarantee and the Nigerian Gas to Power Challenge - An Introduction' (2011) 5 *OGEL*.

⁵⁴¹ Nigeria LNG Limited, 'LNG and the Nigerian Economy - Environmental Harzard Reduction' avaiable at:< <http://nlng.com/Our-Company/Pages/NLNG-and-the-Nigerian-Economy.aspx>> accessed 09/05/2020.

⁵⁴² Ibid Ugbo (n 521) pp 18, there are currently fifteen constructed gas-powered plants to meet domestic electricity needs.

⁵⁴³ Ibid.

transport gas to Europe via Algeria.⁵⁴⁴ The TSGP also aimed to help Nigeria achieve zero gas flaring and unlock gas potentials by 2020. Although there is a robust portfolio of gas investment opportunities to underpin the objectives of the NGMP, other issues different from Oyinlola's slowed down the progress of the policy objectives. Ugbo enumerated issues like a monopoly in the Nigerian gas sector because, currently, the entire crucial features of the sector are owned and controlled by a few major players. For instance, Government-owned NNPC controls the downstream sector, and Shell-operated Joint ventures control the upstream sector of the gas market. Also, no third-party access rules would introduce new players to access the gas market.⁵⁴⁵ It is submitted that this has hampered the total actualisation of the NGMP. Nevertheless, the issue has been recently rectified with the establishment of the Nigeria Gas Flare Commercialisation Programme 2016 and the recent approval of the National Gas Policy 2017 – all initiated by the 7 Big Wins Policy 2015.

3.4.3 The "7 Big Wins" Policy, 2015

In response to the limitations of the NGMP highlighted above and the determination of Nigeria to achieve its intended policy of both AG and NAG utilisation, among others, the Ministry of Petroleum Resources (MPR), under a new democratic regime, launched the "7 Big Wins" policy measures in the year 2015.

⁵⁴⁴ The Trans Saharan Gas Pipeline Project (also known as the Algeria-Nigeria Gas Pipeline Project) is a planned project of about \$20 billion initial investment. When completed, it will transport up to 30 billion cubic metres of natural gas from Warri (Nigeria) through the Niger Republic to Algeria on an annual basis. The total length involved is estimated at 4128km (2565 miles), with over 1,037km (644 miles) in Nigeria, 853km (530 miles) in Niger, 2,310km (1435 miles) in Algeria, and about 220km connecting Algeria to Spain. The pipeline will be built and operated by the partnership of the NNPC and Sonatrach. The NNPC and Sonatrach will hold a total of 90 percent equity shares, while the Niger Republic would hold 10 percent. The derivable benefits of the project to the African economy and Europe are enormous. First, it will contribute to the export diversification drive of Nigeria. Secondly, it means an opportunity for closer cooperation, integration, and a significant income for the transit countries such as Niger, Burkina Faso, and Mali as well as Algeria. Thirdly, it will remedy the European Union gas shortfall estimated at 18-25 billion cubic metres. Though the project was planned to become operational in 2015, however, is running behind schedule as the project could not move beyond its first stage. See ESI Africa, 'Nigeria: Trans-Saharan Gas Pipeline Project behind schedule' (2018) *Africa's Power Journal*.

⁵⁴⁵ Ibid Ugbo (n 521) pp 24 - 25

The policy outlines short-term and medium-term priorities to grow Nigeria's petroleum industry from 2015 to 2019.⁵⁴⁶ The policy aimed to sustain a stable development and enable the oil and gas landscape with improved transparency, efficiency, a stable investment climate, and a well-protected environment.⁵⁴⁷ The policy focused on seven key areas; *Policy and Regulation, Business Environment and Investment Drive; Gas Revolution; Refineries and Local Production Capacity; Niger Delta and Security; Transparency and Efficiency; and Stakeholder Management and International Coordination.*⁵⁴⁸ Most of these key focus areas directly or indirectly affect the government's policy of ending gas flaring by 2020.

The first pillar of the Policy is the creation of new policies and regulations intended to revolutionise Nigeria's petroleum industry with a firm desire to remedy challenges in the industry. This could be done through robust policies and laws that drive efficiency, encourage investments, and improve local participation in the sector and environmental protection. The country intended to introduce the following new policies: National Oil policy, National Gas Policy, Downstream policy, and Fiscal Reform policy.⁵⁴⁹ Similarly, the policy also sought to create new legal and policy regimes for gas utilisation that encompass legal/ regulatory, institutional, commercial, and fiscal frameworks that address and situate gas as a 'standalone commodity' and promote investment in gas development in the country.⁵⁵⁰ The policy identified key responsible parties that would help implement the first pillars' objectives, including MPR, NNPC, DPR, GACN, IOCs, and Private Investors.

Consequently, in terms of its first pillar's objectives, the policy has succeeded in reviewing old and moribund policies, gazetting new policies, and entrenching robust fiscal instruments and regulations with critical attention given to the

⁵⁴⁶ The Ministry of Petroleum Resources, '7 Big Wins Short and Medium Term Priorities to Grow Nigeria's Oil and Gas Industry 2015 – 2019' @Ministry of Petroleum Resources Nigeria, available at: < <http://www.buharimeter.ng/wp-content/uploads/2017/05/7-wins-.pdf> > accessed 11/05/2020.

⁵⁴⁷ Dr. Emmanuel Ibe Kachikwu (The Nigerian former Minister of Petroleum Resources) during the unveiling of the 7 Big Wins

⁵⁴⁸ Ibid the 7 Big Wins Policy document p. 9 (n 546)

⁵⁴⁹ Two of these policies have now been approved and gazetted, i.e. the National Oil policy 2017 and the National Gas policy 2017 while the Downstream policy, the Fiscal Reform policy and the Petroleum Industry Reform Bill are still under consideration.

⁵⁵⁰ Ibid part II Implementation Strategy and Objectives, p. 11 (n 546)

successful passage of the latest Gas Flare Regulation 2018; the creation of Nigerian Gas Flare Commercialisation Programme and the National Gas Policy 2017 as well as the approval of 4 new Guidelines for flaring regulation issued by the DPR.⁵⁵¹ These achievements recorded are explicitly peculiar to the utilisation of AG, an aspect of the current Buhari-led administration proponents. Thus, unlike previous policies, this policy has achieved its stated milestones within the period of creating appropriate flare-out policies and regulations.⁵⁵² Therefore, it is submitted that the policy has reached its set target of developing laws and policies for AG and NAG utilisation. As said earlier, the policy was the basis for introducing critical measures that, if appropriately managed and effectively implemented, would help the country's flare-out policy by 2030 but certainly not 2020.

3.4.3.1 The Nigerian Gas Flare Commercialisation Programme, 2016

The third pillar of the 7 Big Wins policy is a gas revolution that includes reducing gas flaring as one of the six goals.⁵⁵³ Consequently, in support of ending routine gas flaring, the Federal Executive Council (FEC) 2016 approved the Nigerian Gas Flare Commercialisation Programme (NGFCP) as one of the mechanisms for implementing Nigeria's commitment to eliminate routine gas flaring by 2020.⁵⁵⁴ The NGFCP is a high-priority strategy for FGN's policy to achieve the national flare-out and, to date, one of the significant achievements in terms of the gas revolution in the country.⁵⁵⁵ The Petroleum Act of 1969, the Flare Gas Regulations 2018, and the corresponding 2018 Guidelines published by the DPR provide the basis for the NGFCP. Thus, the Act based the entire ownership and control of all petroleum in all the land, under its territorial water, continental shelf, or exclusive economic zones in the FGN.⁵⁵⁶ This section confirmed the FGN right to the crude oil, AG, and

⁵⁵¹ See previous discussion under heading 3.3.2.1 and and the following discussion under heading 3.4.3.1

⁵⁵² The policy categorised the policy implementation strategy into short-term (0-2 years) and medium-term (0-4 years). In its short term objectives was the development of a regulatory framework that would dis-incentivise gas flare and open third-party access to the gas sector within two years, and develop technical codes and standards. It is ultimately intended to achieve flare out and encourages third party gas off-take at the wellhead. All these have been achieved within the time-frame. Ibid p. 11 (n 546)

⁵⁵³ Ibid p. 27

⁵⁵⁴ The FGN flare-out policy still remains the year 2020

⁵⁵⁵ *The National Gas Policy*, p. 62

⁵⁵⁶ *The Petroleum Act, 1969 (Cap 350 L.F.N 1990) Cap P10 L.F.N 2004, s. 1*

NAG within Nigeria's territorial jurisdiction. Based on this right, the *Gas Flare Regulations* assert the right of the FGN to take all flared gas and commercialise it through the NGFCP framework.⁵⁵⁷

The NGFCP's primary objective is to provide a commercial framework that would encourage investments in the AG utilisation projects.⁵⁵⁸ The Programme was designed to offer a series of auction rounds, wherein the FGN takes the flare gas at the flare sites and auctions it to third parties for commercialisation.⁵⁵⁹ The programme would directly benefit the majors in the industry. Thus, by enabling gas that would typically be flared to find its way to market, the oilfields producers and operators are saved from paying flaring fines for that gas and reducing the environmental impact caused by the routine flare.⁵⁶⁰ It will contribute to the Nigerian economy (through the delivery of additional volumes of gas to the domestic market for use by various sectors of the economy) and contribute to the global efforts to mitigate GHG emissions. The NGFCP would also benefit the host communities by creating jobs for the locals and reducing air pollution in the communities. The programme was estimated to generate around \$3.5 billion in initial inward investment.⁵⁶¹

The Gas Flare Regulation 2018 was established specifically to support the realisation of the NGFCP's main objective. The Regulations asserted the long-established ownership right that the FGN, not oil producers, own the flare gas, among others.⁵⁶² Accordingly, by written instrument, the petroleum minister may

⁵⁵⁷ *The Gas Flare Regulations 2018, s. 2*

⁵⁵⁸ This Programme Information Memorandum focuses primarily on issues related to associated gas that is not being used by its producers and is the subject of the auctions in the NGFCP. The policy thrust for reduction of gas flaring identified the MPR, DPR, IOCs, NNPC, Indigenous Producers as the responsible parties that would help implement the reduction strategy. The implementation strategy of the policy includes a review of the existing legal framework to drive flare out and develop policy, legal, and regulatory framework to de-incentivise gas flaring, reduce its environmental impacts and ensure enforcement of compliance, among others.

⁵⁵⁹ The Federal Government of Nigeria, 'Nigeria Gas Flare Commercialisation Programme – Programme Information Memorandum January, 2017' Ministry of Petroleum Resources (Rev 1) p. 11

⁵⁶⁰ *Ibid* p. 12

⁵⁶¹ *Ibid*

⁵⁶² *The Gas Flare Regulations 2018 and the Petroleum Act 1969, s. 1 and 9*

require permit Holders⁵⁶³ to take flare gas at specified sites on behalf of the FGN.⁵⁶⁴ Though producers (IOCs) can participate in the NGFCP through a subsidiary midstream company under the relevant Guidelines laid out by the DPR, a Permit to Access Flare Gas can only be given to companies other than Producers of the flare gas.⁵⁶⁵ Thus, Producers can also offer guaranteed gas volumes to third parties, which, if contracted, are not subject to flare payment if these volumes are flared.⁵⁶⁶ The Regulations also reviewed the AG flaring penalty irrespective of whether flaring is routine or non-routine. The NGFCP was also supported by fiscal terms incentivising the commercialisation of the flare gas. The CITA offers tax relief for up to five years and an annual allowance of 90% with 10% retention for investments in plants and machinery.⁵⁶⁷ During the tax-free period, all dividends are tax-free. The investment is in foreign currency or imported plants, and machinery consists of at least 30% of the company's share capital. Interest payable on a loan obtained for a gas development project is tax-deductible, provided the consent of the Minister of Finance is secured.⁵⁶⁸

Consequently, to this end, the FGN is striving to attract technically and commercially viable gas utilisation projects with the main objective of significantly reducing flared gas volumes. Likewise, the FGN is also about to conduct another round of an auction process to award Permits to Access Flare Gas to third parties. The Programme Manager, Justice Derefaka, disclosed that if appropriately managed and effectively implemented, the programme has the potential of creating 300,000 jobs. It could also produce 600,000 MT of LPG per year and

⁵⁶³ Permit holders are those who have been granted Permits to access flare gas after a competitive bid process in the NGFCP bid conducted by the FGN

⁵⁶⁴ Ibid s 6 - 12

⁵⁶⁵ The following guidelines currently support the Flare Gas (Prevention of Waste and Pollution) Regulations, 2018, to actualise the objective of the NGFCP. (1) Guidelines for Grant of Permit to Access Flare Gas 2018 (2) Guidelines for Flare Gas Measurement, Data Management, and Reporting Obligations 2018 (3) Guidelines for Flare Payments 2018 (4) Guidelines for Producer's Associated Gas Utilisation Project 2018. See <https://www.dpr.gov.ng/dpr-guidelines/>.

⁵⁶⁶ The 2018 Regulation Ibid s 13 - 15

⁵⁶⁷ *The Companies Income Tax Act*, s 39 see <http://www.firs.gov.ng/Tax-Management/Pages/Tax-Legislations.aspx> for the Act.

⁵⁶⁸ Ibid

generate 2.5 GW of power, approximately 700mmscf/d. Above all, it can help Nigeria achieve its elusive goal of ending gas flaring.⁵⁶⁹

Therefore, it is submitted that if effectively implemented, NGFCP would be the best that ever happened to Nigeria's petroleum industry in terms of policy measures designed to end gas flaring. Besides producing a regulatory framework that increases flaring penalties and incentives for AG utilisation, the NGFCP is the first programme that seeks to allow third-party access (TPA) to gas flare infrastructure. Thus, this will ensure that available gas processing facilities and pipelines can be used by an operator even when a third-party owns these facilities. Therefore, it is submitted that the programme will only achieve its objective if implemented stringently and efficiently with an open and transparent TPA to the gas facilities. As the World Bank opined, open and transparent TPA to gas gathering, processing, and transmission facilities is essential for promoting AG utilisation and would ensure flare and vent reduction. Even though the NEITI Act provides a framework for transparency and accountability by imposing reporting and disclosure obligations on all oil and gas companies.⁵⁷⁰ Nonetheless, the Act could only be relevant in this regard when effectively enforced.

3.4.3.2 The National Gas Policy, 2017

The Nigeria National Gas Policy (NGP) was also built on the 7 Big Wins policy of FGN for the gas sector and the country's commitment to the actualisation of its international commitment to end gas flaring by 2030 while retaining the domestic 2020 target, among others.⁵⁷¹ The policy articulates the vision of the FGN and sets goals, strategies, and an implementation plan to introduce an appropriate legal, regulatory, institutional, and commercial framework for Nigeria's gas sector⁵⁷².

⁵⁶⁹ Justice Derefaka (The Programme Manager, NGFCP), 'How Nigeria can save \$1b yearly from flared gas' Speaking at the Nigerian Norwegian Chamber of Commerce (NNCC) Q1 2018 Business Roundtable Seminar held in Lagos, Nigeria on "The Monetization of Gas: Perspectives and Opportunities in the Nigerian Gas Industry". See <https://guardian.ng/business-services/how-nigeria-can-save-10b-yearly-from-flared-gas/> accessed 14/05/2020

⁵⁷⁰ *The Nigerian Extractive Industries Transparency Initiative Act, 2007*, s. 3

⁵⁷¹ The Federal Republic of Nigeria – Ministry of Petroleum Resources, 'National Gas Policy – Nigerian Government Policy and Actions 2017' approved by the Federal Executive Council June 28, 2017,

⁵⁷² *Ibid* p. 13

For consistency with the previous policies, the FEC assured the industry players and the public that the policy document would be reviewed continuously and updated periodically to ensure such conformity. Unlike other policies, the FGN assured that it shall abide by the policy's provisions until such a review or replacement by a formal statement duly gazetted by the Government⁵⁷³.

As with previous policies, flared gas utilisation is part of the broader objectives of the NGP 2017. The policy document contains provisions re-affirming the country's stands regarding measures for the treatment of routine flaring. The measures were to ensure that flared gas finds its way to markets.⁵⁷⁴ The FGN assured that it would take measures to ensure that flare capture and utilisation projects are developed. It guaranteed to work collaboratively with industry development partners, providers of flare capture technologies, and third-party investors without prejudices to enforce applicable sanctions.⁵⁷⁵ Accordingly, the policy has introduced new measures critical to flaring reductions in highlighted successful jurisdictions (*see headings 3.3 above*). The country believes it would help it end routine flaring. Some of the measures introduced by *NGP 2017* affect some of the country's long-standing policies on *Gas Re-injection policy, Flare-out targets, Gas Flaring Penalties, New Flare Capture Technologies, and New, Existing, and Uneconomic fields Development*.

I. Gas Re-injection

One of the significant changes introduced is that the country's long-standing policy of gas re-injection has now mainly been restricted. Historically, there have been no restrictions, as oil companies could re-inject any AG discovered during production. The 1979 Act made it legally permissible as it required all oil companies to submit a preliminary programme for gas re-injection.⁵⁷⁶ The programme should consist of schemes for the viable utilisation and projects for gas re-injection of all AG produced that could not be utilised.⁵⁷⁷ For gas re-injection, the Act required companies to submit detailed plans to implement the

⁵⁷³ Ibid

⁵⁷⁴ Ibid, s. 6.4

⁵⁷⁵ Ibid p. 60 - 61

⁵⁷⁶ *The Associated Gas Re-injection Act, 1979, s. 1 (a-b)*

⁵⁷⁷ Ibid

gas re-injection programme.⁵⁷⁸ The provision appeared to have allowed blank permission to re-inject the flare gas without any restriction as long as oil companies comply with the requirements.

However, the new position now is that the FGN prefers commercialising the flared gas instead of re-injecting it. Thus, in the absence of a compelling technical reason or a viable outlet for the gas, the government restricts undue re-injection of the produced AG.⁵⁷⁹ The FGN believes that flared AG should find its way to the different downstream sectors of the country. However, for such a policy to affect gas re-injection restriction, the 1979 regime that recognised AG re-injection has now been amended and the new PIA 2021 prefers utilisation of all AG produced. Similarly, the provision of the 1979 Act that gave the country's petroleum minister power to make regulations prescribing anything required to be prescribed within the purview of the Act has been retained.⁵⁸⁰ Although, the recently approved Gas Flare Regulations, 2018 should have given legal backing to the re-injection restriction, noting that the NGP was introduced one year earlier than the Regulations.⁵⁸¹ Therefore, it is submitted that while the NGP is a sound policy that would mainly maximise the country's revenue from its petroleum industry, it could not affect gas re-injection restriction unless through a legislative amendment.

II. Flare-out Targets

The policy outlines FGN's plans to open an industry consultation mechanism to ensure that feasible flare-out targets and regulations are realistic.⁵⁸² Consequently, this is an essential step towards achieving the targets as oil companies that are critical stakeholders in flare-out have been continuously complaining of failure by the Nigerian government to consult them when pronouncing deadlines.⁵⁸³ Apart from the consultation on flare-out deadlines, FGN believes that routine flaring reduction projects should no longer be seen as isolated elements of the oil and gas sector in the country. Therefore, the policy contains

⁵⁷⁸ Ibid s. 2

⁵⁷⁹ The NGP 2017, p. 61

⁵⁸⁰ Ibid (n 507) s. 5, This is a blanket approval to proposed and effect amendment to the country's anti-gas flaring legal regime

⁵⁸¹ *The Gas Flare (Prevention of Waste and Pollution) Regulations 2018, s. 12*

⁵⁸² The NGP p. 63

⁵⁸³ See generally heading 3.3.2.1

provisions for FGN's intention to invest heavily in projects that would help maximise AG utilisation for achieving the flare-out target.⁵⁸⁴

III. Gas Flaring Penalties

The NGP also contained a planned increase in flaring penalties as one of its main measures. Thus, this measure has already been achieved by introducing the *Gas Flare Regulations 2018*. The *Regulations* increased the flaring penalty from N10/mscf (equivalent to \$0.03) to \$2.00/1000 scf of gas flared where the field produced 10,000 or more barrels per day. However, where the field produced less than 10,000 b/pd, the penalty is \$0.50/1000scf of gas flared. Thus, the flare has to pay the penalty irrespective of whether the flaring is routine or non-routine.⁵⁸⁵ Consequently, industry observers have applauded the appropriateness of the *Regulations* and the penalty increment introduced by the *Regulations*. Some have submitted that the *Regulations* would help discourage routine flaring in the country.⁵⁸⁶

IV. New Flare Capture Technologies

The FGN believes that new gas flare technology for capture and utilisation has the potential to help reduce routine flaring. The country has continuously made this statement and has incorporated it into the NGP policy document.⁵⁸⁷ The policy encouraged an innovative technology solution for AG flare capture and utilisation. Thus, the FGN has actively engaged the industry, development partners, providers of flare capture technologies, and third-party investors to actualise this goal. The FGN has outlined certain projects that could receive government support. These include projects for power generation, mini-LNG plants, and gas infrastructures,

⁵⁸⁴ The NGP p. 62. According to the policymakers, the best prospects for reducing routine flaring are through appropriately developed projects by investors and companies with experience in environments and with steady local engagements

⁵⁸⁵ *The Gas Flare Regulations 2018*, s. 13 (1&2)

⁵⁸⁶ Ibid

⁵⁸⁷ Ibid Kachikwu (n 21). Furthermore, the former minister had once assured industry players that during the seminar that technology for capture and monitoring of flare gas would be installed by 2017. Unfortunately, 2017 has since past, and there was no report of technology for monitoring the actual volume of the flares AG in the country.

among others.⁵⁸⁸ However, the FGN is yet to take drastic measures that could implement the policy regarding the deployment of new technologies.

V. New, Existing, and Uneconomic Fields

The NGP has reiterated the FGN's intention to prohibit any new field development by Regulations until there is a proper integrated plan for utilisation of any AG discovered during production. While for the existing AG fields, the government is considering other options to ensure significant reductions.⁵⁸⁹ Some of the measures outlined by the policy instrument include a requirement for the Operators of existing AG fields to produce integrated gas flare reduction plans and effectively implement them. While Joint Ventures and Service contracts, which almost contribute 88% of the total AG flared in the country, were subjected to a new sliding scale penalty.⁵⁹⁰ The government also considers regulations to allow a TPA to gas gathering pipelines to ensure that the flared gas has access to gas gathering systems and gas gathering facilities. This measure has been covered by the establishment of NGFCP and the *Gas Flare Regulations 2018* (see heading 3.4.3.1 above).⁵⁹¹ However, where fields have clearly shown to be uneconomic for developing and implementing gas flare reduction plans, the government considers other options, including shutting down such fields.⁵⁹²

Henceforth, it is unlikely that any field development will be allowed without the AG field development plan (FDP). Fields without such plans for AG development should be deferred in favour of such fields that submitted their plans.⁵⁹³ In this regard, the FGN requested that all upstream development proposals, whether for oil or gas, should contain; a study for the economic efficiency of the FDP, a practical gas utilisation plan for field life; a study for the use of shared infrastructure, especially for gas gathering and processing; and clear HSE plans with a target.⁵⁹⁴ Overall, the NGP 2017 policy regime has introduced robust

⁵⁸⁸ The NGP p. 62

⁵⁸⁹ Ibid

⁵⁹⁰ *The Gas Flare Regulations 2018*

⁵⁹¹ Ibid s. 6 – 12

⁵⁹² The NGP p. 64

⁵⁹³ Ibid

⁵⁹⁴ Ibid and *The Gas Flare Regulations 2018*, s.

reforms that, if implemented effectively, have the effect of helping the country realise its elusive goal of ending gas flaring and unlocking its gas sector.

Consequently, in the context of domestic and international energy development, the NGP aimed to define and set a framework necessary to move Nigeria from being a crude oil export-based economy to becoming an attractive gas-fired industrial economy hub. While at the same time, it helps to eliminate routine from Nigeria's petroleum industry. Occhiali and Falchetta described the introduced reforms as significant steps in the right direction that have the potential to achieve many benefits.⁵⁹⁵ According to them, effective implementation of the NGP can enable substantial economic gains, including increased government revenues, enhanced gas-powered electricity generation, and guaranteeing a cleaner and healthier environment, particularly in the Niger Delta.

⁵⁹⁵ Giovanni Occhiali and Giacomo Falchetta, 'The Changing Role of Natural Gas in Nigeria: A policy outlook for Energy Security and Sustainable Development' (2018) *Working Paper, No. 010.2018, Fondazione Eni Enrico Mattei (FEEM), Milano*.

3.5 Factors Affecting the Effectiveness of the Law and Policy Regimes – An Evaluation

The previous headings critically reviewed Nigeria's law and policy regimes regulating routine flaring. The headings, among other things, show that the country currently has adequate legislative, fiscal, and regulatory frameworks to deal with the menace of routine flaring and appropriate policy measures. However, the review also shows that the regimes have suffered ineffective enforcement processes. Thus, from the review, one could hold a view that the challenge facing the regimes was not inadequacies of the laws and policies but rather an ineffective enforcement process that was characterised by the seeming failure of the Nigerian authorities to enforce the requirements of the laws and policies governing gas flaring in the country. As discussed above, the primary factors that are critical to Norway's and Alberta's success in the elimination of routine flaring are *enforcement of the law prohibiting flaring; implementation of flare-out deadlines; effective monitoring and reporting; the transparency and independency of the regulating agencies; as well as open and transparent TPA to gas gathering and processing facilities*. Therefore, the sections below mainly evaluate these primary factors affecting the effectiveness of Nigeria's anti-gas flaring law and policy regimes.

3.5.1 Flaring Prohibition

The Nigerian government introduced its first legislative framework for regulating gas flaring in 1979. The framework assumed CAC regulatory approach, which mandated oil companies to stop flaring activities and fixed January 1984 as the deadline. Nevertheless, the Act did not expressly prohibit routine flaring nor provide the use of enforcement machinery to get oil companies to obey the requirement. The Act merely required oil companies in Nigeria to cease flaring - a requirement later suspended with the approval of Regulations 1984.⁵⁹⁶ Thus, it could be argued that the regime merely required cessation of flaring without declaring the practice as prohibited. Thus, no provision in the current regime expressly declares routine flaring illegal. Instead, it merely requires oil companies

⁵⁹⁶ *The Associated Gas Re-injection (Continued Flaring of Gas) Regulations, 1984 s. 1*

to stop flaring without the petroleum Minister's approval and later imposes a charge for the practice. Thus, this is a clear departure from how a CAC approach should be designed.⁵⁹⁷

Apparently, it took the intervention of Nigeria's judiciary to declare the routine flaring illegal. In the landmark case of *Gbemre vs Shell & others* referred to above, the trial court expressed its judicial power in declaring flaring illegal as it violates the human right enshrined under the African Charter. The court strongly pronounced routine flaring in the country an environmental degradation that violates human rights and expressly interpreted a fundamental right to life to include rights to a healthy environment. The *Gbemre's case* was a drastic shift from erstwhile Nigeria's court attitude to oil pollution-related cases compared to the decision in *Chinda v Shell BP*.⁵⁹⁸ In *Chinda's case*, the court rejected the plaintiff's request for an injunction against flaring, saying '*it is an absurdly and needlessly wide demand*'. It is submitted that the approach could have worked better in practice when a law that makes routine flaring illegal had delegated authority to enforce such a law through the imposition of fines or penalties to violators.

3.5.2 Insignificant Flaring Penalty

The flaring penalties in Nigeria were condemned as insignificant and could not induce compliance.⁵⁹⁹ Industry observers have found that the penalties were insignificant enough to induce compliance. Omorogbe argued that the penalty was insignificant and ineffective as it only made it economical for oil companies to flare than utilise or re-inject the gas.⁶⁰⁰ Similarly, the CJP and ERA studies confirmed the insignificance of the penalty regime when they estimated that the penalty

⁵⁹⁷ Neil Gunningham and Darren Sinclair, 'Regulatory Pluralism: Designing Policy Mixes for Environmental Regulation' (1999) *Law and Policy Blackwell Publishers* 49 - 76

⁵⁹⁸ (1974) 2 R.S.L.R. 1 see also *Elf Nigeria Limited vs. Opere Sillo and Anor* (1994) 6 NWLR [Pt.350] 258 and *Shell Petroleum Development Company Ltd vs. Councillor F.B. Farah and Others* [1995] 3 NWLR [Pt. 382] 148 at 185.

⁵⁹⁹ The country after realising that its objectives of ending flaring through the CAC approach alone could not be realistic resorted to the economic approach of enforcement through the introduction of a penalty-based fiscal framework that imposed pollution charges to supplement the earlier CAC approach. Regulations were introduced that imposed flaring penalties that were later increased.

⁶⁰⁰ *Ibid* Omorogbe (289)

payment for AG flaring is between \$150,000–\$370,000 (20 million and 50 million Naira) annually. The country loses between US\$500 million and US\$2.5 billion to gas flaring annually.⁶⁰¹ Thus, one could argue that the penalty only succeeded in monetising routine flaring at a ridiculously cheap rate and made it more economical for oil companies to flare gases rather than harness or conserve them through utilisation or re-injection schemes.

Another significant setback to the fiscal framework imposing a penalty for flaring was the instrument's content. The court interpreted the prescribed flaring penalties introduced by the 1985 Regulations as tax-deductible. Thus, in *Mobil Producing Unlimited v. Federal Inland Revenues Services*,⁶⁰² the tribunal judge held that the word 'Charge' by the Regulations was not equivalent to a penalty and thus tax-deductible. This implies that oil companies can flare gas as much as they desire, and the prescribed penalties would be deemed subtracted from their taxable incomes. This unsatisfactory verdict has aggravated gas flaring by oil companies in the sector. However, the current Buhari-led administration signed in 2018 a regulatory framework that modified that anomaly and increased the flaring penalty.⁶⁰³ It is essential to point out that the new 2018 framework supersedes the earlier 1985 Regulations concerning flare payments. Nevertheless, it is submitted that no matter the amount of penalty increment, the objective of ending gas flaring could only be realised if the measures were effectively enforced.

3.5.3 Flare-out Deadlines

The Nigerian government had been fixing flare-out deadlines since the enactment of the 1979 anti-gas flaring regime. Olujobi and Temilola contended that the first flare-out deadline was 1969. The oil companies failed to meet the deadline citing a lack of finance to construct gas re-injection plants within the stipulated time as the major problem.⁶⁰⁴ Nevertheless, the first flare-out deadline in Nigeria was not supported with any legal backing until 1979. It was the 1979 regime that required

⁶⁰¹ Ibid

⁶⁰² [2017] All FWLR 543

⁶⁰³ *The Gas Flare Regulations 2018* The Nigerian government is optimistic it will bring help end AG flaring in the country

⁶⁰⁴ Olusola Joshua Olujobi and Temilola Olusola-Olujobi, 'The Appraisal of Legal Framework Regulating Gas Flaring In Nigeria's Upstream Petroleum Sector: How Efficient?' (2019) 10(5) *International Journal of Civil Engineering and Technology* pp. 256-272

oil companies to stop flaring of AG except those with a permit and fixed the first deadline on 1st January 1984 but without success. The oil companies did not comply with the flare-out deadline because of the high cost of re-injecting gas. The minister later issued a Regulation, allowing oil companies to continue flaring subject to paltry penalties.⁶⁰⁵ The oil companies continued to enjoy the free-flaring era under the amended Regulation subject to payment of a tax-deductible charge until 2003. In 2003 the FGN set another flare-out deadline but was not complied with due to the alleged failure of the government to engage the oil companies before fixing the deadline date. Thus, one year after due consultation with the oil companies, the same administration set another deadline. However, the oil companies claimed that the deadlines were not expressly spelt out in any legislation.⁶⁰⁶ The same administration later moved the deadline from December 2003 to 2006 but without success.⁶⁰⁷ The business, as usual, affairs continued until 2007, when the new administration was elected.

Therefore, some months after assuming office, the Yar'adua administration also sought to enforce the flare-out deadline. The administration fixed January 2008 and then December 2008 as the flare-out deadlines, but they were not complied with by the oil companies nor enforced by the government.⁶⁰⁸ Thus, the flare-out deadlines were postponed following a negotiation between the government and the oil companies. Industry observers found that the 2008 deadline would not be feasible. It was just an understanding between the FGN and the oil companies without legal backing, thus making the agreement vulnerable to violation. The oil companies did unilaterally agree to 2009 as a target year. Nevertheless, oil companies cited the alleged failure of the government to engage before fixing the deadline as the ground for their inability to meet the deadline.⁶⁰⁹

Consequently, the oil companies could not keep to their commitment to the 2009 flare-out target, and the government announced another shift of the flare-out date to 2010, which, according to the parties, is the viable year for the flare-out

⁶⁰⁵ All these discussions have been advanced above

⁶⁰⁶ Ibid Olujobi and Temilola (n 604)

⁶⁰⁷ Ibid, the NEP (n 512)

⁶⁰⁸ Ibid

⁶⁰⁹ Ibid Olujobi and Temilola

cessation. Malumfashi was strongly optimistic about the deadline when he suggested that the deadline fixed by the country was sacrosanct and achievable that year, and he estimated that flaring could end by 2010.⁶¹⁰ Nevertheless, Malumfashi fails to consider that the FGN had been announcing flare-out deadlines since 1979 and repeatedly adjourning them with the penultimate deadline in December 2012.⁶¹¹ Prof. Duruigbo, while criticising Nigeria's flare-out deadlines, viewed that "it was pathetic and horrible the gas still being flared in Nigeria. The deadline keeps on shifting. Like Russia, and each time they imposed standards, fines, deadlines, nothing seems to come out".⁶¹²

It was evident that the continuous shifts in the flare-out deadlines and the failure of the FGN to enforce the deadlines were among the reasons why the flaring continues routinely. Thus, in 2014, a new administration issued statements technically permitting oil companies to continue with AG flaring until 2020, which to FGN, was the feasible year for the flare-out deadline.⁶¹³ Though issued by the previous administration, this permission coincides with the current Buhari-led government's policy of zero routine flaring. There was no public retraction of the earlier permission given to the oil companies.⁶¹⁴ Thus, considering the country's repeated unwillingness to enforce the provisions of the current regime and its reluctance to implement the deadlines policies, one can argue that the country had indirectly permitted oil companies to continue flaring till 2020. This argument could be sustained considering the country's endorsement of the GGFRP initiative for ending gas flaring by 2030, notwithstanding maintaining its national target to end the flaring by 2020.⁶¹⁵ Therefore, it could be suggested that the continuing

⁶¹⁰ Ibid Malumfashi (n 73).

⁶¹¹ The *Petroleum Industry Bill, 2012*, Adeola Yusuf, 'FG Plans Another Shift for 40 Year-Old Gas Flaring Deadline – Legal Loophole Created as Flaring Deadline Expires' Daily Independent of 09/06/2014

⁶¹² Emeka Duruigbo, 'The World Bank, Multinational Oil Corporations and Resource Course in Africa' (2005) 26 (1) Pa. J. Intl. Econ L.

⁶¹³ Business Day Newspaper, 'Oil Companies to Continue to Flare Gas Beyond 2015' February 19, 2014, available at: <<http://businessdayonline.com/2014/02/oil-companies-to-continue-to-flare-gas-beyond-2015/>> accessed on 15/02/2020

⁶¹⁴ The World Bank, 'Nigeria's Flaring Reduction Target: 2020' March 2017. Available at: <<http://www.worldbank.org/en/news/feature/2017/03/10/nigerias-flaring-reduction-target-2020>> accessed on the 18/12/2017

⁶¹⁵ The World Bank, 'Nigeria's Flaring Reduction Target: 2020, 10 March 2017. Available at: <<http://www.worldbank.org/en/news/feature/2017/03/10/nigerias-flaring-reduction-target-2020>> accessed on 30/01/2018

flaring of AG in Nigeria's oil and gas industry can be attributed, among others, to the failure of the successive Nigerian governments to enforce the flare-out deadlines.

3.5.4 Monitoring, Measurement, and Reporting

As seen in *section 3.3.4.1*, adequate monitoring of measurement and reporting procedure is an essential tool for mitigating routine flaring, without which Regulations would not be ineffective.⁶¹⁶ Nevertheless, it was reported that these requirements are another regulatory obstacle demeaning Nigeria's anti-gas flaring regimes. Thus, measurement and reporting are essential requirements of an effective regulatory regime; regardless of how well the regime's design is, it will not make any impact unless the regulatory breaches are monitored and enforced. Thus, GGFRP suggests monitoring flaring, and venting volumes is necessary to enforce regulations properly.⁶¹⁷ Typically, the regulator has two corresponding options for monitoring flare and vent volumes; operators' reports and logs or an ad-hoc site inspection. Thus, operators must maintain a written record of all flare and vent records regardless of size and duration and regularly report them to the regulator. Similarly, ad-hoc site inspections ensure record-keeping is being done as required by regulation. It can also be used to inspect facilities to ensure that appropriate gas measuring equipment is installed where required and to check on methodologies being used to estimate flare/vent volumes where this is an acceptable practice.⁶¹⁸

However, the situation in Nigeria was uncertain as there was limited information on how the DPR (now NURC) monitors the measuring and reporting requirements. Correspondingly, the FGN had recently alleged that the oil companies falsified AG

⁶¹⁶ The World Bank 2009 (n 1)

⁶¹⁷ Similarly, like Measurement requirements, reporting of flare and vent volumes are also an integral part of a regulatory regime. Thus, reporting allows the regulator to monitor the operators' compliance with approved flaring and venting levels; identify under-performing assets, for instance, by comparing the performance of similar types of assets so that measures can be taken to improve the performance of poorly performing assets. See The World Bank 2009 (n 1)

⁶¹⁸ However, On-site monitoring of venting is generally more challenging than flaring, as vented gas is not visible to the naked eye. A few regulators like the U.S. Mineral Management Service (MMS) and Alberta Energy Resources Conservation Board (ERCB)) employ infra-red video cameras that allow otherwise invisible vent streams be "seen".

flaring data to avoid penalty payment.⁶¹⁹ According to the former state minister for petroleum resources, Kachikwu, the country is not adequately monitoring the volumes of the AG flared. It is much higher than what the companies are reporting in a real sense. Kachikwu explained that the government would, by 2017, start to enforce AG flaring regulations rigorously. Kachikwu further claimed the country would be using technology to measure the actual volumes of the flares AG as they could no longer continue relying on figures from the oil companies.⁶²⁰ Unfortunately, the 2017 deadline has since passed, but there was no technology report for monitoring the volume of the flare's AG in the country.

The previous legal frameworks had mentioned the requirement of monitoring and reporting in the general term, and not until 2018; there were no regulations or guidelines detailing how the requirement should be carried out. However, in 2018, the DPR issued Guidelines for Measurement and reporting. Whether the guidelines will be effectively enforced, only time will tell. Farina claimed that there seems to be uncertainty about the actual volume of gas flared globally because of limited oversight and that many oil-producing countries lack monitoring equipment.⁶²¹ Another reason was the inability of these countries to report AG flaring volumes publicly.⁶²²

3.5.5 Open and Fair Third-Party Access (TPA)

Open and fair TPA to the upstream gas infrastructure such as gas gathering and processing facilities, gas pipelines, trunk lines, and transmission facilities is another policy measure lacking for quite a long in Nigeria's petroleum industry. Though the policy was introduced in late 2008, its implementation, particularly as regards AG, has been subject to controversies. The World Bank opined that open and fair TPA is essential for promoting AG utilisation, hence flare and vent

⁶¹⁹ Chris Bignell, 'Gas Flaring in the News – December/January 2017' available at: <<https://www.fluenta.com/news/flaring-in-the-news/gas-flaring-in-the-news-december-january/>> accessed on 28/01/2018

⁶²⁰ Ibid Kachikwu (n 21)

⁶²¹ M.F Farina, 'Flare Gas Reduction: Recent Global Trends and Policy Consideration' (2010) GE Energy Global Strategy and Planning, GE 18592

⁶²² United States Accountability Office, 'Natural Gas Flaring and Venting: Opportunities to Improve Data and REDUCE Emissions' Government Accountability Office (GAO 2008)

reduction.⁶²³ Therefore, legislative and regulatory frameworks must ensure third-party non-discriminatory, and transparent access to upstream gas handling infrastructure. Though the infrastructures are usually built and owned by the operators, TPA to this infrastructure is often not regulated and thus entails commercial negotiations between the parties. Nevertheless, it is good practice that a regulator should be able to have the right to impose TPA if this cannot be secured through commercial negotiations.⁶²⁴

A typical example of a regulator with the right and power to impose TPA is the AER. The AER is empowered by law to compel negotiation or issue an order for TPA if the AG producer and the infrastructure owner cannot agree on access terms⁶²⁵. Ordinarily, owners of pipeline gathering and transportation systems can grant TPA and charge a fee under a negotiated agreement. This is usually negotiated under Standard industry agreements that set out costs and general terms of access though there are exceptions. However, where parties cannot agree on access, an application can be made to the AER for access rights to infrastructure that does not cross Alberta's borders. The AER can then order any oil and gas pipeline owner to operate as a common carrier so that a producer can access the existing pipeline capacity.⁶²⁶ Alberta detailed basic general requirements that must be met to obtain access.⁶²⁷

Consequently, once the general requirements are met, the AER can issue an order to grant access and any other conditions that the AER might consider necessary to ensure equitable and fair treatment. In most cases, owners of an unregulated pipeline or facility favour reaching a negotiated settlement with third parties to avoid imposing such an order. However, certain gas pipelines fall under the Alberta Utilities Commission's (AUC) jurisdiction, which has the authority to regulate rates and terms and conditions of access associated with such pipelines.⁶²⁸ The UK also

⁶²³ Ibid the World Bank 2009 (n 1)

⁶²⁴ Ibid

⁶²⁵ *Oil and Gas Conservation Act, Revised Statutes of Alberta 2000 Chapter O-6, s. 1 and 7. Current as of June 7, 2017*

⁶²⁶ Ibid part 9 s. 48

⁶²⁷ Ibid

⁶²⁸ See AER, 'Roadmap to Recovery: Reviving Alberta's Natural Gas Industry 2018' Natural Gas Advisory Panel Report ISBN 978-1-4601-4191-5.

has one of the best systems for third-party access to upstream oil and gas infrastructure.⁶²⁹

However, open and fair TPA to gas infrastructure has been a significant issue since petroleum activities started in Nigeria. Although the NGMP 2008 sought to correct the failures by providing a roadmap for investing in the gas sub-sector and effectively utilising gas resources and the regional market.⁶³⁰ Nevertheless, there was a limited impact on TPA in the gas infrastructure for AG utilisation. Likewise, the NGFCP did not give a detailed explanation of the TPA. The NCGFP merely requires the third party or the flare gas buyer to engineer, procure and construct the Buyer Gas Connection Assets⁶³¹ and the Producer Gas Connection Assets⁶³² at its own expense and then hand over their title and ownership to the Producer upon the start of commercial operation. The Producer will be responsible for operating and maintaining the assets and will receive a handling fee from the Flare Gas Buyer under the Connection Agreement.⁶³³ The Producer will make available and deliver Flare Gas at a delivery point for the term of the Permit to Access Flare Gas or until the expiration of the OML, whichever comes earlier.⁶³⁴ Thus, this shows that open and fair TPA information is limited within the country's petroleum industry. There was also no explanation for the extent of the Regulator's involvement as obtainable under the Alberta jurisdiction.

⁶²⁹ See Oil and Gas Authority, 'Guidance on Dispute Over Third Party Access to Upstream Oil and Gas Infrastructure' OGA's guidance for the handling of third party access disputes under Chapter 3, Energy Act 2011

⁶³⁰ Ibid Ugbo (n 521).

⁶³¹ Buyer Gas Connection Assets is the natural gas pipeline used to transport Flare Gas from the Delivery Point at the perimeter of the flare site to the Project Facility and any other equipment, machinery or other property of any kind that are owned or leased by Flare Gas Buyer to take delivery of Flare Gas under the Connection Agreement. See *The NGFCP - Programme Information Memorandum (the PIM)*, pp 27

⁶³² The pipeline, equipment, machinery, and other assets or facilities designed, funded and built by the holder of the Permit to Access Flare Gas and used to transport Flare Gas from the Flare Gas Connection Point to the Delivery Point under the Connection Agreement. Title, care and custody of these assets are transferred by the holder of the Permit to Access Flare Gas to the Producer upon the start of commercial operation. See *The PIM*, pp 27

⁶³³ An agreement, conforming substantially to the template appended to the RFP document, which is entered into by and between a Producer and a Flare Gas Buyer with respect to the connection of the respective facilities of the Producer and the Flare Gas Buyer through the Gas Connection Assets. See *The NGFCP - PIM*, pp 27

⁶³⁴ *The Programme Information Memorandum*, pp 27

3.6 The Current Reforms to Enhance the Appropriateness and Effectiveness of the Law and Policy Regimes

Nigeria's petroleum industry has recently witnessed positive legislative, fiscal and regulatory framework amendments. In 2018, the Nigerian President approved a new regulatory framework that reviewed the penalty regime for gas flaring than it currently obtains by categorising the oil fields into smaller and larger fields. The penalty payment applies to all cases irrespective of whether the flaring is routine or non-routine. Moreover, on 16th August 2021, the President also assented to the long-awaited Petroleum Industry Act (the PIA) 2021 into law (popularly known as PIB 2012), ending Nigeria's 20-year-long awaiting reform's oil and gas sector. The PIA repealed the Associated Gas Re-injection Act 1979, among others, and thus became Nigeria's significant legal framework regulating gas flaring. Therefore, an examination of the various reforms relating to the frameworks is discussed in *section 3.3. and 3.4* are given below:

3.6.1 Legislative Reform

Two significant legislative instruments recently passed that affect the treatment of gas flaring in Nigeria. The Petroleum Industry Act, 2021, and Climate Change Act, 2021. Thus, a review of the reforms is presented below.

3.6.1.1 The Petroleum Industry Act, 2021

The long-awaited Petroleum Industry Act 2021 (PIA) has been a significant legislative effort by the Nigerian authorities to consolidate all the existing petroleum laws in the country into a single piece of legislation per the principles of good governance, transparency, and sustainable development of Nigeria.⁶³⁵ The Act aimed to establish effective and efficient legal and regulatory frameworks in Nigeria's petroleum industry, promote transparency and accountability in resources administration, combat the menace of AG flaring and promote its utilisation, among others.⁶³⁶ The key aspect of the PIA touching on environmental regulation and AG flaring has been contained under Chapter 2 Part II, which

⁶³⁵ The Petroleum Industry Act, 2021, s 2

⁶³⁶ Ibid

addressed many issues.⁶³⁷ The Act requires both the existing and new licensee or lessee who engages in upstream and midstream petroleum operations to submit for approval an environmental management plan in respect of projects which require environmental impact assessment to the Commission or Authority, as the case may be. While the existing license holders have one year to comply with the Act's requirement, the new holders have only six months to comply.⁶³⁸

While prohibiting gas flaring, the PIA criminalises it where it provides that a licensee, lessee, or marginal field operator that flares or vent gas commit an offence and shall be liable to a penalty as prescribed under the Flare Gas Regulation 2018 and as discussed in the previous paragraphs.⁶³⁹ However, the Act recognises certain exceptional situations where flaring could occur without any penalty or such situations in which permits can be granted.⁶⁴⁰ Additionally, as opposed to the status quo, the gas flaring penalty shall not be eligible for cost recovery or tax-deductible; thus, operators shall bear the cost alone. Thus, it shall be paid in the same manner and procedure as the payment of royalties.⁶⁴¹ Such monies shall be used for environmental remediation and relief for the host communities, the direct victims of gas flaring.⁶⁴²

Moreover, the PIA 2021 also strengthens the requirement of measurement and reporting of the flared gas introduced by the Flare Gas Regulation 2018, which mandates licensees and lessees to install metering equipment in accordance with the specifications prescribed by the commission before the commencement of oil production to measure the volume of gas flared.⁶⁴³ Failure to comply with this requirement by a licensee or lessee is a criminal offence and is liable to a fine as prescribed by the commission.⁶⁴⁴ The FGN is optimistic that the PIA 2021 will bring more investment into its natural gas market and end AG's flaring in the country. Nevertheless, no matter how appropriate the new amendments may be,

⁶³⁷ Ibid

⁶³⁸ Ibid s. 102.

⁶³⁹ Ibid s. 104 & 105

⁶⁴⁰ Ibid. The exemption situations include emergency cases, for safety, operational reasons or where permit is granted, see s. 107.

⁶⁴¹ Ibid s. 104 (2 & 3)

⁶⁴² Ibid (4)

⁶⁴³ Ibid s. 106 (1)

⁶⁴⁴ Ibid (2)

the objective of ending gas flaring could only be realised if they were effectively enforced. This means that a strong regulatory institution is required to enforce the content of the PIA 2021 effectively.

3.6.1.2 The Climate Change Act, 2021

In November 2021, during COP26, Nigeria committed to achieving net-zero emissions by 2060. Less than a week after the conference, President Muhammadu Buhari signed the Climate Change Act (CCA) into law 2021, passed by the National Assembly in October 2021⁶⁴⁵. The Act seeks to provide a framework for mainstreaming climate change actions into national plans and programmes, thereby establishing a body to ensure achieving the Act's objectives – net zero GHG emissions by 2050 – 2070⁶⁴⁶. The CCA provides a solid framework for climate action to achieve Nigeria's short, medium, and long-term goals on climate mitigation and adaptation, as well as funding for the realisation of the objectives – the ultimate principle and objectives of PA and UNFCCC⁶⁴⁷.

The CCA established a body known as the National Council on Climate Change (NCCC), chaired by the President of Nigeria, with members from the public and private sectors, including civil society, women, youth, and persons with disabilities⁶⁴⁸. The Council was empowered to coordinate national climate actions, administer the newly established Climate Change Fund, mobilise resources to support climate actions, and collaborate with the Nigerian Sovereign Green Bond in meeting Nigeria's NDC⁶⁴⁹. The Climate Change Fund is envisioned as a financing mechanism for prioritised climate actions and interventions⁶⁵⁰. Promoting and adopting nature-based solutions to reduce GHG emissions and mitigate climate change is encouraged⁶⁵¹.

⁶⁴⁵ The Climate Change Act, 2021, passed by the Nigerian Senate on 8th July 2021, by the House of Representatives on 13th October 2021 (harmonised 20th October 2021) and assented to by President Muhammadu Buhari 17th November 2021.

⁶⁴⁶ Ibid, s. 1 (d) part 1

⁶⁴⁷ Ibid and Art 2 PA

⁶⁴⁸ Ibid Part II s. 3 - 5

⁶⁴⁹ Ibid s. 4

⁶⁵⁰ Ibid s. 15 (1 & 2)

⁶⁵¹ Ibid Part VII s. 27 - 29

The CCA 2021 applies to all MDAs, and public and private entities within Nigeria's territorial jurisdiction and directs both to implement mechanisms geared towards fostering a low-carbon emission, environmentally sustainable, and climate-resilient society⁶⁵². The Act obligates any private entity - oil companies inclusive of putting in place measures to achieve the annual carbon emission reduction targets in line with the Action Plan; and designate a climate change officer responsible for submitting effort annual reports to the NCCC Secretariats regarding the entity's efforts at meeting its carbon emission reduction and climate adaptation plan⁶⁵³.

The commitment shown by the country in passing the CCA is laudable and a step in the right direction toward complementary efforts in ending gas flaring. The measures provided a sound legal foundation for supplementing the FGN's efforts in combating gas flaring. Thus, gas flaring represents Nigeria's largest single source of climate pollution, contributing about 55 million tonnes of CO₂ emissions per annum.⁶⁵⁴ Thus, it became imperative to arrest the climate pollution from gas flaring if Nigeria is interested in tackling climate change. Bearing this in mind, the FGN has committed to an unconditional 20% reduction of gas flaring by 2030 to achieve its target through the robust implementation of anti-gas flaring laws and policies⁶⁵⁵. In its NDCs' submission, Nigeria has realised that strengthening the enforcement of gas flaring restrictions and working to end gas flaring is an essential mitigation measure to combat global warming and achieve the ultimate objectives of the PA⁶⁵⁶.

Moreover, the framework would serve as a basis for potential climate litigation. For instance, the CCA makes it actionable for a victim of environmental harm to bring a claim for the failure of the Council to regulate offences and penalise any entity for non-compliance with the climate obligations imposed by the Act. These

⁶⁵² Ibid Part IV - s. 22, 23 & 24.

⁶⁵³ Ibid s. 24 (a & b)

⁶⁵⁴ Society of Planet and Prosperity, 'Towards a Green and Resilience Recovery in Nigeria' (2021) Policy Brief May 2021.

⁶⁵⁵ Nigeria's Intended Nationally Determined Contribution – Submitted to the COP-UNFCCC in Preparation for the Adoption of Climate Change Agreement at the Paris Conference on Climate Change, December 2015. Prepared by the Nigerian Federal Ministry of Environment, Abuja on 27 October 2015

⁶⁵⁶ Ibid

include any person, private or public entity that acts in a manner that negatively affects efforts towards mitigation and adaptation measures made under the Act⁶⁵⁷. It empowered Federal and State High courts to make an Order to prevent, stop or discontinue the performance of any act that is harmful to the environment, specifically climate change harms and gas flaring adjudged to be one such⁶⁵⁸. Thus, *Gbemre's* (supra), where the court cited the provision of the Nigerian Constitution and African Charter and ruled that oil companies must stop gas flaring, has now been supported with a legal framework.

Although the CCA has provided another life support for combating gas in Nigeria, a closer examination of the CCA provisions would make one conclude that the Act created more avenues for conflict and lack of coordination previously addressed by the PIA 2021 and Gas Flare Regulation. For instance, the Council established by the Act was empowered, among other things, to make decisions concerning climate change and oversee the implementation of the climate action plan⁶⁵⁹. This extends to overseeing and supervising Nigeria's petroleum sector as the country's largest source of CO₂ emissions. While the PIA and Gas Flare Regulation 2018, as discussed earlier, has removed any MDAs from regulating the upstream sector except the new NURC⁶⁶⁰.

Now with the new Conflicting regulatory oversight granted to the NCCC, one may be tempted to submit that there could be a lack of appropriate and effective coordination between the NURC and the NCCC. The CCA did not contain a detailed explanation of how the supervisory or oversight functions could be implemented. This issue has always been one of the primary challenges and a critical barrier to combating AG flaring in Nigeria. Undoubtedly, the duplicity in functions and the multiplicity of regulatory institutions without defined apportioned responsibilities would impede the effective realisation of AG flaring regulation in the country.

⁶⁵⁷ s. 34 (1)

⁶⁵⁸ Ibid (2) (b) compel any public official to act to prevent or stop the performance of any act that is harmful to the environment; (c) compensate victims directly affected by the acts that are harmful to the environment.

⁶⁵⁹ s. 3 & 4 CCA 2021

⁶⁶⁰ s. 334 PIA 2021 and Gas Flare Regulation 2018, Regulation 17

Notwithstanding the conflict, it must stress that the CCA provided necessary measures to effectively implement the Act's objectives regarding climate change mitigation, adaptation, and finances. The FGN demonstrates a seriousness in approaching climate action with an appropriate legal framework. It is the first stand-alone comprehensive climate change legislation in West Africa and among a few globally and regionally. The Act has the potential to become a strategic tool for climate change advocacy and a legal foundation for potential climate litigation only if implemented effectively.

3.6.2 Regulatory (Governance) Reforms

The PIA also overhauls the regulation and governance of the petroleum industry. The significant reform introduced by the PIA 2021 to this effect is the replacement of the DPR and other agencies with two new regulatory agencies known as the Nigeria Upstream Regulatory Commission (NURC) and the Nigerian Midstream and Downstream Petroleum Regulatory Authority (NMDPRA)—that will be responsible for the technical and commercial regulation of petroleum operations in their respective sectors (NURC for upstream operations and NMDPRA for midstream and downstream operations). These agencies have the power to acquire, hold, and dispose of property, as well as sue and are sued in their name.⁶⁶¹ The agencies are to enforce, administer and implement laws, regulations, and policies relating to their respective sectors.⁶⁶²

The technical and regulatory functions of the NURC, among others, include establishing, monitoring, regulating, and enforcing health, safety, and environmental measures and standards relating to upstream operations. These upstream operations include setting, defining, and enforcing approved standards and regulations of upstream natural gas gathering and treatment and the elimination of natural gas flaring and venting.⁶⁶³ The NURC also supervises and ensures accurate metering equipment for measuring gas flaring is used pursuant

⁶⁶¹ See generally Chapter 1 Part III and Part IV of the PIA 2021.

⁶⁶² Ibid s. 7 & 31

⁶⁶³ Ibid s. 7 (c - e).

to the applicable laws and certificates of quality and quantity for petroleum produced.⁶⁶⁴ The NMDPRA also has a role relating to gas flaring regulations in terms of monitoring and enforcing compliance with the terms and conditions of third-party access to facilities under the gas processing liceneces, transportation pipelines, and networks. It could also exercise control concerning the construction and operation of TPA to infrastructure for natural gas operations in downstream and midstream sectors.⁶⁶⁵ The NMDPRA shall also be responsible for determining and collecting the gas flare penalty arising from midstream operations and its enforcement.⁶⁶⁶

3.6.3 Fiscal Reforms

Chapter 2 & 4 of the PIA 2021 contains detailed provisions introducing new fiscal reforms applicable to the industry.⁶⁶⁷ The PIA maintained the gas flaring penalties introduced hitherto increased by the Gas Flare Regulation 2018 with little modification. According to PIA 2021, gas flaring penalties would operate in the same manner as the payment of royalties under the Act. Thus, gas flaring penalties shall no longer be eligible for cost recovery or tax-deductible.⁶⁶⁸ Similarly, it also replaced the existing petroleum profits tax with a hydrocarbon tax and introduced a tax on the income of oil companies.⁶⁶⁹ Under this new regime, hydrocarbons—including crude oil, condensates, and natural gas liquids produced from associated gas—will be subject to taxation. Thus, the cost of production of AG upstream of the measurement point shall be allocated to crude oil for calculating the hydrocarbon tax.⁶⁷⁰ However, crude oil from frontier acreage and deep offshore is excluded from the tax.⁶⁷¹

⁶⁶⁴ Ibid (l).

⁶⁶⁵ Ibid s. 32 & 33.

⁶⁶⁶ Ibid 259 (c)

⁶⁶⁷ The PIA 2021, s. 104 & 258 – 296.

⁶⁶⁸ Ibid s. 104 (3).

⁶⁶⁹ Ibid s 260 (1a).

⁶⁷⁰ Ibid (2)

⁶⁷¹ Ibid (3)

Consequently, gas flaring penalties along with the financial contributions for remediation of environmental damage received by the NURC shall be for environmental remediation and relief of the host communities of the settlers on which the penalties are levied.⁶⁷² However, the penalties for gas flaring arising from midstream operations will accrue to the Midstream and Downstream Infrastructure Fund and will be used to finance midstream and downstream infrastructure investment.⁶⁷³

3.6.4 Other Reforms

Other significant reforms related to the flaring regulation may not likely happen but are still under consideration at the Nigerian national assembly. One such is the amendment to the National Oil Spill Detection and Response Agency (Establishment) Act 2006 that established the National Oil Spill Detection and Response Agency (NOSDRA).⁶⁷⁴ The Act places an obligation on the NOSDRA to ensure that oil and gas operations do not cause oil spill pollution.⁶⁷⁵ The Act requires NOSDRA to protect the natural environment from environmental harm by monitoring oil companies' operations and compelling them to conduct necessary clean-up exercises to restore the affected areas.⁶⁷⁶ Thus, the NOSDRA's function is mainly related to the country's preparation, investigation, detection, and enforcement of an oil spill response.⁶⁷⁷ However, an amendment was recently submitted to the national assembly for the NOSDRA's functions to be extended to gas flaring issues.

⁶⁷² Ibid s. 104 (4) & s. 103. Note, as a condition for the grant of a licence or lease and prior to the approval of the environmental management plan by the NURC or NMDRA, a licensee or leasee shall pay a prescribed financial contribution to an environmental remediation fund established for the rehabilitation and management of negative environmental impacts with respect to the licence or lease.

⁶⁷³ Ibid 258 - 259

⁶⁷⁴ *The National Oil Spill Detection and Response Agency (Establishment) Act, 2006 No. 72 of 29th December, 2006 vol. 93*

⁶⁷⁵ *Ibid s. 2*

⁶⁷⁶ *Ibid s. 5*

⁶⁷⁷ *Ibid s. 1 (1)*

Hon. Makwe re-introduced the amendment to the current ninth assembly and scaled the first reading on 26 September 2019.⁶⁷⁸ It seeks to amend the functions of NOSDRA to include the detection and general management of *oil spills, oil waste, and gas flares*.⁶⁷⁹ Consequently, this amendment will inevitably conflict with the statutory responsibility of the DPR as it is now the sole agency responsible for regulating gas flaring in the country. This has supported the above argument on the conflict of interest among the regulatory agencies in Nigeria's petroleum industry. NOSDRA will have a concurrent responsibility with NURC in gas flaring issues if the amendment is scaled through. Like NURC, NOSDRA has repeatedly failed in its primary duty to enforce oil spill penalties and measures. So far, it has failed to initiate a single oil spill investigation, so there is no basis for why it will effectively enforce measures regarding gas flaring.⁶⁸⁰

Furthermore, NOSDRA currently has a limited workforce that would ensure an effective investigation of its main responsibilities. The investigation processes were often heavily reliant on the information presented by the oil corporations instead of their personnel. Thus, this has made it difficult for NOSDRA to perform its function efficiently and effectively.⁶⁸¹ Moreover, even after glaring at oil spillage issues, NOSDRA could not compel a clean-up of the polluted sites nor provide any sanction to the contrary.⁶⁸² Thus, this glaringly shows the failure of NOSDRA to perform the statutory functions assigned to it by the Act. Consequently, it is submitted that nothing good would come out of the shared responsibility between the two regulatory agencies.

⁶⁷⁸ The Nigeria National Assembly, <<https://www.nassnig.org/documents/bill/10696>>

⁶⁷⁹ *The National Oil Spill Detection and Response Agency (Establishment) Bill, 2019 (HB. 351) s. 6 (1) a*

⁶⁸⁰ Olawale Atande, 'An Overview of the Legal Framework for Oil Pollution in Nigeria' (2015) available at: <https://www.researchgate.net/publication/281102181_AN_OVERVIEW_OF_THE_LEGAL_FRAMEWORK_FOR_OIL_POLLUTION_IN_NIGERIA> accessed 01/06/2020

⁶⁸¹ Abiyomi Olaniyan, 'The Multi-agency Response Approach to the Management of Oil Spill incidents: legal framework for effective implementation in Nigeria' (2015) 6 (1) *African Journals Online*

⁶⁸² Amnesty International, 'Decoding Shell and Eni's Poor Record on Oil Spills' (Amnesty International Report 2018) p.24, 35.

3.6.4 Evaluating the Reforms

The proposed reforms above evidently addressed many of the lacunas discovered under Nigeria's anti-gas flaring law and policy regimes. The reforms also identify effective strategies for improving the administration of gas flaring in Nigeria. For instance, it has introduced a solution to many problems earlier identified by this study under *heading 3.5*. One of the significant reforms was the Act's passage almost two decades after its introduction. The first significant effort toward becoming a reality was in 2019 when the Nigerian legislature passed the PIGB, but the Nigerian president blocked its passage into law.⁶⁸³ Few expect such a real reform in the country's petroleum sector without a catalyst like the long-awaited PIA. It will entrench transparency in the sector and ensure effective utilisation of the AG – a measure that will help the country end flaring, among others.

However, some reforms may likely create more problems for Nigeria's petroleum industry. For instance, some institutional reforms are still anticipated by the amendment of the Gas Flaring Bill 2020 and the NOSDRA Act. The amendment of the two Bills runs concurrently, and both sought to repeal the current anti-gas regime, among others. The proposed amendment to the NOSDRA Act could become a problem for institutional reform. The NOSDRA Amendment Bill 2019 proposed additional functions for NOSDRA, including the detection and general management of gas flares.⁶⁸⁴ Consequently, this will inevitably conflict with the responsibility of the proposed NURC as the sole agency responsible for regulating gas flaring in the country. Thus, if such an amendment should scale through, NOSDRA will share similar responsibility with NURC, which may impede the effective enforcement of the regulations.

Therefore, it is submitted that the reforms are laudable and timely besides the conflicting responsibilities that may arise regarding the proposed institutional

⁶⁸³ *Financial Times* 'State Promises Hike in Oil Take Will Benefit all Nigerians' Oil & Gas industry special Report by Neil Munshi published November 22, 2019. Thus, the Nigerian President - Buhari refused to sign it, objecting in part because the Bill would constrain the power of the president — who has also named himself oil minister — to oversee oil licences and contracts.

⁶⁸⁴ *Ibid* the NOSDRA (Establishment) Bill, 2019 (HB. 351) s. 6 (1) a

reform. The anticipated conflict could be avoided once the national assembly rejected the amendment version of the Gas Flaring Bill 2020, and the NOSDRA Bill 2019 and settled for one single entity responsible for the management of AG flaring, among others as established by the PIA 2021. Thus, Nigeria's petroleum industry has long been criticised for having multiple regulators, especially when dealing with environmental issues in the industry, and various observers within the industry have called for the establishment of an independent regulator to oversee the affairs of the industry.

It is further submitted that even though the PIA 2021 and the Gas Flare Regulation 2018 have remedied most of the regimes' defects, for example, the gas flaring penalty has been reviewed, Guidelines for monitoring and reporting were developed, and gas infrastructure TPA was unbundled, and many more. Nevertheless, Regulations need to be established that would serve as guidance notes on how the new reforms would be implemented. Furthermore, the establishment of a single regulator for the sector as provided by the new reforms would help provides a definitive deadline for ending gas flaring and unlocking gas potential in Nigeria – a policy objective the country intends to achieve by 2020. Therefore, whether the objective could be achieved depends upon whether the new reforms would be implemented effectively and efficiently. Above all, it depends upon the political will of the regulator to enforce the provisions of the new regimes. This is because no matter how appropriate the design of the proposed regime may be, the objective can only be realised if the regime is effectively enforced.

3.7 Summary of the main Successes and Challenges

The critical review of this chapter has raised an array of issues affecting the design and enforcement of Nigeria's anti-gas flaring law and policy regimes.⁶⁸⁵ The review has revealed some of the successes recorded and challenges the regimes are currently facing. Consequently, while bearing in mind the study's aim and objectives, this section presents the findings of one of the sub-question raised in the study.⁶⁸⁶ The present heading critically examined the successes and challenges of the regimes to align the chapter with objective two of the study.⁶⁸⁷ The evaluation was done under the following sub-headings; appropriateness of the design of the legal regime and regulatory frameworks, adequacy of the policy regimes and their implementation, effectiveness of the enforcement processes, the appropriateness of the institutions responsible for regulatory oversight, and the appropriateness and effectiveness of the regulatory approach.

3.7.1 The Appropriateness of design of the legal regime

As examined earlier in this chapter, legal powers for the treatment of AG flaring can either be embedded in primary or secondary legal instruments. Thus, most oil-producing nations reviewed above, along with Nigeria, have promulgated relevant primary legislation that establishes regulatory regimes and an agency with the overall power to deal with flares. Thus, regulatory design such as regulatory approval, measurement and reporting, economic evaluation of the

⁶⁸⁵ Thus, for a better understanding of the underlying issues, it is important to refer to *sections 3.3, 3.4, 3.5 and 3.6* that critically review that the design and making of Nigeria's anti-gas flaring law and policy regimes, the enforcement and implementation of the regimes along with the factors affecting the processes, and the current undergoing reforms for optimal utilisation of gas flaring in Nigeria.

⁶⁸⁶ The sub-questions stemmed from the principal research question "*How appropriate and effective is the design and enforcement of Nigeria's anti-gas flaring legal regime.*" The question is: '*Are current Nigeria's anti-gas flaring legal and policy regimes appropriately designed and effectively enforced to achieve the country's objective? In order words, 'are the existing laws regulations and policies appropriately formulated and effectively enforced to influence gas flaring reduction and utilisation?*'

⁶⁸⁷ The Objective two of the study: '*To critically evaluate Nigeria's anti-gas flaring law and policy regimes and enforcement processes to ascertain deficiencies and challenges in its design, and their inability to establish effective compliance to the ideal of zero flaring and environmental sustainability.*'

flared gas, and monitoring and enforcement that are necessary for effective flaring regulation are covered in secondary legislation - such secondary legislation includes, for instance, regulations, guidelines, codes, licenses, petroleum agreements, and standards. In Nigeria, flaring laws and regulations can be found in primary and secondary legislation. As seen under *section 3.3*, the country had its first legal instrument in 1979, which required oil companies to end flaring and fixed 1985 as the appropriate deadline for ending flaring. In this regard, the country continues to update and review its legal regime until now. There are so far substantial successes recorded and some challenges that affect the regime.

Interm of the successes recorded in this regard, there are currently adequate anti-gas flaring laws, regulations, guidelines, and reform proposals (see sections 3.3 and 3.6 above). The legislative, regulatory, and fiscal frameworks reviewed above have influenced a considerable reduction of AG flaring in the country; and up till now serving, as broad-based frameworks for AG utilisation in Nigeria.⁶⁸⁸ Therefore, in the overall context of the AG flaring trend in the country, the current legal regime has influenced some substantial reduction in AG flaring. It is submitted that the frameworks have collectively succeeded in a sizable reduction of gas flaring volumes in the country (*Figure 1.2*).

However, notwithstanding the accomplishment, it is submitted that the objective of ending gas flaring and unlocking gas potential has not been fully achieved. There are still substantial volumes of AG being flared by the oil companies, mostly due to many challenges. One of the most significant challenges discovered is that the country's petroleum agreements have not been updated to cover the gas flaring issues. While some oil-producing countries have now updated and improved their model contracts, including explicit clauses detailing environmental protection, the study finds that Nigeria's petroleum contract provisions dealing with environmental protection remain weak, unclear, and ambiguously designed.⁶⁸⁹ The country currently operates three contractual regimes; production sharing contracts, joint ventures, and risk service contracts, but PSCs are more prominent in its petroleum industry as they govern many oil fields onshore and

⁶⁸⁸ Knut Am and Heiberg, (n 371)

⁶⁸⁹ Generally, see the discussion under heading 3.3.3

offshore. Nevertheless, these model contracts were practically silent on a provision for treating AG flaring, notwithstanding the country's position as the largest gas flaring nation and environmental polluter in Africa.⁶⁹⁰

The FGN had recently acknowledged this challenge when it stated that the PSCs are structured more for crude oil exploration and development than gas development. The FGN clarified that the current PSCs model incorporated gas utilisation provisions. However, they do not contain any commercial terms or enforcement mechanisms between the NNPC and the producers or operators. The PSCs merely state that, in the event of any discovery of a viable natural gas quantity, the contractor should investigate the discovery and submit proposals to NNPC to develop the discovered gas. Then, a separate agreement would be negotiated regarding the discovered gas for development.⁶⁹¹ Consequently, this has exposed the inadequacy of Nigeria's contractual regime regarding the treatment of AG discovered in any given licence area.

Ekhaton observed that the country failed to improve its contractual model agreements because it favoured the CAC regulatory approach for regulating pollution resulting from petroleum activities.⁶⁹² This observation by Ekhaton could be reasonable because, over the years, the Nigerian government has seemed to adopt a CAC approach in which rules and regulations are made and also determine ways of enforcing them. The oil companies have been predominantly allowed free reign in adopting pollution control procedures so long as their operations are conducted according to 'good oil field practice'. Nevertheless, nations that have updated their contractual agreements to include provisions for AG treatment discovered in oilfields have eliminated large volumes of flare gas within their jurisdiction. For instance, Alberta – Canada could serve as a typical example. Alberta PSCs model is one of the early contemporary frameworks for regulating routine flaring reduction (*see section 3.3.3 for a detailed discussion*).

⁶⁹⁰ The World Bank Press Release (n 388)

⁶⁹¹ The National Gas Policy 2017 and also see the discussion *under heading 3.3.3*

⁶⁹² Ibid Ekhaton (n 391)

3.7.2 The Appropriateness of the Design of policy regimes

The overall objective of a country's petroleum policy should be to create a framework that will translate extractive production into equitable and sustainable economic growth while protecting the environment. However, oil-producing countries globally have faced many challenges to achieving these objectives, which should ideally be identified and addressed holistically.⁶⁹³ Nigeria has had its peculiar challenges in designing appropriate anti-gas flaring policies as one of these countries. Nevertheless, following recent unsuccessful attempts with the NEP 2003 and NGMP 2008 regimes, it could be argued that the country may have finally gotten it right with the introduction of the 7 Big Wins policy measures in 2015. As examined above, the policy introduced two significant measures that revolutionalise Nigeria's petroleum industry regarding the treatment of gas flaring and the broader critical aspect of the sector. The two most significant achievements or successes of the policy are the NGFCP 2016 and NGP 2017 policy regimes (for a detailed discussion, see sections 3.4.3.1 and 3.4.3.2 above).

The NGFCP 2016 is the best that happened to the country's petroleum industry in terms of policy measures designed to end gas flaring. The Gas Flare Regulations were signed in 2018, and the DPR also issued three Guidelines in 2018 to support the NGFCP's main objective. Besides coming up with a fiscal framework that reviewed flaring penalties and incentives to utilise the AG, the NGFCP is the first programme that seeks to allow TPA to gas flare infrastructure. Thus, TPA will ensure that available gas processing facilities and pipelines can be used by an operator even when a third party owns these facilities. While the NGP 2017 has introduced several new measures critical to flaring reductions in other successful jurisdictions, the country believes it would help it achieve end routine flaring. These measures affected some of the country's long-standing *Gas Re-injection policy, Flare-out targets, Gas Flaring Penalties, New Flare Technologies, and fields' Development*.

⁶⁹³ Armand Holle, Alexander Hurdeman, and Anastasiya Rozhkova 'The Petroleum Value Chain and Governmental Policies: An Overview' in Alexander Hurdeman and Anastasiya Rozhkova, *Balancing Petroleum Policy: Toward Value, Sustainability, and Security* (1st edn, 2019) International Bank for Reconstruction and Development / The World Bank

Overall, the NGFCP 2016 and the NGP 2017 policy regimes have introduced robust reforms that, if stringently and consistently implemented, have the effect of helping the country realise its elusive goal of ending gas flaring and unlocking its gas sector. The World Bank opined that open and transparent TPA to a gas gathering, processing, and transmission facilities, as introduced by the NGFCP 2016, is essential for promoting AG utilisation and ensuring flare and vent reduction. At the same time, Occhiali and Falchetta described the introduced reforms by the NGP 2017 as significant steps in the right direction that have the potential of achieving many benefits⁶⁹⁴. According to them, effective implementation of the NGP can enable substantial economic gains, including increased government revenues, enhanced gas-powered electricity generation, diffuse benefits in agriculture, infrastructure, and industries, and guarantee a cleaner and healthier environment, particularly in the Niger Delta. (*Generally, see sections 3.4.3.1 and 3.4.3.2 for a discussion of the NGFCP 2016/ NGP 2017*).

Consequently, the 7 Big Win policy has succeeded in reviewing old and moribund policies, gazetting new policies, and entrenching robust fiscal instruments and regulations with critical attention given to the successful passage of the Gas Flare Regulation 2018 and the Gas Flare Commercialisation Programme 2016, along with the development of a new National Gas Policy 2017. These achievements recorded are explicitly peculiar to the utilisation of AG, an aspect the current Buhari-led administration cherished. Unlike previous policies, the 7 BigWin policy has achieved its stated objectives within the timeframe of creating appropriate flare-out policies and regulations. Therefore, it is submitted that the policy has achieved its set target on AG and NAG utilisation. The policy was the basis for introducing critical measures that, if appropriately and effectively implemented, would help the country's flare-out policy by 2030 but certainly not 2020.

⁶⁹⁴ Occhiali and Falchetta (n 595)

3.7.3 The Effectiveness of the enforcement processes

The World Bank panel of experts believes enforcing anti-gas flaring laws and policies is crucial for the regimes. Regardless of how appropriate the design of the regimes is, it is unlikely to bring the expected results unless the Regulator identifies and effectively enforces the regulatory breach.⁶⁹⁵ Fang et al. argued that environmental legislation must be appropriately designed and effectively enforced to achieve its objective. Fang et al. observed that effective enforcement of environmental law and regulations is crucial for proper environmental management because legislation and regulation are only as good as their enforcement.⁶⁹⁶ Consequently, effective enforcement may not only ensure and encourage compliance with anti-flaring laws and regulations. However, it will induce oil companies to adopt environmentally responsible measures that the law does not require, such as internal environmental management systems, voluntary environmental programmes, and information disclosure requirements.⁶⁹⁷

Accordingly, the review has revealed that the country currently has adequate legislative and regulatory frameworks to deal with routine flaring and appropriate policy measures.⁶⁹⁸ Similarly, most of the factors discovered as affecting the effectiveness of the law and policy regimes have been adequately covered in the currently proposed reforms. Nevertheless, what the review revealed to the contrary was that the regimes suffer ineffective enforcement and implementation processes. The critical review revealed that the legal regime had suffered enormously from ineffective enforcement processes. Thus, one could argue that the challenge of the regimes was not inadequacies of the laws and policies but an ineffective enforcement process characterised by the Nigerian authorities' failure to enforce the requirements of the laws.

⁶⁹⁵ The World Bank, 2009 (n. 1) and Coglianesi and Coursy (n 64)

⁶⁹⁶ Liping Fang, Keith W. Hipel and D. Marc Kilgour, 1994 'Enforcement of Environmental Laws and Regulations: A Literature Review' In: Keith W. Hipel and Liping Fang, *Stochastic and Statistical Methods in Hydrology and Environmental Engineering*. Water Science and Technology Library, vol 10/2. Springer, Dordrecht, Page 3

⁶⁹⁷ Coglianesi and Coursy (n 64) and Neil Gunningham, Robert A. Kagan and Dorothy Thornton, *Shades of Green: Business, Regulation and Environment* (Stanford University Press 2003) 20

⁶⁹⁸ The critical review of heading 3.3 and 3.4 as to the design of the law and policy regimes enabling the utilisation of AG in Nigeria.

Similarly, the review shows that the implementation of the flaring policies has not been majorly successful, particularly from when it was recently documented - 2003 to 2015. However, from 2015 to date, the policy regimes are enjoying effective implementation processes. As the study suggests, the enforcement's failure may be due to the weak regulatory oversight by the institution responsible for anti-gas flaring law and policy enforcement. As suggested by Van Houtte, that regulatory framework alone cannot be held accountable for unsustainable environmental practices, and it matters how (or if) the regulations are enforced by an independent regulatory agency.⁶⁹⁹ Consequently, the discussion hereunder will be on the findings of the institution's effectiveness in its regulatory oversight.

3.7.4 The Effectiveness of the institutions in regulatory oversight

Although there is now a new regulator - NURC, the chapter review has hitherto identified weak regulatory oversight, conflicting responsibilities, and interests among the multiple regulatory institutions, and inadequate funding, among others, are the many issues that contribute to ineffective enforcement of the law and policy regimes. Although the reforms to the law and policy regimes have appropriately sought to tackle many of these challenges and are adequately covered, there is a need for more actions to ensure effective enforcement of the anti-gas flaring regulation. Firstly, the review finds weak regulatory oversight to be one of the primary challenges and a critical barrier to combating AG flaring in Nigeria. The challenge also compounded the seeming lack of effective monitoring and enforcement capacity. The DPR appeared to have failed to ensure the effective regulation of gas flares due to the absence of requisite technological capacities to monitor oil-producing companies' volume flared to levy commensurate fines.

Secondly, there is also an issue of conflict of responsibilities among the regulatory institutions saddled with regulatory oversight. Thus, as the previous primary

⁶⁹⁹ Annick Van Houtte, 2001. 'Establishing a legal, institutional and regulatory framework for aquaculture development and management' in R.P. Subasinghe et al., eds. *Aquaculture in the Third Millennium*. Technical Proceedings of the Conference on Aquaculture in the Third Millennium, Bangkok, Thailand, 20-25 February 2000. pp. 103-120. NACA, Bangkok and FAO, Rome.

regulator, the then DPR has overlapping and conflicting jurisdictions with FMEv and NOSDRA.⁷⁰⁰ However, this issue has been addressed recently in the 2018 Regulation by empowering DPR (now NURC) as a sole regulator.⁷⁰¹ Nevertheless, the proposed reform of the NOSDRA Act may likely negate the status of the NURC as the primary regulator. Doubtless, the duplicity in functions and the multiplicity in the guidelines and standards impede the effective and smooth monitoring of AG flaring in the country. Moreover, the introduction of the CCA 2021, as cited earlier now amid the regulatory instruments, would create a problem in combating gas flaring.

Thirdly, the chapter review also reveals the conflict of interest in the sector, which may impede the realisation of effective enforcement processes if not tackled. The DPR as the primary regulator in monitoring and enforcement of AG regulations is an inspectorate division under the MPR and NNPC – a government subsidiary/partner with the majority shares in most joint venture exploration and production agreements.⁷⁰² Consequently, it is submitted that the multiple statuses of the inspector-partner-regulator played by the MPR create a conflict between its commercial and regulatory functions and have previously led to failures in strict enforcement of the AG flaring regulations against the oil companies. It would have also unfavourably affected the interest of the inspectorate divisions too.⁷⁰³ While, in saner climes, regulatory institutions must be entirely independent of the subjects they regulate to avoid any conflict of interest, Nigeria's situation is quite the opposite.

⁷⁰⁰ The Department of Petroleum Resources (DPR) and the Federal Ministry of Environment (FMENV) as the main regulatory agencies are both charged with monitoring and enforcement of environmental standards and EIA procedures in the exploration operations in the Nigerian petroleum industry and they have both enacted distinct Regulations on the same sector. See generally the *DPR Environmental Guidelines and Standards for the Petroleum Industry 1991* and the *EIA Guidelines for Exploration and Production Projects 1994 under the Ministry of Environment*. NOSDRA has also recently joined the league see heading 3.6.5 on the evaluation of the proposed reforms.

⁷⁰¹ *Ibid Regulation 17*

⁷⁰² The *Petroleum Act 1969*, Schedule 1, paragraph 24-27 and Iboronke T. Odumosu, 'Transferring Alberta's Gas Flaring Reduction Regulatory Framework to Nigeria: Potentials and Limitations' (2007) 44 (4) *Alberta Law Review*

⁷⁰³ N. Ojukwu-Ogba, 'Legal and Regulatory Instrument on Environmental Pollution in Nigeria: Much Talk, Less Teeth' (2006) 8 (9) *I.E.L.T.L*

Fourthly, inadequate funding is another factor hindering the effectiveness of the enforcement processes. The study finds that DPR experiences insufficient funding and financial standing to initiate and implement regulatory measures.⁷⁰⁴ It was argued that since the NNPC and DPR are statutorily interdependent bodies that perform strategic roles, adequate financial provisions should have been made for their funding in the national budgetary allocation. One would then wonder how the agencies would be expected to perform without the necessary resources. Adegoke has argued that this challenge has limited the ability of most enforcement agencies to enforce the sanctions stipulated under relevant laws adequately.⁷⁰⁵ Thus, according to the NNPC Act, the DPR on its own is required to secure its funds from the NNPC. At the same time, the said NNPC is an inspectorate division under the MPR and a major partner with the oil companies in exploration and production activities in Nigeria.⁷⁰⁶ Hence, the DPR, the primary regulator of AG flaring in the country, is funded by another FGN institution that is a business partner with the alleged violators – oil companies. To this end, if the NNPC does not make enough funds each year, it would automatically limit the funds available to the DPR to function, hence limiting the DPR's capacity to enforce the flaring regulations effectively.

Therefore, it is submitted that weak institutions with conflicting statutory mandates, inadequate funding, and fragmented management responsibilities between regulatory frameworks and environmental policies have impeded the enforcement of relevant laws governing anti-gas laws and policies in Nigeria and many oil developing nations. Similarly, the absence of effective mechanisms for monitoring and enforcing compliance with the laws and regulations led to sub-optimal outcomes in the country's effort to end AG flaring and unlock gas potentials by 2020. It is further submitted these and many more have negatively affected the ability and effort of Nigeria to end gas flaring and unlock gas potential.

⁷⁰⁴ Tamuno (n 472)

⁷⁰⁵ Adegoroye Adegoke, 'The Challenges of Environmental Enforcement In Africa: The Nigerian Experience' (2019) *Third International Conference on Environmental Enforcement* accessed 01/06/2020.

⁷⁰⁶ The Nigerian National Petroleum Corporation Act 1977, s. 10

3.7.5 The Appropriateness and Effectiveness of the Regulatory Approach

It is glaringly evident from the review that the approach to flaring regulation adopted by Nigeria is continuously inconsistent. The review shows that the legal regime tends toward the traditional enforcement approach, i.e. CAC⁷⁰⁷, including administrative sanctions of revocation or suspension of licences and concessions granted. When the approach failed, the country resorted to an economic, regulatory approach introduced by the 1985 amendment.⁷⁰⁸ Thus, the approach later turns towards a penalty and incentive-based approach imposing monetary penalties and fines to deal with routine flaring in the country. As suggested by Denny, the economic approach, as an alternative to CAC, represents a new pragmatic approach to environmental regulation that need to be studied carefully before adoption.⁷⁰⁹ Although the change in approach from 1990 to date has helped Nigeria reduce a significant amount of flare volumes, there remain a considerable number of flare volumes in the Nigerian industry.

It is submitted that such inconsistency in regulatory design and enforcement approach may likely be why the Nigerian regulator could not encourage substantial compliance with extant laws and regulations. Industry observers like Orji and Omorogbe have criticised the inconsistency in the regulatory approach and suggested it as one of the many reasons why Nigeria could not end gas flaring.⁷¹⁰ Orji suggests that the initial approach adopted by the 1979 regime to out-rightly fix a deadline for the cessation of AG flaring without recognising the lack of required supporting infrastructure has been an approach that wanted to compel gas utilisation by the threat of a stick.⁷¹¹ While Omorogbe argued as being too rigorous, the forfeiture of concession/license is the likely penalty for AG flaring.⁷¹²

⁷⁰⁷ The approach generally seeks to command doing something by passing a law that makes that thing illegal and then delegating authorities to enforce such law through the imposition of fines or penalties to violators. See Freeman and Kolstad (n 319).

⁷⁰⁸ The *Associated Gas Re-injection (Amendment) Act* 1985 Decree No. 7 of 1985 (n 271)

⁷⁰⁹ Ellerman A. Denny, 'Are Cap-and-Trade Programs more environmentally effective Than Conventional Regulation? In Freeman and Kolstad (n 319)

⁷¹⁰ *Generally, see headings 3.3.1 and 3.3.2*

⁷¹¹ *Ibid* Orji (n 320)

⁷¹² *Ibid* Omorogbe (n 321)

3.8 Conclusion

This chapter has shown that Nigeria has made an incredible effort in designing appropriate laws and policy regimes to mitigate gas flaring. It is worthy of note that the country has now succeeded in updating its policy regimes and that the design of the laws and fiscal measures could be argued as appropriate, especially with the passage of the PIA 2021 and CCA 2021. Nevertheless, the review of the enforcement processes has revealed weak regulatory oversight, conflicting responsibilities/interests among the regulatory institutions, and inadequate funding are among the many issues that led to ineffective enforcement. The legal regime is struggling to achieve effective enforcement as there was a seeming failure to enforce the regulations. Likewise, the country's petroleum agreements were silent on associated gas treatment. There are still challenges with the design of the contractual framework.

Moreover, the review also revealed the seeming inconsistencies in the regulatory approach for designing and enforcing the regimes. Therefore, a theoretical investigation of a regulatory approach for designing and enforcing an effective environmental law and policy regime will be analysed in *chapter four*. This is to determine how Nigeria could adopt an appropriately and effectively enforced approach that could help the country sustain effective environmental regulatory compliance. Thus, AG flaring will continue to be a constant issue without a change of attitude and rigorous enforcement of the anti-gas flaring law and regulations.

CHAPTER FOUR – An Investigation into an Appropriate and Effective Approach for the Design and Enforcement of Environmental Law and Policy Regimes – A Sociolegal Perspective

4.1 Introduction

The preceding chapter revealed the regulatory approach inconsistency as one weakness of Nigeria's anti-gas flaring regimes. Thus, this chapter investigates applicable regulatory choices for designing and enforcing an environmental regime. The concept of legal effectiveness was employed to guide the theoretical analysis. Accordingly, this chapter is divided into three main parts, and the first part examines how the chosen concept applies to selecting an appropriate and effective regime. The second part reviews the literature on the general approaches for designing and enforcing an environmental law and policy regime. In particular, the part assesses an appropriate and effective approach to environmental regulation. The justification for such an investigation is that it may bring alternative systems and insights that apply worldwide. These insights may then inform the anti-gas flaring regime in Nigeria and indicate whether it is appropriate to the country's circumstances. The last part of the chapter discusses, evaluates, and considers the general characteristics of an appropriate and effective environmental law and policy regime with emphasis on the anti-gas flaring regime, and this is followed by the justification for having an alternative regime, which may also help formulate some research instruments later in the study.

Consequently, the chapter is organised into seven major sections. Section 4.2 revisited the concept of legal effectiveness as it applies to regulatory policy choice. While section 4.3 discusses the various approaches for designing environmental regulatory regimes worldwide. Section 4.4 reviews a framework for assessing and choosing an appropriate regulatory approach. Section 4.5 reviews the approaches for effective compliance and enforcement of an environmental law and policy regime. Section 4.6 presents the summary of the findings, bearing in mind objective three of the study, and section 4.7 concludes the chapter. In a nutshell, the chapter theoretically investigates an appropriate approach for designing and enforcing a given environmental law and policy regime.

4.2 The Concept of Legal Effectiveness as a Framework for Selecting Appropriate and Effective Environmental Law and Policy Regimes

As Digiusto explained earlier, the key feature of effectiveness is that it refers to a causal link between an intervention and the desired outcome. To Digiusto, effectiveness is synonymous with cost-effectiveness, efficiency, and evidence-based practice.⁷¹³ For instance, an intervention is effective if it directly increases the likelihood that the desired outcome will occur. Thus, an intervention is efficient to the extent that it achieves the desired outcome economically, with minimum waste of resources and effort. Lastly, an intervention is cost-effective if it achieves the desired outcome more efficiently, with a lower resource cost than a specific alternative intervention.⁷¹⁴ Consequently, the definitions of each of these terms - effective, efficient, and cost-effective—all refer to the desired outcome or the aim of the intervention.⁷¹⁵

Just as the desired outcome or the aim of the intervention is a vital part of the definition of effectiveness, it is also central to selecting an *appropriate and effective* approach to environmental regulation. Consequently, many studies in law and economics literature have addressed the effectiveness of a specific environmental law and policy and its enforcement⁷¹⁶. They have also studied the instruments employed in regulating environmental pollution. For instance, the environmental law and policy regime approach, i.e., the Command and Control (CAC) or Market-based Instruments (MBIs) approaches, correlate with the economic analysis. Moreover, the MBIs approach assumes law enforcement's goal is to maximise compliance rates. In addition, the agencies responsible for enforcement must act rationally not to jeopardise the legal regime's economic objective. Therefore, this study uses legal and economic perspectives of the 'effectiveness' and 'efficiency criterion' in assessing the regulatory approaches for the design and enforcement of the regimes to contribute to the general socio-legal evaluation of regulatory instruments' effectiveness.

⁷¹³ Ibid Digiusto (n 131)

⁷¹⁴ Ibid

⁷¹⁵ Ibid

⁷¹⁶ Refer to chapter 1.7 for a detailed discussion.

While stressing the importance of economic perspectives, a study by Germani using a survey concludes that choosing a legal and regulatory framework to implement environmental policy is a difficult task that requires economically structured analysis to model the interactions between governments, firms, and regulators⁷¹⁷. Therefore, evaluating the concept of legal effectiveness from the economic point of view could also have added advantages, even though many non-economist scholars view economic analysis of the law with scepticism.⁷¹⁸ This has become necessary because of the connection environmental regulations have with the economy of oil-producing nations.⁷¹⁹ The economy of many oil-producing developing nations depends mainly on the oil and gas they produce. Posner has argued that the economic analysis of legal effectiveness is based on the so-called 'efficiency criterion.' The criterion emphasises that the primary objective of a legal instrument must be efficient and that the rules must be assessed for their ability to provide incentives to maximise society's aggregate benefits.⁷²⁰ Therefore next part will examine the regulatory designs for environmental regulation to assess their appropriateness and effectiveness in meeting the set objectives.

⁷¹⁷ Anna Rita Germani, 'Environmental Law and Economics in U.S. and E.U.: A Common Ground? (2004), *Centre for Financial and Management Studies, SOAS*.

⁷¹⁸ Louis Kaplow and Steven Shavell, 'Economic Analysis of Law', in A.J. Auerbach and M. Feldstein, *Handbook of Public Economics*.

⁷¹⁹ *Ibid* Germani (n 717)

⁷²⁰ Richard A. Posner, *Economic Analysis of Law* (Little, Brown Boston 1972).

4.3 The Review of the Approaches for the Design of Environmental Policy Regime for Environmental Regulation – Regulatory Design

Policymakers worldwide choose from a range of regulatory approaches to achieve their set environmental and economic objectives. Regulatory approaches refer to those concepts used by the government through its agencies or private individuals to restrict or direct the activities of regulated parties using terms and conditions within statutory and regulatory instruments, operating permits, licences and agreements, approvals, or codes of practice and liability rules. Percival argued that environmental law has been most successful when it has employed approaches that reinforce pre-existing social norms and has failed when attempting to dictate changes in individual behaviour.⁷²¹ Thus, policymakers employ two broad models in designing environmental regulatory regimes: a statutory approach carried out with administrative agencies' help and common-law rules approach developed over time through litigations (liability rules).⁷²² The statutory approach is further divided into two: the command and control (CAC) and the market-based instruments (MBIs) regulatory approaches.

In recent decades, policymakers and empirical researchers have taken a considerable interest in differences in such regulatory design, intending to ascertain each approach's appropriateness over the other. A remarkable amount of literature is devoted to the appropriateness and effectiveness of environmental regulation; thereby, attention is given to the conditions under which the so-called CAC regulation may or may not be more effective than the MBIs.⁷²³ Therefore, this section evaluates these approaches to ascertain their appropriateness to Nigeria's situation. Critically reviewing how these approaches have fared can help Nigerian policymakers design the next generation of regulatory tools. To balance the evaluation, the arguments of scholars from economics and law, who sometimes have different perspectives on their effectiveness, were assessed.

⁷²¹ Robert V. Percival, 'Law, Society and the Environment', in Robert W. Gordon and Morton J. Horwitz, *Law, Society and History: Themes in the Legal Sociology and Legal History of Lawrence M. Friedman* (Cambridge University Press, 2011) 211.

⁷²² Keith N. Hylton, 'When Should We Prefer Tort Law to Environmental Regulation?' (2002), 41 *Washburn Law Journal* 515.

⁷²³ See the papers in Jody Freeman and Charles D. Kolstad, *Moving to Market in Environmental Regulation: Lessons from Twenty Years' Experience* (Oxford Scholarship Online, 2007).

4.3.1 Command and Control Approach⁷²⁴

A command-and-control (CAC), also called 'prescriptive regulation' or 'mandate and ban',⁷²⁵ is a traditional environmental regulation approach that prescribes the nature of abatement for firms within an industry.⁷²⁶ In other words, CAC is an approach where political authorities with appropriate power enact a law mandating people or companies to stop certain activities or behaviour and provide the use of enforcement machinery to get them to obey the law. In environmental law and policy, the CAC approach is of various types that have fundamentally different *modus operandi*.⁷²⁷ For instance, the *Design and Specification Standards Approach* prescribes an approved technology for environmental pollution, and any departure from the approved technology will be considered non-compliance with the statutory requirements. In some cases, the polluting firm is given the discretion to choose the most appropriate technology peculiar to their circumstances.⁷²⁸ In contrast, *Performance-Based Standards* define a firm's duty regarding the problems it must solve or the goals it must achieve. This is outcome-focused and avoids overt prescriptions. Therefore, they also set standards to protect or improve environmental quality and address procedures and parameters for achieving desired environmental objectives.⁷²⁹

The UK and the US have a long tradition of using the CAC approach to control pollution with varying degrees of success. For instance, critical environmental regulation in the UK began in the 20th century as early as 1906 when the Alkali Works Regulations Act was passed, directly regulating specific air pollutants at the

⁷²⁴ As economists put it: "Command-and-control is comforting to politicians and people: governments know what they are asking for, people know what they are getting, companies know what they are supposed to deliver, the only people who do not like it are the economists" *The Economist*, September 2, 1989.

⁷²⁵ Josh Graff-Zivin, 'Environmental Policy-making – Theory & Practice' (2018), *Rockefeller Foundation Economic Council on Planetary Health*.

⁷²⁶ Jody Freeman and Charles D. Kolstad, 'Prescriptive Regulations versus Market-Based Incentives', in Jody Freeman and Charles D. Kolstad, *Moving to Market in Environmental Regulation: Lessons from Twenty Years' Experience* (Oxford Scholarship Online, 2007). Available at: <www.oxfordscholarship.com> accessed 25/08/2019.

⁷²⁷ Neil Gunningham and Darren Sinclair, 'Regulatory Pluralism: Designing Policy Mixes for Environmental Protection' (1999), 21(1) *Law and Policy Journal* 49 – 76.

⁷²⁸ John Atcheson, 'Can We Trust Verification?' (1996), 13 *Environmental Forum* 15-21.

⁷²⁹ Neil Gunningham and Perter Grabosky, *Smart Regulation: Designing Environmental Policy* (Oxford University Press, New York 1998).

industrial level.⁷³⁰ In contrast, traces of CAC for environmental regulation in the US started in the 1960s when it first established the Environmental Protection Agency to monitor and control pollution via the Clean Air Act of 1963 and 1970. The Environmental Action Programme (EAP) was adopted in 1973 to guide environmental policy at the EU level. In Japan, the Basic Law for Environmental Pollution Control was legislated in 1967, and the Environmental Agency was established in 1971.⁷³¹ Since then, the degree of environmental regulation using the CAC approach has increased significantly, becoming interesting worldwide. For instance, it manifested in emerging countries like China and India, where key local air pollutants are well above the World Health Organisation's (WHO) recommended exposure limits.⁷³²

As examined earlier in this study,⁷³³ the application of the approach in Nigeria as it relates to AG flaring regulation commenced in 1969 when the country established the Petroleum Act of 1969. The Act gives the petroleum minister broad power to regulate the country's petroleum industry, including issues relating to environmental pollution.⁷³⁴ Thus, the Petroleum (Drilling and Production) Regulation⁷³⁵ was made pursuant to the power. The Regulation requires the oil companies to submit to the minister any feasibility study, programme, or proposals for the utilisation of the AG that has been discovered in their licensed area not later than five years after the commencement of the production.⁷³⁶ Although the Regulation requires oil companies to submit their plans for AG utilisation, the provision was not seen as legally obligatory and contained no penalty for non-compliance.⁷³⁷ Later, the country passed the 1979 regime, and recently, the regime was strengthened with a Regulation passed by the minister.

⁷³⁰ J.W.S. Longhurst et al, 'The Development of Effects-Based Air Quality Management Regimes' (2009), 43 (1) *Atmospheric Environment Journal*.

⁷³¹ Puja Singhal, 'Environmental Regulations: Lessons from the Command-and-Control Approach' DIW Roundup- Politics in Focus September 4, 2018. Available at: <https://www.diw.de/en/diw_01.c.597509.en/press/diw_roundup/environmental_regulations_lessons_from_the_command_and_control_approach.html> accessed on 29/04/2019.

⁷³² Ibid.

⁷³³ See Chapter 3.2-3.3 above.

⁷³⁴ Sec 9 (1) (b) & 12, Petroleum Act 1969 (now Cap 350 L.F.N 1990).

⁷³⁵ The Regulation is made pursuant to Section 9 of the Petroleum Act, Decree No. 51 of 1969.

⁷³⁶ Ibid Regulation 42.

⁷³⁷ Uchenna Jerome Orji, 'An appraisal of the legal frameworks for the control of environmental pollution in Nigeria' (2012), 38 (2) *Commonwealth Law Bulletin* p. 331.

The Regulation empowers the DPR to regulate and implement policies relating to AG utilisation in the country.⁷³⁸

The Nigerian petroleum minister coordinates and oversees the affairs of the MPR and the DPR.⁷³⁹ The DPR (now NURC), is solely responsible for enforcing the upstream laws and regulations across the entire oil and gas value chain. It also provides regulatory guidelines for operations and supervises the activities of the oil companies that the minister grants leases or licenses.⁷⁴⁰ It ensures that operations are carried out in compliance with the applicable laws and regulations. It also monitors the oil companies' operations to ensure they align with national goals and aspirations, including AG flaring. In compliance with its statutory functions under Regulation 2018, the DPR recently issued three guidelines specifying and regulating the gas flare, all of which have been referred to earlier in this study.⁷⁴¹

The legislation cited and DPR functions examined above show that Nigeria still uses the CAC approach to regulate AG flaring issues in its petroleum industry. However, such an approach to environmental regulation has been continuously criticised by many experts within the industry as inappropriate and ineffective, engulfing more resources but generating little or no revenue.⁷⁴² Critics of this approach (mainly economists) have pointed out three difficulties. Firstly, the approach allocates similar shares of pollution-control burden across firms irrespective of their status and cost. The allocation is generally through setting uniform standards for firms, the most prominent of which are technology and performance-based standards. Secondly, the approach offers no incentive to improve the quality of the environment beyond prescribing a set of standards by a particular law. Once the standards have been satisfied, polluters have zero

⁷³⁸ *The Gas Flare Regulations*, 2018.

⁷³⁹ The Petroleum Act, s 1 & 3: the MPR headed by a minister formulates policies, maintains standards, monitors quality and quantity, and regulates practices in the industry through its various departments and parastatals.

⁷⁴⁰ The *Petroleum Act* 1969 LFN 1990, Schedule 1 and the 1979 Act and Regulation, 2018.

⁷⁴¹ These guidelines are: (1) Guidelines for Grant of Permit to Access Flare Gas, (2) Guidelines for Flare Gas Measurement, Data Management & Reporting Obligations, and (3) Guidelines for Flare Payments.

⁷⁴² Neil Gunningham and D. Sinclair, *Leaders and Laggards, Next-Generation Environmental Regulation* (Greenleaf Publishing, 2002).

incentive to do better. The third argument put forward is that legislation processes are usually carried out by politicians and are thus subject to compromises in the political process.⁷⁴³

Despite all the criticisms, the CAC approach is argued to have understood the goal of reducing pollution, and even its critics have recognised this. Nevertheless, these critics question whether the approach is the best way to design policy tools for accomplishing the environmental goal. In their argument, though CAC regulation understands the goal of reducing pollution, it allows relatively little flexibility in achieving this goal. Some of the criticism aligned with the oil companies' argument that stricter environmental standards should not apply to them, only to new firms that wish to start production.⁷⁴⁴ Consequently, real-world environmental laws are full of fine print, loopholes, and exceptions.

In practice, policymakers have generally favoured the CAC approach, which is highly successful in some jurisdictions. For instance, in the US, the far-reaching Clean Air Act of 1970 has been mostly responsible for cleaner air in recent decades.⁷⁴⁵ However, the approach is seen as a direct regulation through legislation that states what is legal and illegal. Therefore it cannot be loved by the companies and their sympathisers: economists. It differs from economic incentives in that the latter are flexible and use taxes and subsidies to ensure compliance.

⁷⁴³ Richard L. Revesz, *Foundation of Environmental Law and Policy* (Oxford University, 1997). Thus, the approach failed to draw distinctions between firms that would find it easy and inexpensive to meet the standards or to reduce pollution even further, and the ones that might find it difficult and costly to meet them. Firms have no reason to rethink their production methods in fundamental ways that might reduce pollution even more and at lower cost.

⁷⁴⁴ Ibid.

⁷⁴⁵ Ibid.

4.3.2 Economic Approach

The economic approach has significantly increased in recent decades as an alternative to the prescriptive regulation of environmental pollution.⁷⁴⁶ For a century, economists have argued that policymakers should take advantage of the approach provided via the instrumentality of market-based instruments (MBIs) in designing environmental regulations.⁷⁴⁷ As suggested by Denny, MBIs represent a new pragmatic approach to environmental regulation.⁷⁴⁸ MBIs, as policy instruments, use markets, price, and other economic variables to incentivise polluters to comply with environmental goals, i.e. reducing negative environmental externalities. MBIs are called by names such as price-based, new environmental policy instruments.⁷⁴⁹ MBIs have now become more frequent and widely accepted by policymakers as a reasonable way to tackle these environmental externalities.⁷⁵⁰ MBIs use varieties of market instruments, but prominent among them are pollution charges, subsidies, and tradeable permit systems.

4.3.2.1 Pollution Charges

Pollution charge systems calculate a fee or tax based on the amount of pollution that firms generate, offering a straightforward approach to price negative environmental externalities. For instance, charges are imposed on activities that cause external damages, and since businesses would now bear those costs directly, they are motivated to reduce pollution.⁷⁵¹ As one of the leading proponents of MBIs, Pigou argued that tax on pollution provides incentives for firms to reduce pollution and thereby economise on its environmental use. According to him, charges should impose on emissions equal to the cost of the

⁷⁴⁶ Ibid Freeman and Kolstad (n 723).

⁷⁴⁷ As this is an economic approach to regulation, the perspectives here are mainly those of economists. This is notwithstanding the fact that the perspectives of lawyers will be considered, particularly when assessing the efficiency of this instrument and its legal implication.

⁷⁴⁸ Ibid Denny (n 709).

⁷⁴⁹ Nancy Kete, 'Environmental Policy Instruments for Market and Mixed Market Economies' (1994), 4 (1) *Utilities Policy Journal* 5-18.

⁷⁵⁰ Ted Gayer and John K. Horowitz, *Market-Based Approaches to Environmental Regulation* (Now Publishers, 2006) 2.

⁷⁵¹ Maureen L. Cropper and Wallace E. Oates, 'Environmental Economics: A Survey' (1992), 30 (2) *Journal of Economic Literature* 675 - 740.

related damages at the efficient level of control. For each unit of pollution, the polluting source must choose to either pay tax or reduce that unit of pollution through any means at its disposal. Therefore, each polluter will reduce its emissions relative to the free pollution case until it costs more (in terms of higher abatement cost or loss of profits) to reduce a unit of emission than to pay the emission tax.⁷⁵²

Policymakers in Nigeria turned to this approach for gas regulation in 1985 when the country first introduced a new regulation imposing pollution charges. The regulation introduced a penalty of two kobos (N0.02k) per 1000 scf of gas flared at any place where a permit to flare was not granted.⁷⁵³ The amount was later increased to \$2/1000 scf of gas flared in a license area where more than 10,000 barrels of oil are produced, and also \$0.50/1000 scf of gas flared for the field that produces less than 10,000 barrels is liable.⁷⁵⁴ However, critics of this system suggest that it could only encourage pollution sources to reduce pollution but could not provide assurances that the sources would do so.⁷⁵⁵ Furthermore, the critics also cited challenges like difficulties in identifying the appropriate tax rate with their distributional consequences for regulated firms. Therefore, for efficiency, the system should have set equal the marginal benefits of clean up at an adequate level of clean up, not the desired level. Moreover, even though the systems minimise aggregate social costs, they may be more costly than comparable CAC instruments for regulated firms. With this approach, firms pay both their abatement costs and taxes on their residual emissions.⁷⁵⁶

⁷⁵² Arthur Cecil Pigou, *The Economics of Welfare 1920* (4th edition MacMillan, London 1932).

⁷⁵³ *The Associated Gas Re-Injection (Continued Flaring of Gas) Regulations* of 1st January 1985.

⁷⁵⁴ *Ibid The Flare Gas Regulation 2018, Regulation 13 Part II.*

⁷⁵⁵ Winston Harrington and Richard D. Morgenstern, 'International Experience with Competing Approaches to Environmental Policy: Result from Six Paired Cases', in Freeman and Kolstad (n 318).

⁷⁵⁶ Lester Lave and Howard Gruenspecht, 'Increasing the Efficiency and Effectiveness of Environmental Decisions: Benefit-cost Analysis and Effluent Fees A Critical Review' (1991), 41 (4) *Journal of the Air & Waste Management Association*.

4.3.2.2 Subsidies

Subsidies work similarly to taxes and can provide incentives to address environmental pollution. Incentives are offered through subsidies to firms to encourage them to engage in behaviours that reduce emissions. In addition to the pollution charges, Nigeria has also introduced measures incentivising efforts to reduce gas flaring. For instance, early fiscal incentives were introduced in 1998 under the CITA 1998. The CITA provides tax relief to investment opportunities in gas utilisation projects and tax-free dividends during the tax-free period (see heading 3.3.2.2.). Some incentives include an initial three (3) years tax-free and renewable for two (2) more years.⁷⁵⁷ Similarly, interest payable on loans obtained with the prior approval of the petroleum minister for gas utilisation projects are tax-deductible. Therefore, the tax-free period starts when the company commences production as certified by the minister of petroleum resources.⁷⁵⁸

Jaffe and Stavins and other economists argued that subsidies could advance environmental quality when utilised effectively. However, Kohn and Mestelman, using a different method of investigation and analysis, disagree with that position. They argue that subsidies only encourage new entries and can thereby increase industry size and pollution output.⁷⁵⁹ Moreover, it is argued that many government subsidies promote inefficient and uneconomical environmental practices, and therefore reducing subsidies can increase efficiency and improve environmental quality.⁷⁶⁰ For instance, a peer review of subsidies in the G20 countries indicates

⁷⁵⁷ *The Company Income Tax Act, Decree 18 of 1998 and aslo 1999 (now LFN 2004 and Repealed by the CITA 2007 No. 56) Part IV Incentives to Gas Industry, s 39 (n 302).*

⁷⁵⁸ Ibid.

⁷⁵⁹ Robert E. Kohn, 'A General Equilibrium Analysis of the Optimal Number of Firms in a Polluting Industry' (1985) 18 (2) *Canadian Journal of Economics* 347-354; and Stuart Mestelman, 'Production Externalities and Corrective Subsidies: A General Equilibrium Analysis' (1982), 9(2) *Journal of Environmental Economics and Management* 186-193.

⁷⁶⁰ Bei Zhang, 'Market-based Solutions: An Appropriate Approach to Resolve Environmental Problems' (2013), 11(1) *Chinese Journal of Population Resources and Environment* 87-91; and Shelby, M., Shackleton, R., Shealy, M., and Cristofaro, A., 'The climate change implications of eliminating U.S. energy (and related) subsidies' (1997), Washington, DC: US Environmental Protection Agency.

that eliminating government subsidies would significantly reduce carbon dioxide emissions.⁷⁶¹

4.3.2.3 Tradeable Permit Systems

In contrast to pollution charges and subsidies, tradeable permit systems create permits that allow firms to engage in harmful activity, i.e. producing emissions. The permits establish the maximum amount of emissions that are allowed. Therefore, the policymaker/regulator assigns or auctions off transferable permits to firms, thereby allowing permit trading with one another on the open market. Consequently, firms that keep their emissions level below their allotted quota may sell the excess permits to other firms or use them to balance excess emissions in other parts of their operations.⁷⁶² This is called 'cap-and-trade', which is slightly different from 'credit programmes', where permits are assigned when firms reduce emissions below what is required by firm-specific limits.⁷⁶³ This environmental regulatory approach is more prominent in the EU and the US. Nigeria has recently introduced a permit system into the midst of its regulatory designs with the enactment of CCA 2021 (*see section 3.6.1.2*).

Empirical studies conducted around the world and particularly in the US into the efficiency of this approach have strongly favoured it over other MBIs and the traditional CAC approach.⁷⁶⁴ However, other studies cited some factors for their inefficiencies, including difficulty monitoring and enforcing it; transaction costs;

⁷⁶¹ G20, 'United States' Efforts to Phase Out and Rationalise its Inefficient Fossil-Fuel Subsidies' (A Report on the G20 Peer Review of Inefficient Fossil-fuel Subsidies that Encourage wasteful consumption in the United States). Report prepared by members of the peer-review team: China, Germany, Mexico, and the OECD, September 2016. See also David Pearce, 'Environmentally Harmful Subsidies: Barriers to Sustainable Development', Keynote Address delivered at the OECD Workshop on Environmentally Harmful Subsidies 7-8 November, 2002.

⁷⁶² Robert N. Stavins, 'Market-Based Environmental Policies: What Can We Learn from U.S. Experience (And Related Research)?'. Paper presented at: Twenty Years of Market-Based Instruments for Environmental Protection: Has the Promise Been Realized?, *Donald Bren School of Environmental Science & Management University of California, Santa Barbara*, August 23-24, 2003.

⁷⁶³ Robert N. Stavins, 'Transaction Costs and Tradeable Permits' (1995), 29 *Journal of Environmental Economics and Management* 133 – 146.

⁷⁶⁴ *Ibid.* The authors tabled tradeable permit systems in operation in US and some other references around the world.

non-profit maximisation behaviour; and concentration in the permit and product markets.⁷⁶⁵ Consequently, if they were appropriately designed and effectively implemented like other instruments such as tax, they would correspond precisely to the external damages caused by the harmful activity. Gayer and Horowitz suggested that by allocating fewer permits than the free pollution level, the regulator creates a shortage of permits which leads to a higher permit price. This establishes a price for pollution just as in the tax case and would make firms adopt other measures to decrease emissions.⁷⁶⁶

Just as with the tax system, permit systems allow each polluter to compete to reduce pollution until it costs more to reduce one unit than buy or not sell permits. If the permit market is perfectly competitive, marginal abatement costs will equal the permit price and, thus, equal all regulated sources. As argued by Gayer and Horowitz, this equality is a necessary condition for environmental quality to be achieved at a minimal overall cost, a condition known as cost-effectiveness. While both charges and tradeable permit systems can be used to provide incentives and improve environmental quality, their differences are noteworthy when the costs of protection are uncertain.⁷⁶⁷ Tradeable permit systems fix the level of environmental pollution so that all the uncertainty is spread through permit prices. Tax systems fix the price of environmental pollution so that all of the uncertainty is spread through pollution levels, and thus the costs of said uncertainties will differ across economic and regulatory settings. Therefore, they should act as useful guides when choosing between the two instruments.⁷⁶⁸

⁷⁶⁵ Juan-Pablo Montero, 'Tradeable Permits with Imperfect Monitoring: Theory and Evidence' (2003), Working Paper prepared for the UCSB Workshop on Twenty Years of Market-Based Instruments for Environmental Protection, *MIT Centre for Energy and Environmental Policy*; Andrew G. Keeler, 'Non-compliant Firms in Transferable Discharge Permits Markets: Some Extensions' (1991), 21(2) *Journal of Environmental Economics and Management*, and Stavins (n 762).

⁷⁶⁶ *Ibid* Gayer and Horowitz (n 750).

⁷⁶⁷ *Ibid*.

⁷⁶⁸ *Ibid*.

4.3.3 Liability Rules Approach

As stated earlier, policymakers have a comprehensive option to choose either a statutory or common law approach to environmental regulation. Nevertheless, much of the literature on environmental policy instruments only suggests a choice between the two competing statutory models: prescriptive regulation (CAC) and the MBIs. This conventional approach has negated the strength of long-established tort remedies to environmental pollution. Posner was right to have pointed out this difficulty when he posited that scholars have helped limit the choices between free-market and public control, i.e. between two methods of public control.⁷⁶⁹

Though it is argued to have made a relatively minor contribution to environmental policy design, given its many well-known shortcomings when applied to an environmental problem, liability rules could not be said to have lacked a significant role. Lee argues that, in a region where measures employed by policymakers did not provide any significant contribution toward solving environmental problems, the liability rule could play a vital role.⁷⁷⁰ Moreover, Gunningham and Sinclair argue that as the failings and limitations of CAC and MBIs become increasingly apparent, policymakers should consider exploring a much more comprehensive range of policy instruments when designing an environmental regulatory regime.⁷⁷¹

A liability rule is an approach where firms can be held liable for cases of environmental harm.⁷⁷² Scholars have debated its status and relevance as an instrument of environmental regulation for decades.⁷⁷³ The economists argue that

⁷⁶⁹ Richard A. Posner, *Economic Analysis of Law* (7 edn, 2007) 389.

⁷⁷⁰ Maria Lee, 'Tort, Regulation and Environmental Liability' (2002), 22(1) *Legal Studies Cambridge University Press* 33-52.

⁷⁷¹ Gunningham and Sinclair (n 727)

⁷⁷² *Ibid* Hylton (n 722).

⁷⁷³ Generally, Adam D.K Abelkop, 'Tort Law as an Environmental Policy Instrument' (2014), 92(2) *Oregon Law Review* 381 – 470; Keith N. Hylton, 'When Should We Prefer Tort Law to Environmental Litigation?' (2002), 41 *Washburn Law Journal* 515; Kenneth S. Abraham, 'The Relationship Between Civil Liability and Environmental Regulation: An Analytical Overview' (2002), 41 *Washburn Law Journal* 379; Charles D. Kolstad et al., 'Ex Post Liability for Harm vs Ex Ante Safety Regulation: Substitutes or Compliments?' (1990), 80 *Am Economic Review* 888; and Guido Calabresi and Douglas A. Melamed, 'Property Rules, Liability Rules, and Inalienability: One View of Cathedral' (1972), 85 *Harvard Law Review* 10.

it forms part of MBIs because they provide incentives for firms to consider the potential environmental damages in their decision-making process, thereby allowing full flexibility in technology and control practices.⁷⁷⁴ Nevertheless, legal scholars believe it could be considered separately because of its highly discretionary common law rules developed over time through litigation.⁷⁷⁵ While defending the liability rule as part of public regulation, Richard argued that the government could act as an entitlement setter or as a regulator. Therefore, lawmakers can choose to assign liability rights, effectively yielding control over pollution abatement to the market through an interactive series of private negotiations and court rulings.⁷⁷⁶ Therefore, whether liability rule forms part of a policy instrument is almost exclusively evaluated by law and economics scholars and almost entirely forgotten by other disciplines.⁷⁷⁷

The effectiveness of liability rules in environmental regulation is also a subject of debate among scholars. Abelkop suggests that political conflict and polarisation make liability rules a more politically viable statutory instrument than other public regulatory instruments. He argues that political conflicts make it more difficult for lawmakers and regulators to enact and enforce environmental laws, meaning that it is increasingly likely that victims of environmental pollution may resort to litigation. Besides, legal and regulatory frameworks are sometimes ill-equipped in addressing the complexities of contemporary environmental problems, leaving regulatory gaps that liability rules can fill.⁷⁷⁸ However, for liability rules to function effectively and efficiently, a statutory framework to make them more robust regulatory rules is needed.

Abelkop further argues that the effectiveness of the liability rules approach mostly depends on the firm's perception of the likelihood that they will be held liable for polluting the environment on the one hand, and the ability of victims of pollution to bring actions to recover damages on the other.⁷⁷⁹ Thus, the likelihood that a

⁷⁷⁴ Ibid Revesz (n. 743) 63.

⁷⁷⁵ Ibid Hylton (n. 722).

⁷⁷⁶ Kenneth R. Richards, 'Framing Environmental Policy Instrument Choice' (2000), 10 (2) *Duke Environmental Law and Policy Forum* 221-285.

⁷⁷⁷ Adam D.K Abelkop, 'Tort Law as an Environmental Policy' (2014), 92(2) *Oregon Law Review* 381-470.

⁷⁷⁸ Ibid.

⁷⁷⁹ Ibid.

firm will be held liable includes the probability that the harm will be detected and attributed to the firm. It also includes the probability that the firm will be sued, and it will incur some cost through either a settlement, a penalty, bad publicity, or all of the above.⁷⁸⁰ However, uncertainty about any of these likelihoods can lead to the ineffectiveness of the approach. Consequently, if firms fail to take due care in their operations and continue to cause environmental harm but are not held liable, then the essence of the liability rules as policy instruments would be defeated.⁷⁸¹ This is why antagonists of this approach pointed out numerous potential difficulties which would defeat its essence.

Firstly, Cropper and Oates argue that as environmental harms are widely spread, the expected payoff may not justify the cost to an individual victim of bringing a lawsuit.⁷⁸² However, Revesz and Stavins believe that this would not be as complex because a collective-action problem can partially be addressed by permitting individuals to bring class actions on behalf of all those harmed by polluters.⁷⁸³ For instance, in the celebrated case of *Gbemre V. Shell* previously cited, the Nigerian court granted the host communities' motion to sue as a class action.⁷⁸⁴ Secondly, another difficulty is identifying the exact source of damages as there are frequently many sources of a given pollutant. Therefore, the aggrieved party or parties may not be able to identify the actual source of the damages.⁷⁸⁵ Thirdly, many pollution harms have long latency periods, meaning that by the time the harm has manifested, actions may be statute-barred because of time limitations.⁷⁸⁶ Lastly, a polluter may not have sufficient solvency to pay a

⁷⁸⁰ Hylton (n 722).

⁷⁸¹ See Charles D. Kolstad et al., 'ex post liability for Environmental Harm vs ex ante Safety Regulation: Substitutes or Complements?' (1990), 80 *Am Econ. Rev* 888; Kenneth S. Abraham, 'The Relation Between Civil Liability and Environmental Regulation: An Analytical Review (2002), 41 *Washburn Law journal*; David E. Adelman and Ian J. Duncan, 'The Limits of Liability in Promoting Safe Geologic Sequestration of CO₂' (2011), 22 (1) *Duke Environmental Law and Policy Journal*; and Patrick W. Schmitz, 'On the Joint Use of Liability and Safety Regulation' (2000), 20 *International Review Law and Economics* 371.

⁷⁸² Ibid Cropper and Oates (n 751).

⁷⁸³ Ibid Revesz (n 743) and Stavins (n 762).

⁷⁸⁴ *Jonah Gbemre & ords vs. Shell* (n 40).

⁷⁸⁵ Ibid Cropper and Oates (n 751).

⁷⁸⁶ Although in some jurisdictions, actions begin to run only with the discovery of the harm, not the imposition of the risk.

significant damage award. The difference between the polluter's total solvency and the full damages may be externalized.⁷⁸⁷

Nevertheless, whatever difficulty Cropper and Oates might have discovered, liability rules may have a central role to play in environmental regulation because other regulatory tools give rise to their own sets of problems. Although this study limited itself to a critical review of statutory models, as earlier discussed. Nevertheless, researchers/policymakers have choices when considering liability rules for future applications. Some of the issues to consider include; Should polluters be held jointly and severally liable for the harm they cause or non-jointly liable? Is a negligence rule preferable to a strict liability rule or vice-versa? Moreover, which parties should be held liable? Polluters? Site owners? Therefore, alternative liability regimes transmit different incentives to private actors and can have dramatically different effects.

4.3.4 Alternative Approaches

The literature about environmental regulatory design has recently uncovered other alternative approaches that policymakers use in regulating environmental externalities. These approaches include co-regulation, self-regulation, information, and education. The approaches function with limited or no government involvement. It typically involves a professional group within an industry voluntarily setting rules or codes of conduct that regulate or guide their behaviour, actions, and standards within the industry. The group is responsible for developing regulatory instruments, monitoring compliance, and ensuring enforcement. The degree of government involvement and legislative backing determines the difference between co-regulation and self-regulation.⁷⁸⁸

It is regarded as co-regulation when the government involvement in the regulatory framework is explicitly supported, and self-regulation when there is none. Because this involvement can take many forms, it can sometimes be

⁷⁸⁷ Ibid.

⁷⁸⁸ The Organisation for Economic Co-operation and Development (OECD), 'An OECD Framework for Effective and Efficient Environmental Policies' (2008), Meeting of the Environment Policy Committee (EPOC) at Ministerial Level Environment and Global Competitiveness 28-29 April 2008, p.28. Examples include codes of practice, industry-based accreditation arrangements, and voluntary adoption of standards.

challenging to distinguish between the two. Therefore, a group of firms within an industry may develop codes of practice to regulate the behaviour or actions of members, and this would be a self-regulatory mechanism. However, if these codes were supported by legislative backing in some form for the regulatory arrangements requiring members to abide by them and imposed penalties in the case of non-compliance, it would be a co-regulatory regime.⁷⁸⁹ Thus, co-regulation involves some sort of legal underpinning and can, therefore, be described as self-regulation with a legislative backstop instead of self-regulation.⁷⁹⁰

On the other hand, the range of information-based and educational regulatory approaches is broad and, in many cases, may overlap with other voluntary strategies.⁷⁹¹ This approach may include corporate environmental reporting, education, training, community right to know, pollution inventories, and product certification.⁷⁹² One significant importance of the approach it can change businesses' behaviour by providing more meaningful information. The OECD finds ways in which policymakers' action can lead to more meaningful information. For instance, a policymaker can by law require information disclosure from the industry player. The law can impose penalties for non-compliance or when incomplete information is provided. Alternatively, the government or regulator can encourage and persuade businesses to provide additional product information without imposing a formal requirement on businesses to provide the information.⁷⁹³ There are other complementary instruments that the OECD finds to be useful in regulating environmental externalities. These instruments range from environmental management systems EMSs, voluntary environmental programmes VEPs, and information disclosure requirements.⁷⁹⁴ Nevertheless, it must be stated that they are only complementary but not standalone instruments.

⁷⁸⁹ See for instance the definition given by the UK's Better Regulation Task Force (BRTF).

⁷⁹⁰ Generally, the boundary between co-regulation and self-regulation is not always clear-cut. For example, there may be government involvement in the development of self-regulatory arrangements without necessarily implying government support or official backing for the scheme. Government assistance might take the form of advice or participation by officials in the discussions establishing the scheme, but with no formal legislative backing or government responsibility for the scheme.

⁷⁹¹ Gunningham and Sinclair (n 727).

⁷⁹² Ibid OECD (n 788) pp. 28-30.

⁷⁹³ Ibid.

⁷⁹⁴ Ibid.

4.4 Framework for Assessing and Choosing an Appropriate Regulatory Approach

Faced with the multiplicity of approaches discussed above, how can policymakers assess and choose the appropriate instrument or combination of instruments? To find an appropriate and effective instrument for policymakers, many pieces of literature have evaluated the instruments and the problems with instrument choice, often providing a criterion to assess the relative advantage of such instruments.⁷⁹⁵ However, one primary message this evaluation provides is that it is difficult, if not impossible, to find universal and fitted outcomes from the evaluation of the instruments since the supremacy of one over the other is very much dependent upon some specific factors.

These factors include the ideal goal of such an instrument for pollution abatement; the nature of the pollutant; the kind of harm it causes; and the available control technologies. Other factors include the number and type of polluting entities and the type of market failure, pollution, and institutional design, as well as sociopolitical issues.⁷⁹⁶ As rightly argued by Oates, one has to be careful when too strongly recommending one among the competing instruments. Besides, the CAC instrument also includes a wide range of measures, some of which are relatively harsh, and others produce results as efficient as economic incentives.⁷⁹⁷ Therefore, one should be careful with those types of assessments and recommend one instrument over the other. The appropriate way to design a policy regime is to ask questions: what should the policymakers consider in assessing a regulatory instrument? What are the criteria to use in judgment for the practical selection of instruments?

⁷⁹⁵ See Richard L. Revesz and Robert N. Stavins, 'Environmental Law and Policy', in Mitchell Polinsky and Steven Shavell, *The Handbook of Law and Economics* (Elsevier 2007) 499; Jason Scott Johnson, 'Tradable Pollution Permits and the Regulatory Game' in Freeman and Kolstad (n 706); Giandomenico Majone, 'Choice among Policy Instruments for Pollution Control' (1976), 2 *Policy Analysis* 589; Peter Bohm and Clifford S. Russell, 'Comparative Analysis of Alternative Policy Instruments', in *Handbook of Natural Resource and Energy Economics* 395 (Allen V. Kneese & James L. Sweeney eds., 1985); and Robert W. Hahn & Robert N. Stavins, 'Incentive-Based Environmental Regulation: A New Era from an Old Idea?' (1991), 18 *Ecology L.Q.* 1 and Richards (776).

⁷⁹⁶ Ibid.

⁷⁹⁷ Wallace E. Oates, 'Economics, Economists and Environmental Policy' (1990) 16 *E. Econ. Journal* 289-293.

Many studies from sociolegal scholars' perspectives have proposed what policymakers should consider when assessing and choosing policy instruments for environmental regulation. Richards⁷⁹⁸ argues that when it comes to environmental policy instrument choice, one size does not fit all. Richards developed a conceptual framework for understanding the policy instruments and advanced critical ideas about instrument choice, the structure of evaluation criteria, the design of instruments, and the application of lessons from various distinct pieces of literature. Richards, an economist, argues that an appropriate policy should minimise the cost of achieving policy objectives. Thus, that instrument should minimise abatement costs, implementation costs, and undesirable effects on public finance (together called *cost-effectiveness* or *economic efficiency*).⁷⁹⁹

Similarly, while contributing to this debate on appropriate criteria for evaluating policy instruments, Huppes and Simonis categorise it into three main orders. The first-order criteria have *environmental effectiveness, economic efficiency, distributive justice, and fairness*. The second order includes *political and social acceptability and incentives for sustainable technology development*. The third criteria are what he called strategic criteria, including fitting in the broader conceptual framework for public policy, fitting in the broader institutional framework of society, fitting in general cultural developments, and fitting in general economic developments.⁸⁰⁰

Furthermore, Majune came up with a synoptic problem solver, a concept that firstly identifies, scrutinises, and puts into logical order those environmental objectives and other values that he believes should govern the choice of the instrument. The concept then comprehensively surveys all possible means of achieving those values and extensively examines the probable consequences of

⁷⁹⁸ This is one of the leading sociolegal scholars: Professor Kenneth Richards is an economics and law scholar specialising in environmental economics, design of environmental policy tools and implementation including environmental taxes, carbon offsets, marketable allowances, public information campaigns, regulation, and subsidies. His work combines academic research and policy advice to policymakers and the private sector.

⁷⁹⁹ Richards (n 776).

⁸⁰⁰ Gjalt Huppes and Udo E. Simonis, 'Environmental Policy Instruments in a New Era' (2001), WBZ Discussion Paper, No. FS II 01-404 Wissenschaftszentrum Berlin für Sozialforschung (WZB), Berlin.

employing each instrument.⁸⁰¹ The criteria used in Majune's synoptic evaluations of environmental policy tools are *environmental effectiveness, economic efficiency, political and administrative feasibility, flexibility, and compatibility with the existing institutional framework*.⁸⁰² Similarly, a recent study finds that a wide range of practical realities shapes the principal motivation of environmental policy design in practice. While these realities may be too numerous to mention, there are three main factors each policymaker should consider in designing environmental policy. These are *technical and informational constraints, institutional capacity, and political economy*.⁸⁰³

On the other hand, economists simplify the evaluation by reducing it to economic analysis. Bohm and Russell suggest that the evaluation criteria for any instrument employed to achieve an environmental goal must first pass the economic efficiency test. This is followed by other terms such as *information requirements, ease of monitoring and enforcement, demand on government resources, and adaptability and flexibility* in the face of changes in tastes, technology, resource use, and the economy.⁸⁰⁴ However, in principle, such an assessment may not cover all environmental issues.

Finally, the OECD, an established global organisation for monitoring and developing environmental regulations, contributed to the debate. The OECD listed two primary criteria which could be used to assess and evaluate the appropriateness of environmental policy instruments. According to OECD, the approach or instrument chosen to address an environmental issue should first be *effective* in addressing the identified problem. Thus, the approach should address specified environmental objectives and have *effective monitoring and compliance mechanisms*. Secondly, the approach or instrument should be *efficient* in minimising cost. In other words, the efficient instrument should maximise benefits

⁸⁰¹ Giandomenico Majune, 'Choice Among Policy Instruments for Pollution Control' (1976), 2(4) *University of California Press* 589-613.

⁸⁰² Ibid.

⁸⁰³ The Rockefeller Foundation and Oxford Martin School, 'Environmental Policy-Making; Theory and Practice' (2018), Rockefeller Foundation Economic Council on Planetary Health 8-9 February 2018.

⁸⁰⁴ Peter Bohm & Clifford S. Russell, 'Comparative Analysis of Alternative Policy Instruments', in *Handbook of Natural Resource and Energy Economics* 395 (Allen V. Kneese & James L. Sweeney eds., 1985).

and minimise costs, provide a degree of flexibility, and minimise compliance costs.⁸⁰⁵

It is submitted that the preceding debate and counter-debates from both socio-legal and economic perspectives as well as the OECD framework have all agreed that the effectiveness of any environmental policy instrument must ensure it achieves its environmental goal. Nevertheless, for any instrument to achieve this, it must satisfy the criteria of environmental effectiveness and economic efficiency. For sociolegal scholars, an appropriate and effective environmental policy instrument must achieve its environmental goal: environmental effectiveness subject to any legal and political constraints. These constraints require that the instrument employed to implement the policy accomplish the desired policy goal or at least achieve some level of abatement. The instrument must provide efficacy or assurance that the goals will be met.⁸⁰⁶

Meanwhile, for economists, the appropriate criteria for the assessment are cost-effectiveness. Nevertheless, taking the whole argument together, it is further submitted that the evaluation of instruments for environmental policy is not only based on cost-effectiveness and eco-efficiency as economists narrowed it down. It also involves some other essential criteria: for instance, the effectiveness of the instrument to achieve the stated goal; effects on monitoring and enforcement; political and administrative feasibility (political economy); and compatibility with the existing institutional framework (institutional capacity). While supporting this argument, Freeman and Kolstad cautioned that it is essential for policymakers to ask not only whether the instruments offer cost savings (cost-effectiveness). Rather, they should also ask whether and to what extent they accomplish the regulatory purpose for which they were designed, i.e. environmental effectiveness. In other words, policymakers ought to pay attention to benefits in

⁸⁰⁵ The Organisation of Economic Co-operation and Development (OECD), 'Alternatives to Traditional Regulation' (1994), *OECD Report prepared by Mr. Glen Hepburn, who worked for the OECD Regulatory Policy Division*. Available at: <<https://www.oecd.org/gov/regulatory-policy/42245468.pdf>> accessed on 03/11/2019.

⁸⁰⁶ See generally, Abelkop (760); Majune (n 784); Richards (n 776); Bohm and Russell (787); Revesz and Stavins (n 778) and The Rockefeller Foundation and Oxford Martin School, 'Environmental Policy-Making; Theory and Practice' (2018), Rockefeller Foundation Economic Council on Planetary Health 8-9 February 2018.

environmental performance, not just cost-benefits.⁸⁰⁷ Therefore, as legal scholars would argue, the instrument's effectiveness to abate environmental pollution is superior to any other consideration.⁸⁰⁸

Therefore, based on the preceding discussion, it could be understood that the challenge for policymakers when designing regulatory instruments is to ensure that the instrument adopted to achieve environmental goals should be both 'effective' and 'efficient'. Thus, they effectively resolve the problem they were introduced to address, being efficient in maximising benefits and minimising both the direct compliance costs and other indirect costs which may be imposed on the public. Consequently, these two criteria are crucial for legal scholars, economists, and other established organisations when adopting an appropriate and effective approach or instrument for environmental regulation.

As a result, in addition to these rather broad criteria, other specific criteria could also be considered including *equity and fairness, monitoring and compliance, and flexibility*. These specific criteria will be evaluated and combined to build a useful framework for the theoretical assessment of an appropriate instrument for environmental regulation and gas flaring. They would also guide the empirical part of this study, which will highlight the strength and weaknesses of each instrument and consider whether such an instrument or combination of instruments is optimal to the criterion. It will also ask whether this could improve and sustain environmental regulatory compliance.

4.4.1 Environmental Effectiveness

Environmental effectiveness in this assessment is defined relative to emissions. This means that the proximate environmental goal (i.e. reduction of emissions) for the intended reduction is assumed to be well-chosen for the underlying environmental objective. It does not in any way assume the underlying environmental problem that is broader in scope. This criterion examines how the

⁸⁰⁷ Freeman and Kolstad (n 723).

⁸⁰⁸ Ibid Huppés and Simonis (n 800).

policy instrument achieves the desired objective for which it was introduced. The OECD framework used in this assessment highlights three characteristics of 'effective' environmental policy instruments: A) should address clearly specified environmental objectives; B) be integrated and consistent with other regulations, and C) have effective monitoring and compliance mechanisms.⁸⁰⁹

4.4.1.1 Addressing Clearly Specified Environmental Objectives

There is an enormous variety of literature concerning the effectiveness of various approaches as discussed in *section 4.2* in addressing clearly specified environmental objectives. First, begin with the CAC's appropriateness in addressing specified environmental objectives. The critical literature review indicates that in many analyses of environmental instruments, the CAC approach has been severely criticised for failing to achieve its objectives as well as for its tendency to become "a political process entailing bargaining between parties of unequal power".⁸¹⁰ However, most of the antagonists of the CAC approach are economists, and they favour MBIs as a more appropriate approach. In contrast, legal scholars have argued the contrary, and maintain that the CAC approach has been quite effective in reducing emissions in the atmosphere.⁸¹¹

Nevertheless, the effectiveness of CAC in achieving environmental objectives has been documented in several studies, and an unbiased observer can find this evidence in many jurisdictions. For instance, the comprehensive Clean Air Act of 1970 in the United States represented a significant example of an effective CAC regulatory approach.⁸¹² The Act and its amendments mandated prescriptive

⁸⁰⁹ Ibid OECD Frameworks (n 771).

⁸¹⁰ MBIs and other related market-oriented techniques have been favoured as alternative approaches which could reduce the scope for administrative discretion and bargaining while enabling government to accomplish its regulatory goals in a more effective manner. Thus, if bargaining is an inevitable and necessary consideration for choosing an instrument, the ability of policymakers to nudge the process towards the actual outcomes of environmental policies are more significantly affected by the institutional arrangements emerging from the political process followed by the technical characteristic of the instrument used. See Jody Freeman and Charles Kolstad (n 723).

⁸¹¹ Jody Freeman and Charles Kolstad (n 723).

⁸¹² The Clean Air (Amendments) Act (CAA), 1970 Code 42 – Title 1 – Air Pollution, Prevention and Control Part A – D ss 7401 – 7431: though amended in 1990 to include MBIs mechanisms, it has been largely responsible for a reduction in emissions since its introductions in the 70s.

environmental quality standards, and in some cases required specific technologies for compliance.⁸¹³ The Act empowered the Environmental Protection Agency (EPA) to take practical actions to fight environmental pollution. The EPA's consequence of this power established the performance standards, among other things, which regulate the number of permissible emissions from different classes of facilities, including emissions from natural gas production flare facilities.⁸¹⁴

The Act further provides that the violation of any standards, prohibitions, or requirements may lead to criminal penalties. This is in addition to possible jail time of up to 15 years, and fines of up to \$250,000 for individuals and up to \$500,000 for corporations for each violation or both. Moreover, a civil penalty of not more than \$25,000 per day for each violation may be added.⁸¹⁵ The EPA claimed that the Act has been mostly responsible for cleaner air in the US since 1970. According to EPA, between 1970 and 2018, the Act succeeded in reducing combined emissions by 74%. This progress was recorded while at the same time energy consumption increased.⁸¹⁶ Several studies have acknowledged the effectiveness of the US Clean Air Act, which is the best example of a legal framework that entrenched the CAC regulatory approach. For instance, Zarker and Kerr, in their 20 years of pollution regulations progress study, find that the current US regulatory system championed by the Act is highly effective. However, they suggested that more effective mechanisms are needed to advance environmental protection through pollution prevention.⁸¹⁷

In the United Kingdom, the *Energy Act 2016 and the Petroleum Act 1998* empowered the OGA as the primary regulator for the industry. This principal legislation requires operators to obtain OGA consent for the flaring and venting of hydrocarbons during production operations. Therefore, it is the OGA's function to provide these consents.⁸¹⁸ The total elimination of unnecessary or wasteful gas

⁸¹³ Ibid.

⁸¹⁴ CAA Sec 101 – 131 the Clean Air Act.

⁸¹⁵ CAA Section 113 US Code 7413.

⁸¹⁶ The US Environmental Protection Agency, 'Our Nations Air'. Available at: <<https://gispub.epa.gov/air/trendsreport/2019/#home>> accessed 22/10/2019.

⁸¹⁷ Kenneth A. Zarker and Robert L. Kerr, 'Pollution Prevention through Performance-based Initiatives and Regulation in the United States' (2008), 16(6) *Journal of Cleaner Production* 673-685.

⁸¹⁸ *The Petroleum Act, 1998, s. 3(3)* and the *Energy Act (as amended), 2016 s. 2 (3) & 8.*

flaring is central to the OGA's policy objective for the UKCS flaring and venting regime. However, OGA recognises that gas flaring and venting from petroleum installations and relevant facilities are unavoidable. To meet the said objective, it requires that this flaring and venting should be kept to a technically and economically justified minimum.⁸¹⁹ The OGA will only issue consents for flaring and venting after a thorough review of the consent requests to ensure that the flare and vent volume requested is at a level that is technically and economically justified. The OGA will usually deny consent if the said request does not serve the objective of its policy, as mentioned above. Thus, when deciding to either grant or deny flaring and vent consent, the OGA will consider all of the appropriate data and evidence submitted to it in support of a flare or vent consent request.⁸²⁰

Consequently, the OGA's regulatory regime required oil companies at the UKCS to implement best practices to minimise flaring and venting. This requirement applies to the early stage of the development design and by continuing to improve on this during the subsequent operational phase.⁸²¹ The regulations obliged the companies to carefully consider all operational activities according to acceptable oil field practices, considering plant uptime, efficient processing, handling, uses, and transportation of gas. These measures have been quite effective in reducing emissions in the atmosphere. Therefore, the OGA anti-gas flaring regimes rely primarily on prohibitions, setting standards, and performance-based on firms that generate emissions, which is the best example of the CAC approach.

Similarly, the effectiveness of MBIs in achieving their environmental goals has also been featured in many studies.⁸²² For instance, Kuklinska et al.'s study of the

⁸¹⁹ Oil & Gas Authority, 'Flaring and Venting – OGA Policy Position' *Oil and Gas Authority, 2018*. Available at: < <https://www.ogauthority.co.uk/media/5014/flaring-and-venting-policy-position-website.pdf> > accessed 28/08/2020.

⁸²⁰ Ibid, at the FDP stage, the OGA will consider whether alternative uses for the gas have been considered and whether the best application of technology has been considered. It will also consider the historic performance of the operator and installation against flare and vent consents.

⁸²¹ Oil & Gas Authority – Flaring and Venting. Available at: < <https://www.ogauthority.co.uk/licPetroleum%20Act%201998>. > accessed 28/08/2020.

⁸²² See Winston Harrington and Richard D. Morgenstern (n 733), Denny.

combined review of EU and US legislation⁸²³ on atmospheric pollution argued that MBIs are the most effective approach. The study finds that though the set of legal, social, and structural instruments is different, anti-gas flaring emissions have been achieved. The EU Member States and the U.S. have achieved significant milestones in reducing emissions and improvements in air quality over the past thirty years. These achievements result from the enactment and enforcement of international, national, and local air quality regulations requiring the best environmental practices and best available technologies, among other things.⁸²⁴ Moreover, Denny's empirical study further finds that MBIs, particularly permit systems, can be both environmentally effective and more economically efficient than CAC regulation. Danny's study underscores the importance of measuring effectiveness in achieving the approximate goal of emissions reduction rather than the larger goal of solving the underlying environmental problem.⁸²⁵

However, other studies have found that though the economic performance of MBIs may be better, the environmental performance (i.e. effectiveness) is worse, and its increased environmental damages outweigh the savings in abatement cost.⁸²⁶ Notwithstanding, proponents of MBIs strongly argue that if they are appropriately designed and effectively implemented, they encourage firms to undertake pollution control efforts that are in their interests and collectively meet the

⁸²³ The study analyses the US Air Pollution Control Act 1955; the Clean Air Act 1963; the Air Quality Act 1967; and the Clean Air Amendments of 1970, 1977 and 1990. At EU level it examines: Directive on air quality limit values and guide values for SO₂ and PM (80/779/EEC) 1980; Directive on limit values for lead in the air (82/884/EEC) 1982; Directive on air quality standards for NO₂ (85/203/EEC) 1985; Directive limiting emissions of certain pollutants into the air from large combustion plants (88/609/EEC) 1988; Directive on air pollution by ozone (92/72/EEC) 1992; Council Directive concerning integrated pollution prevention and control (96/61/EC) 1996; The Ambient Air Quality Assessment and Management Directive (96/62/EC) 1996; Directive on the limitation of emissions of certain pollutants into the air from large combustion plants (2001/80/EC) 2001; the 1st Daughter Directive AQ limit for SO₂, NO₂, NO_x, PM and lead (1999/30/EC) 1999; the 2nd Daughter Directive relating to CO and benzene (2000/69/EC) 2000; the 3rd Daughter Directive relating to O₃ in ambient air (2002/3/EC) 2002; the 4th Daughter Directive relating to As, Ni, PAH in ambient air (2004/107/EC) 2004; and finally Directive of the European Parliament and of the council on ambient air quality and cleaner air for Europe (2008/50/EC) 2008.

⁸²⁴ Karolina Kuklinska et al., 'Air Quality Policy in the U.S. and the E.U – a Review' (2015), 6(1) *Atmospheric Pollution Research* 126-137.

⁸²⁵ Ibid Denny (n 709).

⁸²⁶ Curtis A. Moore, 'Marketing Failure: The Experience with Air Pollution Trading in the United States (2002), *ibid*; and Clear the Air: National Campaign Against Dirty Power (2002) *ibid*.

environmental policy objectives as against the CAC approach.⁸²⁷ Moreover, proponents of MBIs strongly argue that if they are well designed, MBIs could provide incentives that will encourage those regulated to act in a way that facilitates the attainment of the environmental policy objectives.

In the same vein, liability rules and other alternative approaches could also provide the desired result when appropriately designed. While assessing the effectiveness of the liability regime for environmental regulation, Segerson supports this narration. Segerson suggests that a liability regime can provide efficient deterrence incentives under ideal conditions. It can function like MBIs and deter polluters from risky behaviour under specific conditions.⁸²⁸ For instance, this can happen where the liability is prospective rather than retroactive and where damages are known immediately after they occur.⁸²⁹

Similarly, industry-initiated self-regulation and co-regulation strategies are more likely to address desired environmental objectives. This is highly achievable, particularly when the interests of the industry, government/regulator, and the community more generally coincide. However, where these interests differ, there may be problems or concerns that must be addressed. Thus, a common concern or difficulty with these instruments is the ability of the industry to use self-regulation in an anti-competitive manner. The industry can for instance be used to restrict new entrance and thereby diminish competitive pressures or establish measures to the detriment of government and communities.⁸³⁰ Consequently, the

⁸²⁷ Terry L. Anderson and Donald R. Leal, 'Taking Free Market Environmentalism Global', in Terry L. Anderson and Donald R. Leal *Free Market Environmentalism* (Palgrave Macmillan, New York, 2001) 159-169; Organisation for Economic Cooperation and Development, 'Economic Instruments for Environmental Protection' (1989); 'Environmental Policy: How to Apply Economic Instruments' (1991); 'Economic Instruments In Environmental Policy: Lessons from OECD Experience in Their Relevance to Developing Economies' (1994); 'Applying Market-Based Instruments to Environmental Policies in China and OECD Countries' (1998). All these are available at: <<http://www.oecd.org/env/outreach/economic-instruments.htm>> See also United States Environmental Protection Agency, 'Economic Incentives, Options for Environmental Protection' (1991), Document P-2001 *U.S EPA, Washington D.C.*; 'The United States Experience with Economic Incentives to Control Environmental Pollution' (1992), EPA-230-R-92-001 *U.S EPA, Washington D.C.*; and finally 'The United States Experience with Economic Incentives for Protecting the Environment' (2001), *U.S EPA, Washington D.C.*

⁸²⁸ Kathleen Segerson in Freeman and Kolstad (706). A good example of this is the CERCLA strict liability regime in US.

⁸²⁹ Ibid.

⁸³⁰ Ibid OECD (n 827).

effectiveness of alternative approaches is also well-documented and noted. However, these instruments could not work alone in practice but need the support of the three major instruments examined above.

4.4.1.2 Consistency with Other Regulations

An effective instrument for environmental regulation must not only address the externalities but should be consistent with other regulatory instruments; it should complement them, particularly when they were set up to achieve a similar objective. Therefore, the CAC approach can work with all of the instruments cited above. For instance, the approach may specify the minimum standard or objective required, and co-regulation or self-regulation could lift the bar higher by setting more stringent requirements than the minimum required by legislation.⁸³¹ Thus, a law may set out gas limits to flare, but an industry-developed code of practice may set the standards higher by reducing the amount. Consequently, one significant advantage of the alternative approach is its flexibility to work perfectly with all other regulatory instruments. Alternative approaches could be well integrated with other regulations, especially when the information and education campaign is integrated into the broader policy package, i.e. inserted into the law.⁸³² However, there would be problems with integration when the objectives of the alternative approaches conflict with other policy instruments.⁸³³

Similarly, other difficulties may arise in some cases when integrating self-regulation with existing regulatory arrangements. For instance, a study of alternative regulation in the EU suggested that self-regulation raises issues about how to ensure implementation and consistency across the Member States. It will always be challenging to engage the whole EU market without the active support of European-wide trade organisations.⁸³⁴ Therefore, co-regulation may be more

⁸³¹ OECD, 'Regulatory Reform and Innovation' Organisation for Economic Co-operation and Development. Available at: <<https://www.oecd.org/sti/inno/2102514.pdf>> accessed on 13/11/2019.

⁸³² Ibid OECD.

⁸³³ For instance, where in some cases, there are education campaigns against wasting water due to drought conditions, but at the same time, there are policies to keep water prices low.

⁸³⁴ The Chair Report – Better Regulation Task Force 2004. Available at: <https://www.eesc.europa.eu/resources/docs/designdelivery.pdf> accessed on 13/11/2019.

likely to integrate better with all the instruments than inadequately designed self-regulation because of the active role of government officials in developing co-regulatory arrangements. Similarly, integration with other regulations is essential when implementing MBIs because they must operate within other regulations' legal and institutional frameworks. The MBIs are often combined with other policy instruments to form a package of instruments to achieve a given objective.

4.4.1.3 Effective Monitoring and Compliance Mechanisms

The availability of mechanisms for monitoring compliance with an environmental policy instrument is critical for achieving the policy objectives. A study observes that the compliance and monitoring issues under the MBIs approach are likely to vary between fiscal and trading type instruments. Therefore, a report from the OECD countries finds that compliance with MBIs is likely to be high. These instruments act through the economic incentives facing businesses and citizens.⁸³⁵ Once the incentive regime is appropriately designed, firms would make decisions based on assessing the costs and benefits of different actions. Therefore, their actions will help to achieve the environmental policy objective. Nevertheless, there may be possibilities for avoiding MBIs, which would weaken their effectiveness. For example, it may be possible to understate the level of taxable emissions produced and so evade the payment of appropriate taxes. Alternatively, there may be unlisted companies' operations in the informal economy, thereby avoiding the payment of taxes.

Consequently, an effective monitoring and compliance regime would help to provide the information necessary to make the adjustments that ensure that the government's objectives are met. The difficulty with MBIs is that there may be constant change in the instrument, which likely leads to uncertainty and the imposition of additional costs for businesses. Therefore, MBIs are unlikely to be the most appropriate instrument if there need to be constant adjustments. For instance, the UK independent panel review of the offshore regulatory regime

⁸³⁵ Ibid OECD (n 831) p. 28. It is also necessary that those subject to the policy instrument comply with it, and a key element of compliance is monitoring. The aim is not necessarily for 100 percent compliance, because there may be a trade-off between compliance and levels of monitoring and enforcement, but for a level of compliance which balances the effects of the instrument with monitoring and enforcement costs.

recommends that the regulator should continue to work with the industry to identify ways in which existing reporting requirements, especially regarding environmental compliance, might be simplified or rationalised. This would be done to demonstrate the need for the detailed environmental assessments required of them to provide increased scope for innovative approaches to improving environmental standards.⁸³⁶

On the other hand, alternative approaches provide little or no monitoring and compliance mechanisms. This is because the objective of the instruments is to voluntarily complement an existing instrument to provide measures that should lead to a change in behaviour as businesses make better-informed decisions. For self- and co-regulation, the difficulty with their design and implementation is that it will affect the likely level of compliance because it may require external monitoring or auditing to ensure that they are achieving their objectives. Therefore, external monitoring is likely to be essential where there is some concern among the public or policymakers about whether the scheme is working as intended. Nevertheless, external monitoring not only imposes some constraints on the industry's behaviour in the scheme but also provides reassurance and information to the general public.⁸³⁷

Meanwhile, for education and information campaigns there is no attempt to monitor compliance or impose penalties for non-compliance. This is because the objective of the instrument is to provide information that should lead to a change in behaviour as businesses make better-informed decisions. However, it may be valuable to have some monitoring to ensure that the information is being received by those who most need it.⁸³⁸ Therefore, monitoring may be required not to assess compliance but to ensure that the campaign effectively meets its objective of providing information to those who need it. In cases where the government

⁸³⁶ Offshore Oil and Gas in the UK – An Independent Review of the Regulatory Regime (December, 2011) page 21. Available at: <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/48252/3875-offshore-oil-gas-uk-ind-rev.pdf> accessed 10/11/2019

⁸³⁷ Organisation for Economic Co-operation and Development, 'Reducing the Risk of Policy Failure: Challenges for Regulatory Compliance' (2000), OECD Paris p.11.

⁸³⁸ Ibid.

requires the disclosure of information, there may be a need for effective monitoring and compliance mechanisms.

4.4.2 Economic Efficiency

Economic efficiency is also a significant criterion for assessing an appropriate instrument for environmental regulation. Like environmental effectiveness, numerous pieces of literature from both socio-legal and economic disciplines have assessed the appropriateness of those instruments concerning their economic efficiency. The findings revealed that the most efficient instrument is that which maximises the benefits it creates while minimising the costs it imposes.⁸³⁹ However, it can be challenging to assess the costs and benefits of various instruments and determine which is the most efficient instrument. Nevertheless, the OECD suggests that techniques such as cost-effectiveness and benefit analysis could reveal some of the information policymakers require in deciding on an efficient instrument. Moreover, the degree of flexibility given to the regulated subjects in terms of how they can comply with the policy instrument can influence the efficiency with which the instrument can achieve its objective.⁸⁴⁰

Therefore, regulated subjects would have incentives to comply with the lowest possible cost. To act based on these incentives, they must have the flexibility to choose the course of action that complies with the government's requirements and minimises their costs. Flexibility in the policy instrument may make some targeted group members find ways of complying with requirements that the government or regulators had not even considered. Consequently, as with effectiveness, the framework for analysis used in this assessment highlights three characteristics of an 'efficient' environmental policy instrument:⁸⁴¹ A) cost-effectiveness (maximising benefits and minimising costs); B) flexibility, and; C) compliance costs.

⁸³⁹ Ibid OECD (n 723).

⁸⁴⁰ Ibid.

⁸⁴¹ Ibid.

4.4.2.1 Cost-Effectiveness

Economists have argued that cost-effectiveness is the most specific attribute of the MBIs and is most effective over other approaches. They maintained that the potential criterion for assessing any instrument is cost-effectiveness.⁸⁴² Revesz and Stavins strongly argued that, as a society with limited resources to spend, cost-effectiveness ought to be a primary criterion for assessing and choosing a given environmental regulatory instrument. Nevertheless, this could not be said to be the popular view even within the economic discipline. The duo themselves agreed that in addition to the cost-effectiveness criteria, the general view is that there should be other criteria, but their existence does not invalidate the efficiency criteria.⁸⁴³ Unlike CAC, which was seen as costly and weighty, MBIs by contrast would enable the government to accomplish its regulatory goals with less cost.⁸⁴⁴ Freeman and Kolstad argued that not only would MBIs be more comfortable and cheaper to administer than CAC, but they would also harness the profit motive in the service of environmental protection and dramatically reduce the costs of achieving the objectives.

Furthermore, in terms of cost analysis associated with the management of the instrument, Stavins also argued that MBIs are more flexible in terms of effective monitoring and enforcement than the CAC approach. Hylton agreed with Stavins when he claimed that, of all the instruments, MBIs require less information gathering by administrative agencies in monitoring emissions levels, and thus would benefit from leading to efficient enforcement.⁸⁴⁵ However, scholars like Montero disagree with Hylton and Stavins and argue that MBIs would indeed require more information in some cases than is required under the CAC system. Montero further argued that it might be cheaper to require firms to stop exceeding an emission standard under the CAC system than to find a fair price for pollution

⁸⁴² Revesz (n 743) and Stavins (n 762-763).

⁸⁴³ See Kenneth J. Arrow et al., 'Is There a Role for Benefit-cost Analysis in Environmental, Health, and Safety Regulation? (1996), 272 *American Association for Advancement of Science* 221-222; and Raymond J. Kopp, Alan J. Krupnick and Michael Toman, 'Cost-Benefit Analysis and Regulatory Reform: An Assessment of the Science and the Art' (1997), Discussion Paper 97-19 *Resource for the Future* Washington, DC.

⁸⁴⁴ Stavins (n 762-763).

⁸⁴⁵ Hylton (n 722).

obtained under the MBIs system.⁸⁴⁶ Although Montero's study finds that MBIs ought to be the default regulatory tools, it suggests the desirability of supplementing MBIs with some prescriptive standards, i.e. the CAC system.⁸⁴⁷

However, though Majune argues that the underlying logic for MBIs, especially pollution charges, is compelling and straightforward, in the absence of such detailed cost information for monitoring and enforcing MBIs, the authorities will have to rely on other rules which may be costly to administer. For instance, equal standards for all are highly unlikely to correspond to the minimum cost allocation of a discharge permit. Nevertheless, if the damage caused by different concentrations of residuals was known, the regulator would have to establish a charge or price equal to the marginal damage for each residuals unit. Polluters would then decrease their residual flows as long as the marginal cost of doing so was less than the price for discharging, settling at the optimum where marginal treatment costs equal the charge.⁸⁴⁸ In this regard, the environmental goal would be reached at a minimum social cost.

4.4.2.2 Flexibility

Flexibility is also a significant consideration of an economically efficient policy instrument for environmental regulation. The more flexible instruments are, the more industry-specific information can be considered in determining the best way to achieve the policy objectives.⁸⁴⁹ The OECD provides two primary elements of flexibility: 1) the degree of flexibility given to the regulated subjects to respond to the policy instrument; 2) the flexibility of the policymakers or regulators to amend the instrument or adjust it to ensure that the policy objectives are met.⁸⁵⁰ In this regard, the OECD finds that the CAC approach failed to satisfy these elements because the requirements in CAC are often specified in detail and mostly backed by legislation that cannot easily be amended or changed. However, all other instruments allow little or more choice to the regulated subjects in how to respond

⁸⁴⁶ Ibid Montero (n 765). Montero's study evaluates whether MBIs (especially permits systems) might have advantages over CAC in cases where monitoring and enforcement are more difficult and the regulator has incomplete information.

⁸⁴⁷ Ibid.

⁸⁴⁸ Ibid Majune (n 801).

⁸⁴⁹ The OECD 2005 pp. 46-47.

⁸⁵⁰ Ibid.

and change their behaviour.⁸⁵¹ For instance, alternative approaches such as self and co-regulation in practice are potentially rated highly in terms of flexibility over other instruments.⁸⁵² Although co-regulation may require changes to subordinate regulations that the relevant regulatory institution could undertake, its weakness is that it could be changed without any adequate scrutiny or review by those who are outsiders to the industry or profession.⁸⁵³

Moreover, scholars have long argued in favour of MBIs over the CAC as the most flexible instrument in the sense that they do not usually stipulate in detail how firms are to respond. Unlike the CAC, which generally specifies how the subjects should respond to the regulation, this may affect compliance.⁸⁵⁴ The MBIs normally create incentives but allow firms to make their own choices and decisions based on these incentives. The proponents of MBIs have always argued that if they are appropriately designed and effectively implemented, they encourage firms to undertake pollution control measures that are in their interests and that collectively meet the environmental policy objectives.⁸⁵⁵ The OECD also suggests that the flexibility of MBIs and other alternative approaches in how they respond to the incentives are likely to be particularly appropriate and effective instruments compared to the CAC approach.⁸⁵⁶ Therefore, this could be understood in situations characterised by rapid technological advancements, for instance.⁸⁵⁷

⁸⁵¹ Ibid.

⁸⁵² They are more flexible instruments compared with CAC and MBIs and have the potential to be more efficient due to their flexibility. In addition, they can be changed without the need for new laws to be passed.

⁸⁵³ Ibid.

⁸⁵⁴ Anderson and Leal (n 827); Organisation for Economic Cooperation and Development, 'Economic Instruments for Environmental Protection' (1989); 'Environmental Policy: How to Apply Economic Instruments' (1991); 'Economic Instruments In Environmental Policy: Lessons from OECD Experience in Their Relevance to Developing Economies' (1994); 'Applying Market-Based Instruments to Environmental Policies in China and OECD Countries' (1998). All of these are available at: <<http://www.oecd.org/env/outreach/economic-instruments.htm>> Aee also United States Environmental Protection Agency, 'Economic Incentives, Options for Environmental Protection' (1991) Document P-2001, *U.S EPA, Washington D.C.*; 'The United States Experience with Economic Incentives to Control Environmental Pollution' (1992) EPA-230-R-92-001 *U.S EPA, Washington D.C.*; and 'The United States Experience with Economic Incentives for Protecting the Environment' (2001) *U.S EPA, Washington D.C.*

⁸⁵⁵ Ibid.

⁸⁵⁶ The OECD 2005 pp. 46-47.

⁸⁵⁷ Ibid OECD 1994.

Consequently, it has also been widely argued that MBIs and other alternative instruments provide flexibility to easily adapt, promote, and stimulate technological innovation. In contrast, CAC freezes new technology as companies are not motivated to innovate.⁸⁵⁸ However, while this assertion could be partially true, empirical research conducted by Driesen, Salzman, and Ruhl found that both CAC and MBIs have sometimes encouraged innovation and sometimes held up the latest technological developments. Therefore, there is no convincing empirical evidence that MBIs foster innovation better than an appropriately designed traditional CAC approach.⁸⁵⁹ Driesen further provides a theoretical argument about why MBIs would inappropriately encourage more expensive innovation than the CAC approach.⁸⁶⁰

Similarly, Johnson agreed with Driesen when he opined that although MBIs provide firms with a great deal of flexibility, once implemented, they may be difficult to change. For instance, once a permit system has been implemented, there may be fears that the market will develop independently of the government or regulator and therefore become difficult to change. Similarly, charges and subsidies once established may take time to change, particularly if they are to be made less attractive to businesses. The business may find its way of sabotaging any proposed amendments, especially in developing oil-producing nations.⁸⁶¹ Therefore, it is suggested instead that the CAC approach has some flexibility and simplicity as it always relies on adjustment in light of economic realities. The approach also has considerable flexibility in the enforcement process when

⁸⁵⁸ See Adam B. Jaffe et al., 'Environmental Policy and Technological Change' (2002), 22 *Environmental and Resource Economics* 41; Bruce A. Ackerman and Richard B. Stewart, 'Reforming Environmental Law: The Democratic Case for Market Incentives' (1988), 13 *Columbia Journal of Environmental Law* 171-183; Daniel J. Dudek and John Palmisano, 'Emissions Trading: Why is this Thoroughbred Hobbled? 1988), 13 *Columbia Journal of Environmental Law* 217, 234-35; Richard B. Stewart, 'Controlling Environmental Risks through Economic Incentives' (1988), 13 *Columbia Journal of Environmental Law* 153, 160; Robert N. Stavins, *Policy Instruments for Global Climate Change: How Can Governments Address a Global Problem?* (1997), *University of Chicago Legal Forum* 293, 302-3; Robert W. Hahn and Robert N. Stavins, 'Incentive-Based Environmental Regulation: A New Era from an Old Idea' (1991), 18 *Ecology Law Quarterly* 1, 13.

⁸⁵⁹ David M. Driesen, 'Design, Trading, and Innovation', in Freeman and Kolstad (n 706); and James Salzman and J.B Ruhl in Freeman and Kolstad (n 706).

⁸⁶⁰ Ibid.

⁸⁶¹ Jason Scott Johnston in Freeman and Kolstad (723).

regulators must determine whether firms are out of compliance and what they must do in response.⁸⁶²

On the other hand, alternative approaches by their nature are generally flexible. For instance, information, education, and self- and co-regulation are very flexible instruments compared with CAC and MBIs. This is because they do not normally impose or require specific actions to achieve their objectives. They mostly rely on their agents in the industry to change their behaviour based on more or better-quality information or appeals to moral obligation. Thus, firms are free to choose how they respond and will make decisions based on what is the best possible outcome for them. Nevertheless, these instruments, particularly information and education, may not be appropriate when policy objectives or the policy environment are changing rapidly.⁸⁶³ Consequently, in this regard, the instruments may lack the flexibility to achieve environmental objectives quickly and precisely in such rapidly changing circumstances.

4.4.2.3 Compliance Costs

The minimisation of compliance costs is also one of the characteristics of an economically efficient policy instrument. The OECD suggested that the best possible instrument to deal with a particular environmental issue should minimise the compliance costs borne by regulators and regulated entities.⁸⁶⁴ Economists like Revesz and Stavins have included the implementation cost of both the regulated entities and the government itself as a cost of environmental regulation. Meanwhile, other scholars also include costs such as capital and operating expenditures associated with regulatory compliance; legal and other transaction costs; the effects of refocused management attention; and the possibility of disrupted production.⁸⁶⁵

⁸⁶² For instance, when the 1979 regime was introduced in Nigeria, at the expense of non-compliance with the ideal of the Act, the authorities immediately passed a Regulation allowing companies to continue flaring of AG (see *heading 3.3*).

⁸⁶³ See generally the OECD 2005.

⁸⁶⁴ *Ibid*, the OECD 1995 (n 781) pp55.

⁸⁶⁵ Revesz (n 743) and Stavins (n 762-763): capital and operating expenditures associated with regulatory compliance typically represent a substantial portion of the overall costs of regulation, although a considerable share of compliance costs for some regulations falls on governments rather than private firms.

The OECD has examined the strength of MBIs in minimising compliance costs and argued that MBIs leave the regulated entities plenty of options on how they respond to the incentives put in place by either tax or subsidy regimes.⁸⁶⁶ For instance, in response to a tax on harmful emissions, firms are free to change their production process to minimise emissions. Thus, they may alter the technology they use or choose to put some form of filter in place to remove the emissions from the environment. In this way, firms are free to choose the cost-minimising option. As a result, firms have a strong incentive to find a cost-minimising response, given the incentives established by the regulatory regime. This suggests that compliance costs will be minimised if the tax or subsidy rates remain stable. Moreover, Revesz and Stavins suggest that instruments that help to stimulate environmental technology development like MBIs will have lower costs in implementation in the long run.⁸⁶⁷

On the other hand, CAC's critics have argued that it can result in substantial implementation costs. They cited the administrative apparatus required to promulgate, and implement regulation, which is cumbersome and costly. This makes it challenging to respond to rapid technology and new information.⁸⁶⁸ Moreover, firms may likely resist prescriptive regulation, making implementation and enforcement a struggle. However, there are enough incentives for those who adopt alternative instruments. For instance, self- and co-regulation minimise overall schemes' compliance costs, especially when the costs are borne by those initiating and implementing the scheme. This includes the operation costs, the enforcement and direct compliance costs.⁸⁶⁹ However, sometimes there may be a trade-off between the costs of monitoring a self- or co-regulation and the other similar scheme, which must be considered before its introduction. This trade-off may be one of the weaknesses of self- and co-regulation.⁸⁷⁰ Therefore, it must be considered when a decision is made to use a self- or co-regulatory instrument when other possible instruments could have sufficed and been adopted.

⁸⁶⁶ Ibid, OECD 1995, pp55.

⁸⁶⁷ Ibid.

⁸⁶⁸ Freeman and Kolstad (n 723).

⁸⁶⁹ The OECD 1995, p55.

⁸⁷⁰ Ibid.

4.4.3 Equity and Fairness

There was a near consensus among economists and socio-legal scholars that policy instruments for environmental regulation must be regarded as being fair and equitable for them to be 'effective' and 'efficient'. Therefore, the consensus is that equity and fairness considerations play an integral part in environmental policy assessment, and the assessment suggests that these considerations are best embodied in given policy instruments.⁸⁷¹ The seeming fairness of an instrument can influence its acceptance by the regulated subjects and hence increase the level of compliance. This is because a policy instrument is unlikely to effectively achieve environmental objectives if there is a high level of non-compliance. Moreover, an instrument that is perceived to be unfair is unlikely to be the most cost-effective instrument available if the government must devote significant resources to enforcement and monitoring compliance. Huppes and Simonis argue stridently that for any regulatory approach to satisfy the criteria of environmental effectiveness and economic efficiency, it must be considered fair and equitable.⁸⁷² Thus, such instruments must be: a) transparent in their operation and impacts; and b) contain appropriate appeals mechanisms.

4.4.3.1 Transparency

Transparency (i.e., political accountability) is a significant characteristic of an equitable and fair policy instrument. It usually guarantees that those subject to the regulation can see its impacts and ensures that all regulated entities are being treated equally. Where there are inequalities in the way entities are treated by the regulatory instrument, the reasons should be open to all for scrutiny. Those who make decisions should be subject to some oversight to ensure that they implement regulations as intended and do not overstep their authority. The degree of transparency has an important influence on perceptions of fairness and can also be an essential mechanism for ensuring the accountability of regulators.⁸⁷³

⁸⁷¹ Revesz (n 743) and Stavins (n 762-3). Though this consensus does not include specific criteria that might be used to rank alternatives instrument from an equity and fairness perspective, many proposed and implemented environmental policies involve real quid pro quo between equity and efficiency.

⁸⁷² Ibid.

⁸⁷³ The OECD 1995, p57.

Sometimes, perceptions of an instrument's fairness may not be based on objective analysis. However, when specifying the objectives and the suitability of the policy, as well as information regarding the appropriateness of alternatives, transparency can help overcome inaccurate perceptions.⁸⁷⁴

The OECD finds that the transparency of MBIs is likely to be relatively high. This is because measures such as taxes and subsidies are likely to have been discussed before their establishment. However, this could not be said of the CAC system. Similarly, any lack of transparency between the two ranking instruments may make it easier for the industry to use alternative instruments like a self-regulatory approach or to insist on co-regulation. This would protect their interests better at the expense of the oil communities and the government. Similarly, the transparency of alternative instruments could be improved if those who developed and operated the instruments published guidelines and information on how they work. However, published material such as industry guidelines or codes of conduct is not sufficient if the public does not see that the scheme operates under the guidelines or codes.

Similarly, unlike the CAC system which directly dictates behaviour or MBIs and works through changing prices, transparency issues are unlikely to be significant concerns with information and education instruments.⁸⁷⁵ The information and education-based instruments rely on transparency to have an impact. Thus the scheme requires people to receive additional information and change their behaviour based on this information when they make decisions. Consequently, the consensus is that policy instruments should be transparent and ensure that the subjects can see that all are being treated equally and consistently. It is submitted that while alternative instruments could provide a high degree of transparency and fairness, this could not be said of the MBIs and the CAC system.

⁸⁷⁴ Ibid.

⁸⁷⁵ The OECD 1995, p57.

4.4.3.2 Appeals and Dispute Resolution Mechanisms

Appeals and dispute resolution mechanisms have an essential role to play in ensuring that the environmental policy is regarded as fair and equitable. It typically ensures that all stakeholders regard the regulatory instrument as being fair and equitable both in terms of its impact on the regulated entities and ensuring accountability among the regulatory institutions. Consequently, businesses that believe they are unfairly treated may be able to conduct an administrative review of any decision that goes against them. If the decision is unsatisfactory, there may be recourse to other dispute resolution mechanisms and further appeal mechanisms.⁸⁷⁶ The regulated entities should be available for review by an independent body if they disagree with the regulator's decisions or actions. Nevertheless, while the CAC and MBIs approach typically contains appeal mechanism provisions, appeals and disputes are unlikely to arise often when alternative approaches are employed as policy instruments, especially information and education approaches.⁸⁷⁷

⁸⁷⁶ Appeal mechanisms are also an essential element of fairness and equity regardless of how effective the administrative review or the initial dispute resolution mechanisms are. See *ibid*.

⁸⁷⁷ However, in the case of government requirements to provide information, there may be a need for a mechanism to deal with disputes if businesses regard the government's requirements as being too onerous or costly to comply with. The exact nature of the arrangement will depend upon the scheme design, but they should be transparent about its operation and it should be accessible to those with a dispute.

4.4.4 Evaluation and Consideration

Following the critical review of the literature relating to regulatory design for environmental regulation, the literature reveals that there is hardly a single approach that is appropriately and effectively perfect. Thus, no single approach could be said to satisfy the three major criteria (effectiveness, efficiency, and equity and fairness requirements) without being complemented by the other instruments. This applies to the so-called MBIs. Even regarding a single criterion, there is hardly any superior approach that satisfies the requirement. This is because all the instruments have their strengths and weaknesses, and none could be said to be adequately effective and efficient to successfully address all environmental problems in all contexts. Therefore, this difficulty in finding an effective and efficient ranking policy instrument has led some observers to suggest that policymakers should always choose and use a mixture of instruments.⁸⁷⁸ However, this suggestion fails to recognise the actual source of the difficulty.

For instance, to consider environmental effectiveness and economic efficiency as criteria of choice, all three main approaches (i.e. the CAC, MBIs, and liability rules discussed above) have their strength and weakness in satisfying these criteria despite significant differences in their implementation and the corresponding institutional arrangements. For example, the CAC approach has the virtues of high predictability and dependability if it is appropriately enforced, but it commonly proves to be inflexible in certain circumstances.⁸⁷⁹ In contrast, MBIs tend to be economically efficient but are in many cases not dependable because of their flexible nature.⁸⁸⁰ On the other hand, the liability rule is cost-effective but also has low reliability when used in isolation. Therefore, in a practical sense, it is not

⁸⁷⁸ Neil Gunningham and Peter Grabosky, *Smart Regulation: Designing Environmental Policy* (1st Edn Oxford University Press: New York 1998); Neil Gunningham and Darren Sinclair, 'Regulatory Pluralism: Designing Policy Mixes for Environmental Protection' (1999), 21(1) *Law and Policy Journal* 49-76; Alvin L. Alm, 'A Need for New Approaches: Command and Control No Longer a Cure-All' (1992), 18 *Environmental Protection Agency Journal*; and Rob Gerits and Jules Hinssen, 'Environmental Covenant for Oil and Gas Producing Industry: A Valuable Policy Instrument' (1994), 24(6) *Environmental Law and Policy Journal* 323-329.

⁸⁷⁹ *Ibid* Gunningham and Grabosky.

⁸⁸⁰ *Ibid*.

perfect and cannot function independently. Nevertheless, it can be used to remedy the weaknesses of either the MBIs or the CAC approach.⁸⁸¹

Consequently, considering the arguments advanced in this chapter, MBIs can be more environmentally and cost-effective than CAC regulation. However, it is conceded that other important studies in the literature argue otherwise. The claim is that most criticisms of the CAC approach are overstated. However, the study aligns more with the position that both the MBIs and the CAC share the same weaknesses when applied in practice. This suggests that the challenge of designing MBIs can be just as great or even higher in some situations than the challenge facing regulators who were charged with enforcing prescriptive standards. Moreover, though neglected by policymakers, the liability rule also shares similar weaknesses when applied in practice. Therefore, given the partially conflicting nature of the assessment, it is not surprising that a uniformly better approach cannot be found.

The review also shows that most economists assume the superiority of MBIs over CAC. At the same time, the CAC approach is favoured by most scholars in the law and political science fields, policymakers, and regulators.⁸⁸² The critics of CAC regulation (primarily economists) have always argued that while CAC understands the goal of reducing pollution (i.e. environmental effectiveness), the question is whether it is the best way to design policy tools for accomplishing this goal. They suggest using a wide range of mechanisms, not just the traditional CAC approach, to meet policy goals, helping to ensure that the most efficient and effective approaches are used. Moreover, economists have strongly argued that if MBIs are appropriately designed and effectively implemented, this approach would encourage companies and other industry players to undertake pollution control efforts that are in their interests and collectively meet environmental policy objectives.⁸⁸³

⁸⁸¹ See general discussion under 4.3.3.

⁸⁸² Stephen Dovers, 'Information, Sustainability and Policy' (1995), 2(3) *Australian Journal of Environmental Management* 149-156.

⁸⁸³ Ibid Anderson and Leal (n 827), Organisation for Economic Cooperation and Development, 'Economic Instruments for Environmental Protection' (1989); 'Environmental Policy: How to Apply Economic Instruments' (1991); 'Economic

Furthermore, the review has also shown in practice that an environmentally and economically optimal policy may require a combination of approaches. For instance, the US Clean Air Act's optimality is achieved by the combined effort of CAC and MBIs regulatory approaches.⁸⁸⁴ Therefore, on closer examination, some of the most significant success stories in US emission regulations were achieved using a mixture of the CAC and MBIs systems. Even though Danny argues that regulators in the US shifted to MBIs as the most favoured regulatory instruments, they realised the limitations of CAC in controlling emissions and understood that the abatement costs are too high to be politically acceptable. However, in practical terms, most of the MBIs worked in tandem with the CAC, which makes it difficult, if not impossible, to assess the superiority of one over the other.⁸⁸⁵ Similarly, in the EU for instance, Harrington and Morgenstern pointed out that without proper control, it may be difficult to conclude that MBIs are the real reason for given successes recorded.⁸⁸⁶ That is why observers like Montero suggest that it is desirable to supplement the MBIs instrument with some use of prescriptive standards.⁸⁸⁷

Similarly, some critics of the CAC approach have always suggested using a mixture of instruments and not just the CAC alone to meet policy goals. The mixture helps to ensure that the most efficient and effective approaches are used. Therefore, this highlights the strength of other instruments, especially MBIs, in promoting

Instruments In Environmental Policy: Lessons from OECD Experience in Their Relevance to Developing Economies' (1994); 'Applying Market-Based Instruments to Environmental Policies in China and OECD Countries' (1998). All of these are available at: <<http://www.oecd.org/env/outreach/economic-instruments.htm>> See also United States Environmental Protection Agency, 'Economic Incentives, Options for Environmental Protection' (1991), Document P-2001, *U.S EPA, Washington D.C.*; 'The United States Experience with Economic Incentives to Control Environmental Pollution' (1992), EPA-230-R-92-001 *U.S EPA, Washington D.C.*; and 'The United States Experience with Economic Incentives for Protecting the Environment' (2001), *U.S EPA, Washington D.C.*

⁸⁸⁴ Generally, the most effective and efficient regulatory instruments involve hybrid approaches in which both CAC and MBIs work together. For instance, an emissions trading program or tax system typically functions against the background of an otherwise highly CAC regime (for example in the UK and US). Moreover, these policy instruments can evolve dynamically. It appears common, for example, for prescriptive approaches to develop features of market instruments over time.

⁸⁸⁵ For instance, the US Clean Air Act that was cited as a far-reaching Act in curtailing emissions in the US: it was later supplemented with MBIs and up until now worked in tandem with MBIs.

⁸⁸⁶ Ibid (n 883).

⁸⁸⁷ Juan-Pablo Montero (n 765).

and stimulating technological innovation. The critics argue that the CAC has always thought to freeze technological advancement as companies have limited incentives to innovate.⁸⁸⁸ However, this assertion could not be practically factual, as various pieces of empirical research that have been conducted have concluded the contrary. For instance, studies by Driesen, Salzman, and Ruhl find that both the CAC and MBIs have sometimes encouraged innovation and sometimes failed to do so. Therefore, there is no convincing empirical evidence that MBIs foster innovation better than a comparably designed CAC regulation.⁸⁸⁹ Driesen also provides a theoretical argument about why MBIs would be inappropriate for encouraging expensive innovation compared with the CAC approach.⁸⁹⁰ Another practical reality is that both the CAC and MBIs suffer from many of the same or similar weaknesses, including a pervasive lack of monitoring and enforcement, which can severely compromise their effectiveness and limit the ability to evaluate their performance.⁸⁹¹ Keohane's study also looks at MBIs in some projects in the US and finds that the permit systems resulted in higher-cost abatement than the CAC system. Meanwhile, in the performance and technology standards, the MBIs only modestly outperform the CAC system.⁸⁹²

Therefore, this difficulty in finding a precise ranking policy instrument has led some scholars to conclude that policymakers should always use a mixture of instruments.⁸⁹³ However, each case must be considered on its own merits. Thus,

⁸⁸⁸ See Jaffe et al (n 841); Ackerman and Stewart (n 63); Dudek and Palmisano (n 841); Stewart (n 841); Stavins (n 762) See also Robert W. Hahn and Robert N. Stavins, 'Incentive-Based Environmental Regulation: A New Era from an Old Idea' (1991), 18 *Ecology Law Quarterly* 1, 13.

⁸⁸⁹ David M. Driesen, 'Design, Trading, and Innovation' in Freeman and Kolstad (n 706), and James Salzman and J.B Ruhl in Freeman and Kolstad (n 706).

⁸⁹⁰ Ibid James Salzman et al, 'Regulatory Traffic Jams' (2002), 2(2) *Wyoming Law Review* 253-289.

⁸⁹¹ Ibid Freeman and Kolstad (n 723).

⁸⁹² Ibid Keohane (n 135).

⁸⁹³ See Michael Faure, 'Effectiveness of Environmental Law and Policy Review: What Does the Evidence Tell Us' (2012), 36 (2) *William & Mary Environmental Law and Policy Review*; Neil Gunningham and Darren Sinclair, 'Regulatory Pluralism: Designing Policy Mixes for Environmental Protection' (1999), 21(1) *Law and Policy Journal* 49-76; Winston Harrington & Richard D. Morgenstern, 'International Experience with Competing Approaches to Environmental Policy: Results from Six Paired Cases', in *Moving To Markets In Environmental Regulation: Lessons From 20 Years Of Experience* 95, 137 (Jody Freeman & Charles D. Kolstead eds., 2007) (arguing that, in practice, regulators often use a mixture

a better strategy is to harness the strength of a chosen separate instrument and compensate for its perceived weakness with the use of additional and complementary instruments. It is suggested that a mixture of regulatory approaches is required to achieve specific environmental objectives. In supporting this view, the OECD finds that the combination of policy instruments may be more valuable than using an instrument in isolation.⁸⁹⁴

Therefore, it is submitted that while a combination of instruments will be better than using a single instrument, an inappropriate combination or introduction of a new instrument into the mixture of existing instruments could have a variety of effects, not all of which are positive. This is because instruments are not selected based on effectiveness or efficiency criteria; rather, the practicability of their implementation is another primary consideration. In other words, it may be said that no matter how well the design of the instruments is, or whatever the combination in which they are used may be, they will not provide any meaningful result unless they are appropriately and effectively enforced. Unfortunately, as Freeman and Kolstad put it, both approaches suffer from a pervasive lack of monitoring and enforcement, which can severely compromise their effectiveness and efficiency, thereby limiting the ability to evaluate their performance. Consequently, the next heading reviews the effective compliance and enforcement of environmental law and policy regimes.

of command and control and economic incentive instruments); and Javier de Cendra, 'The Effectiveness of Instruments Mixes in Environmental Law: Insights from Ship-Source Pollution', in Paul Martin and Amanda Kennedy, *Implementing Environmental Law* (Edward Elgar, 2015) 217-237.

⁸⁹⁴ Organisation of Economic Co-operation and Development (OECD), 'Alternatives to Traditional Regulation' (1994). OECD Report prepared by Mr. Glen Hepburn, who worked for the OECD Regulatory Policy Division. Available at: <<https://www.oecd.org/gov/regulatory-policy/42245468.pdf>> accessed on 03/11/2019.

4.5 The Review of the Approaches for Effective Compliance and Enforcement of Environmental Law and Policy Regimes

It is becoming apparent that environmental compliance and enforcement is a critical problem facing environmental regulatory regimes in most developing countries. While the number of regulatory instruments at all levels continues to increase, the actual compliance and enforcement of the relevant law and policies remain insufficient, seriously weakening the effectiveness and efficiency of the regimes.⁸⁹⁵ For effective compliance and enforcement, policymakers always require strategies as to how regulators should intervene in the affairs of regulated organisations to ensure compliance and enforcement, an aspect that receives limited attention in most oil and gas-producing developing nations.⁸⁹⁶ The effective enforcement of environmental laws and regulations, and the implementation of the attendant policies, are crucial for proper environmental management. Fang et al. observe that legislation and policies are only as good as their enforcement.⁸⁹⁷

As earlier pointed out, the World Bank panel of experts believes that enforcement is a crucial element of gas flaring regulation. Regardless of their design, laws, and policies are unlikely to bring the expected results unless the regulatory breach is identified and effectively enforced by the regulator.⁸⁹⁸ This may not only ensure and encourage compliance with the gas flaring prohibition laws and regulations. It may also induce oil companies to adopt environmentally responsible measures that are not even required by the law, such as internal environmental management systems, voluntary environmental programmes, and information

⁸⁹⁵ That is why the US-EPA's latest strategic plan identifies enforcing laws and assuring compliance as one of its five strategic goals for addressing climate change, improving air quality and protecting human health and environment by enforcing laws and assuring compliance. See the US EPA 'EPA Strategic Plan' FY 2014-2018. Available at: <https://19january2017snapshot.epa.gov/planandbudget/strategicplan.html> accessed 24/11/2019.

⁸⁹⁶ Neil Gunningham, 'Enforcing Environmental Regulation' (2011), 23(2) *Journal of Environmental Law* 169-201.

⁸⁹⁷ Liping Fang, Keith W. Hipelm and D. Marc Kilgour, 'Enforcement of Environmental Laws and Regulations: A Literature Review' (1994), in Keith W. Hipel and Liping Fang, *Stochastic and Statistical Methods in Hydrology and Environmental Engineering*. Water Science and Technology Library, vol 10/2. Springer, Dordrecht, 3.

⁸⁹⁸ The World Bank, *Guidance on Upstream Flaring and Venting Policy and Regulation* (2009), Global Gas Flaring Reduction (a Public-Private Partnership), March 2009 Washington DC.

disclosure requirements.⁸⁹⁹ Consequently, this section reviews the enforcement theories and approaches for environmental regulations as well as their implications for compliance. It examines each strategy's strengths and weaknesses and considers how best to balance the sometimes-competing criteria of effectiveness, efficiency, and equity, in addition to fairness considerations. It finally makes a case for the appropriate approach policymakers should adopt when dealing with the environmental pollution in general and gas flaring in particular. Nevertheless, the review excludes alternative styles and strategies which other scholars misrecognize as enforcement approaches when they are the behaviours of different levels of actors in the enforcement process.⁹⁰⁰

4.5.1 Enforcement Approaches versus Compliance Behaviour – Theoretical Underpinnings

The theories of behaviour underlying environmental regulation reflect two prominent and different policymakers' approaches to achieving compliance: the rationalist and normative models of behaviour. The rationalist theory posits that regulated entities follow the logic of consequence because everyone acts to maximise their self-interest. Thus, if it is cheaper to violate an environmental regulation, regulated entities will do so. Therefore, rationalists argue that laws and policies must discourage this behaviour by raising the costs of non-compliance.⁹⁰¹ Accordingly, they advocate deterrence-based enforcement, entailing a legalistic approach to regulation.

⁸⁹⁹ Ibid Coglianese and Coursey (n 64)

⁹⁰⁰ Though arguably because these behaviours constitute an important aspect of regulatory enforcement strategy, a distinction is needed between what constitutes an approach and what constitutes a behaviour expressed by agencies to allow further progress in understanding the effects of enforcement style in compliance. What follows is the basic distinction between the choices made by regulatory agencies' enforcement strategies as relating to environmental regulations. See Peter J. May and Soren C. Winter, 'Chapter 10: Regulatory Enforcement Styles and Compliance', in Christine Parker and Vibeke Lehmann Nielsen, *Explaining Compliance: Business Responses to Regulation* (Edward Elgar 2011) 222,

⁹⁰¹ Gary S. Becker, 'Crime and Punishment: An Economic Approach' (1968), 76(2) *Journal of Political Economy* 169-217; George J. Stigler, 'The Optimum Enforcement of Laws' (1970), 78(3) *Journal of Political Economy* 526-536; and Steven Shavell, 'The Economic Theory of Public Enforcement of Law' (2000), 38(1) *Journal of Economic Literature*.

Conversely, normative theorists posit that regulated entities simply follow the logic of appropriateness and often act in good faith. Therefore, in this account, compliance occurs (or does not occur) largely because of the regulated entities' capacity (e.g. knowledge of the rules and financial and technological ability to comply) and commitment (e.g. the perception that the rule is fair).⁹⁰² Accordingly, the theory encourages policymakers to enhance compliance promotion with assistance, incentives, and other activities. In other words, it advocates cooperative enforcement involving a flexible approach.⁹⁰³ Both rationalist and normative models represent opposite ends of the spectrum, providing useful insights into the types of behaviour that lead to compliance.

Therefore, the literature on environmental regulatory enforcement and compliance strategies has identified and recognised the 'Deterrence-based approach' and 'Cooperative-based approach'. The literature shows that laws and regulations may either be enforced by compulsion/coercion (legalistic) or conciliation and compromise (cooperation). Therefore, actual environmental enforcement approaches tend to fall along the spectrum of these two extremes or in a combination of both approaches.⁹⁰⁴ That said, in theory, other available strategies

⁹⁰² Raymond J. Burby and Robert G. Paterson, 'Improving Compliance with State Environmental Regulations' (1993), 12(4) *Journal of Policy Analysis and Management* 753-772; Soren C. Winter and Peter J. May, 'Motivation for Compliance with Environmental Regulations' (2001), 20(4) *Journal of Policy Analysis and Management* 675-698; and Peter J. May and Soren Winter, 'Regulatory Enforcement and Compliance: Examining Danish Agro-Environmental Policy' (1999), 18(4) *Journal of Policy Analysis and Management* 625-651.

⁹⁰³ INECE, *Principles of Environmental Compliance and Enforcement Handbook* (International Network for Environmental Compliance and Enforcement, 2009) 8.

⁹⁰⁴ See Clifford Rechtschaffen and David L Markell, *Reinventing Environmental Enforcement and the State/Federal Relationship* (Environmental Law Institute, Washington DC 2003) Chapter two at 59, Gunningham (n 896); Peter J. May and Soren C. Winter, 'Chapter 10: Regulatory Enforcement Styles and Compliance', in Christine Parker and Vibeke Lehmann Nielsen, *Explaining Compliance: Business Responses to Regulation* (Edward Elgar 2011) 11; M. Cave, R. Baldwin and M. Lodge (eds), *The Oxford Handbook of Regulation* (OUP 2010); J Black 'Talking About Regulation' [1998] PL 77; P May and S Winter 'Reconsidering Styles of Regulatory Enforcement: Patterns in Danish Agro-Environmental Inspection' (2000), 22 *Law & Policy* 143; M Pautz, 'Trust Between Regulators and the Regulated: A Case Study of Environmental Inspectors and Facility Personnel in Virginia' (2009), 37 *Policy & Pol* 1047; J Black and R Baldwin, 'Really Responsive Risk-Based Regulation' (2010), 32 *Law & Policy* 181; J Black, 'Managing Regulatory Risks and Defining the Parameters of Blame: The Case of the Australian Prudential Regulation Authority' (2006), 28 *Law & Policy* 1; J Black, 'The Emergence of

could be considered alternative approaches. Nevertheless, Gunningham, Coglianese, Coursy, and Heyes argue that they are merely complementary strategies that are unlikely to be found in the real world in their precise form but are helpful when used as strategies for environmental regulatory enforcement.⁹⁰⁵

4.5.1.1 The Legalistic Approach

The literature sometimes refers to the legalistic approach as 'Rules and Deterrence' or 'Deterrence-based Sanctioning'⁹⁰⁶. This is because environmental regulation enforcement encompasses an element of sanctioning whereby a panel style of enforcement deals with some forms of regulatory non-compliance. The approach emphasises a coercive, formal, and adversarial style of enforcement and the sanctioning of rule-breaking behaviour⁹⁰⁷. It assumes that those subjected to regulations are rational actors capable of responding to sanctions and that if offenders are detected with sufficient frequency and punished with sufficient severity, then they, and others, will be deterred from future violations⁹⁰⁸. Thus, the focus of this approach has been on compliance monitoring to identify violations and collecting evidence to support enforcement actions coupled with targeted enforcement activity.

Rechtschaffen and Markell have argued that many people will not comply with the law unless there are clear consequences for non-compliance. Therefore, once violations are detected, and some form of enforcement action is taken, compliance

Risk-Based Regulation and the New Public Risk Management in the United Kingdom' [2005] PL 512, for a review of different enforcement strategies and styles. However, the review excluded other styles and strategies which are mistaken by other scholars to include enforcement approaches when in fact they are just the behaviours of different levels of actors in the enforcement process.

⁹⁰⁵ Ibid, Gunningham (n 896) and Coglianese and Coursy (n 64), Anthony Heyes, 'Implementing Environmental Regulation: Enforcement and Compliance'. Available online: <<http://www.oecd.org/environment/outreach/33947786.pdf>>

⁹⁰⁶ In other literatures, references to punitive-based, panel-based or enforced strategy are all meant to indicate a legalistic enforcement approach.

⁹⁰⁷ Robert A. Kagan, 'Regulatory Enforcement', in David Rosenbloom and Richard Schwartz (eds), *Handbook of Regulation and Administrative Law* (New York: Marcel Dekker 1994), 383-422.

⁹⁰⁸ Ibid, Gunningham (n 896).

will be achieved through deterrence mechanisms.⁹⁰⁹ Thus, the essential task of the policymakers and enforcement agencies is to make penalties high enough and the probability of detection higher that would make it economically irrational for regulated entities to violate the law. For this approach to be effective and efficient, scholars and observers have identified necessary essential elements to achieve deterrence, and these are: there must be a likelihood that a violation will be detected; sanctions must be swift, certain, and appropriate, and the regulated entities must perceive the presence of the first three elements.⁹¹⁰

Consequently, an investigation of the agencies charged with enforcing environmental regulations has identified the US EPA as arguably the typical example of an agency applying this approach with varying degrees of success. The EPA was quoted to have said that regulated entities targeted by this enforcement approach meet their environmental obligations effectively, deter those who might otherwise profit from violating the law, and level the playing field with environmentally compliant companies.⁹¹¹ Therefore, the EPA argued that imposing penalties and other enforcement actions is essential in an effective enforcement programme.⁹¹² The EPA also found that the approach is crucial for establishing credible environmental requirements, promoting compliance, providing equitable treatment of regulated communities, and providing public trust in government.⁹¹³

However, chapter three of this study has indicated the contrary is true of Nigeria's situation. Nigeria has been using this enforcement approach to environmental

⁹⁰⁹ Clifford Rechtschaffen and David L Markell, 'Reinventing Environmental Enforcement and the State/ Federal Relationship', in Durwood Zaelke, et al. (eds), *Making Law Work: Environmental Compliance and Sustainable Development* (Vol 1, Cameron May 2005), 158.

⁹¹⁰ Ibid Rechtschaffen and Markell (n 909) 60-9, Robert V. Percival et al., *Environmental Regulation* (3rd edn, 2000) 103-104; James Salzman et al, 'Regulatory Traffic Jams' (2002), 2(2) *Wyoming Law Review* 253-289; and Jon D. Silberman, 'Does Environmental Deterrence Work? Evidence and Experience Say Yes, But We Need to Understand How and Why', (2000) 30 (7) *Environmental Law Reporter* 10523.

⁹¹¹ Robert A. Kagan, *Adversarial Legalism: The American Way of Law* (Harvard University Press, 2003), and US EPA on Enforcement Data and Analysis <https://www.epa.gov/enforcement/enforcement-data-and-results> accessed 24/11/2019.

⁹¹² Robert V Percival et al., *Environmental Regulation* (3rd edn, 2000) 101-102.

⁹¹³ Steven A. Herman, Assistant Administrator US EPA, 'Oversight of State and Local Penalty Assessment: Revisions to the Policy Framework for State/EPA Enforcement Agreements' (1993), *Memorandum submitted to the US EPA Washington DC* 20460. Available at: <https://www.epa.gov/compliance/oversight-state-and-local-penalty-assessments-revisions-policy-frame-work-stateepa> accessed on 24/11/2019.

regulations for decades but with varying difficulties. Chapter three of this thesis (*heading 3.7*) has shown that enforcement issues are currently the main challenge for Nigeria's anti-gas flaring law and policy regimes. The DPR, as the primary regulator of Nigeria's petroleum industry, has failed to effectively enforce the laws and policies for ending gas flaring in the country. Fiorino has criticised the legalistic enforcement approach for environmental regulation as being too adversarial, costly, and time-consuming, being therefore inappropriate for environmental regulation.⁹¹⁴ Nevertheless, Gunningham suggests that its weaknesses could be supplemented when combined with other cooperative-assistance strategies. Gunningham argues that even the US-EPA has had to go beyond an exclusive reliance on a legalistic approach and explore more cooperative models such as compliance assistance, outreach, and other alternatives to resolve pending enforcement issues.⁹¹⁵

Consequently, legalistic enforcement could be evaluated primarily by measuring agency activities or output in practice. These measures include the number of inspections conducted; the timeliness of the response policies; the number of civil and criminal cases referred to in the filing; the number of administrative penalty orders; and the administrative compliance orders or permits issued.⁹¹⁶ Rechtschaffen and Markell describe these indices as directly related to the goal of the approach.⁹¹⁷ For instance, inspections provide a credible threat of detection; timely responses ensure swift and certain punishment, and formal actions and penalties provide appropriate sanctions for violations.⁹¹⁸ Consequently, these indices are considered a guide to this study's empirical part. They are considered within the study's framework to assess the appropriateness and effectiveness of the DPR as the primary regulator in Nigeria's petroleum industry.

⁹¹⁴ See Dan Fiorino, *The New Environmental Regulation* (MIT Press, 2006), Chapter 1, and Kagan *ibid* (866).

⁹¹⁵ Gunningham (n 896).

⁹¹⁶ Rechtschaffen and Markell (n 909) and Cheryl Wasserman, 'An Overview of Compliance and Enforcement in the United States' (1990), 1 *International Enforcement Workshop*.

⁹¹⁷ *Ibid*.

⁹¹⁸ *Ibid* Rechtschaffen and Markell (n 909).

4.5.1.2 The Cooperative Approach

The cooperation-based approach is also variously termed the 'Compliance-based', 'Negotiated', 'Flexible', 'Compliance Assistance', 'Conciliatory', or 'Advice and Persuasion' approach.⁹¹⁹ As opposed to the legalistic approach, the underlying assumption is that most businesses have a generalised commitment to abiding by the law, especially when they are assisted or persuaded to do so. The assumption suggests that persuasion works better than punishment when dealing with environmental issues and that deterrence is counterproductive.⁹²⁰ Thus, if regulators treat violators like partners, they will respond positively to suggestions and advice about how to achieve compliance. However, if the corresponding response to non-compliance is sanction-oriented, regulated entities will become resentful and less cooperative with the regulators.⁹²¹

The proponents of the cooperative approach have argued that it is the best approach for environmental enforcement. Harris postulates that the legalistic approach requires regulators to disburse considerable resources for monitoring and detecting violations, inspecting facilities, and taking enforcement measures. The cooperation-based approach places greater reliance on compliance-assisted and self-policing, allowing the government to concentrate its scarce resources on the most serious violations and other related purposes.⁹²² This is why the proponents of this approach argue that it is more effective and less costly. Its flexible nature would also allow businesses to use more efficient methods to

⁹¹⁹ This approach stresses cooperation rather than confrontation, conciliation rather than coercion, and manifest reluctance to use enforcement and prosecution except as a last resort. The aim is to prevent harm, achieved by bargaining, persuasion and negotiation rather than through sanctioning. Recourse to the legal process here is rare, the assumption being that the majority of regulatees are willing to comply voluntarily. The approach seeks to prevent harm rather than punish violators. Proponents of this approach argue that it is far more effective than the legalistic approach because its conception of enforcement centres upon achieving the broad aims of legislation, rather than sanctioning its breach. Recourse to the legal process here is rare, a matter of last resort, since compliance strategy is concerned with repair and results, not retribution. See Rechtschaffen and Markell (n 892), chapter 2 pp 59-84.

⁹²⁰ Michael R. Harris, 'Promoting Corporate Self-Compliance: An Examination of the Debate Over Legal Protection for Environmental Audits' (1996), 23 *Ecology L.Q.* 663-771.

⁹²¹ Ibid.

⁹²² Ibid.

achieve compliance.⁹²³ Kagan and Scholz maintain that the most effective responses to a violation are education and technical assistance, but not penalties. Thus, regulators should act as consultants explaining requirements to the regulated entities.⁹²⁴

Moreover, it has been suggested that a cooperative approach encourages businesses to adopt sophisticated internal regulatory mechanisms for complying with environmental requirements. Ayres and Braithwaite have opined that internal regulatory programmes adopted by regulated agencies are in many cases more effective and far-reaching than government enforcement efforts. Their studies found that these programmes cover a wider range of issues than government regulations, and any institution found in violation of the requirements is more likely to be disciplined than they are by government-owned regulators.⁹²⁵ Examples of these internal programmes usually used in environmental regulations by businesses include environmental management systems, environmental auditing, and codes of management conduct.⁹²⁶

Another powerful argument that the cooperative approach is preferable to the legalistic approach is that most environmental pollution results from a productive activity that cannot be suspended. For instance, gas flaring is an unwanted oil and gas exploration product that contributes to the economy and therefore is necessary. Thus, it can be argued that the line between what is permitted by environmental regulation and what is not permitted is thin, being often only a matter of degree. Consequently, environmental pollution, particularly gas flaring, should be seen as an illegal activity only because it is proscribed by law, not because it is morally reprehensible. Therefore, the regulated entities should be encouraged to comply with the regulations rather than sanctioning the violators.⁹²⁷ The cooperative enforcement approach comprises many strategies for achieving

⁹²³ John T. Scholz, 'Voluntary Compliance and Regulatory Enforcement' (1984), 6 *Law and Policy Journal* 385-392.

⁹²⁴ Robert A. Kagan and John T. Scholz, 'The Criminology of Corporations and Regulatory Enforcement Strategies', in Keith O. Hawkins and John M. Thomas, *Enforcing Regulation (Law in Social Context)* (Springer New York, 2014) 67.

⁹²⁵ Ian Ayres and John Braithwaite, *Responsive Regulation: Transcending the De-regulation Debate* (Oxford University Press, New York 1992), Chapter 4 at 101.

⁹²⁶ *Ibid* Rechtschaffen and Markell (n 819) 69.

⁹²⁷ *United States vs Bajakajian* (1998) 524 U.S 321.

the desired objectives, and prominent among these strategies are compliance incentives and compliance assistance.⁹²⁸

I. Compliance Incentives

Compliance incentives are policies and programmes that provide tangible benefits to regulated entities which meet specific compliance objectives. Therefore, policymakers may provide incentives for regulated entities in exchange for activities designed to improve compliance. For instance, programmes meant to reduce or waive penalties for facilities that voluntarily discover; promptly disclose; correct non-compliance; and prevent future environmental violations, information campaigns and market-based mechanisms can also be considered incentives for compliance.⁹²⁹ The strategies could be structured in any form. For instance, the US-EPA has been encouraging regulated entities to engage in self-policing activities like voluntarily conducting environmental audits and correcting the violations that such audits uncover. Additionally, the environmental management system and information disclosure requirements which force regulated entities to report emissions (to the government or the public directly) are other types of compliance incentives used by the US-EPA. These strategies have been adjudged to be successful in the US.⁹³⁰

II. Compliance Assistance

Compliance assistance refers to the efforts of regulatory agencies to help those subjected to regulation to meet the requirements of environmental regulations. This can be achieved through outreach, education, information, financial assistance, and promotional activities. Thus, compliance assistance activities are designed to improve compliance by explaining how it is possible to comply with legal and regulatory requirements. The regulator can provide this assistance either formally or informally through the regular inspection process. The UK has been at the forefront of using a compliance assistance enforcement model, whereby regulators rely on a system of informal negotiations and persuasion to achieve

⁹²⁸ Ibid Rechtschaffen and Markell (n 892) 70.

⁹²⁹ Ibid INECE (n 886), 71.

⁹³⁰ Ibid 71.

compliance. In exchange, the regulated entities voluntarily and cooperatively report violations and assurance of compliance with the law.⁹³¹

4.5.1.3 Alternative Approaches

Scholars have suggested other strategies in response to the criticisms and challenges of the two legalistic and cooperative approaches. While this study termed these strategies as 'alternative enforcement approaches', other scholars termed them 'Next Generation Compliance'⁹³² or 'Hybrid Strategies'.⁹³³ The proponents of these enforcement strategies have emphasised that it only complements the two traditional enforcement approaches rather than displacing them.⁹³⁴ Therefore, sanctioning, monitoring, compliance assistance, and initiation of enforcement cases against significant environmental regulation violators should be essential parts of any enforcement strategy.

Some of the strategies identified include advanced monitoring technologies, self-certification programmes, company compliance management systems, environmental petitions, insurance mechanisms, and regulatory approaches that leverage a company's internal economic interests to drive behaviour.⁹³⁵ Nevertheless, as earlier pointed out, they are merely complementary strategies that are unlikely to be found in the real world in their precise form but are helpful when used as strategies for environmental regulatory enforcement.⁹³⁶ Therefore, these strategies are concerned with extending the regulator's reach rather than solely with the choice of enforcement mechanisms like the cooperative or legalistic approaches.

⁹³¹ Keith Hawkins, *Environment and Enforcement: Regulation and the Social Definition of Pollution* (Caledonian Press, 1984) 124-125.

⁹³² Lee Paddock and Jessica Wentz, *Next Generation Environmental Compliance and Enforcement* (1st edn, Environmental Law Institute 2014), and David L. Markell and Robert L. Glicksman, 'Next Generation Compliance' (2015) 30 *Natural Resources and Environment* 22.

⁹³³ *Ibid* Gunningham (n 855).

⁹³⁴ Cynthia Giles, EPA Assistant Administrator for Office of Enforcement and Compliance Assurance, 'Next Generation Compliance' (2013), *Environmental Forum* 22; and Lee Paddock and Jessica Wentz, *Next Generation Environmental Compliance and Enforcement* (1st edn, Environmental Law Institute 2014).

⁹³⁵ *Ibid*.

⁹³⁶ *Ibid* Gunningham, Coglianese and Coursy (n 64), and Heyes (n 905).

4.5.2 Evaluation and Consideration

The preceding section discusses the two traditional approaches and briefly identifies the third approach, which this study has termed an alternative enforcement approach. Consequently, this section assesses the strength and weaknesses of each enforcement approach in line with the effectiveness and efficiency criteria earlier discussed. This became necessary to consider the effective and efficient approach to the enforcement of anti-gas flaring laws and policy regimes. Nevertheless, the evaluation is restricted to the two competing traditional approaches to consider the ranking enforcement approach. As pointed out earlier, the alternative approaches are merely complementary strategies, and therefore their superiority over other approaches could not be assessed. Gunningham, May, and Winter suggest that they are not enforcement approaches per se: instead, they are merely complementary models and so they have been excluded from the evaluation.⁹³⁷

For a long time, scholars and policymakers have assessed the superiority and the comparative strengths and weaknesses of the legalistic and cooperative approaches.⁹³⁸ Nevertheless, the assessment shows that there are generally no clear-cut differences between the competing approaches, as the differences are only reflected in their enforcement style.⁹³⁹ For instance, the enforcement style of the legalistic approach is *reflective*. Thus, its primary concern is whether a law has been violated, and, if it has, whether an offender can be detected. If so, then the breach *deserves punishment*. In contrast, the style of the cooperative approach is conciliatory and relies upon bargaining to achieve compliance.⁹⁴⁰ Therefore, enforcement here is *prospective*: a matter of responding to a problem and negotiating future conformity to standards that are often administratively determined.

⁹³⁷ Ibid Gunningham (n 796), and May and Winter (n 903).

⁹³⁸ As earlier pointed out, the legalistic approach that emphasises the deterrence of non-compliance through inflexible imposed sanctions and the cooperative approach, which emphasizes the inducement of compliance through flexibility and assistance.

⁹³⁹ Ibid (n 937).

⁹⁴⁰ Ibid.

However, the difference between the two ranking enforcement approaches goes beyond enforcement style, as one's superiority over the other has been keenly assessed. Scholars and policymakers are interested in knowing which enforcement approaches within the realms of environmental protection are effective and efficient. Therefore, this study analyses the effects of these approaches on compliance with gas flaring and climate change to consider the superiority of one over the other. It specifically evaluates the literature regarding the enforcement of environmental regulations, although there is limited empirical evidence in practice. The theoretical literature about the effectiveness of the approaches for environmental regulatory enforcement surpasses the empirical evidence.

The literature investigation reveals almost a consensus that the legalistic approach is problematic due to its adversarial nature. Even the US-EPA, a typical example of an agency applying this approach, had to go beyond an exclusive reliance on it. As a matter of necessity, it has had to employ more alternative approaches such as outreach, compliance assistance, and other strategies.⁹⁴¹ Therefore, more reasoned approaches involving flexible styles and cooperative approaches are more promising. Nevertheless, there is counterevidence that questions the effectiveness of cooperative approaches too.⁹⁴² Although a cooperative approach is considered an effective enforcement approach, it may be devastating to those not disposed to voluntary compliance.

Studies by Shapiro & Rabinowitz and May & Winter found that the cooperative enforcement approach may discourage improved regulatory performance amongst diverse actors, especially where the violators were allowed to go unpunished. The studies argued that while the approach may be appropriate for good players and some environmental leaders, it will not be effective at engaging reluctant compliers or recalcitrant players. The studies suggested that the approach could

⁹⁴¹ Ibid Gunningham (n 796).

⁹⁴² Neil Gunningham, 'Enforcing environmental regulation' (2011), 23(3) *Journal of Environmental Law*, and Robert A. Kagan, *Adversarial Legalism: The American Way of Law* (Harvard University Press, 2003) 3.

only be effective when supplemented with other complementing strategies, some of which have been discussed above.⁹⁴³

Similarly, a study by Gunningham concerning the effective strategy a regulatory agency should adopt found that neither total commitment to persuasion nor prosecution is likely to provide a significant result.⁹⁴⁴ While persuasion may deter those unwilling to comply voluntarily, the prosecution may lead to an organised culture of resistance which would enable the sharing of knowledge about legal resistance and counter-attack methods. Arguably, the key to maximum compliance is an optimal combination of punishment and persuasion. As Shapiro and Rabinowitz suggest, a combination of cooperation and punishment is likely to be an optimal enforcement policy since the literature provides no clear guidance concerning which policy is optimal.⁹⁴⁵

Therefore, it is submitted that cooperation may be paired with the legalistic approach, structured in a pyramid-like fashion, with initial or minor violations treated leniently. While repeated or significant violations may be punished with increasingly severe sanctions. As Shover et al., Ayres, and Braithwaite suggest, a more cooperative approach is warranted when dealing with major firms which can comply with the laws and could face other social pressures to comply. In contrast, a more legalistic approach may be taken with smaller firms with lower visibility and face little risk of public condemnation for non-compliance.⁹⁴⁶ Accordingly, regulators should consider cooperative techniques backed up with the occasional use of more legalistic measures to provide significant deterrence incentives. It is submitted that unless violators are equally subject to adequate penalties and encouragement where possible, regulated entities will not voluntarily comply because they will be at a competitive disadvantage with noncompliers.

⁹⁴³ Sidney A. Shapiro and Randy S. Rabinowitz, 'Punishment versus Cooperation in Regulatory Enforcement: A Case Study of OSHA' (1997), 14 *Administrative Law Review* 713; and May and Winter (n 903).

⁹⁴⁴ Neil Gunningham, 'Negotiated Non-Compliance: A Case Study of Regulatory Failure' (1987), 9(1) *Journal of Law and Policy* 69. See also Kagan and Scholz (n 924).

⁹⁴⁵ Ibid.

⁹⁴⁶ Neal Shover et al., 'Regional Variation in Regulatory Law Enforcement: The Surface Mining Control and Reclamation Act of 1977' (1984), in Keith Hawkins and John M. Thomas (eds.) *Enforcing Regulation* (Boston: Kluwer, Nijhoff 1984); and Ayres and Braithwaite (n 913).

4.6 Summary of the Findings

Bearing in mind objective three of the study and one of the questions the study set out to answer,⁹⁴⁷ this chapter has investigated an appropriate approach for designing and enforcing a given environmental law and policy regime. The chapter has identified a set of normative lessons which could help policymakers design an appropriate environmental regulatory regime. As seen in the chapter review, neither a single approach for the design of the environmental regulatory regime nor an enforcement approach is said to be best for all circumstances. For example, let us say the design is appropriate: the practical success of such a regime will depend mainly on the context in which it is implemented. Therefore, environmental law and policy regimes may be appropriately designed, but effective enforcement may hinder the success of such laws or policies. As a result, each regime has distinct characteristics and needs to develop mixed regulations and policies to enable flaring reductions and utilisation projects.

Consequently, following the investigation, it could be suggested that the literature does not confirm the superiority of either CAC, MBIs, or liability rule as the most effective and efficient instrument. The study finds that such instruments have sometimes succeeded and sometimes failed to produce the desired result. Some literature points to the relative effectiveness of MBIs in providing incentives for emission reductions. Nevertheless, the investigation equally showed that MBIs are not always effective. For instance, pollution charges were effective only in those systems where effective monitoring and enforcement were applied effectively. Thus, in this regard, both the CAC and MBIs approaches are not that much different as both require effective monitoring and enforcement systems.

Therefore, rather than assuming that merely designing and passing environmental law and policy regimes will ensure their robust implementation, theoretical and empirical studies demonstrate that practical enforcement is the key to the success of each regime. Therefore, the central finding of this chapter is that policy

⁹⁴⁷ Objective three of the study seeks 'to critically assess whether strengthening the current regulatory approach or a new approach would sustain environment-friendly behaviour and make all stakeholders bound by their responsibilities.' It also seeks to answer one of the study's questions, 'How can Nigeria eliminate associated gas flaring through an appropriately and effectively enforced approach?'

instruments are not selected based on their formal properties alone (i.e. effectiveness or efficiency considerations). Instead, the practicability of their implementation is a factor that policymakers should consider when designing policy instruments. This is because no matter how appropriate the design of the regulatory instruments, they would not provide any meaningful result unless they are effectively enforced.

Likewise, an investigation concerning the appropriate enforcement approach a regulatory agency should adopt finds that neither total commitment to a cooperation-based nor legalistic approach is likely to provide the desired goal. Instead, the key to maximum compliance is an optimal combination of legalistic and cooperation-based approaches. Therefore, a combination of cooperation and punishment is likely to be an optimal enforcement policy because the literature provides no clear guidance concerning which approach is optimal and effective. In practice, cooperation is paired with legalistic, structured in a pyramid-like fashion, with initial or minor violations treated leniently and repeated or significant violations punished with increasingly severe sanctions. Therefore, regulators should consider cooperative techniques backed up with more occasional legalistic measures to provide more significant deterrence incentives.

4.7 Conclusion

The review of the literature investigated does not necessarily confirm the superiority of either CAC, MBIs, or liability rule as the most effective and efficient instrument. Instead, it shows that the effectiveness and efficiency of any chosen instrument or combination of instruments largely depend upon how well it is enforced. Thus, it was revealed that the CAC approach is strongly dependent upon public enforcement. Similarly, the review of the enforcement approach regulatory agencies adopt finds that neither total commitment to a cooperation-based (persuasion) nor a legalistic (punishment) approach is likely to produce an effective result. It has also been found that the key to maximum compliance is an optimal combination of persuasion and punishment.

Therefore, it is submitted that policymakers should consider a mixture of approaches when designing an environmental law regime. Regulators should also consider choosing an enforcement approach based on the individual characteristics of the regulating entity and a combination of both punishment and persuasion. In other words, regulators should consider cooperative techniques backed up with more occasional use of legalistic measures to provide more significant deterrence incentives. It is further submitted that unless violators are subject to adequate penalties and encouragement where possible, regulated entities will not voluntarily comply because they will be at a competitive disadvantage with noncompliers.

Chapter Five: Methodology and Methods of the Study

5.1 Introduction

While previous chapters 2 and 3 reviewed the pertinent literature upon which this study is based, chapter four theoretically reviewed the appropriate approaches for effective environmental regulatory design and enforcement. It also presented the investigation findings and adopted them as an appropriate and effective approach for designing and enforcing a regulatory regime. Consequently, this chapter aims to review some of the methodologies and methods that this study adopts in conducting the review, including the empirical part of the study. The chapter discusses the research paradigm, questions for the empirical part of the study, the methods employed, the justification for the chosen methodology and methods, and the data analysis techniques used. In particular, Section 5.2 gives a background on methodology and methods in legal research. The section presents a broad view of the research regarding philosophical assumptions, research questions and methods, and data analysis methods in an attempt to situate the thesis within the context of the methodological discussion. Sections 5.3 and 5.4 discuss the population of the study, sampling and data collection techniques, design and handling, the validity and reliability of the data, and the data administration and analysis techniques used. Section 5.5 concludes the chapter.

5.2 Methodology and Methods in Legal Research

Generally, legal research may mean systematically investigating problems and matters concerned with laws. At the same time, methodology is a scientific discipline related to defining and systematising methods, i.e. appropriate ways of discerning the subject of investigation.⁹⁴⁸ Thus, legal research methodology is a scientific discipline dealing with methods of discerning law and legal phenomena.⁹⁴⁹ Consequently, as Webley has posited, methodology and methods in legal research are the overall frameworks of philosophical assumptions and practical methods within which one chooses to conduct legal research.⁹⁵⁰ In other words, they are the lens used by a researcher to understand and research the research problem, question, or hypothesis to be tested. They include philosophical underpinnings and methods of data collection.⁹⁵¹ Other factors, such as the amount of time and resources one can commit to research, are also likely to feature.⁹⁵² Therefore, the study's rationale, methodology, and methods are discussed under the following subheadings.

5.2.1 Research Philosophy

Philosophy is an essential part of research methodology; Birks defines it as a view of the world encompassing the questions and mechanisms for finding answers that inform that view'.⁹⁵³ In other words, it is a belief about how phenomena are viewed and data are gathered, analysed, and used. Research philosophy can be classified as ontology, epistemology, and axiology. These philosophical approaches enable the researcher to decide which approach should be adopted and why, as derived

⁹⁴⁸ Dawn Watkins and Mandy Burton, *Research Methods in Law* (1st edn Routledge 2013) 3. The methodology could also be referred to as a group of selected methods or bodies of methods used in a particular field of study or research.

⁹⁴⁹ Paul Chynoweth, 'Legal Research', in Andrew Knight and Les Ruddock, *Advanced Research Methods in the Built Environment* (1st edn Blackwell Publishing, 2008) 30.

⁹⁵⁰ Lisa Webley, 'Qualitative Approaches to Empirical Legal Research', in Peter Cane and Herbert M. Kritzer, *The Oxford Handbook on Empirical Legal Research* (Oxford University Press 2010) 926.

⁹⁵¹ Ibid.

⁹⁵² Ibid Chynoweth (n 949).

⁹⁵³ Melanie Birks, 'Practical Philosophy' (2014), in Jane Mills and Melanie Birks, *Qualitative Methodology: a practical guide*. (SAGE Publications 2014) 17-30.

from research questions.⁹⁵⁴ However, the most dominant philosophical underpinnings are epistemology and ontology. Some researchers have argued that the differences between the two are at the divide between the qualitative and quantitative research approaches (see discussion on approaches below).⁹⁵⁵ For epistemology, a researcher understands the nature of knowledge, and in ontology, the researcher understands the nature of being or reality.⁹⁵⁶

Furthermore, the two dominant philosophies are also explained as an objective/subjective divide. This objective/subjective divide is popularly known as a distinction between Positivism and Interpretivism. Positivism deals with discovering the observed laws that govern behaviour and is usually characterised by quantified analysis, looking for consistencies in data to form objective and universal rules.⁹⁵⁷ On the other hand, interpretivism deals more with the actions of an individual. Therefore, it seeks to uncover the culturally derived and historically situated interpretations of the social lifeworld.⁹⁵⁸ In practice, most research has tended to fall within these two broad traditional divides of positivism and interpretivism (also known as constructivism).

The difference between the two traditional divides is that positivists consider people as the product of their environment, and a positivist researcher attempts to be an objective researcher. Here, the researcher examines the environment and the people's reactions to it to understand the environment better. Interpretivism also considers people to be the products of their environment. However, at the same time, they consider people as those who construct the environment through their own understanding of it.⁹⁵⁹ Interpretivist researchers tend to focus on an individual inner world and understanding of the world. They

⁹⁵⁴ Mark Saunders, Philip Lewis and Adrian Thornhill, *Research Methods for Business Students* (5th edn Pearson 2009) 16-17.

⁹⁵⁵ Webley (n 950) at 929.

⁹⁵⁶ Ibid .

⁹⁵⁷ Gibson Burrell and Gareth Morgan, *Sociological Paradigms and Organisational Analysis* (Heinemann 1979) 23.

⁹⁵⁸ Ibid.

⁹⁵⁹ Michael Quinn Patton, *Qualitative Research and Evaluation Methods* (3rd edn, London: Sage 2002), chapter 3.

believe that we all construct our world. While interpretivism may be subjective, positivism believes in objectivity.⁹⁶⁰

Similarly, scholars have also argued that positivism is linked to quantitative research and interpretivism to a qualitative research methodology. However, King et al. argue that there is no established link between interpretivism and qualitative research. Nevertheless, researchers from the interpretivist school tended to incline toward the qualitative research approach in practice.⁹⁶¹ Therefore, this study adopts interpretivism and qualitative methodology as its guiding philosophical research approach. This is necessary to understand why gas flaring is still an issue in Nigeria despite being prohibited for four decades. The rationale behind the chosen interpretivism and qualitative approach is further explained in detail below.

5.2.2 Research Approach

As discussed above, interpretivism is generally inclined towards a qualitative research approach. However, some interpretivist researchers conduct research from the positivists' point of view, i.e. by using a quantitative methodology as a guiding philosophy. Consequently, this has left interpretivism with three overriding research approaches: quantitative, qualitative, and mixed. The quantitative research approach is based on the measurement of quantity or amount. It has been defined as a systematic scientific investigation of the quantitative properties of a phenomenon and its interrelation.⁹⁶² Bryman has further described the approach as one that often deals with numbers more than words to give meaning.⁹⁶³ In a quantitative study, a researcher usually centres his/her view as the focus of the study instead of the qualitative researcher, whose perspective of

⁹⁶⁰ Tim May, *Social Research: Issues, Methods and Process* (3rd edn, Buckingham Open University Press, 2001) Chapter 1.

⁹⁶¹ G King, R.O Koehane and S Verba, *Designing Social Inquiry Scientific Inference in Qualitative Research* (Pinceton University Press: 1994). King et al. also argued that there are qualitative researchers who indeed undertake research from the positivist viewpoint, but this does not necessarily make them positivists.

⁹⁶² Helen Kara, *Research and Evaluation for Busy Students and Practitioners: A Time Saving Guide* (Policy Press, 2017) 19.

⁹⁶³ Alan Bryman, *Social Research Methods* (5th edn Oxford University Press, 2016) 401.

the investigation is seen through the eyes of those being studied.⁹⁶⁴ Generally, quantitative researchers approach their research from the positivists' point of view.⁹⁶⁵

On the other hand, the qualitative approach is concerned with qualitative phenomena relating to quality or kind.⁹⁶⁶ McConville and Chui simplistically define it as a research approach that merely involves non-numerical data instead of quantitative, which is statistical research.⁹⁶⁷ Similarly, Kothari gives an excellent example of the qualitative approach: when a researcher is concerned with investigating the reasons for, or motives behind, specific human behaviour (i.e. why people think or do certain things), his research becomes qualitative research. Thus, unlike quantitative research, qualitative research relies on the reasoning behind various aspects of behaviour.⁹⁶⁸ Qualitative researchers usually undertake their research from an interpretivist standpoint. They conduct their research in natural contexts (often in the field) rather than in an environment constructed by the researcher.⁹⁶⁹

Lastly, the mixed method approach combines the features of both quantitative and qualitative research approaches. Bryman acknowledges the growing influence of this approach on a variety of disciplinary research.⁹⁷⁰ For instance, King et al. argue that there are qualitative researchers who collect quantitative data and thus appear to be more closely associated with the positivists' conception of qualitative research than interpretivism.⁹⁷¹ As a result, this would indeed put them between the two dominant approaches. However, many researchers criticise the approach due to its difficulty in collecting and validating data either through scientific experiments and measurement (a quantitative approach) or through people's

⁹⁶⁴ Ibid.

⁹⁶⁵ Ibid King et al. (n 961).

⁹⁶⁶ Rajendra Kumar, *Research Methodology* (APH Publishing Corporation, 2008) 8.

⁹⁶⁷ Mike McConville and Wing Hong Chui, *Research Methods for Law* (Edinburgh University Press, 2007) 20.

⁹⁶⁸ C.R Kothari, *Research Methodology: Methods and Techniques* (2nd edn New Age International Publishers, 2004) 10.

⁹⁶⁹ Webely (n 950) at 927.

⁹⁷⁰ Bryman (n 963) 636.

⁹⁷¹ Ibid King et al. (n 961).

observations and experiences (a qualitative approach).⁹⁷² Johnson and Gray advise that a researcher might avoid the difficulty associated with the mixed method approach when restricting the choice between the two major dominant approaches (i.e. between the qualitative and quantitative approaches).⁹⁷³

Therefore, in the sequel to the preceding discussion, the study adopts and utilises a 'qualitative approach'. The rationale behind choosing this approach is that the study's aim and objectives involve examining the framework's problems and challenges, aiming to investigate phenomena with the firm objective of exploring the reasons behind particular unfriendly human behaviour. Therefore, a qualitative approach is more appropriate for this study's aim. While supporting this view, Kirk and Miller suggest that qualitative study fundamentally depends on seeing people in their environment, and interacting with them in their language and on their terms.⁹⁷⁴ The qualitative approach differs from the quantitative in that a qualitative observation technically 'identifies the presence or absence of something', in contrast with a quantitative observation which involves measuring the degree to which some feature is present.⁹⁷⁵ As Bauer explains, qualitative research does not depend on statistical quantification; instead, it attempts to capture and categorise social phenomena and their meaning.⁹⁷⁶

Consequently, the empirical study aimed to investigate phenomena to obtain stakeholders' perceptions about why anti-gas flaring regulations could not end flaring in Nigeria. The study inter alia, therefore, posed an important question: *How appropriate and effective is the design and enforcement of Nigeria's anti-gas flaring law and policy regimes?* This provides an extensive study of the design and enforcement processes of the regimes. Thus, the subsequent section aptly discusses the research questions formulated for the empirical part of the study.

⁹⁷² Barke Johnson and Robert Gray, 'A History of Philosophical and Theoretical Issues for Mixed Methods Research', in Abbas Tashakkori and Charles Teddlie, *SAGE Handbook of Mixed Methods in Social and Behavioural Research* (2nd edn SAGE 2010) 69.

⁹⁷³ Ibid.

⁹⁷⁴ Jerome Kirk and Marc L. Miller, *Reliability and Validity in Qualitative Research* (Sage Publication, 1986) 9.

⁹⁷⁵ Ibid.

⁹⁷⁶ M W Bauer, 'Classical Content Analysis: A Review', in M.W Bauer, G. Gaskell and N.C Allum (eds), *Qualitative Research with Text, Image and Sound: A Practical Handbook* (London; Sage Publications, 2000) 9.

5.2.3 Formulation of the Questionnaire

Generally, research questions are derived from the aim and objectives of the study. At the same time, research questions are generated and regenerated from the research problem investigated. Therefore, research questions help to narrow the focus of the research on researchable areas within the scope of the study.⁹⁷⁷ Consequently, the literature investigated in this study attempts to answer some of the research questions; however, it has identified challenges that need to be investigated empirically. Therefore, drawing from the reviewed literature and its findings, the study's central question stemming from the aim and objectives and the subsequent questions initiated by the review is put together to empirically determine the position of the appropriateness and effectiveness of Nigeria's anti-gas flaring law and policy regimes. This is to consider measures that could sustain environmental regulatory compliance.

Consequently, the regimes could be empirically assessed concerning their design appropriateness and the effectiveness of their enforcement processes. As Webley has argued, documents (desktop research) in legal research could provide evidence of policy directions, legislative intents, understanding of perceived shortcomings, or best practices in the legal system and agendas for legal reform. Interviews⁹⁷⁸ will explore participants' experiences, feelings, and understandings which can be interpreted to impact research and provide a wealth of data from both primary sources.⁹⁷⁹ Webley then concludes that a combination of interview and document analysis in empirical legal research is most likely to answer the research questions effectively instead of selecting only one tool.⁹⁸⁰

Therefore, in a qualitative study research questions are useful in as much as they ask questions that can be linked directly to the aim and objectives of the study.⁹⁸¹ Research questions normally come in two forms: a central question and associated subquestions.⁹⁸² The central question is a far-reaching question that asks for an

⁹⁷⁷ John W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (4th edn, SAGE publication 2014), Chapter 7 at 129 -143.

⁹⁷⁸ As one of the popular tools to examine legal phenomena and perceptions of the law.

⁹⁷⁹ Webley (n 950).

⁹⁸⁰ Ibid.

⁹⁸¹ Ibid Creswell (n 977) at 129.

⁹⁸² Ibid.

exploration of the central phenomenon or concept of a study. Consistent with the emerging qualitative research methodology, the researcher poses this question as a general issue to avoid limiting the inquiry. The intent is to explore the multipart set of factors surrounding the central phenomenon and present the varied perspectives or meanings that participants hold. Creswell provides guidelines for writing broad qualitative research questions,⁹⁸³ suggesting that a researcher asks one or two central questions, followed by no more than five to seven subquestions. The subquestions narrow the focus of the study but leave open the questioning. This approach is well within the limits set by an excellent qualitative study.⁹⁸⁴

Miles and Huberman, while supporting this approach, recommend that researchers should write no more than a dozen qualitative research questions in all central and subquestions. The subquestions, in turn, can become specific questions used during interviews (or when observing or looking at documents).⁹⁸⁵ In developing an interview protocol or guide, the researcher might ask an icebreaker question at the beginning, followed by five or more subquestions in the study and then more specific questions.⁹⁸⁶ The interview would then end with an additional wrap-up or summary question, asking for example: '*Whom should I turn to learn more about this topic?*'.⁹⁸⁷ Consequent to the preceding discussion, the following questions were formulated for the empirical part of this study.

These are questions emanating from the earlier investigation conducted in this study. They are also directly related to the aim and objectives of the study. The subquestions are formulated based on the central question in this study: "*How appropriate and effective is the design and enforcement of Nigeria's anti-gas flaring law and policy regimes?*". The rationale for formulating the subquestions was discussed in the previous chapters and summarily given below. This is done to answer the research focal areas centering on Nigeria's anti-gas flaring law and

⁹⁸³ Ibid 129-130.

⁹⁸⁴ Ibid.

⁹⁸⁵ Matthew B. Miles and A. Michael Huberman, *Qualitative Data Analysis: An Expanded Sourcebook* (2nd edn, SAGE Publication, 1994), 'Chapter B: Formulating Research Questions' 23.

⁹⁸⁶ Ibid and see also Creswell (n 977) chapter 9 at 183.

⁹⁸⁷ Ibid and also Kelly J. Asmussen and John W Creswell, 'Campus Response to a Student Gunman' (1995), 66 (5) *The Journal of Higher Education*.

policy regimes. The study's focal areas were examined, assessed, and evaluated in this study under Chapters 2, 3, and 4.

A. Subquestion 1: *Are Nigeria's current gas flaring legal and policy regimes appropriately designed to achieve the country's objective? In other words, are the existing laws, policies, and regulations appropriately formulated to influence gas flaring reduction and utilisation?*

Gas flaring nations, including Nigeria, apply various frameworks to meet the objectives of ending gas flaring. What matters, therefore, is not the number of frameworks but the ability of each framework to meet the set objectives. The main frameworks are legislative, fiscal, contractual, and regulatory governance. For the fiscal framework, Nigeria employs a combination of penalties and incentives-based frameworks to meet the nation's objectives. It seems imperative to examine the appropriateness of these frameworks to empirically assess whether or not they achieved their stated objectives. This question was put forward through the specific questions related to the objective of the Nigerian gas flaring law and policy regimes in the following order:

- a) Is the current legal regime appropriately designed to achieve the country's objective?
- b) Are the policy measures appropriately designed to achieve the country's objective?
- c) Do you think the current penalty regime is appropriate and suitable for achieving the objective set for ending gas flaring?
- d) What is your view about the incentives for the utilisation of associated gas? Are the incentives provided adequate to influence investment in AG utilisation projects?
- e) Overall, what is the impact of the existing laws and regulations on AG flaring reduction and utilisation?

The rationale for the question: *The specific questions in this subquestion are designed to ascertain whether the existing laws and regulations are adequately formulated and represent the interests of both the Nigerian Government and oil companies while assessing the impact of these laws and regulations in ending gas flaring in Nigeria.*

B. Subquestion 2: *How effective and efficient is the enforcement of the AG laws and regulations by the responsible agency?*

The efficiency of any anti-gas flaring law and policy regime is not only determined by how appropriate the regime is designed but also by the effectiveness of the enforcement process. An appropriately designed regime cannot function better than its enforcement process. As earlier noted, the worth of any AG flaring regime depends on how effectively it is enforced.⁹⁸⁸ A poorly enforced regime has the potential to cause considerable damage to the environment and government revenues. This also underscores the importance of a sound institution for proper enforcement of the laws and regulations. Being heavily associated with gas, Nigerian oil needs a well-designed anti-gas flaring legal regime and a well-organised institutional base that could enforce the laws.

The rationale for the question: *This subquestion is formulated to explore and attempt to understand the enforcement processes of the legal regime. This determines whether the regime is suitable and effective for achieving the objective to end gas flaring in Nigeria and whether Nigeria has a sound regulatory framework for doing so.*

C. Subquestion 3: *What would you describe as the major obstacles limiting Nigeria's effort to end gas flaring?*

The rationale for the question: The investigation in chapter 3 has revealed many obstacles limiting the realisation of Nigeria's policy objective of ending gas flaring and unlocking gas potential. This specific question is formulated to obtain stakeholders' perceptions about what they think are the obstacles limiting the realisation of the objective. It will also ascertain whether stakeholder views align with the findings in chapter 3.

D. Subquestion 4: *What measures to put in place could sustain environmental regulatory compliance?*

⁹⁸⁸ The World Bank, (n. 1) and Coglianese and Coursy (n. 64) and Fang et al. (n 65).

The rationale for the question is to give a platform to recommend appropriate measures to address the identified obstacles to strengthen the anti-gas flaring regime.⁹⁸⁹

E. Subquestion 5: *How can Nigeria eliminate associated gas flaring through an appropriately and effectively enforced approach?*

The broad objective of any country's gas flaring legal regime is to strike a balance between the interests of the government and those of the oil companies as investors. However, since there are no universal benchmarks designed for balancing the interests of contracting parties as discussed earlier, each regime depends on the specific needs of the host country. Governments and oil companies do not necessarily negotiate any arrangement that would supposedly allow the oil companies to have an input into the kind of regime to come that will fairly capture the interests of all parties. Given this, it seems reasonable to investigate cooperation in designing and persuasion in enforcing the regime, which would fairly represent the interests of the oil companies and the government. In doing so, the following specific questions are formulated for investigation:

- i. Can a cooperatively enforced "command and control" regime serve as an alternative approach and induce compliance with Nigeria's associated gas flaring regulations?
- ii. Can punishment or persuasion for violating anti-gas flaring laws and regulations be effective, or a combination of punishment and persuasion?

The rationale for the question: *The specific questions in this subquestion are formulated to investigate whether a cooperatively designed and enforced regime can be recommended that would represent the interests of both the Nigerian government and oil companies. This will also expatiate the debate about whether Nigeria's gas flaring legal regime is a fair representation of the government's interests and those of the oil companies.*

⁹⁸⁹ This is to achieve objective 5: "To recommend reforms that will address the identified deficiencies and challenges in order to strengthen the anti-gas flaring regime."

Finally, as Creswell suggests, each interview should then wrap up with an additional final question: '*Whom should I turn to learn more about this topic?*'.⁹⁹⁰ Consequently, the next heading aptly discusses how qualitative data would be generated and collected for the study.

5.3 The Design of the Study

Research design is critical in any research project, including qualitative studies. Therefore, considering the various theoretical and philosophical underpinnings, approaches, and methods that can be utilised in sociolegal research as described above, this section presents the research design to situate the study within the context of qualitative legal research methodology and methods. This section discusses the population of the study, sampling and data collection techniques, the design and administration of the data, the validity and reliability of the data, and the data administration and analysis techniques employed.

5.3.1 The Population of the Study

The study population in research design refers to the sample of participants recruited for the study. Researchers will need to provide the rationale for participant inclusion or any exclusion and consider any additional legal requirements, ethical principles, or regulatory approvals which may be required.⁹⁹¹ A population simply refers to any set of persons or objects that have at least one characteristic in common.⁹⁹² It is also defined as an entire group of people, events, or things of interest that the researcher wishes to investigate.⁹⁹³ Knowing a study population at the outset of a study is crucial in identifying the

⁹⁹⁰ Ibid Creswell (n 977).

⁹⁹¹ The Research Governance Framework for Health and Social Care; Second Edition 2005, replaced by the UK Policy Framework for Health and Social Care Research with effect from November 2017, Noclor Research Support.

⁹⁹² N. K Denzin, and Y.S Lincoln (eds), *Handbook of Qualitative Research* (Sage, Thousand Oaks, 1994).

⁹⁹³ U Sekaran, *Research Methods for Business: A Skills Building Approach* (John Wiley and Sons Inc., New York, 2001) 225.

proper sources from which data can be collected.⁹⁹⁴ In this regard, nine legitimate groups of stakeholders were identified and selected to participate in the study. The selection was made based on the literature reviewed, and they are critical to the study's outcomes (see appendix A2).⁹⁹⁵

The list of stakeholders represents the study's entire population and are critical stakeholders in Nigeria's petroleum industry except for the higher institution of learning. The stakeholders were identified from the review of pertinent literature relevant to the study (see chapter three in particular): any exclusion of other stakeholders is either for one or both reasons. Firstly, the views of the excluded stakeholders are not thought to be critical in meeting the study's objectives. For instance, not all legal and industry experts are considered relevant in meeting the study's objectives except those with sufficient knowledge of the working of the industry. Secondly, some stakeholders are excluded because they were duly represented by the institutions identified and selected. For instance, the National Assembly represents states and local governments. In Nigeria, each state is represented by three senators and some House of Representative members who make laws for the country.⁹⁹⁶

Furthermore, to satisfy that the groups of selected stakeholders are relevant, and the identified subjects possess the required knowledge and expertise about gas flaring issues in the industry (particularly those that are not working in the industry), efforts were made during the fact-finding study in Nigeria to seek guidance and advice from a range of individuals in positions of authority in Nigeria's petroleum industry. Consequently, based on the information gathered

⁹⁹⁴ Leonard Bickman and Debra J. Rog (eds), *Handbook of Applied Social Research Methods* (SAGE Publications, 1998) 107-109.

⁹⁹⁵ The list of participants representing groups of stakeholders was arrived at from the review of the relevant literature and the fact-finding study in Nigeria conducted between November 2018 and January 2019. They represent the total number of staff with expertise in upstream petroleum operations in the respective departments of the stakeholders' groups. In the fact-finding study, the first step taken was to identify persons in a position of authority in the Nigerian oil and gas sector who were saddled with the responsibility of overseeing gas flaring issues in the country. This was achieved through the help of contacts who were either employees or close associates of the persons identified. The researcher then met with those persons and sought their assurances and advice on whether the experts selected for the study have the appropriate knowledge of upstream operations. Some gave their assurances outright while others reported back later.

⁹⁹⁶ The Constitution of the Federal Republic of Nigeria, 1999, s. 5.

and the reviewed literature about the groups selected, there are reasonable grounds to support the view that the experts have the requisite knowledge. It is also noteworthy that these groups of experts may have different perspectives regarding the operation in the upstream sector of Nigeria's petroleum industry. They arguably influence not only the behaviour in the industry but also may have input into the appropriateness of the design and effectiveness of the enforcement of Nigeria's anti-flaring law and policy regimes. Consequently, the interests of the expert groups and their relevance to the study interview are explained in detail in chapter three, as summarised below:

1. The National Assembly (NASS) is responsible for making laws in Nigeria. It consists of the upper (senate) and lower chamber (House of Representatives), actively engaged in anti-gas flaring lawmaking through its standing committees. The committees ensure that laws relating to the oil petroleum industry are up-to-date. The NASS recently passed the PIA 2021 and CCA 2021, which repealed the erstwhile anti-gas flaring legal regime. The study identifies the lawmakers for both upper and lower chambers heading the upstream and gas committees. It also identified the sponsors of the anti-gas flaring bills as study subjects.
2. The MPR and FMEvn are among the Nigerian Government agencies responsible for formulating and administering environmental policies and gas flaring in Nigeria. Therefore, these agencies might be likely to provide perceptions and statements about the appropriateness of the design of anti-gas flaring laws and policy regimes and the effectiveness of the enforcement and implementation processes and compliance mechanisms.
3. The DPR was Nigeria's immediate primary regulator for the oil and gas industry (now NURC). It was empowered by Section 8 of the Gas Flare Regulation 2018 as the only agency responsible for regulating gas flaring in the country. It enforces gas flaring regulations and penalties. Therefore, it ensures that the oil companies and other industry players comply with the flaring regulations and pay penalties for the flaring of such gases. Accordingly, as the sole regulator, the DPR might be expected to respond positively to the questions relating to the effectiveness and efficiency of the anti-gas flaring laws, policies, enforcement, and compliance.

4. The NGFCP is one of the mechanisms for implementing Nigeria's commitment to eliminate routine gas flaring by 2020. The NGFCP is a high-priority strategy for FGN's policy to achieve the national flare-out by 2020.⁹⁹⁷ The NGFCP was also meant to benefit the host communities by reducing air pollution from gas flaring while creating jobs. It was also forecast to contribute to the economy through additional volumes of gas to the domestic market for various sectors and contribute to the global efforts to mitigate GHG emissions.⁹⁹⁸ Therefore, having the NGFCP as one of the respondents confirms the findings from the literature that the country has an adequate policy programme encouraging the utilisation of AG, and explains more about the effectiveness of policy implementation.

5. The NNPC (now NNPC Ltd) is the Nigerian state oil corporation established on April 1, 1977, which principally manages the government's oil and gas industry interests. It engages in exploration activities and all activities that improve the government's interest in the industry. The NNPC was given powers and operational interests in refining, petrochemicals, product transportation, and marketing.⁹⁹⁹ Consequent to the power, the NNPC is involved in commercialising Nigeria's AG and NAG abundant gas reserves, reducing gas flaring, and promoting viable LNG and AG utilisation projects. The NNPC was involved in setting the objective for achieving and sustaining the zero flaring of AG.¹⁰⁰⁰ The NNPC also works closely with the IOCs in exploration and production activities within the industry. Although the situation has changed with the introduction of PIA 2021, the NNPC responds to some of the interview questions, particularly regarding its goal to achieve and

⁹⁹⁷ *The National Gas Policy*, p. 62, see also (n 516).

⁹⁹⁸ Ibid: the programme is estimated to generate around \$3.5 billion of initial inward investment.

⁹⁹⁹ In 1988, the NNPC was commercialised into Strategic Business Units, covering the entire spectrum of oil industry operations: exploration and production, gas development, refining, distribution, petrochemicals, engineering, and commercial investments. See Nigerian National Petroleum Corporation NNPC Corporate Information. Available at: <<https://www.nnpcgroup.com/About-NNPC/Pages/Corporate-Information.aspx>> accessed on 22/06/2020.

¹⁰⁰⁰ Nigerian National Petroleum Corporation, NNPC Business – Upstream Ventures – Gas Production. Available at <<https://www.nnpcgroup.com/NNPC-Business/Upstream-Ventures/Pages/Gas-Production.aspx>> accessed on 22/06/2020.

sustain 'zero' flaring as well as its perceived conflict of interest being an inspectorate division along with the DPR under the MPR.¹⁰⁰¹

6. The oil companies are among the major players in the Nigerian oil sector. They are operators of the fields that flare the AG in the Nigerian petroleum industry. While they account for over 90% of the nation's petroleum taxes, their main objective is to ensure that their interests are adequately captured in lawmaking and enforcement. Consequently, they are expected to respond to the appropriateness and effectiveness of the penalties and incentives for AG flaring, as well as the issue of monitoring and reporting the flare AG and any compliance issues.

7. The host communities: as earlier noted in this study under chapter one, apart from environmental and climate change issues, AG flaring in Nigeria raises a broad spectrum of sociopolitical issues and even has implications for human rights. The continued practice of flaring and its proximity to the oil communities' dwelling places makes the host communities feel marginalised and neglected. As a result, this encourages youth restiveness, militancy, and pipe vandalization.¹⁰⁰² Additionally, the prevailing kidnapping of expatriates in the Niger-Delta region of Nigeria has been linked to continued flaring by the oil companies.¹⁰⁰³ Furthermore, there are various reported cases of unlawful arrest and detention, killings, maiming of locals who oppose flaring, and related issues because of the agitation of the host communities to pressurise the oil companies to end AG flaring.¹⁰⁰⁴ In two significant celebrated judgments referred to earlier, gas flaring was declared a violation of the host communities' human rights under the Nigerian constitution, and ACHPR was told to stop.¹⁰⁰⁵ Consequently, host communities should be

¹⁰⁰¹ Note: the literature suggests that there is general dissatisfaction with the NNPC status within the Nigerian oil and gas sector. There is a distinct possibility that in responding to interviews about this perceived conflict of interest in the oil and gas sector that the NNPC may try to deflect attention away from any perceived faults.

¹⁰⁰² Ibid Watt (n 49).

¹⁰⁰³ Ibid Edino et al. (n. 50).

¹⁰⁰⁴ Ibid The Climate Justice Programme & ERA Report (n 52) and Manby (n 53).

¹⁰⁰⁵ See *Jonah Gbemre & Others vs. Shell Petroleum Dev. Company of Nigeria & Others* and also *SERAC and CESR vs. Nigeria* (n 40 & 41).

engaged to obtain their perceptions about compliance with the regulations governing gas flaring.

8. Other industry players: the legal and other industry experts who are conversant with gas flaring issues would help respond to questions on the effectiveness of law enforcement. Thus, experts are seen as outliers from the general population. They depend heavily on domain-specific knowledge, enabling experts to anticipate, prepare, and advise for future actions more efficiently.¹⁰⁰⁶ As Charness and Krampe posit, experts are essential to society because they typically find excellent solutions to societal problems. As such, they may contribute disproportionately to the outcomes of any research project.¹⁰⁰⁷ Moreover, the campaign to end AG flaring in Nigeria has benefited from international movements' pressure against the oil companies' destruction of the Niger-Delta communities. These include HRW, ERA, and Friends of the Earth.¹⁰⁰⁸ Consequently, their perceptions of compliance with the law should also be obtained.

9. The university lecturers from higher learning institutions with expertise in upstream oil and gas operations will have a sound theoretical knowledge of the issues involved in setting laws and policies that would ensure effective regulation of AG flaring in Nigeria.

5.3.2 Sample and Sampling Techniques Used in the Study

Generally, to capture a spectrum of opinions and experiences and effectively report findings that include the nuances of experience rather than narrow perspectives, a researcher needs to interview a sufficient number of people or observe sufficient instances. Accordingly, apart from considering the study's population, a researcher should also consider 'how many participants' or data

¹⁰⁰⁶ Ericsson KA, Charness N, 'Expert performance: Its structure and acquisition' (1994), 49 *American Psychologist* 725–747; and Neil Charness and Michael Tuffiash, 'The Role of Expertise Research and Human Factors in Capturing, Explaining, and Producing Superior Performance' (2008), 50(3) *Hum Factors. Author manuscript* 427–432.

¹⁰⁰⁷ Neil Charness & Ralf T. Krampe, 'Expertise and knowledge', in Scott M. Hofer and Duane F. Alwin eds. *Handbook on Cognitive Aging: Interdisciplinary perspectives* (Sage; Thousand Oaks, CA: 2008) pp. 244–258.

¹⁰⁰⁸ Ibid Olise and Nria-Dappa (n 51).

sources are necessary to produce findings in which one may have confidence: this is what is termed in research as a 'sample'.¹⁰⁰⁹ A sample, according to Webster, is a 'finite part of a statistical population whose properties are studied to gain information about the whole.'¹⁰¹⁰ When dealing with people, it can be defined as a set of respondents selected from a larger population for the survey. The population, as discussed above, is the group of individual persons, objects, or items from which the samples are taken for measurements.¹⁰¹¹

Patton maintains no hard and fast rules for determining sample size in qualitative research. The sample size depends on certain factors: what the researcher wants, the research's purpose, what is at stake, what will be useful, what will affect the research's credibility, and what can be done with the available time and resources.¹⁰¹² Webley also suggests that qualitative studies should focus on fewer observations or data sources, whether of people, events, or documents considered data-rich and thus worthy of study. These sources should then be examined in-depth to produce qualitative findings. Qualitative researchers do not usually concern themselves much with the number or size of the study population but rather with making an in-depth examination because they do not seek to reach findings that are generalisable to an entire population. Instead, their studies are designed to go beyond description to find meaning, even if that meaning is related to an individual experience or perceptions of a small number of people.¹⁰¹³

There are various techniques that qualitative researchers may adopt in deciding the sample of their population. As Webley has pointed out, a researcher may adopt versions of representative or random sampling used by quantitative researchers. Secondly, it may employ an intentionally stratified sampling method to ensure that the research sample includes people or documents in key categories.¹⁰¹⁴ Thirdly, a snowballing sampling technique is where researchers begin with a group

¹⁰⁰⁹ Ibid Webley (n 950) at 933.

¹⁰¹⁰ Merriam Webster, *Webster's Ninth New Collegiate Dictionary* (Springfield, Massachusetts, 1988) p1100.

¹⁰¹¹ The methodology used to sample from a larger population will depend on the type of analysis being performed but will include simple random sampling, systematic sampling, and observational sampling like that of quantitative research.

¹⁰¹² Ibid Patton (n 959).

¹⁰¹³ Ibid Webley (n 950) at 934.

¹⁰¹⁴ Ibid.

of participants known to them and then ask each to provide details of someone else they consider to be a useful research subject.¹⁰¹⁵ Patton also describes an alternative method known as 'purposeful sampling'. A researcher may seek out key people of events that are likely to provide rich sources of information or data.¹⁰¹⁶ By contrast, a researcher may use their personal judgment to decide on a suitable number of respondents for the study. Sandelowski argues that determining the adequate sample size in qualitative research is eventually a matter of judgment and experience in evaluating the quality of the information collected against the uses to which it will be put.¹⁰¹⁷

Consequently, based on the above suggestion and considering the stratified and snowball sampling techniques, the study adopts three respondents from each population group of stakeholders (*see appendix A2*). Therefore, three of the sampling techniques discussed above (i.e. stratified, snowballing, and judgmental) were used in selecting the population sample. As Marshall argues, the stratified and snowballing methods dominate the pieces of research literature that utilise the qualitative approach and select the most productive sample to answer research questions.¹⁰¹⁸ In contrast, Thietart argues that the judgmental sampling technique, in particular, allows for the selection of the sample elements with extreme precision, making it easier to guarantee respect for criteria such as homogeneity.¹⁰¹⁹

5.3.3 Validity and Reliability v Dependability and Trustworthiness

Generally, a decision on how research should be conducted to get dependable findings and minimise the threats to the credibility of those findings requires the consideration of two critical concepts: validity and reliability. Validity is generally

¹⁰¹⁵ Ibid Webley (n 950) at 934, In this regard, a researcher may gradually build up a larger sample of participants.

¹⁰¹⁶ Ibid Patton (n 959) at 45.

¹⁰¹⁷ Margarete Sandelowski, 'Sample size in qualitative research' (1995), *18(2) Research in Nursing & Health* 179–183.

¹⁰¹⁸ M.N Marshall 'Sampling for Qualitative Research' (1996), *13(6) Family Practices*.

¹⁰¹⁹ R. A Thietart, *Doing Management Research: a Comprehensive Guide* (Sage Publications, London, 2001).

seen as an essential consideration in evaluating a measure. Jensen defined validity as the appropriateness, meaningfulness, and usefulness of a measure for a specific purpose.¹⁰²⁰ Meanwhile, Saunders et al. describe it as the ability of a study to accurately measure what was intended to be measured or to ascertain how accurate research results are.¹⁰²¹ AERA et al. define validity as 'the degree to which accumulated evidence and theory support specific interpretations of test scores entailed by proposed uses of a test'.¹⁰²² In contrast, reliability refers to how a variable or set of variables agrees with what it is intended to measure.¹⁰²³ Joppe describes it as the degree to which results or findings are consistent over time. Thus, a research instrument is considered reliable when the study results can be reproduced using a similar methodology.¹⁰²⁴

Nevertheless, while the underlying philosophical approach of this study is interpretivism, as earlier argued validity and reliability are concepts derived from the positivists' conceptions of data and data analysis.¹⁰²⁵ Golafshani has posited that they are quality evaluation concepts commonly and extensively used in quantitative research.¹⁰²⁶ Interpretivism argues that there will be some difficulties when applying the terms to qualitative studies as the terms are faced with some threats to their credibility. For instance, Lafaille and Wildeboer have identified three threats to validity.¹⁰²⁷ First is the composition of a research group that would

¹⁰²⁰ M Jensen, 'Questionnaire Validation: A brief guide for readers of the research literature' (2003), 19(6) *Clinical Journal of Pain*. Jensen identifies three of the most common types of validity: content, construct, and criterion validity. Content validity refers to the extent to which the items of a measure are representative of some defined domain of interest, and this is usually determined by expert judgement. Construct validity refers to how well questions relate to the same objective correlate with each other, and this is often established through factor analysis, the opinions of judges, and known correlations etc. Criterion validity refers to how well results obtained from one data collecting instrument are supported by other surveys or questionnaires, and this is often established by correlating the results of the different gathering instruments.

¹⁰²¹ Ibid Saunders et al. (n 954) *Students* (Prentice Hall, Harlowet 2003).

¹⁰²² AERA et al. Standard for educational and psychological testing (1999), American Educational Research Association, Washington, p184.

¹⁰²³ J Kirk and M.L Miller, *Reliability and Validity in Qualitative Research* (Beverly Hills: SAGE Publication 1986) 41-42.

¹⁰²⁴ Marion Joppe *The Research Process* (2006), 1.

¹⁰²⁵ Ibid Webley (n 950) at 935.

¹⁰²⁶ N Golafshan, 'Understanding Reliability and Validity in Qualitative Research' (2003), 8(4) *The Qualitative Report*.

¹⁰²⁷ R Lafaille and H Wildeboer, 'Validity and Reliability of Observation and Data Collection in Biographical Research' (1995), *International Institute for Advanced Health Studies*, Antwerp, Belgium.

lead to subject bias, in which the wrong people have been selected as respondents. However, this could be avoided by employing a careful selection procedure for respondents.¹⁰²⁸ Secondly, research participants can influence the validity of an instrument in several ways, including through their belief system, social influence, memory failure, and poor state of health (such as bad eyesight). Thirdly, there is the possibility of subject mortality.

Similarly, Saunders et al. have identified four threats to reliability: participant error, participant bias, observer error, and observer bias.¹⁰²⁹ Participant error reflects the respondents' attitude at the time of the interview or receiving the questionnaire. Where the timing is inappropriate for the respondents, the results generated may differ from their actual beliefs due to the stresses and variables of their surroundings. On the other hand, participant bias occurs when participants can be identified individually as they tend to give desirable answers. Observer errors occur due to the way the questions are asked. Observer bias occurs when the researcher only looks for data supporting their viewpoint. Even though a researcher can avoid these identified threats to validity and reality, they are still errors that may affect the credibility of the results if not properly managed.

Consequently, several interpretivists have attempted to use different terminology to distance themselves from the positivist paradigm and its associated threats. For instance, Lincoln and Guba used the concept of 'trustworthiness'.¹⁰³⁰ However, other scholars from the interpretivist school hold that the broad and abstract concepts of reliability and validity can still be applied to all research as the general goal of finding plausible and credible explanations for outcomes is central to all research.¹⁰³¹ Nevertheless, the antagonists further argue that there would be

¹⁰²⁸ Adam Konto Kyari, 'A theoretical and empirical investigation into the design and implementation of an appropriate tax regime: an evaluation of Nigeria's petroleum taxation arrangements' (2013), a thesis submitted in partial fulfilment of the requirements of the Robert Gordon University for the Degree of Doctor of Philosophy. Available from *OpenAIR@RGU* <<http://openair.rgu.ac.uk>> accessed on 20/03/2020.

¹⁰²⁹ Ibid Saunders et al. (n 954).

¹⁰³⁰ Lincoln, Y. and Guba, E., *Naturalistic Inquiry* (Beverly Hills: Sage Publications, 1985).

¹⁰³¹ A. J Kuzel, A. J. and R.C Like, R. C. (1991), 'Standards of trustworthiness for qualitative studies in primary care', in Norton, P.G. et al. (eds), *Primary Care Research* (Sage Publications, Newbury Park 2001) (Kuzel and Engel, 2001); and J.M Pitts, 'Personal understandings and mental models of information: a qualitative study of factors associated with the information-seeking and use of adolescents' (1994), PhD thesis submitted to Florida State University (Unpublished).

some difficulties in applying positivists' interpretations of reliability to qualitative research. In their argument, qualitative research is less concerned with quantity and distribution; instead, it is more concerned with people's understanding of the meaning of social facts. Similarly, in most qualitative research, the researcher is the data collection tool and the one who analyses the collected data. Therefore, the extent to which the researcher is stable and a reliable data collection tool depends mainly on his training and experience.¹⁰³²

Therefore, instead of using the concepts 'validity and reliability,' the interpretivists have invented the terms 'dependability and/or trustworthiness' to evaluate a study. This terminology is used to distance interpretivism from the positivist paradigm.¹⁰³³ Lincoln and Guba used the concept of 'trustworthiness' which consists of four aspects, credibility, transferability, confirmability, and dependability, as a qualitative substitute for the quantitative concepts of reliability and validity.¹⁰³⁴ The terms 'dependability and trustworthiness' refer to the degree to which a qualitative study and its findings are free from bias in terms of the questions posed, the methods used, the data generated, the combination of methods and data types, the modes of analysis, and whether the evidence supports the findings.¹⁰³⁵

Consequently, to avoid bias or any threat to 'dependability and trustworthiness,' the study tried to be objective in its data generation, analysis, and reporting. For instance, regarding the problem of subject bias (i.e., the wrong people might have been selected as respondents), the study avoided this threat by employing a careful selection process (*see section 5.3.1-2*). The aspects of participants' influence that may affect the study's trustworthiness are also minimised by standardising the interview questions. This allows the respondents to interpret the questions in their own terms and words. Similarly, threats to dependability such as participant error, participant bias, observer error, and observer bias have been reduced to a negligible level. Therefore, the interview with the respondents was conducted on their own terms and with chosen techniques. It is thus believed that

¹⁰³² Ibid Webley (n 950) at 935.

¹⁰³³ Ibid.

¹⁰³⁴ Ibid Lincoln and Guba (n 1030).

¹⁰³⁵ Ibid and Webley (n 950).

the respondents were not under stress, and their answers were not distorted. Likewise, participant bias was avoided as the participants were individually identified and questioned as they tended to give desirable answers.¹⁰³⁶ It is submitted that the study avoided any bias or threat to its credibility regarding data collection, analysis, or reporting. The study tried to be as objective as possible during the collecting, analysing, and reporting of the findings.

5.3.4 Data Collection Methods Used in the Study

For every type of research, it is essential for the researcher to collect factual, unknown, or untapped data, gather new facts, or explore new fields through specific methods. Therefore, the methods employed to generate data are called data collection tools. While the information gathered is called data, the devices employed in gathering the information are called tools.¹⁰³⁷ The tools assist the researcher in realising, analysing, and interpreting data related to his research.¹⁰³⁸ Khan suggests that tools and techniques are the means of conducting research, and research could only be justified by using appropriate methods relevant to it.¹⁰³⁹ For qualitative empirical legal research, data are generally generated using three primary methods: interviews, analysis of documents, and direct observation.¹⁰⁴⁰ Patton points out that this type of research flows from the three methods mentioned: studying, records, and reviews.¹⁰⁴¹ Similarly, Webley also views qualitative empirical legal researchers using individual and group interviews, qualitative documentary analysis, and third-party and participant observation as major tools for generating data.¹⁰⁴² Thus, a researcher may use any tools singularly or in combination.

¹⁰³⁶ It is therefore assumed that this threat did not affect the dependability of the interview (or questionnaire) and any observer error occurs due to the way questions are asked in the questionnaire.

¹⁰³⁷ Prabhat Pandey and Meenu Mishra Pandey (Translation), *Research Methodology: Tools and Techniques* (Bridge Center: Romania 2015) 57.

¹⁰³⁸ Ibid.

¹⁰³⁹ J.A Khan, *Research Methodology* (1st edn APH Publishing Corporation: New Delhi 2007) 97.

¹⁰⁴⁰ Ibid May (n 960).

¹⁰⁴¹ Ibid Patton (n 959) 4.

¹⁰⁴² Ibid Webley (n 950) at 936.

Interviews generally provide researchers with access to others' experiences and perceptions, and they may be conducted individually or in a group. Therefore, qualitative researchers use individual interviews to examine legal phenomena and perceptions of law and the legal profession.¹⁰⁴³ Group interviews are used less frequently in empirical legal research, although they may also lead to useful data and interviewer-interviewee interactions.¹⁰⁴⁴ In a qualitative interview, the interviewer would usually pursue in-depth information about the topic and then meet the interviewee to investigate their responses.¹⁰⁴⁵ Although research objectives govern the questions asked in interviews, the content, sequence, and wording of interviews are entirely in the hands of the interviewer.¹⁰⁴⁶

Similarly, qualitative document analysis in empirical legal research can provide a wealth of official and personal data, text-based and image-based. The mode of analysis of a document will partly depend on the nature of the document, whether it is formal communication like legislation, case reports, policy documents, newspaper, or informal documents like lawyers' notes and other private communications.¹⁰⁴⁷ For analysis of these documents, some researchers may examine the context within the documents, while others may examine their substance.¹⁰⁴⁸ Nevertheless, using documents as data sources are relatively under-utilised in empirical legal research, as Webley firmly argues, even though they provide a rich data source.¹⁰⁴⁹ The seeming reluctance of empirical legal researchers to use documents as a data source was born out of a contention that

¹⁰⁴³ See Hilary Sommerlad, 'Researching and Theorising the Processes of Professional Identity Formation' (2007), 34(2) *Journal of Law and Society* 190; and Margaret Thornton, *Dissonance and Distrust – Women and the Legal Profession* (Oxford University Press: Oxford, 1996) 323.

¹⁰⁴⁴ John Seely Brown, Allan Collins and Paul Duguid, 'Situated Cognition and the Culture of Learning' (1989), 18 *Educational Researcher* 32-42.

¹⁰⁴⁵ Carter McNamara, *Field Guide to Consulting and Organizational Development: A Collaborative and Systems Approach to Performance, Change and Learning* (1st edn, Authenticity Consulting: Minnesota 2006), Chapter VI Toolbox for Practical Data Collection Methods.

¹⁰⁴⁶ Fred N. Kerlinger, *Foundations of Behavioural Research* (2ND edn Holt, Rinehart and Winston: New York, 1973).

¹⁰⁴⁷ *Ibid* Webley (n 950) at 939.

¹⁰⁴⁸ *Ibid*.

¹⁰⁴⁹ Lisa Webley, *Adversarialism and Consensus? The Messages Professional Bodies Transmit About Professional Approach and Professional Identity to Solicitors and Family Mediators Undertaking Divorce Matters* (Institute of Advanced Legal Studies: London, 2008).

the documents represent nothing but the words and meanings contained within them.¹⁰⁵⁰ Countering this argument, Block posits that documents provide evidence of policy directions, legislative intent, understanding of perceived shortcomings or best practices in the legal system, as well as agenda for change.¹⁰⁵¹

On the other hand, third-party and participant observation are where a researcher participates and observes a specific event or events for a short time. For instance, an ethnography researcher may plunge himself into a situation or place for an extended period and keep a note of his observations for such a situation or place. Alternatively, a researcher may even participate in the environment rather than observe as an onlooker.¹⁰⁵² However, this method has been criticised as fraught with methodological and ethical difficulties. For instance, Webley argues that people may consciously or subconsciously alter their behaviour if they know they are being observed, and similarly, covert studies pose significant ethical problems.¹⁰⁵³

Additionally, findings derived from a participatory study may be tainted by the lack of critical reflection.¹⁰⁵⁴ That is why Flood and Eekelaar et al. argue that observation from a more independent viewpoint as an outsider rather than a participant is preferable and appropriate.¹⁰⁵⁵ Nevertheless, whatever the support Observation and Participation may receive, they are not meant for most qualitative research. This is why Becker and Geer based their support of this method mainly on ethnographic studies.¹⁰⁵⁶

¹⁰⁵⁰ Ibid May (n 960).

¹⁰⁵¹ Marc Bloch, *The Historian's Craft: P. Putnam translation* (Manchester University Press: Manchester, 1992).

¹⁰⁵² Howard S Becker and Blanche Geer, 'Participant Observation and Interviewing: A Comparison (1957), 16(3) *Human Organization* 28-32.

¹⁰⁵³ Ibid Webley (950).

¹⁰⁵⁴ Ibid Webley (n 950) at 937.

¹⁰⁵⁵ John Flood 2005. 'Socio-Legal Ethnography' in Reza Banakar and Max Travers (eds), *Theory and Method in Socio-legal Research* (Hart Publishing: Oxford, 2005) 33-48; and John Eekelaar and Marvis Maclean, *Family Lawyers: The Divorce Work of Solicitors* (Hart Publishing: Oxford, 2000).

¹⁰⁵⁶ Ibid Becker and Geer (n 1052). They hold that many ethnographers may argue that 'going native' through participation or observation is a positive rather than negative and yields far better data as long as the researcher reflexively and critically examines their assumptions and motives.

Therefore, the selection of any particular or combinations of methods discussed above mostly depends on some complex factors, which include the nature of the research question and objectives, the availability or access to data sources, the availability of time for data collection, and the resources available to conduct the study.¹⁰⁵⁷ Having examined the competing methods and their strengths and weaknesses, the study thus employed individual interviews in gathering the data. Interviews are beneficial, particularly for getting the story behind participants' experiences and viewpoints. The interviewer can pursue in-depth information around the topic, and this can be useful to follow-up individual respondents to investigate their responses.¹⁰⁵⁸

Using interviews as an instrument for generating data in this study can be justified because interviews typically offer an objective means of gathering information concerning people's knowledge, beliefs, attitudes, and behaviours.¹⁰⁵⁹ Numerous empirical legal researchers use interviews to examine legal phenomena and perceptions of the law. Where necessary, the interview will indicate the authentic experiences, feelings, and understanding of research participants who are interpreted to impact the research.¹⁰⁶⁰ Khan, May, Patton, and Webley firmly argue that the interview in qualitative empirical legal research is the appropriate method for the researcher to gather relevant data for his research. The interview assists the researcher in analysing and interpreting data relating to their research.¹⁰⁶¹

Moreover, adopting interviews has also served as one of the study's objectives when examining the perceptions of different groups of stakeholders about compliance with the requirements governing Nigeria's anti-gas flaring legal and policy regimes. While the study is aware of the limitations of using the interview as a major instrument for collecting data, the weaknesses have been tackled as

¹⁰⁵⁷ Floyd J Fowler Jr., *Survey Research Method* (4th edn SAGE Publishing, 2009), 58. 'The choice of data collection mode – mail, internet, personal interview or group administration – is related to the sample frame, research topic, characteristics of the sample and available staff and facilities; it has implications for response rates, question form and survey costs'.

¹⁰⁵⁸ Ibid McNamara (n 1045).

¹⁰⁵⁹ A N Oppenheim, *Questionnaire Design, Interviewing and Attitude Measurement* (2nd edn Bloomsbury Publishing, 2000).

¹⁰⁶⁰ Ibid Webley (n 950) at 936.

¹⁰⁶¹ Ibid Khan (n 1039), May (n 960), Patton (n 959) and Webley (n 950).

only groups of selected experts familiar with Nigeria's petroleum industry formed the population of the study. Therefore, one way of assessing the experts' suitability as research subjects was by finding their experience and perception of the happenings in the industry before the scheduled interview. This insight and their perceptions about certain issues have positively impacted the meaning and understanding attached to each phenomenon investigated by this study. Accordingly, the processes involved in designing and administering the questions to the respondents are discussed below.

5.3.4.1 Interview Questions Design

The design of interview questions affects the response as well as the validity and reliability (trustworthiness and dependability) of the data collected.¹⁰⁶² Therefore, adherence to certain basic principles is fundamental for effective and successful interview administration during the design process. Fontana and Frey find that interviews can be designed in three ways: structured interviews, unstructured interviews, and semi-structured interviews.¹⁰⁶³ A structured interview has a set of predefined questions that should be asked in the same order for all the respondents, often having a limited set of response categories. There is little room for variation in responses, and few open-ended questions are included in the interview guide. This type of interview resembles a questionnaire, where questioning is standardised, and the ordering and phrasing of the questions are kept consistent from interview to interview.¹⁰⁶⁴ The interviewer asks each respondent the same series of questions. They play a neutral role and act casual and friendly but do not insert their opinion in the interview. For example, self-administered questionnaires are a type of structured interview.¹⁰⁶⁵

Thus, researchers commonly use a structured interview technique for a study requiring a clear topical focus and a well-developed understanding of the topic.

¹⁰⁶² Ibid Saunders et al. (n 954).

¹⁰⁶³ Andrea Fontana and James H. Frey 2005 'The interview: From Neutral Stance to Political Involvement', in Norman K. Denzin and Yvonna S. Lincoln (eds), *The SAGE Handbook of Qualitative Research* (3rd Sage Publishing, Thousand Oaks, 2005) 695-728.

¹⁰⁶⁴ Cohen D and Crabtree B. 'Qualitative Research Guidelines Project' (2006), *Robert Wood Johnson Foundation*. Available at: <<http://www.qualres.org/HomeSemi-3629.html>> accessed on 01/07/2020.

¹⁰⁶⁵ Ibid.

This allows researchers to create a highly structured interview guide or questionnaire which provides respondents with relevant, meaningful, and appropriate response categories to choose from for each question. Cohen and Crabtree suggest that structured interviews are best used when the literature is highly developed or when following observational and other less structured interviewing approaches that provide the researcher with an adequate understanding of a topic to construct meaningful and relevant close-ended questions.¹⁰⁶⁶ The strength of structured interviews is that they can be conducted efficiently by interviewers trained only to follow the instructions in the interview guide or questionnaire. As opposed to semi-structured and unstructured interviews, this technique does not require the development of rapport between interviewer and interviewee, and they can produce consistent data which can be compared across several respondents.¹⁰⁶⁷

In contrast, unstructured interviews are the opposite of structured interviews. As the name implies, it is an interview in which neither the questions nor the answers categories are predetermined. Instead, the process relies on social interaction between the interviewer and the interviewee.¹⁰⁶⁸ This technique aims to expose a researcher to unanticipated themes and thus help them better understand the interviewees' social reality from their points of view.¹⁰⁶⁹ Unstructured interviews are generally suggested for long-term fieldwork to allow respondents to express themselves in their own way and at their own pace, with a minimal hold on respondents' responses.¹⁰⁷⁰ This technique best suits ethnography research, where the interviewer collects data through observation or participation.¹⁰⁷¹ Focus interviews and informal and conversational interviews are other forms of

¹⁰⁶⁶ Ibid .

¹⁰⁶⁷ Ibid Cohen and Crabtree (n 1064).

¹⁰⁶⁸ Victor Minichiello, *In-Depth Interviewing: Researching People* (South Melbourne: Longman Cheshire, 1990).

¹⁰⁶⁹ Ibid.

¹⁰⁷⁰ Juliet Corbin and Janice M Morse, 'The unstructured interactive interview: Issues of reciprocity and risks when dealing with sensitive topics' (2003), 9 *Qualitative Inquiry* 335–354.

¹⁰⁷¹ Ibid.

unstructured interviews. They are based on an unplanned set of questions generated instantaneously during the interview.¹⁰⁷²

The semi-structured interview sits in-between structured and unstructured interviews. This technique collects qualitative data by designing the interview that allows respondents the time and scope to talk about their opinions on a particular subject.¹⁰⁷³ The researcher designs the interview based on the areas that they are interested in exploring. The objective is to understand the respondent's point of view rather than make generalisations about their behaviour.¹⁰⁷⁴ It is like a conversation consisting of closed-ended and open-ended questions, and the researcher tries to build a rapport with the respondent. This type of interview allows the interviewer the freedom to adjust the sequence of the questions to be asked during the interview and to add or omit questions based on the context of the participants' responses.¹⁰⁷⁵ As opposed to structured interviews, the wording of questions in semi-structured interviews may not necessarily be the same for all respondents.

While examining the strength of semi-structured interviews, Cohen and Crabtree suggest that they allow respondents the freedom to express their views on their own terms. In addition, the qualitative data generated can be reliable, efficient, and relatively more flexible than both structured and unstructured interviews.¹⁰⁷⁶ Minichiello also suggests that semi-structured interviews provide valid and reliable data as respondents can discuss something in detail and depth.¹⁰⁷⁷ Similarly, complex questions and issues can be discussed and clarified with ease. The interviewer can probe areas suggested by the respondent's answers, picking up information that had either not occurred to the interviewer or of which the interviewer had no prior knowledge.¹⁰⁷⁸ However, like other interviews, semi-structured interviews also have some weaknesses and limitations. For instance, depending on the interviewer's skill, the interviewer may give out unconscious

¹⁰⁷² David E. Gray *Doing Research in the Real World* (2nd edn Thousand Oaks, London: 2004).

¹⁰⁷³ Cohen and Crabtree (n 1064).

¹⁰⁷⁴ *Ibid.*

¹⁰⁷⁵ *Ibid* Gray (n 1072).

¹⁰⁷⁶ *Ibid* Cohen and Crabtree (n 1064).

¹⁰⁷⁷ *Ibid* Minichiello (n 1068).

¹⁰⁷⁸ *Ibid.*

signals and clues that guide respondents to give answers expected by the interviewer. Moreover, samples tend to be small compared to structured interviews or questionnaires, and it is also time-consuming and expensive.¹⁰⁷⁹

This study employed a semi-structured interview to gather the participants' views and experiences about the appropriateness and effectiveness of the regimes. The use of semi-structured interviews can be justified for the following reasons. In addition to its numerous strengths mentioned above, Bernard argues that semi-structured interviewing provides a clear and accurate set of instructions for interviewers and can provide reliable and comparable qualitative data.¹⁰⁸⁰ Similarly, Strauss postulates that this technique is utilised extensively as an interviewing format, possibly with an individual or a group, and could provide reliable and valid data.¹⁰⁸¹ For Bernard, it could be appropriate when the researcher would not get more than one chance to interview respondents or when a researcher will be seeing several interviewees in the field to collect data.¹⁰⁸² Having unsuccessfully tried to collect data previously, a semi-structured interview was employed after due consultation with the interview subjects.

In the field, a semi-structured interviewer commonly develops and uses an 'interview guide' and then engages the respondents in a formal interview.¹⁰⁸³ The interviewer follows the guide but can also pursue topical paths in the conversation that may stray from the guide when they feel it is appropriate. The interview guide serves the valuable purpose of exploring many respondents more systematically and comprehensively while keeping the interview focused on the desired line of action.¹⁰⁸⁴ The interview guide's questions comprise the central and subquestions,

¹⁰⁷⁹ Ibid Cohen and Crabtree (n 1064).

¹⁰⁸⁰ H Russel Bernard, *Research Methods in Anthropology: Qualitative and Quantitative Approaches* (4th edn AltaMira Press, 1988) 210 Chapter 9.

¹⁰⁸¹ Juliet Corbin and Anselm Strauss, *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory* (4th edn Sage Publications; 2015).

¹⁰⁸² Ibid Bernard (n 1080).

¹⁰⁸³ The 'interview guide' is a schematic presentation of questions or topics that need to be explored by the interviewer. Semi-structured interviews are normally based on this guide.

¹⁰⁸⁴ Barbara DiCicco-Bloom and Benjamin F Crabtree, 'The qualitative research interview' (2006), 40(4) *Medical Education* 314–21.

which in turn improve further through pilot testing of the interview guide (see *appendix A1*).¹⁰⁸⁵

The study's 'interview guide' was divided into five sections. The first section (Section A) sought information about the demographic characteristics of the respondents. Respondents were asked four questions in this section regarding their name, place of work, occupation, and years of working experience. These characteristics were used to examine the suitability of the selection and differences in opinion among the study's stakeholders regarding anti-gas flaring law and policy issues covered in the study. Other demographic characteristics, such as age, nationality, and educational background, have not been included because they were irrelevant to addressing the study's research question. Section two (B) of the guide asked five questions concerning Nigeria's flaring law and policy regimes. The questions aimed to determine whether, in the respondents' opinions, Nigeria's gas flaring law and policy regimes were appropriately designed to achieve the country's objective. In other words, to ascertain whether the existing laws, policies, and regulations were appropriately formulated to influence gas flaring reduction and utilisation. This central question was asked through several subquestions, and the number of respondents was stipulated in this section.

The third section (C) asked a question relating to the effectiveness of the enforcement of the legal regime. The fourth section (D) asked questions about what participants considered major obstacles and then asked them to select one that they thought negatively impacted the realisation of the regime's objective. Section (E) then asked respondents about the appropriate measures to sustain environmental regulatory compliance. The final section (F) asked two questions requiring respondents' viewpoints on the best approach to address gas flaring issues in Nigeria. The respondents' views on the best approach to regulating gas flaring in Nigeria would serve as a basis for making recommendations to Nigerian policymakers- and lawmakers for possible law and policy reforms. Finally, as Creswell suggests, each interview then wrapped up with an additional final question: *'Whom should I turn to learn more about this topic?'*

¹⁰⁸⁵ John W. Creswell, *Qualitative Inquiry and Research Design: Choosing Among Five Approaches* (Sage Publications; 2012).

5.3.4.2 Administration of the Interview Questions

All the interview techniques discussed above could be administered in any of the following, but are not limited to, face-to-face, visual, telephone, and web-based (email, chat, etc.) interview techniques. Thus, the face-to-face interview was the dominant technique in qualitative research until the last two decades, when telephone interviewing became more prominent. Due to the volatile advance of new communication forms, other techniques such as computer-mediated communication, such as Skype, email, chat boxes, and more recently, video-conference interview techniques (via zoom, WhatsApp, MS Teams, and messengers) were introduced within the field of qualitative research.¹⁰⁸⁶ Nevertheless, the dominant choice for semi-structured interviews lies in face-to-face, telephone, and video-conference interviews. These techniques could provide accurate and reliable data in a semi-structured interview and appeal to some demographic interview groups more appealing.¹⁰⁸⁷

For instance, one major advantage of face-to-face interviews is that there is no significant time delay between question and answer. The response from the interviewee is spontaneous, without an extended reflection. The interviewer and interviewee can directly react to what others say and do.¹⁰⁸⁸ Additionally, the interviewer has many possibilities to create a good rapport and interview ambience. Similarly, social cues such as the interviewee's voice, intonation, and body language in face-to-face interviews can give the interviewer extra information that can be added to their verbal answer, especially on a question about which the interviewee is a subject.¹⁰⁸⁹

However, social cues become less important when the interviewee is an expert and the interview is about things or persons that have nothing to do with the

¹⁰⁸⁶ Raymond Opdenakker, 'Advantages and Disadvantages of Four Interview Techniques in Qualitative Research' (2006), 7(4) *Forum: Qualitative Social Research*.

¹⁰⁸⁷ Anne H. Anderson 2008. 'Video-Mediated Interactions and Surveys', in Frederick G. Conrad and Michael F. Schober (eds), *Envisioning the Survey Interview of the Future* (New Jersey: John Wiley, 2008) 95-118. Anderson finds that video-conferencing appeals to the younger members of population groups than older members.

¹⁰⁸⁸ Tom Wengraf, *Qualitative research interviewing* (SAGE: London 2001) p194.

¹⁰⁸⁹ *Ibid* interview ambience is the view of the situation in which the interviewee is situated and this could allow the interviewer to make more use of a standardisation of the situation.

expert as a subject.¹⁰⁹⁰ However, despite its merits, the face-to-face interview has some weaknesses when considering the time and costs it consumes. For instance, interviewing a respondent in a place far away from the interviewer will take much time to prepare and administer. It can be even more challenging when the interviewee is ill and cannot reach or cancel the interview after the interviewer arrives. Likewise, costs such as travel can become very high, especially for an interview that has to be held all over the globe.

Nevertheless, face-to-face interviews have the advantage of generating more accurate data.¹⁰⁹¹ They can be recorded using a tape recorder with the interviewee's permission. Cohen and Crabtree suggest that it is generally advisable for the researcher to tape-record semi-structured interviews and later transcribe the tapes for analysis purposes. However, tape recording also brings the danger of not taking any notes during the interview.¹⁰⁹² Taking notes during the interview is vital for the interviewer, even if the interview is tape-recorded.¹⁰⁹³ While taking notes to capture respondents' answers is possible, it is challenging to focus on conducting an interview and jotting notes simultaneously entirely. This will result in weak notes and diminish the rapport between the interviewer and interviewee. Therefore, if this will negate the whole essence of the interview, a researcher should consider having a notetaker present during the interview.¹⁰⁹⁴

On the other hand, telephone and visual interviewing can supplement some of the disadvantages highlighted above regarding face-to-face interviews. Mann & Stewart, and Alkhateeb argue that the two techniques have the advantages of generating extended access to participants within a short time and at a minimal

¹⁰⁹⁰ Ibid Opdenakker (n 1086).

¹⁰⁹¹ Steinar Kvale, 'The qualitative research interview: A phenomenological and a hermeneutical mode of understanding' (1983), 14 *Journal of Phenomenological Psychology* 171-196.

¹⁰⁹² Lisa A. Burke and Monica K. Miller, 'Phone interviewing as a means of data collection: Lessons learned and practical recommendations' (2001), 2(2) *Forum: Qualitative Social Research*. Tape-recording too has its own demerit as the time a transcription of the tape recording consumes suggests that one hour of tape takes five to six hours to transcribe. See also Bryman (n 963).

¹⁰⁹³ For instance, the advantages of notetaking are enormous. It can be used to check if all the questions have been answered; it can be rely upon in case of malfunctioning of the tape recorder, and malfunctioning of the interviewer. For example, Opdenakker reported that he had forgotten to push the "record" button.

¹⁰⁹⁴ Ibid Cohen and Crabtree (n 1064).

cost compared to face-to-face interviews.¹⁰⁹⁵ Thus, people from all over the globe can be interviewed via telephone and video conference. The techniques could also enable a researcher to interact with respondents who might be difficult to interview face-to-face.¹⁰⁹⁶ Although these techniques afford the interviewer easy access to respondents, one of their disadvantages is the reduction of social cues that face-to-face interviews could offer the interviewer and the interviewee. The interviewer does not physically meet the interviewee, so their body language, voice, and intonation cannot be appropriately assessed and used as a source of extra information.

Nevertheless, it is submitted that social cues will not limit the impact of data generated via visual or telephone interviews for a study in which neither respondents nor their behaviour is the subject. This study fits into such a category. In fact, the interviewee could be spontaneous in his response in visual interviews, just like in face-to-face interviews. The interviewer would also concentrate on the questions that need to be asked as well as the answers given.¹⁰⁹⁷ Similarly, visual interviews could also create a good interview ambience as in the face-to-face interview. Another advantage of telephone and visual interviews over face-to-face interviews is that the interviewer does not need extra tape-recording material, as most equipment is self-recorded.¹⁰⁹⁸

Therefore, this study employed face-to-face and audio-visual interviews to gather the data. Even though the study's initial design was for face-to-face interviews only, due to the recent COVID-19 pandemic that affected the study's timeframe, some of the interviews were conducted face-to-face while the rest were audio-visually administered. These techniques were employed concurrently for one method to supplement the weakness of the other. For instance, some data were collected during an era when travelling proved abortive. It happened due to a

¹⁰⁹⁵ Chris Mann and Fiona Stewart, *Internet communication and qualitative research*. (London: Sage, 2000); and Maryam Alkhateeb, 'Using Skype as a Qualitative Interview Medium within the Context of Saudi Arabia: A Research Note' (2018), 23(10) *Qualitative Report* 2253-2260.

¹⁰⁹⁶ Ibid.

¹⁰⁹⁷ Joëlle Kivits, 2005. 'Online interviewing and the research relationship' in Christine Hine (eds), *Virtual methods; Issues in social research on the Internet* (Oxford: Berg, 2005) pp. 35-50.

¹⁰⁹⁸ Ibid.

lockdown that led to the closure of several airports around the globe. At the same time, visual and telephone interviews became more appealing to some respondents because they were confined to the comfort of their houses and thus had extra time to be interviewed. Therefore, employing face-to-face interviews in the study provides social cues and standardisation of the interview situation. Visual and telephone interviews allowed the study to save money and time.

5.4 Methods of Data Analysis Used in the Study

Data analysis and drawing findings and conclusions from the data are among the most contentious aspects of qualitative research. Bogdan and Biklen define data analysis as systematically searching and arranging the interview transcripts, field notes, and other materials generated to increase the researcher's understanding of them and enable the researcher to present what was discovered to others.¹⁰⁹⁹ Accordingly, it involves working with data, organising it, breaking it into manageable units, synthesising it, searching for patterns, discovering what is essential and what is to be learned, and deciding what to tell others.¹¹⁰⁰ In essence, data analysis could be described as making meaning from the collected data.

Therefore, deriving valid and dependable findings from reams of interview transcripts is the most serious and central difficulty for qualitative data. Miles argued that while the methods of analysis are straightforward because there is an already established convention for quantitative data, qualitative data has few guidelines for protection against self-delusion, let alone the presentation of unreliable or invalid conclusions.¹¹⁰¹ Nevertheless, despite this difficulty, qualitative researchers commonly employ three relatively used methods in analysing collected qualitative data: thematic/classical content, discourse, and

¹⁰⁹⁹ Robert C. Bogdan and Sari Knopp Biklen, *Qualitative Research for Education: An introduction to theory and methods* (Boston: Allyn and Bacon, 1982) 145.

¹¹⁰⁰ Ibid.

¹¹⁰¹ Matthew B. Miles, 'Qualitative Data as an Attractive Nuisance: The Problem of Analysis' (1979), 24(4) *Administrative Science Quarterly* pp.590-601.

grounded theory.¹¹⁰² G.R. Gibbs posited that each method relies on coding but in slightly different ways.¹¹⁰³

According to Bauer, classical content analysis (CCA) is a highly systematised mode of qualitative data analysis with relatively well-developed rules of sampling, selection of codes, analysis of those codes, and reporting of findings.¹¹⁰⁴ CCA is a method of analysis examining research-generated text such as interview transcripts, images, or documents developed for other purposes such as articles, case reports, or newspapers. It involves thematic categorisation (coding) and counting the frequency of those themes or codes.¹¹⁰⁵ For the qualitative legal study, CCA has a broader application. Therefore, it can be used to examine the nature and frequency of a particular type of legal phenomenon within legal cases or to consider the content of interviews or policy documents.¹¹⁰⁶ Using CCA for the content of interviews reduces the text to codes by categorising items in the text and then counting the frequencies of those items to allow inferences to be drawn from the document.¹¹⁰⁷ In a nutshell, researchers read the text (for instance, the interview transcripts) and then pull out emerging themes, attempting to make them as specific as possible by analysing how they are used, the limits of their use, and the context within which they appear.¹¹⁰⁸

Consequently, once these themes are juxtaposed, they become codes that would be counted and considered alongside other codes. Researchers would then keep a codebook that provides an accurate, detailed description of each code to enable others to review the analysis and reach judgments about the validity and reliability of the data analysis and findings.¹¹⁰⁹ Researchers recently used computer-assisted software such as NVivo to carry out the analysis. While the computer-assisted

¹¹⁰² G.R. Gibbs, *Analysing Qualitative Data* (London, Thousand Oaks, Sage Publications, 2007) 38.

¹¹⁰³ Ibid: coding involves identifying and recording one or more passages of text or other data items and then linked with a name for an idea (the code).

¹¹⁰⁴ Martin W. Bauer, 'Classical Content Analysis: A Review', in Martin W Bauer and George Gaskell (eds), *Qualitative Research with Text, Image and Sound: A Practical Handbook for Social Research* (London: Sage Publications, 2000) 131-151.

¹¹⁰⁵ Ibid.

¹¹⁰⁶ Ibid Webley (n 950) at 941.

¹¹⁰⁷ Ian Dey, *Qualitative Data Analysis: A User-Friendly Guide for Social Scientists* (Routledge, London, 1993).

¹¹⁰⁸ Ibid Webely (n 950).

¹¹⁰⁹ Ibid.

qualitative data analysis software (CAQDAS) may assist a researcher in systematising coding, the bulk of the analysis work is still relied upon by the researcher to make justification.¹¹¹⁰ For instance, the researcher must justify the selection of codes, the validity of the coding frame, and the interpretation of the relationships between the selected codes. As the name implies, in CCA it is only the content that is analysed (i.e. the interview transcripts) rather than what the material does not contain. Even though a researcher can make a few claims about material not found in the text by comparing it with material that is present, most of the analysis lies within the material that is present.¹¹¹¹

Unlike CCA, discourse analysis (DA) considers what is present and what is not present, focusing on texts. Using this method, a researcher would examine many things, including the use of language, syntax, grammar, pauses, hesitations, and repetitions in the discourse being studied.¹¹¹² In essence, DA is a precise method that analyses the text word-by-word and pause-by-pause, coupling description with evaluation.¹¹¹³ A researcher would consider and rely on extraordinarily detailed transcripts for a qualitative interview analysis using the DA method. For instance, Gill finds that there are four main themes that a researcher should consider: the discourse itself, a view of the language, an emphasis upon discourse as a form of action, and a conviction in the rhetorical organisation of discourse.¹¹¹⁴ Consequently, all these forms of discourse would be analysed rather than just the meaning behind the text, which is the crucial object of analysis in the case of CCA. Nevertheless, like CCA, data is coded in DA to reveal the meaning within, and the researcher develops labels that capture different phenomena in the transcript.¹¹¹⁵

¹¹¹⁰ The primary function of CAQDAS is not to analyse data but rather to aid the analysis process, in which the researcher must always remain in control. In other words, researchers must equally know that no software can analyse qualitative data. CAQDAS are basically data management packages, which support the researcher during data analysis process. See F.C. Zamawe, 'The Implication of Using NVivo Software in Qualitative Data Analysis: Evidence-Based Reflections' (2015), 27(1) *Malawi Medical Journal* 13-15.

¹¹¹¹ Ibid Bauer (n 1104).

¹¹¹² Rosalind Gill, 'Discourse Analysis' 2000. Review', in Martin W Bauer and George Gaskell (eds), *Qualitative Research with Text, Image and Sound: A Practical Handbook for Social Research* (London: Sage Publications, 2000) 172-190.

¹¹¹³ Ibid.

¹¹¹⁴ Ibid.

¹¹¹⁵ Anna Kurtycz, 'Jonathan Potter (1996), *Representing Reality: Discourse Rhetoric and Social Construction*' (2003), 22(1) *Journal of Communication* 210-214.

On the other hand, the Grounded theory (GT) method involves developing a theory rather than testing a hypothesis or finding meaning from interview questions. Glaser and Strauss suggest that GT provides a framework for the whole research process and not merely as a means of extracting data. Therefore, it is a theory of research, a data collection method, and a method of analysis and generating theory.¹¹¹⁶ Glaser and Strauss also find that GT analysis relies on what the researcher observes during the data generation and the researcher's reaction to what was observed. Due to its complex nature, GT has received many criticisms from qualitative researchers.¹¹¹⁷ For instance, Charmaz has argued that GT only benefits qualitative study partly because its process allows for the replication of findings as required by the positivist–quantitative research approach.¹¹¹⁸ Nevertheless, like other core qualitative analysis methods, GT is broadly inductive and thus seeks to draw out concepts from the data and organise and theorise them in a more structured and considered fashion.¹¹¹⁹

Accordingly, the data in this study were analysed in line with the study's objectives using thematic analysis. Therefore, the interview responses were coded onto separate coding sheets before being entered into the database.¹¹²⁰ Simon advises that it is a good idea for qualitative researchers to read through all the data to get a general sense of all the information before conducting the analysis using the help of any computer-assisted software. A researcher may consider consulting a qualitative software expert or obtaining a workshop to help with this process.¹¹²¹ Therefore, taking Simon's advice into cognisance, the study adopted and employed the help of Nvivo to enable the entry of coded data into the computer

¹¹¹⁶ Barney G. Glaser and Anselm L. Strauss, *The Discovery of Grounded Theory: Strategies for Qualitative Research* (London: Aldine Transaction Publishers, 1967, re-printed 2006) 3-20

¹¹¹⁷ Ibid.

¹¹¹⁸ Kathy Charmaz, 'Grounded Theory in the 21st Century: Application for Advancing Social Justice Studies', in Norman K. Denzin and Yvonna S. Lincoln (eds), *The SAGE Handbook of Qualitative Research* (3rd edn Thousand Oaks: Sage Publications, 2005) 507-536.

¹¹¹⁹ Ibid Webley (n 933) at 945.

¹¹²⁰ Dey advises that a researcher should either think of the coding scheme at the beginning of his research in order to allow direct entry of the data into the database or alternatively code the interview responses onto separate coding sheets, then enter the data from the coding sheets into the database. Ibid (n 1032).

¹¹²¹ Marilyn Simon, 2011. 'Analysis of Qualitative Data' in Marilyn K Simon (edn), *Dissertation and Scholarly Research: A Recipes for Success* (Settle, WA, Dissertation Success, 2011) LLC.

system. The researcher has also attended workshops and personal training using Nvivo in analysing qualitative data (*See Appendix B5*).

Although other CAQDAS packages could be relevant to the qualitative study,¹¹²² the choice of the Nvivo was informed by three primary reasons. Firstly, NVivo provides a compelling data analysis package that handles complex data procedures for CCA.¹¹²³ Secondly, it helps to improve the accuracy and reliability of qualitative studies.¹¹²⁴ Thirdly, it is the most widely used package for qualitative data analysis in sociolegal research.¹¹²⁵ Richards argues convincingly that Nvivo provides a qualitative researcher with various tools for handling rich data records and information about them for browsing and enriching text.¹¹²⁶ It helps to code them visually and categorise, annotate and gain access to data records accurately and swiftly. The software was designed to help qualitative researchers overcome the rigid divisions between data and interpretation. It also helps the researcher to manage and synthesise ideas accurately and effectively. Welsh argued that when combined with manual techniques in the qualitative data analysis of interview transcripts, NVivo would help a qualitative researcher to realise accurate, valid, and reliable research outcomes. It is shown that a combination of both manual and computer-assisted methods is likely to achieve the best results.¹¹²⁷

¹¹²² Such as ATLAS.ti, MAXqda, NUD*IST and N6, among others see Zamawe (n 1035).

¹¹²³ Even though NVivo has little or no influence on research design, but the presence of nodes in NVivo makes it more compatible with thematic analysis (CCA) and grounded theory approaches.

¹¹²⁴ P. Bezeley, *Qualitative Data Analysis with NVivo* (London: Sage Publications, 2007).

¹¹²⁵ Lyn Richards, *Using Nvivo in Qualitative Research* (1st edn London: Sage Publications, 1999) 4.

¹¹²⁶ *Ibid.*

¹¹²⁷ Elaine Welsh, 'Dealing with Data: Using Nvivo in the Qualitative Data Analysis Process' (2000) 3(2) *Forum: Qualitative Social Research*.

5.5 Conclusion

This chapter has discussed the methodology and methods that the study adopted in reporting the findings in the next chapter. The chapter has mainly addressed the study's research approach and philosophical underpinnings, the research design, the methods adopted to undertake such a study, the data collected, and how the data were analysed. As discussed in the chapter, the qualitative methodology selected for this study is particularly appropriate for examining whether a particular phenomenon exists and assessing the nature of that phenomenon. Therefore, in essence, the study adopts a qualitative approach to understanding the research participants' viewpoints and experiences regarding the design and enforcement of Nigeria's anti-gas flaring law and policy regimes and the participants' relationship with the regimes. Accordingly, the next chapter presents these viewpoints, experiences, and relationships alongside analysis and discussion of the findings.

Chapter Six: Data Presentation and Analysis

6.1 Introduction

The previous chapter discussed the methodology and methods adopted for the study. It argued that the qualitative methodology selected for the study is particularly appropriate for understanding the research participants' viewpoints and experiences regarding the design and enforcement of Nigeria's anti-gas flaring law and policy regimes, as well as the participants' relationship with the regimes. Similarly, it employed interviews to collect the data for the study. Consequently, this chapter presents the analyses of the interviews conducted with twenty-six respondents drawn from various groups of stakeholders (*Appendix A2*). Thus, the chapter analyses the interview data collected and the data analysis procedure and then presents the findings. Borrowing from qualitative data analysis procedures and principles associated with thematic analysis, the study employed coding, sub-coding, and constant comparison to generate themes from the twenty-six interviews.

Consequently, while this section introduces the chapter, section 6.2 presents the data analysis processes, analyses the interview response, the demographic characteristic of the respondents, and the processes used in generating and developing codes, subcodes, and themes while checking data collection and missing data. This is followed by a presentation and analysis of the main findings in section 6.3. Section 6.4 summarises the main findings and logically reports them. Finally, section 6.5 discusses and synthesises the findings, with section 6.6 concluding the chapter.

6.2 Data Analysis

As earlier indicated in chapter 5.3.4, the purpose of employing the interview research tool for this study is to ascertain the issues that emerged from the findings of the literature and the theoretical investigation conducted in the previous chapters¹¹²⁸. The interviewees were carefully selected based on their experience and the level of managerial cadre they have achieved¹¹²⁹. The interviews, videos, and audio were transcribed using an Office online transcription service, before being edited and imported into NVivo for systematic coding and categorisation analysis¹¹³⁰. The outline of the activities carried out as they relate to the analysis and presentation are summarised in the below table:

Table 6.1 shows the data analysis processes

Stages	Process	Activities	
1.	Transcription	1.	Data were transcribed and checked for errors
2.	Coding	2.	Codes generated in text
		3.	Codes were generated for generalisation and checked for any duplication and similarities
		4.	Codes grouped into subcategories
		5.	Grouped codes into themes
3.	Analysis	6.	Data interpreted and analysed rather than described
		7.	Employed a critical eye to ensure that themes and data were sufficient
		8.	The themes and subsequent data sufficiently answered the research questions
4.	Writing Up	9.	Method clearly outlined
		10.	Themes provide a useful basis for discussion in the text
Notes		A detailed explanation of how the processes were conducted follows below.	

¹¹²⁸ See generally heading 5.3.4 and (n. 984, n. 985 & n. 986)

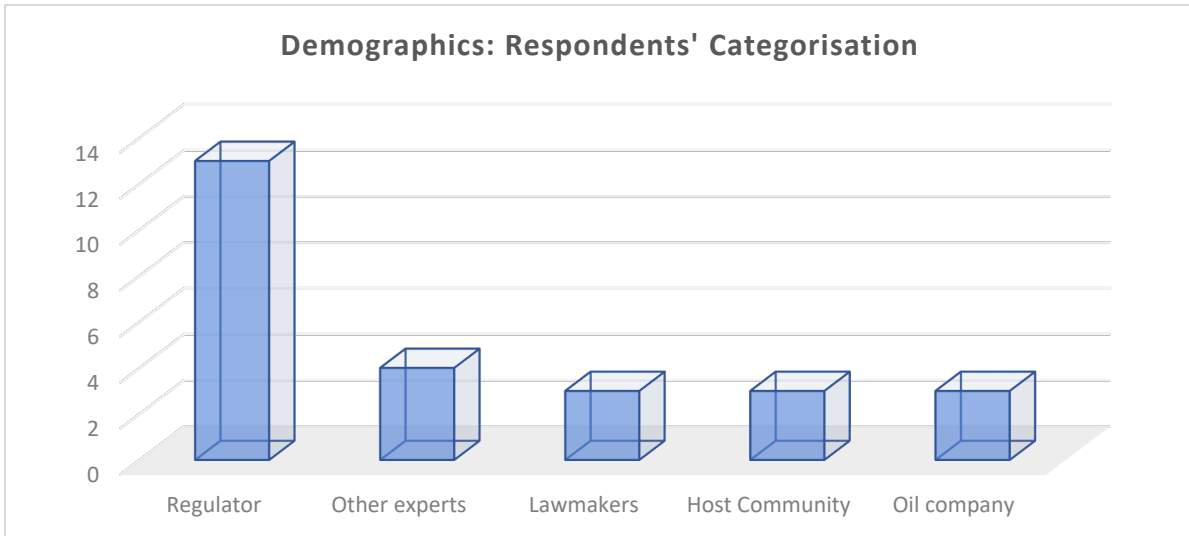
¹¹²⁹ See Figure 5.1: identified the study participants representing the groups of the stakeholders (pp 220).

¹¹³⁰ see heading 5.4 and also (n 1048 - 1052) on justification for chosen Nvivo.

6.2.1 Demographic Characteristics of Respondents

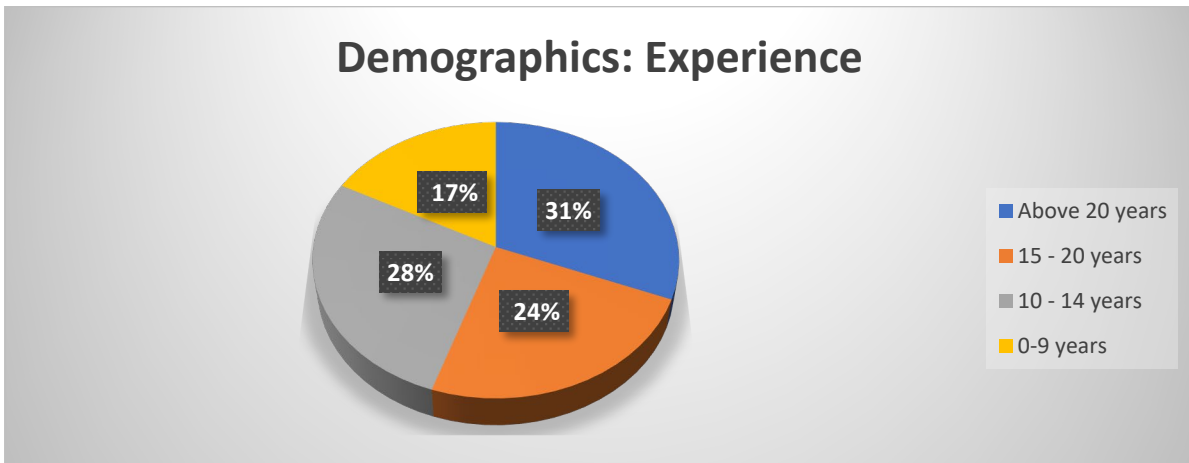
Twenty-six interviews were conducted for this study, with thirteen out of the twenty-six respondents from the DPR (now NURC). DPR, as said earlier, was the sole regulatory agency charged with enforcing gas flaring and other environmental issues within Nigeria’s petroleum industry.

Figure 6.1 presents the value chart of stakeholders who participated in the study



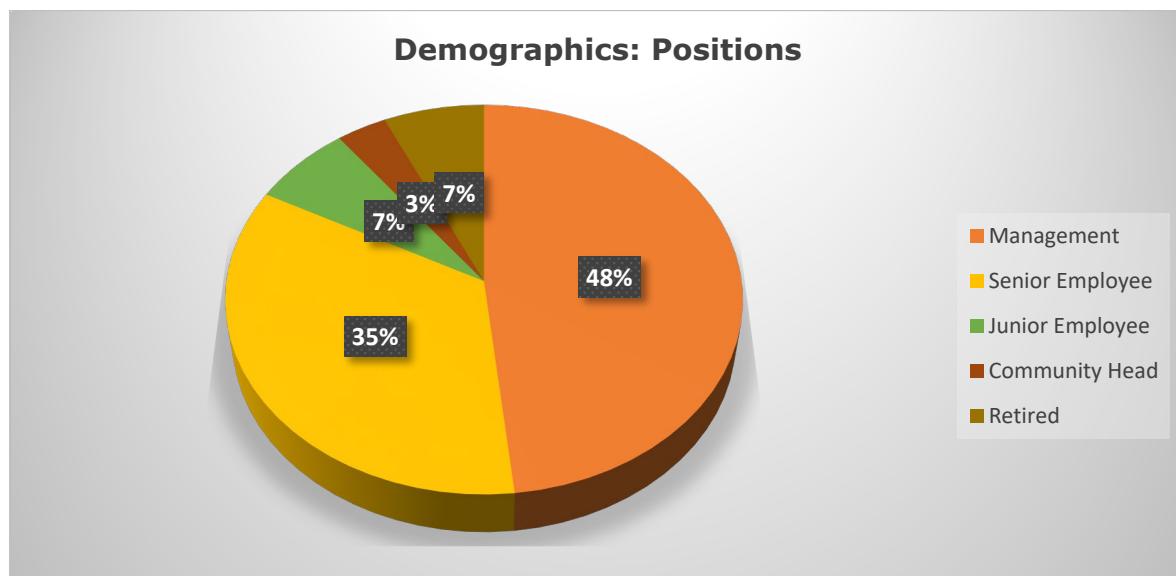
Several factors have contributed to the high response rate from the DPR (regulator). For instance, one critical reason is that the gap discovered in the study was mainly in the enforcement of the regimes. Therefore, the responsible agency for regulating the industry is a more appropriate interlocutor to respond to why they could not do so effectively.

Figure 6.2 shows the experience of the stakeholders in the study



Moreover, the respondents in this study were mostly professionals with varied professional backgrounds, sufficient cognition, and appropriate experiences to give useful perspectives on the study. Many of the respondents occupied management positions and were well-placed to have first-hand insights into practice within the petroleum industry. Furthermore, three respondents are lawmakers with long-term periods in the National Assembly. They also sponsored the gas flaring probation bills still pending before Nigeria’s NASS. Therefore, the interview appointments were secured with some difficulty and limited time. Their positions made time an issue as they operate under demanding schedules. These are the respondents that Empson, Odendahl & Shaw, and Zuckerman described as elite participants.¹¹³¹

Figure 6.3 shows the positions of the stakeholders of the study



6.2.2 Data Check and Missing Data

The first step taken in the analysis is to ensure the integrity of the data by checking the accuracy of the data coding and entry. This was achieved by going through all the transcripts and checking them against the data entered into the NVivo software. There were three cases where the data were entered wrongly and later manually entered. This informed the decision to repeatedly crosscheck the entire

¹¹³¹ Laura Empson, 'Elite Interview in Professional Organisations' (2018), 5(1) *Journal of Professions and Organisations* 58-69; T Odendahl and AM Shaw, 'Interviewing Elites', in JF Gubrium and JA Holstein (ed). *Handbook of Interview Research: Context and Method* (SAGE, 2002), 299; and H Zuckerman, 'Interviewing an Ultra-elite' (1972), 36 *Public Opinion Quarterly* 159-175.

returned interview audios, videos, and transcripts to ensure nothing was left out. After a thorough analysis of the responses and the transcripts for any missing data, all the errors were uncovered and accordingly corrected.

6.2.3 Coding and Themes Generation Processes

This study adopted three types of coding processes and theme generation in breaking up, reassembling, and integrating the data: open coding, categories development, and selective coding (data integration). The codes were freely generated for open coding based on the research objectives. The edited transcripts were coded appropriately using a combination of line-by-line, paragraph-by-paragraph, and incident-by-incident coding procedures. Codes were generated freely with a reflective eye on the research objectives. Thus, the decision to code an idea depended on its relevance to the research objectives. The second coding process - the categories development- was also guided mainly by the research objectives involving the creation of subcategories and clustering the various categories generated around a core theme. The codes generated in the open coding process were further reorganised into categories and subcategories. For instance, codes such as 'political interference', 'court interference, and 'undue influence' merged into one category. The same logic informed the rallying of other individual codes such as 'lack of capital', 'lack of investment', and 'lack of market' around the category 'lack of investment'.

Consequently, with the core themes earlier identified in the stages above, the next stage - the integrating process (selective coding) explored how the categories related to the themes.¹¹³² The previous coding model was utilised in the integrating process with some modifications. The aim was to capture categories of suggestions for improving Nigeria's anti-gas flaring law and policy regimes, which is objective 5 of the study. Similarly, the various elements of the coding paradigm became the conduit for exploring links between the categories and the core theme. More emphasis was placed on identifying categories that responded to the various research objectives at this stage.

¹¹³² Corbin and Strauss (n 1064).

6.3 The Main Findings of the Study

This section presents the outcomes of the data analysis that were organised into six different subsections directly related to the objectives of the study as well as the title of the study, 'An Investigation into the Effectiveness of the Design and Enforcement of Nigeria's Anti-Gas Flaring Law and Policy Regimes and the Consideration of Measures that Could Sustain Environmental Regulatory Compliance'. The empirical approach was adopted to determine the overall perceptions of the respondents concerning each of the questions asked in the study. This will also be compared with the literature findings in the next sections and is one of the ultimate objectives of the study.

6.3.1 Appropriateness of Nigeria's Anti-Gas Flaring Law and Policy Regimes

An appropriately designed anti-gas flaring law and policy regime is expected to help oil-producing countries end gas flaring and encourage investment into gas utilisation projects. Thus, guided by the GGFRP model as a framework, the study sought the respondents' views on whether Nigeria's anti-gas flaring regime is appropriately designed to help the country end gas flaring. The main question was asked along with five more subquestions, as presented below. This is related to the first primary question of the study and objective 2 of the study.

6.3.1.1 Appropriateness of the Legal Regime

Below are the direct quotations of some responses from the respondents who believe the regime is appropriate:

R-007 *"...the laws have been usually the same when it comes to oil and gas regions. It is like copying and pasting basically, so the laws are usually standard laws. Usually, these laws are standardized, and knowing Nigerian jurisdiction, they usually take Nigeria likes more or less a copy and paste."*

R-011 *"So the answer to your question is yes, the laws are appropriate, but the problem is implementation. We need strong institutions. It is our responsibility as lawmakers to make sure that we establish such institutions that will compete globally, hence our determination and commitment in passing the PIA 2021."*

R-014: *"One thing I would say: Nigerian laws are not so bad. They may not be as sophisticated and all-inclusive, all-encompassing as maybe the laws of the West. Maybe the UK, Netherlands, France, Germany, even the US, right? However, if they were properly enforced or complied with, there would be a better measure, a stricter measure of Environmental Protection, and you see because the flaring of gas is an environmental catastrophe."*

R-025 *"Yes, Nigeria's gas flaring law and policy regimes were appropriately designed to achieve the country's objective. As of 2021, there are laws which are aimed to totally reduce/ban gas flaring in Nigeria. Though we have not yet actualized the mission/purpose. The laws have greatly reduced the gas flaring and improved gas utilization process, especially for green projects."*

However, those who do not believe that the country has an appropriate legal regime had this to say:

R-002: *"The laws are not sufficient. They just mention gas flaring in abstract form without really giving it the necessary meaning. And over time there have been several policies and political statements from the Government as to the stopping of gas flaring and nothing is done. So, the problem I do believe is beyond just legislation, is just beyond what legal regime we have."*

R-003 *"The first pointer is the fact that gas flaring issues are subsumed inside the Act, and in my opinion, it's not sufficient. It just mentioned gas flaring without really giving it the necessary coverage. And over time, there have been several policy statements from the Government as to stopping gas flaring, and here we are and where we are."*

R-004 *"I think, first of all, the major obstacle will be from the foundation. It was the foundation. I think the foundation of the regime. OK, because if the foundation is faulty, then everything that stands on it will definitely fall. So, I think, first of all, it is the legal regime. Insufficiency of a legal regime to regulate and strongly prohibit gas flaring in Nigeria."*

R-009 *"Nigeria enacted laws and issued regulations and has institutions, but still, oil companies find their way to subvert those laws. The previous laws have given the petroleum minister too much power over the industry, including the regulators. Hence, our resolve is to amend the laws and pass the PIA. So, the laws are okay to some extent, but the implementation is what we should be worried about."*

R-010 *"The laws don't change. It doesn't really scare a polluter who is willing to just keep saying, 'I'm ready to just pay how much fine you put on me, I'll just keep polluting my thing, and just I'll pay you, it's just nothing. They don't feel the effect."*

6.3.1.2 Appropriateness of the Policy Regime

With the establishment and gradual implementation of NGFCP, the FGN shows seriousness in pursuing policy measures that would help the country end gas flaring. The literature has reviewed all the policies established from 2000 to date and found that NGFCP is one of the most significant policies. Therefore, respondents were asked to share their opinion about the appropriateness of the policies. Consequently, there is no dissenting opinion among the respondents that the current policies devised by the FGN, if implemented effectively, would help the country to achieve its stated objectives. Below are some of their views:

R-004 *"And over time, there have been several policies, we have heard back from the 80s down to the recent one that was pronounced to end. So, I do think in my opinion, that they have been fantastic policies up to the most recent and the NGCP Nigerian Gas Commercialization Programme. The most recent one is the Nigerian Gas Flare Commercialization Programme: if that alone can hit the ground running and hit those milestones and timelines, then there is a possibility that gas flaring will stop."*

R-012 *"I would say the laws and policies are appropriate even though they may not be as appropriate as those in developed countries, but they are okay. If they were properly enforced or complied with, I would have said gas flaring will end sooner rather than later."*

R-018 *"Yes, the present gas flare policies laws are designed to achieve the country's objectives. The impact of the policy is high because the Gas Flare Commercialization Programme mandates operators to use and utilize flare gas or the Government gives the flare site to a third party for utilization."*

R-026 *"The NGFCP is a driver by combating & transforming the flare gas for commercial benefits and ultimately transforming the midstream sector. NGFCP greatly reduced gas flaring and ultimately will achieve the 5% ultimatum given by the Federal Government to all the exploration and production companies."*

6.3.1.3 Adequacy of the Penalty Regime

The research subjects responded to the question of whether the penalty regime is appropriate and sufficient to end gas flaring. There was a mixed reaction. While some respondents, largely from the regulatory sector, believe that the penalties are adequate to serve as a deterrent, many respondents from across the stakeholders believe that the country needs to increase the flaring penalties. **R-015, R-018, R-020, R-021, R-023, R-024, R-025, and R-026** believe that the

country's current penalty regime is appropriate and adequate to end gas flaring. In their opinion, the penalty has already been increased, and there is no need for any further increment now. For instance:

R-020 *"Do I think the current penalty for gas flaring is appropriate and adequate? Yes, the current penalty for gas flaring is appropriate and adequate."*

R-026 *"Currently, yes, I think the current penalty for gas flaring is appropriate and adequate."*

R-026 *"The companies report that all produced gas, utilized & flare for evaluation as statutorily required. While failure or wrong volumes report attracts penalties & sanctions."*

Most respondents opined that the penalty regime is not appropriate and adequate to end gas flaring in Nigeria: they argue that the penalties are established to deter oil companies from flaring, but this does not stop them. If the penalties do not end gas flaring, they will not have had any meaningful impact. In their view, it is cheaper to pay those penalties than to put in place technologies that would take care of flared gas.

R-001 *"Totally not, because we know as a legal person that the penalties are to serve as a deterrent. So, if those penalties did not end gas flaring, then what? Those penalties if you ask me, they're cheaper, and it is cheaper to pay those penalties than to put in place technologies that would take care of this anomaly."*

R-002 *"My straight as an arrow answer to that question is no - it's direct. I just want to give you a direct answer. I think the penalty imposed is inadequate, grossly inadequate."*

R-003 *"But yeah, I think the penalty imposed is inadequate, grossly inadequate. That's one angle; another angle is where are the infrastructures to help end gas flaring?"*

R-004 *"My answer to that question is not sufficient nor adequate. I just want to give you a direct answer before you know I try to flush it off. So, what happens is that after those companies pay the penalty, they still go back to get them back as a charge. So, it is viewed more like a charge than a penalty."*

R-006 *"The penalties for gas flaring are too small. They are too small because companies even prefer paying the penalties than ending gas flaring."*

R-009 *"The penalties for gas flaring are not adequate. They are too meagre to serve as deterrence. The executive does not want to offend the oil companies because they know that the bulk of the country's revenue is from there and they refused to diversify the sources of revenue generation. That is why we wanted to*

introduce a provision for penalties in the PIA but received a stiff rejection. We wanted to increase the gas flaring penalty to an appropriate level to disincentivise the practice of gas flaring."

R-010 *"The penalties for gas flaring are meagre, and they are too small. They are too small because when the laws for the flaring penalties were made, what those who drafted the rules or the regulations had in mind and took into consideration was the market value of the prices of gas or oil."*

R-011 *"The executive arms of government have already increased the penalties for flaring gas. But I think for me it is not enough. But let us give them the benefit of the doubt now that the new PIA came on board, and see if they will be increased or maintained."*

R-012 *"I think the penalties are too meagre, but the executive arm has our mandate to increase the penalty for gas flaring. What the oil companies are currently paying is not commensurate with the environmental degradation they caused."*

R-014 *"\$3.50: I think that's still small. It's still small and the fact of the matter is in places like the Netherlands or in Norway, where they have almost about zero flaring, they pay more. I still think that is small, because even if we are saying at N500 to \$1 that would be about 1750 Naira, which is peanuts."*

Likewise, some respondents from the regulatory sector also shared a similar opinion with the other stakeholders' category that the penalty is not appropriate and should be increased for optimal performance. For instance:

R-016 *"It should be raised higher to enforce better compliance."*

R-017 *"No, I don't think the current penalty for gas flaring is appropriate and adequate."*

R-019 *"Yes. However, for consistent non-compliance, the penalty can be made progressive, i.e. a yearly increase."*

R-025 *"The enforcement needs to be increased/strict, and the penalty has to be enforced or increased."*

6.3.1.4 Adequacy of the Incentive Regime

The assessment of whether the country has the incentives necessary to encourage oil companies to invest in gas utilisation projects has also been responded to by all the participants in the study. Though the majority of the respondents believed that the country has adequate incentives necessary to tackle the menace of gas flaring, a substantial number of the respondents did not agree with this view. 14 out of the 26 respondents answered in the affirmative, while 10 respondents believed the country needs to provide more incentives. For instance:

R-013: *".... there are incentives in place, and I can say they are adequate enough to end gas flaring.... I am sure they can help influence investment into the gas utilisation projects."*

R-011 and R-012 *"I think it has been spelt out in the PIA though it is mostly for gas development, but gas flaring infrastructures also do enjoy that. I think for now they are adequate, though the oil companies may argue otherwise considering the fact that they are businesses and want to maximise profits. So as time goes on, I believe the executive may consider giving other incentives but let's utilise what we have, no matter how inadequate."*

R-015: *"Domestic Gas utilisation for electricity production provides one of the most viable options for deployment. There are incentives for DOMGAS' adequate utilisation. I will say yes, there are adequate incentives provided to stimulate investment in gas utilisation projects."*

R-016 *"I think the incentives provided are fair enough incentives to influence investment in gas utilisation projects"*

R-024 *"Government is all out to support gas utilisation – fast track of approvals to encourage companies/proponents. The incentives provided are absolutely adequate to influence investment in gas utilisation projects."*

R-026 *"The fiscal incentives package is a trigger and is enough to influence investment in gas utilisation projects."*

However, those who did not believe the country has adequate incentives also explicitly stated their opinion. Though they agree that there are incentives, they are inadequate to encourage oil companies to invest in gas utilisation projects. Some have even claimed that the incentives exist only on paper, but in the real sense, they are not accessible and are shrouded with many unfulfilled promises. For instance, see the views of R-002, an expert and industry watchdog, and R-003, representing the oil companies category.

R-002 *"The Nigerian government usually makes many promises that they don't fulfil. They normally promise oil companies heaven and earth, but it is just on paper: there are numerous political policies that they don't fulfil. So I don't know if there are not or if they do fulfil them. That is between them and the oil companies but all we want is a pollution-free environment and nothing more."*

R-003 *"Well, the thing about the oil and gas industry in Nigeria and the Nigerian Government, they tend to make many promises that they can't fulfil. Yes, in paper there are numerous political policies relating to tax havens, and you can count many of them and provision of facilities to encourage the domestic utilisation of gas. But, in fact, those incentives are the value they have in paper, but not in practice. So those incentives are there, but they are not being rolled out: they are not being matched by actions to encourage operators to stop gas flaring."*

R-004 also believed that though the incentives are there, they were not rolled out in practice. According to him, *"those incentives are there in the paper but in practice, in actuality in a natural scenario, they are not there."*

R-005 *"There are incentives in place, but yeah, the incentives may not be adequate."*

R-006 *"I think the Government has no incentives for ending gas flaring at the moment. The incentives are for gas development mostly, though I stand to be corrected. I have not seen tax breaks in the real-time of the world, other than for just those LNG projects."*

R-009 *"Yes, just as penalties: the incentives are inadequate too. You see oil companies are here to make money, and they would not invest their capital unless they are convinced, they will make a profit."*

R-010 *"So which tax breaks do we actually know that exist? It is one thing to give tax breaks, though it is also another thing to ensure that. Are you sure that the environment would allow these tax breaks and activities to thrive? We can say tax breaks on paper but in reality, our companies do not really see them."*

Likewise, two of the respondents from the regulatory agency did not agree with the majority of views in that category of the stakeholder. These two respondents were of the view that the incentives are not adequate, and the Government need to do more in terms of rolling out incentives with a proper flow of investment into the gas sector of the country.

R-018 *"It is not adequate because the existing gas infrastructure still is insufficient to meet gas demand from the power sector, commercial customers, industrial and exports needs. There is still a need for investments in new pipelines and other gas gatherings, processing and storage infrastructures."*

R-025 *"Incentives definitely influence investment in gas utilization, but for me, incentives for associated gas utilization should continue to be encouraged because of the process/cost of gas purification."*

6.3.1.5 Overall Impact of the Law and Policy Regimes

A. Legal Regime/Negative

R-001 *"To be quite honest, it had very little impact on the industry because as you know and has been written, over time, gas flaring as we speak is still ongoing. And it is because these laws came into being quite early in the history of oil and gas, and so if you ask me directly, the impact on gas flaring, I will say: almost non-existent."*

R-005 *"Currently, they have little impact on the reduction of gas flaring in Nigeria. But that is not to say a lot of things have not happened over time, but the laws did not end gas flaring, did they?"*

R-006 *"Yeah, the laws are there and do they have any impact as far as my opinion is concerned? The answer is no."*

R-009 *"You see gas flaring starts since the 1960s when the oil and gas exploration started in Nigeria. But hardly you see our regulations playing a vital role in those effects. Like a decrease in production or any other factor. But the laws have a minimal impact in the reduction of gas flaring in Nigeria."*

R-010 *"The impact of the laws? Let me make out that bold claim that the laws do not have as much relevant impact as expected. Even though, to some extent, we cannot say that these laws do not apply at all. To some extent, it does apply, but it doesn't really have the force of law that you would expect for any legislative regime."*

B. Legal Regime/Positive

R-013 *"Most effective, yes: we have the laws and policies, and if we now count the years between the time those laws were put in place and now. I mean, obviously, you can see that there is some impact towards regulating gas flaring."*

R-015 *"The existing laws and policies have helped in achieving a significant reduction in flare reduction and gas utilisation."*

R-018 *"It is yielding results with more gas utilization projects."*

R-020 *"It has greatly reduced gas flaring in Nigeria, and hence has an impact."*

R-021 *"The impact of the existing laws and policies on gas flaring reduction and utilization? Most effective."*

R-023 *"The impact of the existing laws and policies on gas flaring reduction and utilisation is positive."*

R-024 *"The impact of the existing laws and policies on gas flaring reduction and utilisation is more than average."*

R-025 *"As of 2021, there are laws which are aimed to totally reduce/ban the gas flaring in Nigeria, but we have not yet actualised it as the mission/purpose. The laws have greatly reduced the gas flaring and improved the gas utilization process, especially for green projects."*

R-026 *"It has impacted on increased gas utilization and reduced gas flaring."*

6.3.2 Appropriateness and Effectiveness of the Policy Measures

R-015 *"The mechanisms have resulted in a significant reduction of gas flaring activities in Nigeria. Routine flaring is almost non-existent. What is prevalent is the occasional flaring resulting from operational upset."*

R-017 *"Policy measures have increased gas utilisation."*

R-018 *"Yes, the recent National Gas Flare Commercialization Programme where companies bided to utilize the flared gas from some facilities. Nearly all the gas facilities have flare meters which account for all flared gas."*

R-019 *"The Gas Flare Commercialization Programme is a critical initiative to achieve reduction. The impact is high because the Gas Flare Commercialization Programme mandates operators to utilize flare gas or the Government gives the flare site to a third party for utilization."*

R-022 *"Many companies have keyed into gas utilization programmes rather than flaring".*

R-023 *"What is the impact of the existing laws and policies on gas flaring reduction and utilisation? I think to me it is positive."*

R-024 *"Above average: it is all about ensuring strict adherence to the provisions of the EGASPIN 2018 and the implementation of ERA policies."*

R-026 *"The NGFCP greatly reduced gas flaring and will ultimately achieve the 5% ultimatum given by the Federal Government to all the E&P."*

6.3.3 Appropriate Alternative Regulatory Approach

Appropriate regulatory design and enforcement approaches are essential to eliminating gas flaring and other environmental pollution. This question followed the theoretical investigation in chapter 4 and wanted to supplement it in the empirical study. The question was to obtain the respondents' views about the appropriate method to use when designing an environmental regulatory regime or the best environmental enforcement approach to adopt. This is related to objective 3 of the study in assessing whether strengthening the current regulatory approaches or devising a new approach would sustain environmental regulatory compliance.

6.3.3.1 Design Approach

i. Suitability of Command-and-Control approach (CAC)

R-010 *"CAC can never outlive its usefulness in any setting. Because you shouldn't leave people to self-regulate themselves, and people always have a way of running cycles."*

R-011 *"For Nigeria in the state that it is now, it is better with the 'command-and-control' model. Because we are not yet matured to extend the regulation of our mighty industry to the whim and caprices of oil companies."*

R-012 *"I think CAC is better. Because at times you can't help but question the integrity and sincerity of the multinational oil companies operating in Nigeria. Because while they adopt international best practices elsewhere, they do what they like here in Nigeria."*

R-014 *"The idea that they (oil companies) should be stakeholders and regulate themselves is not an option. For Nigeria in the state that it is now, it is better with the CAC approach. I do not believe in self-regulation."*

R-022 *"Cooperation can be an option but may not function, so CAC is better."*

R-023 *"No, a cooperatively enforced regime cannot be an alternative approach and induce compliance with Nigeria's associated gas flaring regulations."*

ii. Suitability of the Economic Approach

R-002 *"I think economic approach because if we talk about the approach as it were, I mean if you talk about it as a consultative approach, and this is how best to end gas flaring in Nigeria."*

R-007 *"I reckon that having the oil companies be stakeholders and making sure they implement the laws already set up will work better. I think it's logical because 'command-and-control' gives room for this lobbying that we're talking about. It gives room for the system to be infiltrated and corrupted."*

R-018 *"... experience from Nigerian environmental policies and implementation has shown that the traditional 'command-and-control' system had not produced the desired result of 100%. So market-based forces could be an option."*

iii. Suitability of the Combination

R-001 *"So there has to be a little bit of flexibility when it comes to regulatory approaches, there has to be flexibility. Not all companies have the same level of resources or understanding. Some very new companies are going to apply the same law. So that is why I say there has to be a mix of approaches, if that answers your question directly."*

R-003 *"Yes, I do think sometimes the CAC structure has outlived its timeline. The industry is dynamic and changing far and beyond that outlook and now has it's more stakeholder-like approach, where all stakeholders come together and propose the way forward with other stakeholders."*

R-004 *"Government should be sincere in its dealings with the oil companies, and there should be constant engagements with those that matter (oil companies) before setting out any policies because they will be the ones to comply with the laws. Therefore, they should be consulted, and their opinion should be considered. They should be treated as stakeholders, not adversaries."*

R-005 *"Cooperation and a little bit of control because of the type of oil companies we are dealing with; cooperation because of the location of your operations."*

R-006 *"I will go with a combination of both approaches. Yes, a combination whereby all parties' views will be taken into consideration as a step forward in charting a new way: that's good."*

R-010 *"Companies can actually self-regulate. But for me I would say it should be a combination: we shouldn't throw away any."*

R-011 *"Though I will suggest that all stakeholders should be involved in everything, the oil companies have the technical know-how and enough capital to end gas flaring in Nigeria and therefore should be involved in all of the processes because they are good at this kind of thing."*

R-013 *"Combination of both will be more effective. While the oil companies should be involved in everything, the oversight and power should still be with the regulator."*

R-014 *"I would have said yes, the stakeholders should be involved in everything. Yeah, there is involvement, but I think the oversight and power should*

still be with the Federal Government or state government or whoever, rather than an outsider. But I don't think that this should be without oversight. There should always be oversight: yeah, OK, a combination of both."

R-015 *"No, I do not think the use of force – 'command-and-control' – will achieve the required and necessary compliance. It should be a combination."*

R-017 *"Yes, a cooperatively enforced 'command-and-control' regime would be an alternative approach and would induce compliance with Nigeria's associated gas flaring regulations."*

R-019 *"Yes, the answer is a combination of CAC and cooperation will work best."*

R-020 *"Synergy among the relevant agencies and stakeholders is always a good idea in enforcing regulations."*

R-021 *"I think a combination of both will be more effective."*

R-023 *"Combination of both."*

R-024 *"Both are already existing in the guidelines and are effective."*

R-025 *"Yes, a cooperatively enforced 'command-and-control' regime would be an alternative approach when empowered by the law."*

6.3.3.2 Enforcement Approach

i. Sanctions

R-004 *"For me, a change of approach would not work. It would not work because, I mean you, the devil is in the detail. Somehow, when you're asking a question, you answer the question. These other comparable jurisdictions are mostly mature."*

R-010 *"I would say punishment but on a condition. Punishment if, as a regulator, you have done your job. Because you cannot ignore your part of the bargain and expect that companies will continue soon."*

ii. Persuasion

R-002 *"I think persuasion, when you try to bring people together, is better if it is done in good faith and all stakeholders are bound by their commitments. Therefore, cooperation is key to ending gas flaring but must be done in good faith."*

R-022 *"Many companies are in compliance, and more are showing interest without being forced or imposed."*

iii. Best global practice

R-003 *"In mature jurisdictions, you have critical infrastructures, but in Nigeria, those critical infrastructures are not there. So it's a matter of the Government itself, not just resetting the parameters or giving out punishments to stop gas flaring, but it needs to go back and set those critical infrastructures in place."*

R-004 *"I think the keyword in the oil and gas industry is that it should be operated based on best global practices. This should be the hallmark of any oil and gas industry in any jurisdiction."*

R-005 *"I think one of my greatest achievements was moving compliance through dialogue rather than through sanctions, so I'm going to be coming from that perspective. Even though I worked in a regulatory agency, I felt that nobody would deliberately want to flaunt the laws rather than its entities."*

R-014 *"I have a lot of suspects for the commitment and goodwill of a lot of these international or multinational oil companies. If they were applying international best practices across the board, then that would be good."*

iv. Mixed/Combination Approach

R-001 *"Yes, and then the next question you are asking is punishment or persuasion. Again, it has to be both. The industry is very complex and trying to understand the complexities of the operations. I think the mixed approach is also okay. Sometimes you need to persuade, sometimes you need to be outrightly sanctioned."*

R-005 *"The industry is very complex because even as a regulator, you need to understand where they are coming from and in one of the areas, one of the instances where I have engaged operators, one of the frustrations they have put forward is that the regulators don't try to understand where they are coming from. So it has to be a mix as well i.e., a combination of punishment and persuasion."*

R-006 *"I would say punishment and persuasion could work best. The regulators need to bring all parties together and encourage them to end gas flaring."*

R-007 *"Yes, there should be a mixture of all. But on punishment, it takes time. We're seeing that time immemorial doesn't really work for a big industry like oil and gas. Because first of all, they would drag. There's time, you lose a lot of time while the damage is still continuing. Yeah, maybe a combination instead of like punishment only."*

R-011 *"I think the combination of both. Carrot and stick approach. Both could work best for the industry."*

R-012 *"The combination of punishment and persuasion would be wonderful and would probably help us in the long run."*

R-013 *"So, I believe they could be a stakeholder in the regulation. So the combination of punishment and persuasion will also be effective. Because 100% punishment wouldn't work properly."*

R-014 *"So if I say no, there should be some kind of incentive. Incentives could be the reverse of penalties as far as I'm concerned."*

R-015 *"A combination of both approaches will best achieve the desired outcome."*

R-017 *"Combination of both punishment and persuasion."*

R-018 *"I believe a combination of all should be applied."*

R-019 *"Both punishment and persuasion are needed."*

R-020 *"I believe persuasion and fines are okay."*

R-021 *"No, I think the combination of both punishment and persuasion will be more effective."*

R-022 *"Both punishment and persuasion for gas flaring regulations can be effective."*

R-023 *"Combination of both can be effective."*

R-024 *"Both punishment and persuasion are already existing in the guidelines and are effective."*

R-025 *"Definitely a combination with serious sanctions for defaulters."*

6.3.4 Effectiveness of the enforcement processes of the legal regime

As seen in the responses and the literature, enforcement has always been the problem limiting the realisation of Nigeria's policy objectives. The above reactions clearly and explicitly show that the problem is not the regime's design but rather how effective the regime is enforced. The study obtained participants' views on the enforcement processes, and below is a sample of the responses.

6.3.4.1 Ineffective Enforcement

Most respondents believed that enforcement is ineffective, and the country needs to do more in enforcing the laws.

R-001 *"There are no consequences for bad action. The agency does not grant stipulated sanctions from all indications. So the lack of sanctions and lack of consequences for bad behaviour are the major problems affecting the industry at large."*

R-002 *"The laws are not effectively enforced. The Government should do everything possible and enforce it right from the inside before it goes out to the other people."*

R-003 *"I think what is lacking is the political will to enforce the laws that Nigeria has, and that is all. Regardless of the many policies that the Government has: irrespective of the legislation and all that, it's still reoccurring. I do not think that gas flaring in Nigeria will be a thing of the past unless we get the right infrastructures in place, backed by progressive policies."*

R-004 *"As inadequate as the industry is is as inadequate as the policy enforcement mechanisms are in the industry. So, in essence, enforcement is lacking and what is actually lacking is political will to actually enforce even the little laws that we have."*

R-005 *"The issue is not about the law but the enforcement of such laws. Are we doing what we are supposed to do as regulators? The answer is no."*

R-006 *"I think the problem is that the regulator is not doing what it should do in term of enforcing compliance which is the primary responsibility."*

R-007 *"If I would think what the laws have been when it comes to oil and gas regions, it is like copy and paste. Basically, the laws are usually standard laws. But then where the problem comes is the implementation of these laws, so maybe implementation and enforcement are lacking."*

R-008 *"Sir, in that area, I know. When you push a certain matter, you get tired and leave the matter. So, probably you see the matter and maybe when you push more, they will tell you that's OK. You can go to court and defend the matter."*

R-008 *"Sir, that is a problem. I told you they are not obeying such laws in our area. Well, they just do some like I don't care, like they don't mind just to maybe know one or two persons in that area. Maybe they can just use the back door to do some certain things, so just to favour them. So, these are the problems we've had since then."*

R-009 *"Nigeria enacted laws and also issued regulations and have institutions, but still oil companies find their way to subvert those laws, and this is largely because the regulator is not effective in discharging its constitutional*

responsibilities. So the laws are ok to some extent but the implementation is what we should be worried about."

R-010 *"I would say that it is not necessarily about how the laws are formulated, and it is just about the implementation."*

R-011 *"So, the answer to your question is yes, the laws are appropriate, but the problem is implementation: we need strong institutions. It is our responsibility as lawmakers to make sure that we establish such institutions that will compete globally, hence our determination and commitments in passing the PIA 2021."*

R-012 *"Of course, the laws are okay, but enforcement and compliance are the issues worth given attention. We need a strong regulatory institution that's great."*

R-013 *"If the government is ready to relinquish the right of that associated gas. I am sure they can help influence investment into the gas utilisation projects."*

R-014 *"So, one thing I would say is Nigerian laws are not so bad. They may not be as sophisticated and all-inclusive, all-encompassing as maybe the laws of the West. But if the laws were strictly enforced, Nigeria would not be in the position it is today. So the laws may be there, but the question is are they being enforced and complied with? And of course, the regulatory institutions we have in Nigeria are inadequate."*

R-016 *"How effective is the enforcement of gas flaring laws and regulations? I think it is not effective."*

R-017 *"The enforcement needs improvement."*

R-025 *"Enforcement is not at its best. There is a need to be stricter and have regular monitoring in terms of metering. The enforcement needs to be increased/strict, and the penalty has to be enforced or increased."*

6.3.4.2 Fairly/Moderately Enforced

R-020 *"I would say the existing anti-gas flaring legal regime was fairly enforced and, in turn, encouraged environmental regulatory compliance in Nigeria's petroleum industry."*

R-021 *"..... The enforcement is moderately effective."*

R-023 *"To a large extent, the existing anti-gas flaring legal regime is fairly enforced and, in turn, encourages environmental regulatory compliance in Nigeria's petroleum industry."*

R-024 *"How effective is the enforcement of gas flaring laws and regulations? I would say is good."*

R-026 *"All routine & non-routine flare gas are subjected to flare penalties, and companies are to utilise the produced gas or the next phase of NGFCP will capture the volume of gas flare in their facility for an interested investor."*

6.3.4.3 Effective Enforcement

Only four out of the 26 respondents from the regulatory agency category believe that the enforcement is effective because sanctions have been applied appropriately. Below are the responses received:

R-015 *"The anti-gas flaring legal regime is strictly enforced, and sanctions are applied appropriately for routine flaring. Flare meters are installed and calibrated on all flare systems in the industry to accurately measure any flaring. This has helped reduce the GHG and methane emissions from our operations."*

R-018 *"It is effective because the regulatory body accounts for every cubic feet of gas produced."*

R-019 *"To a large extent, as the majority of operators have commenced gas flare reduction and utilization projects, The enforcement of gas flaring laws and regulations is adequate. The guidelines on flare reporting are available and enforced. The cost implications of flare penalties compelled operators to initiate gas flare down projects as well as Government commitment to the Paris Accord."*

R-022 *"How effective is the enforcement of gas flaring laws and regulations? Very effective."*

6.3.5 Major Obstacles Hindering Effective Enforcement

As seen in the previous section, the regime suffered from ineffective enforcement processes and thus could not help the country to end gas flaring. The literature examined in chapter three has also confirmed this and revealed many obstacles. Therefore, this section presents the respondents' views about what they believe hinders Nigeria's effort to end gas flaring and unlock its gas potential. This is related to objective 2 of the study, identifying any deficiencies and challenges and their inability to establish effective compliance to the ideal of zero flaring and environmental sustainability.

6.3.5.1 Conflict of Interest

R-004 *"There's a conflict. I'm trying not to use the word conflict of interest, but it is clearly a conflict of interest. So, if the Government is saying that it wants operators to stop gas flaring, that's very well the Government itself because it is a major oil and gas player. Here it's more like the operator. You talk of setting your own views for yourselves, that even you yourself don't adhere to. So the Government is kind of regulating itself to stop gas flaring."*

R-006 *"It's not about how the laws are formulated; it's actually how the implementation works. So, what has happened is that there's a conflict of interest between making money and also regulating and implementing the laws. Because the Government is interested in the money more or less than effectively regulating the sector."*

6.3.5.2 Corruption

R-007 *"There's corruption everywhere. It's just the degrees. Again, the oil industry is itself corrupt. Check the history of the oil and gas industry anywhere in the world. The oil and gas industry are corrupt."*

R-009 *"We have tried as much as possible to be specific about their sources of funding so that they would not have to rely on external forces. Because of course, they need the money to do their work. They need the money we give to them to encourage their staff to avoid all sorts of corruption."*

R-011 *"Of course there are. You see interference and corruption play vital roles in defeating the whole essence of the laws because some people are illegally benefitting from the failures, and I don't want to go further: just go and do your research and come back to me with your discovery."*

R-012 *"So, if there is no political will, there is corruption: what can the law do? Also having a strong and fully funded regulatory agency."*

R-014 *"Of course corruption is right up there. Corruption is right up there. Money is allocated for things, and people are sharing. So corruption is a big issue, and when you're talking of corruption, you're talking of corruption within even the regulatory mechanisms or arms of government. So, the people that are there to regulate you find out that they would collect a bribe and look the other way or allow you to do what you shouldn't do."*

6.3.5.3 Courts Attitudes

R-006 *"Imagine that a judgement was pronounced since 2005 that gas flaring violates our communities' rights and the oil company should stop. But to my greatest surprise, it was the Federal Government that appealed that judgement, not even the oil company. The case has been there at the Court of Appeal without any actual date to be decided."*

R-008 *"So it's wonderful when you want to take down the oil company, they normally say like, 'if you like take us to court, we are ready to go with you.' If it is 10 years, if it is 20 years, we have lawyers, we have SAN (Senior Advocate of Nigeria). So, you get tired."*

R-009 *"Just take the example of the case of Gbemre. But imagine it was the Federal Government who was stealing that judgement. They appealed and dumped the appeal. Since 2005 they got the judgement at the Federal High Court. But imagine up till now the matter is on appeal."*

R-010 *"We should allow the courts to legislate oil and gas matters. The inability of the courts or the inability of the citizens to take bold actions and get judicial remedy is never a good thing for any legislation and any legal sector. They did not do anything. The court just gave a declarative relief. The court did not say this is what you must do. The court only declared that the attorney general should take necessary steps. So the laws, any law that cannot be adjudicated, it's very bad for any sector."*

R-011 *"The courts are also not doing enough to help the executive arm in their job of making sure that laws this house passed receive real interpretation and hold oil companies to account. Just look at the case of P&ID: is this not a shame on the country?"*

R-014 *"You may have seen a case that took up a lot of space was the Gbemre against Shell. I always say that case is still the law in Nigeria. Gas flaring has been pretty much outlawed by virtue of that case. But there was some kind of wonderful magic that was performed and the thing [the case] in the Court of Appeal just happened to die. But it hasn't been overturned on appeal. Well, it was at the Court of Appeal, but we've not heard anything about it."*

6.3.5.4 Double Standards

The double standards here referred to both policymakers and the oil companies as operators.

R-001 *"I think I want to hold both the regulators and the operators responsible for not doing what they are supposed to do. Because they [the operators] cannot do it in their home countries. They claim to protect the environment primarily in their home countries. So, the double standard is there and if they are leaders in their countries, why would you come to a developing country and be selective in the regulations that are put there. What is happening in Nigeria cannot happen abroad."*

R-010 *"You [the Government] don't always honour your stake, but you want to punish the companies for flaring the gases when you have not provided the pipelines, we have not provided the security, we have not provided so and so. If government has done its part, we won't even be talking about persuasion."*

6.3.5.5 Financial inducement /divide-and-rule tactics

R-008 "OK, so they used to give us like a financial incentive to lower the matter. That is that they are not taking things seriously in Nigeria."

"Sir, sometimes you know when they pursue these matters in the community. And they normally do divide-and-rule games, I mean the companies. Sometimes, we pursue such matters, maybe when you are not financially empowered or whatever. You will get tired, and it remains dead, and that's how we normally do."

R-014 "The same way you hear the community, they will say they have to give them the contract that it is their land. So Shell will give them the contract and then those people would carry out something sloppy or they will not do it."

R-014 "The idea that the [oil companies] should be stakeholders and regulate themselves? I do not buy into it in Nigeria. Because Nigeria like I said has corruption issues and sincerity is an issue. Integrity is an issue, transparency is an issue, honesty is an issue. All issues have a way of pretty much eroding the confidence of anybody with regards to what the regulation should be."

6.3.5.6 Government reliance on revenue

R-001 "I think the main reason is that the industry is a main contributor to the Nigerian revenue base. We are in a situation where oil and gas is the mainstay of the economy, and so the regulator's hands are tied because you want to contribute to the revenue base of the country, so you have that dilemma or that balance that you have to maintain because when you are too stringent in ensuring that these laws and regulations are carried out, on the other hand, the Government needs and wants the money because we are a developing country."

R-005 "But I think the most impactful is the sense that this sector is a major contributor to Nigerian revenue, and so sometimes when the enforcement comes, it is watered down to ensure that the oil must flow. And when we have that kind of scenario, it becomes difficult for the enforcers to stand their ground without being seen as saboteurs, do you understand? But if we were not so dependent on oil, I think maybe the enforcement would have been much more okay."

R-006 "So what has happened is a conflict of interest between making money and also regulating, implementing the laws. Because the Government is interested in the money more or less than effectively regulating the sector."

R-009 "The simple answer is bureaucracy. I earlier mentioned that the previous laws gave the petroleum minister too much power and, in their wisdom, the environment is not the first consideration to them, but rather generating revenue."

R-010 "The Government is very much a participant. In fact, it holds the majority shares in this sector. They want to make the most money for the

Government at the same time to be economically interested in how much comes from the sector, and they have equivalent interests in how the sector is effectively regulated."

R-014 "Because even when Justice Wafere (the judge in Gbreme's case) gave that decision, the spokesman for the Federal Government said something that is impossible. So in other words, they're not stopping flaring any gas because we are saying we should stop flaring gas, which means we have to stop producing oil."

6.3.5.7 Instability of the regime

R-022 "Some companies do not require all of the gas produced for internal use, and for fear of regime changes or inconsistencies in Government policies."

6.3.5.8 Interference ('The Oil Must Flow')

R-001 "I have seen instances of where a fine or a sanction has been given to an operator and then a call is made from the powers that be to relax those sanctions and fines."

R-003 "Yes, it just needs to put its house in order and also get a political backing: that is all it needs. They have the manpower, and they should avoid unnecessary interference from politicians."

R-004 "The way the oil and gas industry is in Nigeria is that the Government is actually the major player. Yeah, because the Government owns the majority of all the JVs they issue to IOCs. So if the Government is saying that it wants [operators] to stop gas flaring, that's very well the Government itself as a major oil and gas player."

R-005 "There's a phrase like that that we used to hear some of our bosses say because sometimes when you sanction a company, a higher authority would come and say 'please, let them go because **"the oil must flow"**'. Don't you want Nigeria to generate revenue? So that balance is there."

R-008 "I feel when we lodge our complaint to the Ministry (Petroleum Ministry instead of the regulator), the matter resolves speedily. That is our aim. OK, it will resolve better when you lodge it to the federal ministry of petroleum resources? Is that what you're saying, interference? Yes."

R-009 "Just take the example of the case of Gbemre. Imagine it was the Federal Government that was stealing that judgement. They appealed and dumped the appeal. Since 2005 they got the judgement at the Federal High Court. So, I'm not absolving the Federal Government, it's a party, but I won't be surprised because it is a beneficiary and most of our foreign reserve is from the oil industry. So I don't expect the Government to do anything."

R-010 *"The companies are to blame. The Government also bears the responsibility because the Government is not doing what it should do. The Government just wants the money, like I said, **"the oil must flow"**.*

"We should allow the courts to legislate oil and gas matters. The inability of the courts or the inability of the citizens to take bold actions and get judicial remedy is never a good thing for any legislation and any legal sector."

R-011 *"There was a time before I came to this house when one judge gave a judgment prohibiting gas flaring. I know this is a rare case but the Government along with the oil companies appealed that High Court judgment instead of trying to comply with it and we have not heard of the case since then. So you see the lack of political will I am telling you about."*

R-011 *"Our courts are being weakened very badly to the extent that those powers are taken away from them. The way the executive arm sees the two arms of government, the legislature, is as if we are their boys: not equal. There was no checks and balances, and the supervision is not there."*

R-011 *"Of course there are. You see interference and corruption play vital roles in defeating the whole essence of the laws because some people are illegally benefitting from the failures, and I don't want to go further: just go and do your research and come back to me with your discovery."*

R-012 *"We need a strong regulatory institution that's great. What we have now are quite weak and they are easily manipulated by politicians. The institutions regulating the industry should be strong and independent and that is why this house passed the PIA 2021."*

R-014 *"Our courts are being weakened very badly. The powers are taken away from them with the way the executives see the third arm of government... the judicial arm that should be one of the strongest and should keep everybody in check is one of the weakest in Nigeria."*

R-018 *"I think the biggest impact on the effective enforcement of gas flaring laws and regulations is heavy lobbying by companies and vested interests."*

6.3.5.9 Lack of Capital and Market for Gas

R-010 *"Is the market there? Do we have the market for these gases? It is an absurd reality, but it is true that over here, because of the weather you need these gases, but our weather is not like that. So our own kind of weather doesn't really encourage domestic use of gas."*

R-014 *"Try to harness some of the gas, but this involves a lot of funds. It requires the financial undertaking on capital intensive, the financial undertaking on the part of the parties involved. So it was OK for the Government to say stop flaring. But if the Government has not sunk its money, then it's almost unreasonable to think that the companies are going to stop overnight. Yeah,*

because like I said, these things require some expenses and some financial commitment."

R-018 *"It is not adequate because the existing gas infrastructure still is insufficient to meet gas demand from the power sector, commercial customers, industrial and exports needs. There is still a need for investments in new pipelines and other gas gathering, processing, and storage infrastructures."*

R-020 *"Lack of enough capital in gas flaring reduction/elimination projects is the main obstacle towards effective enforcement of gas flaring laws and policies. Capital and funds are the main obstacles."*

6.3.5.10 Lack of consequences for bad behaviour

R-005 *"... where there are no consequences for bad action, there is no way we will get it right and I think the biggest thing that has impacted on enforcement is lack of consequences for those that are defaulters."*

R-014 *"But I am quite happy of course to discuss it because it's an issue that is really an outrage and that continues and it continues because really, there are no implications for not obeying the law."*

6.3.5.11 Lack of infrastructure

R-001 *"Is it now we are going to start developing new technologies? and does it mean that over this time we didn't have technologies that could have taken care of these gas flares? To the extent that it would be almost minimal, I mean almost nothing."*

R-003 *"I think the major obstacle will be from the foundation. The basic infrastructures are not there, and this is the main problem."*

R-004 *"The lack of critical infrastructure to assist in enforcing or giving life to the enforcement of that legal regime. So that is also an ancillary factor to the main foundation, which is the lack of an adequate legal regime."*

R-005 *"... In the operations in the industry, you will see a very huge gap. Yeah, it's a very huge gap and that is where sometimes technology comes into play. Technology and regulation, because you cannot be there, you cannot be everywhere."*

R-010 *"If the Government wants us to fully delve into gas production, the Government has to provide the facilities."*

R-014 *"It requires the financial undertaking on capital intensive. It was OK for the Government to say stop flaring, but if the Government has not sunk its*

money [built infrastructure], then it's almost unreasonable to think that the companies are going to stop overnight. These things require some expenses and some financial commitment."

R-018 "It is not adequate because the existing gas infrastructure is still insufficient to meet gas demand from the power sector, commercial customers, industrial and exports needs. There is still a need for investments in new pipelines and other gas gathering, processing, and storage infrastructures. The focus of Government should not be on the incentives alone but in the regularisation of areas such as subsidies and inadequate infrastructure."

R-019 "Political will and lack the robust gas infrastructure to transport the gas."

R-023 "Lack of infrastructure and political will and the major obstacle is lack of infrastructure."

R-025 "Enforcement of policies and quiet revalidation of the metering systems."

6.3.5.12 Lack of monitoring

R-005 "... one of the greatest challenges the regulatory agency has is monitoring and having enough personnel to ensure that the agreements signed on with the operators are actually met."

R-008 "I think they are not seriously monitoring the company (oil companies). So how many times have you checked that place to see whether the pipe is properly buried or not. So the company would not even be able to answer such things."

R-017 "Yes, there in place monitoring and reporting mechanisms of the actual volumes of associated gas being flared but not fully covered."

R-022 "Companies are asked to submit the volumes flared and the process has been transparent throughout. The Government is not short-changed but companies now utilized the gas instead of flaring."

R-025 "There is a need to be a stricter and regularly monitor metering. There are reporting mechanisms, but revalidation of the metering systems is not done accordingly. A responsible agency should be able to enforce gas utilization laws and continuous monitoring of all producing fields."

6.3.5.13 Lack of Political Will

R-001 *"The political will to enforce. Yeah, because like I said. This noncompliance is not a one-off noncompliance. It's a consistent and continuous one. So that puts focus on what the regulators are doing. Do you understand? And that's where the political will comes in."*

R-002 *"As presently constituted, I think the answer is no. DPR does not have the political will to enforce the full prohibition of gas flaring in Nigeria. Because DPR has been there for a number of years and there has been flaring since but there is no consequence for that."*

R-003 *"So the problem I do believe is beyond just legislation, it is beyond just what law and policy we have, but it translates to the political will to enforce, insecurity, and others. So in summary, I think that what is lacking is the political will to enforce the laws that Nigeria has, and that is all."*

R-004 *"...in essence, enforcement is lacking and what is actually lacking is the political will to actually enforce even the little laws that we have."*

R-007 *"I would think for the regulator, the first thing for the regulator is that they should have the will to regulate. Let me use the word "will regulate" and implement the laws that are already there."*

R-010 *"The real obstacles, first of all, like ... the NESREA Act is saying that NESREA cannot take action on oil and gas pollution. That is very huge. The primary environmental regulator cannot act on oil and gas pollution. That is too big. It is too big."*

R-011 *"There was no political will to ensure that these laws are adequately complied with, and this is the work of the executive arms."*

R-012 *"...if you like to have the best law in the world, if there is no appropriate regulation via enforcement and compliance on the part of the people being regulated, nothing is going to happen. If there is no political will...."*

R-014 *"I will say that even if you get the best laws, you look around the world and you say, 'let's replicate and modify to suit our situation some of the best laws in the land in the world', it will not work in Nigeria because there is very little political will to ensure that these things are adequately complied with ... that's why I say there's a lack of political will. Political will is important if you want to change your situation very glaringly and clearly."*

R-015 *"Currently, I see no obstacles. Perhaps it would have been the 'political will'. But Government has declared the decade of gas and is championing the gas penetration initiative, so all hands are on deck to ensure zero routine flaring."*

R-018 *"The regulatory body saddled with the responsibility has no mechanism in place to monitor and enforce the regulation."*

R-019 *"Political will and the robust gas infrastructure to transport the gas."*

R-023 *"Lack of infrastructure and political will."*

6.3.5.14 Lobbying

R-007 *"In my experience, it is a two-way street. I have my knowledge of everything, I have known and I've seen it. There's so much in the oil industry and there's so much lobbying in the oil industry."*

R-008 *"Whether the law is effective or not, we think that the DPR can handle this thing. We think that the DPR can handle it, but you know the company and we're in Nigeria, so they operate in the Nigerian way. It would destroy companies. They operate in a Nigerian way. They are not nice at all."*

R-009 *"... of course, they will resort to the previous way of lobbying and everything. So that is, I think that's our own making. Because without doing that you will be subjecting them to lobbying as you have mentioned."*

R-012 *"... I think we have captured all the things required in the new PIA. But it is not all about the law-making: if you like to have the best law in the world, if there is no political will, there is corruption, what can the law do? So also a strong and fully funded regulatory agency."*

R-015 *"Companies lobby all over the world. However, if the regulatory authority is given the freedom to operate and carry out its mandate, then there are no obstacles."*

R-018 *"The lobby by companies is the main obstacle towards effective enforcement of gas flaring laws and policies."*

6.3.5.15 Overlapping functions

R-001 *"Yeah, to be honest, there are some overlaps of functions which companies now use as an excuse not to do what they need to do, so there are so many aspects to regulation on the face of it."*

R-005 *"Yeah, some overlap of functions but largely, I think the industry is more than ripe enough to get its act together."*

R-006 *"Yeah, the DPR's role is encumbered with a lot of responsibilities. S, when you have so many things to do that are begging for your attention, it is very possible that you will focus on some and not focus on the others."*

R-006 *"The DPR has two roles: it is the regulator for the entire industry of oil and gas, and the DPR also make money for the Government. It has to ensure*

that it gets the money from the companies for the Government. So it also has a divided attention."

R-008 *"When we lodge our complaint to them [the DPR], what they normally do, they write to the company, draw their attention, and no phone call, and then the community seeks a tripartite meeting."*

R-010 *"...the DPR already has a lot on its hands, okay. And I know some of these things, I've also talked about them in my work, and the DPR has a lot of responsibilities.... so that is another challenge."*

6.3.5.16 Understanding of the law

R-001 *"And another thing when it comes to the laws in Nigeria, I must say, yes we have the laws. Yes, we have the regulators, but there's something still missing as I discovered in my research, and that is understanding of the laws."*

R-005 *"I felt that nobody would deliberately want to flaunt the laws rather than its entities. Once, once they knew their responsibilities they would abide by the law."*

R-008 *"...sometimes if you wrote to the oil company directly, they would treat your matter like it's not important. Yes, if you write to them directly, they will not treat your matter as a serious matter... we normally do: we write to the company directly."*

R-009 *"However, it is a sad situation when you asked someone from the Niger-Delta about all these environmental issues. As someone that came from a village. Our only problem is with the Federal Government to make it better."*

6.3.5.17 Underfunding

R-012 *"So also having a strong and fully funded regulatory agency."*

R-014 *"The regulatory institutions we have in Nigeria are inadequate. They're like toothless bulldogs: many of them are underfunded."*

6.3.6 Measures that could sustain environmental regulatory compliance

The purpose of asking this question is to provide a basis from which to recommend reforms that will address identified deficiencies and challenges to strengthen the anti-gas flaring regime (objective 5 of the study).

6.3.6.1 Stakeholders' Consultations

R-003 *".... there should be constant engagements with those that matter [oil companies] before setting out any policies because, at the end of it, they will be the ones to comply with the laws. They should be consulted, and their opinion considered. They should be treated as stakeholders, not adversaries."*

R-004 *"The industry is dynamic and changing far and beyond that outlook, and now has its more stakeholder-like approach, where all stakeholders come together, propose and chart the way forward."*

R-005 *"I think one of my greatest achievements was moving compliance through dialogue rather than through sanctions, so I'm going to be coming from that perspective. Even though I worked in a regulatory agency, I felt that nobody would deliberately want to flaunt the laws rather than its entities."*

R-007 *"I reckon that having the oil companies be stakeholders and that making sure they implement the laws already set up will work better. I think it's logical..."*

R-008 *"Since they knew they wanted to come and execute their job, I think they should engage the community properly. They should engage the community properly and know their needs, and they should take responsibility."*

R-009 *"Therefore all stakeholders, executives that are the Government, lawmakers, oil companies, and other development institutions, must put their hands together to tackle this problem."*

R-011 *"I will suggest that all stakeholders should be involved in everything. The oil companies have the technical know-how and enough capital to end gas flaring in Nigeria, and therefore should be involved in all of the process because they are good at this kind of thing."*

R-013 *"To be considerate of the host communities & revenue generation. These are aspect that needs to be considered. The host communities should be considered in regulating the affairs of gas flaring."*

R-014 *".... the stakeholders should be involved in everything. Yeah, there is involvement."*

R-019 *"Adoption of technology and providing an enabling business environment for investors."*

R-022 *"National interest, an improvement on environmental issues, security, and awareness in handling host communities/stakeholders' engagement."*

6.3.6.2 Continuous Monitoring

R-001 *"I think it would be very useful to put in place systems that will continuously monitor the industry. In practice do we have it, monitoring stations? And it should not be just specific to a project: it should be regional, it should cover... constant monitoring, okay."*

R-005 *"I think it would be very important if we continuously implement monitoring and records in the industry. Inspection and monitoring are important."*

R-008 *"As a Government, I think the DPR should monitor the affairs of the company and the community."*

R-017 *"Through adequate monitoring a responsible agency can protect itself against any obstacle."*

R-019 *"Adoption of technology and providing an enabling business environment for investors."*

R-021 *"Yes, we are using flare metres to monitor the actual volumes of associated gas being flared. The monitoring mechanism has helped in reducing gas flaring significantly."*

R-022 *"By continuous support and enforcement strategy."*

R-024 *"Continuous monitoring."*

R-025 *"The factor I would consider in formulating anti-gas flaring laws, policies, and regulations is regular monitoring of all platforms."*

6.3.6.3 Enforcement of EIA and FDI-Licence

R-005 *"We should also make it mandatory that EIA should be conducted for both new and existing facilities. Has anybody carried out a comprehensive cumulative health effect?"*

R-008 *"The right thing is to have EIA enforced. According to the law, that's with whatever operation they might take they should conduct the EIA, social gathering, and a public hearing before proceeding. But in our area, there is nothing of such. Yes, in our area there is nothing of such."*

R-011 *"I think the best thing to do is to apply the law holistically without recourse to any discrimination. In most of the projects you see in those regions [Niger-Delta], there wasn't any EIA environmental impact assessment being undertaken in those areas."*

R-014 *"An example: you have situations where of course you will start projects in which you should carry out an environmental impact assessment, and of course in Nigeria many times they don't bother doing it."*

R-020 *"Encouraging investment in gas flare elimination projects and ensuring that all new projects are designed to eliminate gas."*

R-024 *"Connecting compliance with the issuance of major licenses."*

6.3.6.4 Financial Autonomy

R-001 *"Because if you have an agency that is autonomous and does not depend on government intervention, then the agency will have the full weight of the law to make sure that the checks and balances are in place."*

R-007 *"If they don't have the financial capability to do the work then you're also jeopardising their work because yeah, having an independent body on the one hand side is good, but also having the financial capacity to carry out their responsibilities is another thing."*

R-009 *"The issue has always been how is the regulatory body independent? And without any financial autonomy, how do you expect such a regulatory body to be independent? So this is very key. They are not dependent if they rely on any external forces for their funds. I think that is the reason why the lawmakers in their wisdom see the need for the agency to be independent with financial autonomy."*

R-012 *"In terms of the law, I think we have captured all the things required in the new PIA. So also having a strong and fully funded regulatory agency."*

R-014 *"A fully funded independent agency or whatever, but you see for that to happen, Nigeria itself has to change the concept of Nigeria as it is: you know the separation of powers, who owns what power?"*

R-015 *"The independence of regulatory authorities will guarantee a robust implementation of all compliance mandates. It is hoped that the recently passed PIA will ensure this."*

6.3.6.5 Increase Penalties and Incentives

R-004 *"... the sort of like stiff penalties that would compel compliance with the laws."*

R-025 *"Encourage gas utilization processes and give incentives to operators processing their associated gas, incentives to operators using their produced associated gas, regularly monitoring all platforms and revalidating all gas meters."*

6.3.6.6 Indiscriminate Regulation (Transparency/TPA)

R-003 *"Government should be sincere in its dealings with the oil companies and there should be constant engagements with those that matter [oil companies)] before setting out any policies because, at the end of it, they will be the ones to comply with the laws."*

R-004 *"When that good faith is not there, then I do not see that the sufficiency of the regime, it will still not yield the desired result."*

R-007 *"Well, I could say maybe separation of roles, I mentioned separation of roles and checks and balances."*

R-010 *"I think the attitude of the Government needs to be consistent and you have to be faithful and all of that. But the government does not always remain faithful to that commitment."*

R-011 *"I think the best thing to do is to apply the law holistically without recourse to any discrimination. Because once the law is applied indiscriminately and uniformly, then there will be no need to amend it or make a new law."*

R-013 *"If companies could like have access to the gas like because as it is, the law says that the Government owns the associated gas. So, in a situation whereby the Government may decide, like, to publish a policy that maybe to whoever is ready to build, the Government is ready to relinquish the right of that associated gas. I am sure they can help influence investment into the gas utilisation projects."*

R-014 *"I think the best thing to do is to apply the law without fear or favour. No matter how inadequate the law is. Because the law is now applied indiscriminately, uniformly, consistently. The first thing they need to do, is to apply the law fairly equally, indiscriminately, uniformly."*

R-018 *"Effective application of the laws by ensuring transparency in the application."*

R-019 *"Adoption of technology and providing an enabling business environment for investors."*

R-022 *"National interest, an improvement on environmental issues, security, and awareness in handling host communities/stakeholders' engagement."*

6.3.6.7 Investment in Infrastructure

R-003 *"For me, regardless of the many policies of the government, regardless of the legislation and all that, it's still reoccurring. I do not think that gas flaring in Nigeria would be a thing of the past unless we get the right infrastructures in place, backed by policies, progressive policies that will be put in place and established in good faith."*

R-004 *"Gas flaring in Nigeria would not end until and unless we get the right infrastructures in place, and progressive policies that will established in good faith by the responsible authority."*

R-010 *"Government has a role to invest more in projects which would encourage the reduction of gas. The Government always allowed the company to bear the burden of producing the gases: at the same time, they should also bear the burden of reducing the flared gases."*

R-015 *"Through a concerted and well-outlined approach: infrastructure, domestic gas utilisation for electricity generation, energy/electricity generation, and enforcement of encouragement of open access."*

R-018 *"A realistic timeline for building gas utilization infrastructures by companies to reduce gas flare."*

R-019 *"Adoption of technology and providing an enabling business environment for investors. Availability of technology, the feasibility of reduction projects, HSE, cost."*

R-020 *"Encouraging investment in gas flare elimination projects and ensuring that all new projects are designed to eliminate gas."*

R-023 *"Infrastructure, incentives, energy requirement, economics, sustainability."*

6.3.6.8 Will to regulate

R-002 *"The truth is, let's just be honest to ourselves: the Nigerian government knows best how to end gas flaring but will not just do it because they are benefitting from it. Let them summon the political will and implement the laws and policies, and speak honestly to oil companies."*

R-007 *"I would think for the regulator... first things first, the regulator should have the will to regulate and implement the laws that are already there. But without that, then no."*

R-009 *"...we now have the new legal framework PIA, and all is left to the executive arm to ensure that our efforts have not gone in vain. We did our best to pass this law and the policymakers must now ensure that the law is enforced holistically."*

R-012 *"In terms of the law, I think we have captured all the things required in the new PIA. But it is not all about the law-making. If you like to have the best law in the world, if there is no appropriate regulation via enforcement and compliance on the part of the people being regulated, nothing is going to happen."*

R-013 *"Of course, for gas flaring matters to end, political will is important if you want to change your situation. Like very, very glaringly and clearly."*

R-014 *"Because I am adamant that whatever will be in the law, if there is no appropriate regulation via enforcement and compliance on the part of the people being regulated... If you like, have the best laws, nothing is going to happen."*

R-018 *"Effective application of the laws and sticking with datelines. A realistic timeline for building gas utilization infrastructures by companies to reduce gas flare."*

R-020 *"The DPR as an oil and gas industry regulator ensures that all new projects are designed to eliminate gas flaring. Also, the Government of Nigeria recently launched the Nigerian Gas Flare Commercialization Programme (NGFCP)."*

R-021 *"By enforcing compliance with the regulatory laws."*

R-022 *"By continuous support and an enforcement strategy."*

R-023 *"How does a responsible agency protect itself against these obstacles? Compliance with the existing laws and policies."*

6.3.6.9 Differentiate gas from oil

R-023 *"Only by ensuring that gas is seen as a standalone resource can Nigeria eliminate associated gas flaring."*

R-025 *"Enforcement of gas laws, incentives to operators using their produced associated gas, regular monitoring of all platforms and revalidations of all gas meters."*

6.3.6.10 Name and Shaming

R-001 *"If a big company is found to be in noncompliance, what stops it from being in the news? That will serve as a major deterrent because these are international companies."*

6.4 Discussion of the Main Findings

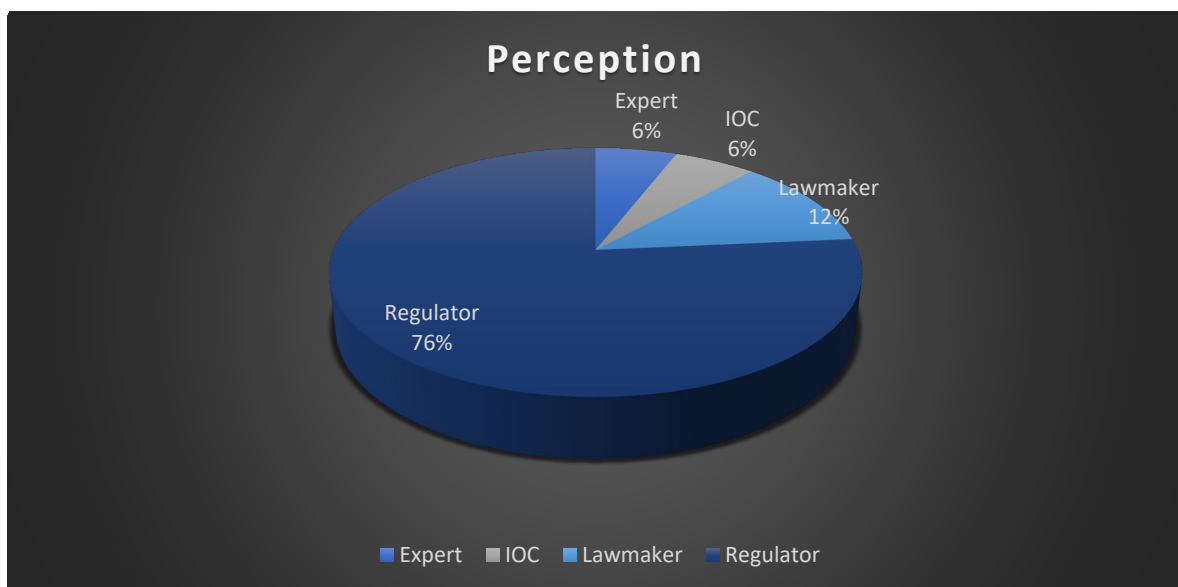
The preceding section in this chapter has presented the results of "An Investigation into the Appropriateness and Effectiveness of the Design and Enforcement of Nigeria's Anti-Gas Flaring Law and Policy Regimes and Consideration of Measures that Could Sustain Environmental Regulatory Compliance". The interviews were conducted to seek stakeholders' perceptions about relevant issues to supplement the findings through engagement with the literature and to support the framing of conclusions that would give a basis for recommendations. To obtain the desired responses that will be relevant to the objective of the study, five main subquestions were identified: namely, the appropriateness of the regimes; their impact, the adequacy of the penalty regime; the incentives provided; effectiveness of the enforcement; and the suitability of the regimes in achieving the set objective of ending gas flaring and unlocking gas potential. Consequently, following the presentations of the interview responses above, this section presents discusses and summarised the main findings based on the six major questions that the study asked. The section used figures and tables to explain the summary of the findings.

6.4.1 Appropriateness of the design of the Anti-gas flaring legal regime

The findings regarding the appropriateness of Nigeria's anti-gas legal regime appeared to reflect the reality of the situation discovered during the literature review. For instance, the literature reviewed reveals that Nigeria's anti-gas flaring law and policy regimes are adequate. Although a significant amount of the relevant literature examined has clarified this aspect, this study asked the same question to obtain the respondents' perceptions and compare them with the literature. There were some mixed reactions across the various groups of stakeholders. Most of the respondents from the regulatory agency perceived the legal regime as appropriate, while other respondents still believed that the current regime is inappropriate for Nigeria's circumstances and thus needs to be updated. Accordingly, out of the 26 respondents who commented on this question, 17 responded positively to the legal regime's appropriateness, which translates to 65% of the study's population. They all share the same view and believe that

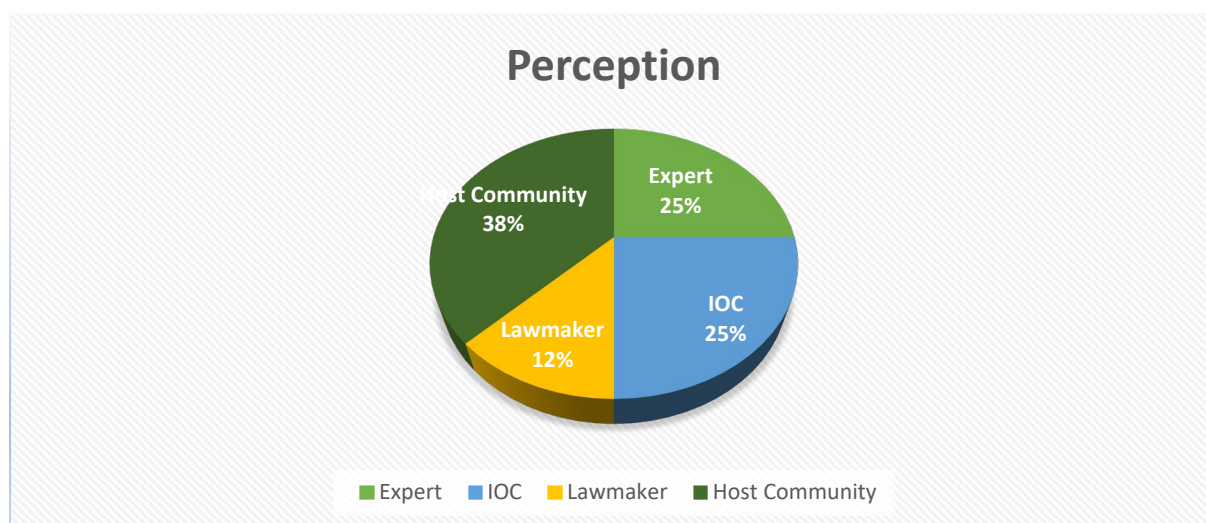
Nigeria has appropriate laws and regulations for combating gas flaring. The majority shared the same opinion that the laws are not the problem. This is consistent with the suggestion made by the World Bank that for flexibility, the primary legislation should lay out the fundamental framework and allow the regulatory framework (secondary instrument) to provide detailed provisions specified by the industry regulator. This will enable changes in specific regulations to be made more quickly. Consequently, the new PIA 2021 as commented by most respondents lays out the basis for prohibiting gas flaring, and the Flare Gas Regulation 2018 contains details about how gas flaring should be treated on an operational level. Additionally, there are also industry guidelines established in 2018 which support these regulatory requirements.

Figure 6.4: Stakeholders' Perception of Appropriateness of the Legal Regime



The above figure clearly shows that the general perception within Nigeria's regulatory agency is that the legal regime is appropriately designed. All the respondents from the regulatory agency (13 respondents) believe that the legal regime is appropriately designed. Likewise, two of the three lawmakers also share the same opinion. However, only one out of the three interviewed from the oil company and industry expert respectively shared a similar opinion, with the host community believing otherwise.

Figure 6.5: Stakeholders' Perception of Inappropriateness of the Legal Regime



The above chart also shows the percentage of respondents who still believe the regime needs to be amended. All three respondents from the host community, two from the oil company and expert's category, and one from the lawmaker category believe that the law and policy do not achieve any desired result and need to be amended. Coincidentally, not a single respondent from the regulatory agency shares a similar opinion.

6.4.2 Adequacy of the Penalty Regime

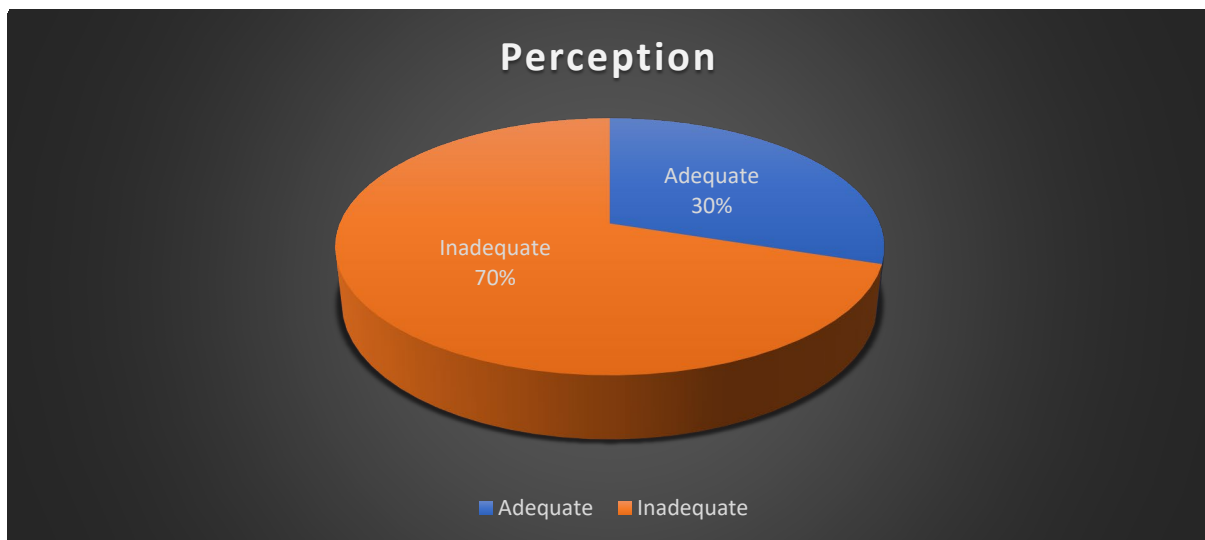
As examined in chapter three, the WB believes that there are two forms of fiscal stimuli typically used by host governments to promote the utilisation of flare gas, namely incentives and penalties.¹¹³³ The effectiveness of these fiscal stimuli has been illustrated by the World Bank in its empirical studies and was found to be promising. For instance, a penalty regime raises the cost of flaring or venting as opposed to an incentive regime. Meanwhile, incentives reduce the effective cost to the operator of investing in gas gathering, thereby reducing this risk. Penalties raise the cost of flaring or venting. The incentives can be more effective when applied to AG investments in upstream and downstream operations; penalties are imposed uniquely on upstream activities, i.e. flaring and venting. A combination

¹¹³³ The World Bank 2009, (n 1).

of incentives and penalties has proved to be more effective than penalties or incentives alone. For effectiveness, the Bank suggests that anti-gas flaring penalties need to be set at such a high level that neither flaring nor venting is economically viable. Thus, the preferred option for the operator becomes the utilisation of such flared gas.¹¹³⁴

Nigeria has realised the importance of this fiscal stimulus, and the current penalties for gas flaring were introduced in 2018.¹¹³⁵ For a licensed area where more than 10,000 barrels of oil are produced, \$2 per 1000 scf of gas are flared, while the field that produces less than 10,000 barrels is liable for \$0.50 per 1000 scf of gas flared.¹¹³⁶ The penalty payment applies to all cases irrespective of whether the flaring is routine or non-routine. Consequently, respondents were asked to comment on the adequacy of the current penalties for flaring gas in Nigeria, and below are the perceptions of the stakeholders. The outcome reveals mixed reactions regarding the adequacy of the penalties.

Figure 6.6: Stakeholders' Perceptions of the Adequacy of the Penalty regime



¹¹³⁴ Ibid

¹¹³⁵ *The Flare Gas Reduction (Prevention of Waste and Pollution) Regulation 2018* Volume 105 no. 88 of 6th July, 2018 (hereinafter referred to as The Regulation, 2018)

¹¹³⁶ Ibid *Regulation 13 Part II*

Figure 6.7: Groups of Stakeholders' perceptions of the inadequacy of the Penalty Regime



While figure 6.6 shows that only 30% of the respondents believe that the penalty regime is adequate, Figure 6.7 shows that 30% were from one particular group of stakeholders: the regulator. They feel the country's penalties are sufficient and will help end gas flaring. Coincidentally, 25% of the respondents from the regulatory agency did not share similar opinions with their colleagues. They believe that the penalty needs to be increased.

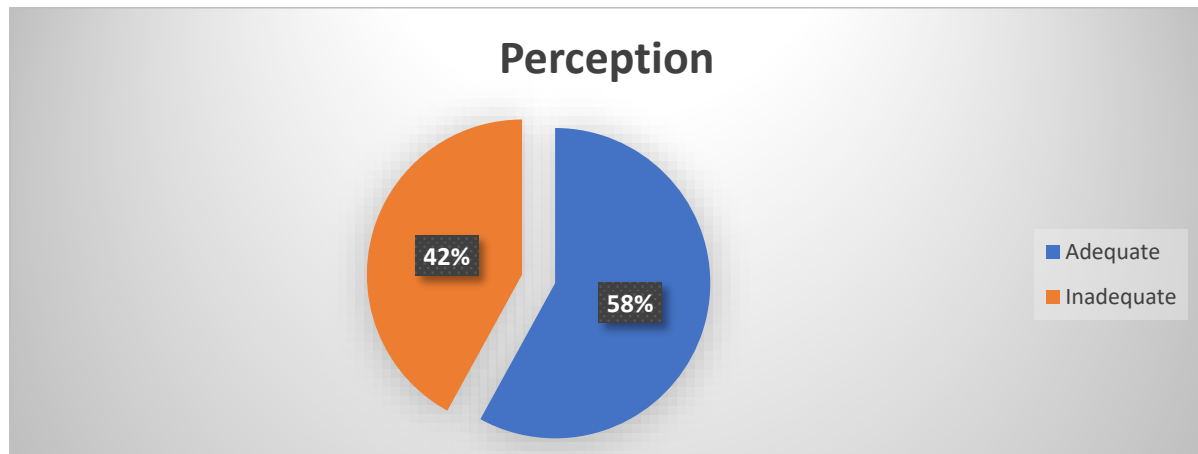
6.4.3 Adequacy of the Incentives

An incentive is the other fiscal stimulus that host governments use to promote flare gas utilisation. Like penalties, the effectiveness of incentive measures has been adjudged to be efficient.¹¹³⁷ Incentives are more effective when applied to AG investments in either or upstream and downstream operations. A combination of incentives and penalties has proved to be more effective than penalties or incentives alone. Consequently, the assessment of whether the country has the adequate incentives necessary to encourage oil companies to invest in gas utilisation projects has also been responded to by all the participants in the study. Unlike the penalty regime, a slight majority of the respondents believed that the country has the incentives necessary to tackle the menace of gas flaring. 14 out

¹¹³⁷ Ibid (n 1109).

of the 24 respondents answered in the affirmative, while 10 respondents thought that the country needs to provide more incentives. Meanwhile, all the respondents except for 2 believe that the incentives are adequate.

Figure 6.8: Stakeholders' Perception of the Adequacy of the Incentives



Those who believe the incentive regime is inadequate also explicitly agree that there are incentives, but these are not adequate to encourage oil companies to invest in gas utilisation projects. Some have even claimed that the incentives are just on paper, while in the real sense, they are not accessible and are shrouded in many unfulfilled promises. For instance, R-002 is an expert and industry watchdog, and R-003 represents the oil companies' category. The respondents in this category (aside from regulators) believed that the incentives were inadequate. They are either not rolled out or not sufficient to influence investment in gas utilisation projects.

6.4.4 Appropriateness of the Policy Measures

Both the literature and the interview responses presented and analysed show Nigeria's willingness to rigorously pursue the implementation of the NGFCP. This policy was considered the most effective among the many policies established to help end gas flaring (see *chapter 3.4.3*). There is a general agreement among the respondents that the policy is critical for the gas flaring reduction currently being witnessed in the industry. Therefore, the general impression is that the policy measures were appropriately designed and effective in contributing to ending gas flaring in Nigeria. The respondents applauded the adoption of the NGFCP 2016 and as well as NGP 2017 to help the country end gas flaring and unlock gas potential.

6.4.5 Overall Impact and Suitability of the Law and Policy Regimes for Achieving the Objectives

As the study focuses on investigating the effectiveness of the anti-gas flaring legal regime, this cannot be separated from the impact of the whole regime on gas flaring reduction and utilisation. Therefore, the impact of the regime is geared toward revealing the regime's effectiveness and interpreting tension between legislators, enforcers, and other players. As Underdal has pointed out, a particular order's effectiveness depends upon 'how well it achieves the goals it was designed to accomplish.' An order is minimally effective if it has a positive causal impact on these goals.¹¹³⁸ Similarly, Schmelzle argues that the more effective a political order is, the more legitimate it is, and the more honest it is, the more effective it becomes.¹¹³⁹

While the literature examined shows that Nigeria's anti-gas flaring regulations have an insignificant impact on the documented reduction,¹¹⁴⁰ this has exposed the weakness of the country's anti-gas flaring law and policy regimes. Political scholars argue that analysing the effectiveness of legal order should belong to a broader category of policy analysis. The policymaking process should be rational and geared towards achieving its stipulated objectives. As Black argues, when the core meaning is clear, an "impact study" is appropriate to show whether the law has been enforced.¹¹⁴¹ Thus, respondents were asked to comment on the overall impact of the regimes on the gas flaring reduction so far recorded (see figure 1.2 and chapters 1.7 and 5.2.3 in general). The question received mixed reactions like other questions, with regulators firmly arguing that the impact has an impact on the reduction so far recorded. By contrast, respondents from different groups of stakeholders believe otherwise.

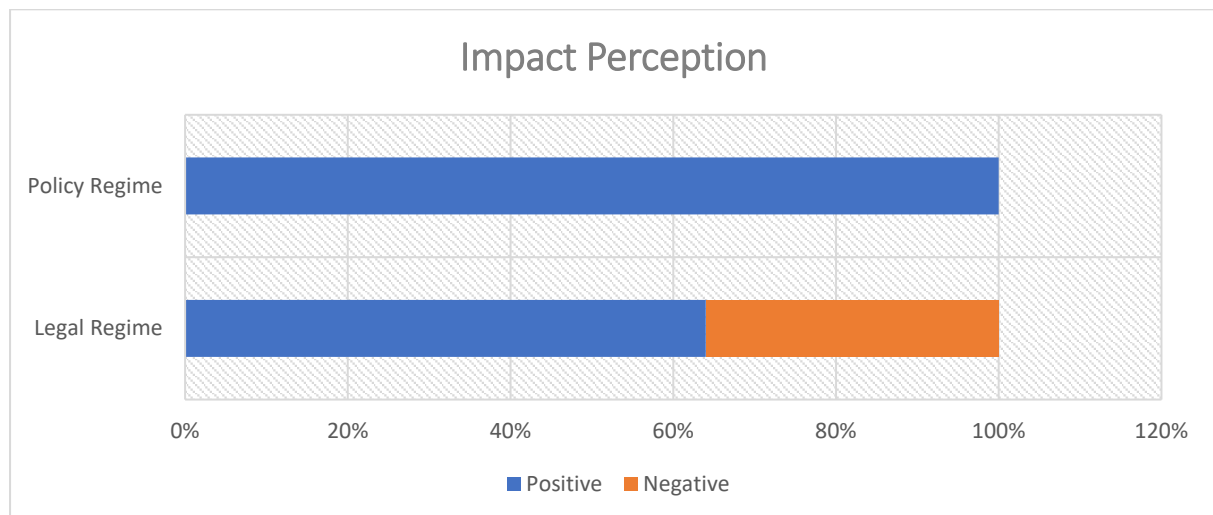
¹¹³⁸ Ibid Underdal (n 106 and 127).

¹¹³⁹ Schmelzle, (n 109).

¹¹⁴⁰ Hassan and Kouhy (n 25).

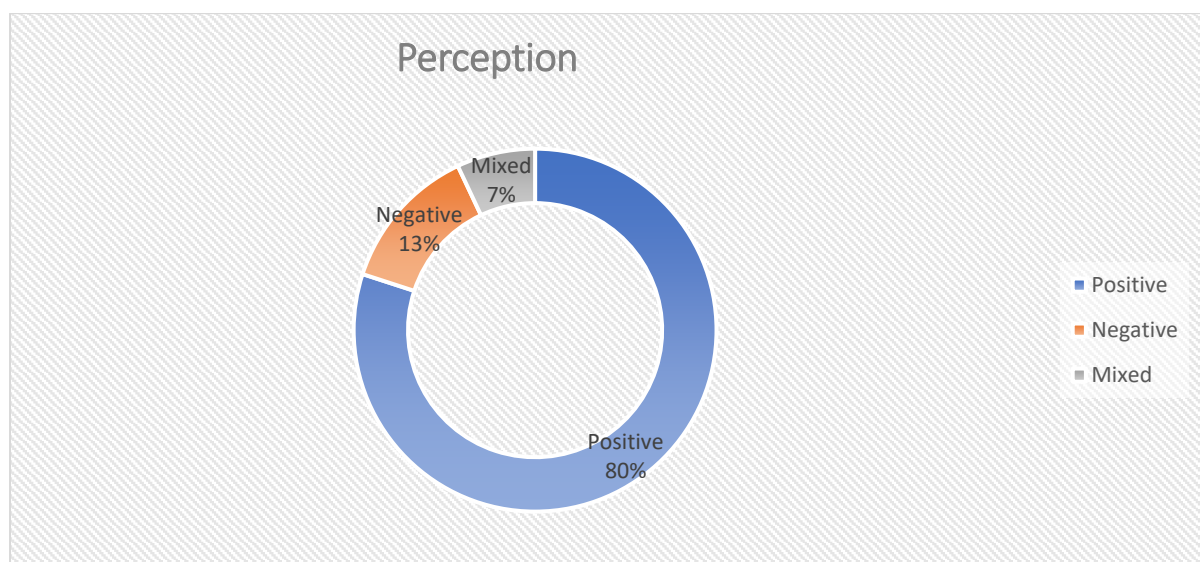
¹¹⁴¹ Ibid Black (n 122).

Figure 6.9: Stakeholders' Perception of the Overall Impact of the Law and Policy Regimes in the Recorded Reduction.



The above figure clearly shows that the law and policy regimes, especially the NGFCP, yield the desired result. 100% of respondents agreed that the regime had played a pivotal role in reducing flaring in Nigeria. However, the legal regime impact received a mixed reaction. The study followed the impact question with a question about the suitability of the regimes in achieving the set objectives, and below is the summary of the responses.

Figure 6.10: Stakeholders' Perception of the Regimes' Suitability for Achieving the Set Objectives.



The respondents presumably believe that the present gas flare policies are designed to achieve the country's objectives. The recent NGFCP involved companies bidding to utilize the flared gas from some facilities.

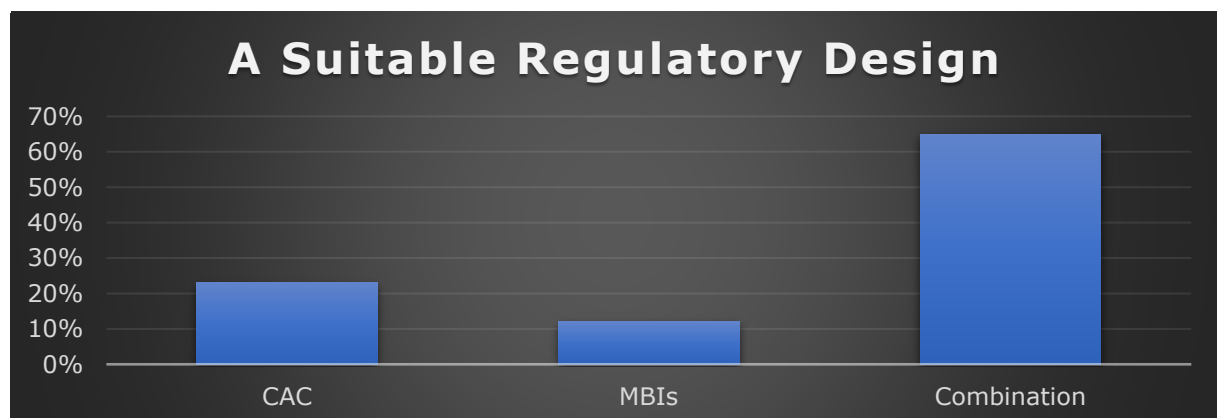
6.4.6 Appropriate and Effective Regulatory Approaches

Chapter four critically examines the design and enforcement of appropriate and effective regulatory approaches in most oil-producing countries. The findings and the conclusion reached were tested in the empirical study conducted. The questions asked were related to the approaches for designing and enforcing an environmental regulatory regime.

6.4.6.1 Regulatory Design Approach

The literature investigated does not necessarily confirm the superiority of either CAC, MBIs, or liability rule as the most effective and efficient instrument. Instead, it shows that any chosen instrument or combination of instruments' effectiveness largely depends on how well it is enforced. While some literature points to the relative efficacy of MBIs in providing incentives for emission reductions, the finding also showed that the MBIs are not always efficiently set. For instance, pollution charges were effective only in those systems where effective monitoring and enforcement were applied effectively. In this respect, both CAC and the MBIs approaches are not that much different as both require effective monitoring and enforcement systems. Therefore, theoretical and empirical studies demonstrate that practical enforcement is the key to the success of each regime. Sometimes the literature shows that combining the two approaches may likely achieve the objectives optimally. Thus, study participants were asked to suggest an appropriate approach best suited to Nigeria's circumstances between CAC, MBIs, or a combination of such approaches. The respondents' views as to the proper regulatory design are presented below:

Figure 6.11: Stakeholders' Suitability of an Appropriate Regulatory Design

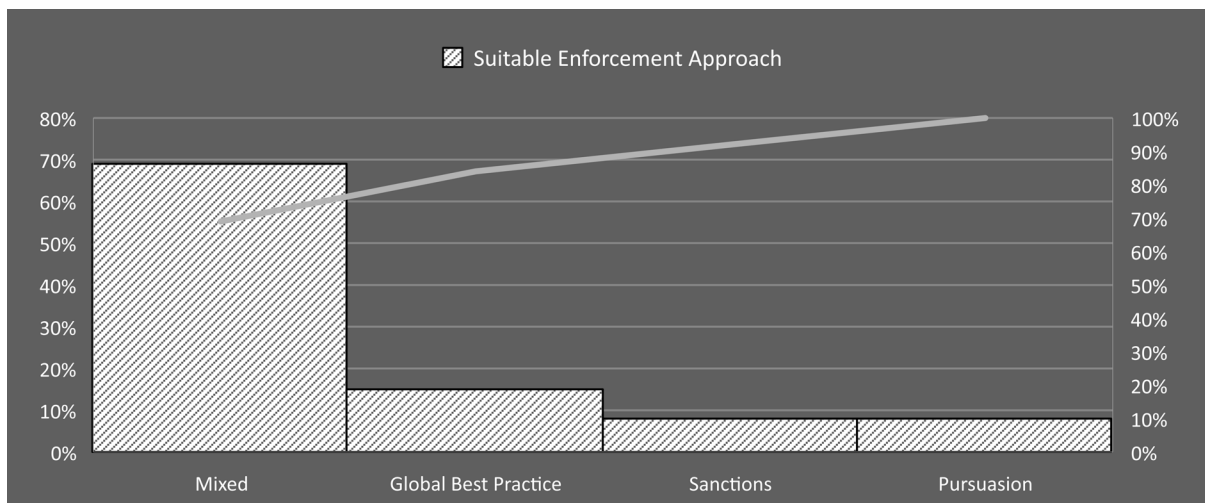


The above chart clearly shows that 65% (representing 17 out of 26 respondents) thought that a combination of CAC with some market forces is appropriate for Nigeria’s circumstances and may encourage environmental regulatory compliance as opposed to the current CAC system. Those favouring the status quo are only 23% (6 out of 26), with 12% (3 out of 26) suggesting changing it totally to MBIs.

6.4.6.2 Enforcement Approach

Likewise, the findings of chapter four concerning an effective enforcement approach that a regulatory agency should adopt showed that neither total commitment to a cooperation-based (compliance assistance) nor a legalistic approach (sanctioning) is likely to provide an effective result. Instead, the key to maximum compliance is an optimal combination of legalistic and cooperation-based approaches. A combination of cooperation and punishment is likely to be an optimal enforcement policy because the literature provides no clear guidance concerning optimal and effective strategy. Consequently, based on the suggestion given earlier by the researcher, respondents were asked to comment on an effective enforcement approach, and below is the summary of their responses.

Figure 6.12: Stakeholders’ Suitability of an Effective Enforcement Approach



The above chart shows that a considerable number of the respondents favour the mixed approach for enforcement. They believe that punishment, when mixed with some form of persuasion, may be more effective than choosing one over the other. The second major view also suggested the use of the best global practice; nevertheless, as earlier pointed out, the investigation concerning the appropriate

enforcement approach that a regulatory agency should adopt finds that neither total commitment to persuasion/compliance assistance nor sanctions is likely to provide an effective result. Instead, the key to maximum environmental regulatory compliance is an optimal combination of sanctioning and persuasion-based approaches. Therefore, a combination of cooperation and punishment is likely to be an optimal enforcement policy because the literature provides no clear guidance concerning which approach is optimal and effective. At the same time, the respondents prefer a combination of the instruments as the likely choice to provide effective enforcement.

However, it must be cautioned that there is no reason to limit the policy choice between the two combinations (punishment and persuasion) in thinking about the effectiveness of environmental regimes. As Young suggested, the actions of the regulator or key actors may be responsive to several mechanisms and may not be sure about the roots of their behaviour, much less the behaviour of others with whom they interact in a particular setting.¹¹⁴² Nevertheless, there is substantial evidence to argue that the combination of the instruments works best in practice despite their differences concerning their policy implications.¹¹⁴³ Thus, persuading actors to adjust their behaviour in response to the prospect of punishment or incentives is one thing. It is another to induce behavioural change as a response to feelings of legitimacy arising from stakeholder engagement or to a sense that the terms of a regime are fair or equitable.¹¹⁴⁴

Therefore, this study is only concerned with which instrument is appropriate and effective between the competing instruments and settled on the combination as more effective. The combination of cooperation and punishment is likely to be an optimal enforcement policy. As a result, it is submitted that regulators should choose an enforcement approach based on the individual characteristics of the regulating entity and a combination of both punishment and persuasion.

¹¹⁴² Oran R. Young, *The Institutional Dimensions of Environmental Change: Fit, Interplay, and Scale*. (2002 Cambridge: MIT Press)

¹¹⁴³ Ibid and Oran R. Young, 'Are Institutions Intervening Variables or Basic Causal Forces? Causal Clusters vs. Causal Chains in International Society,' in M. Brecher and F. Harvey eds. *Millennium Reflections on International Studies*. (2002 Ann Arbor: University of Michigan Press) 176-191.

¹¹⁴⁴ Ibid Young,

Cooperation may thus be paired with the legalistic, structured in a pyramid-like fashion, with initial or minor violations treated leniently, and repeat or significant violations punished with increasingly severe sanctions. In other words, regulators should consider cooperative techniques backed up with more occasional use of legalistic measures to provide more significant deterrence incentives. It is further submitted that unless violators are subject to adequate penalties and encouragement where possible, regulated entities will not voluntarily comply because they will be at a competitive disadvantage with noncompliers.

Although there is no reason to limit the policy choice between the two combinations in thinking about the effectiveness of environmental regimes. It is submitted that a general theory of institutional effectiveness study would integrate these two sources of behaviour and fill in the gap created by this study. For instance, asking what additional insights we can find regarding the effectiveness of environmental regimes. Thus, there is growing interest in how the number of distinct regimes operated in international society in recent decades. Thus, the absence of a government in the ordinary sense in an international setting raises questions about how to address this function of governance frameworks. While in domestic settings, dealing with issues arising from mitigating conflict and fostering synergy among the regulatory institutions.

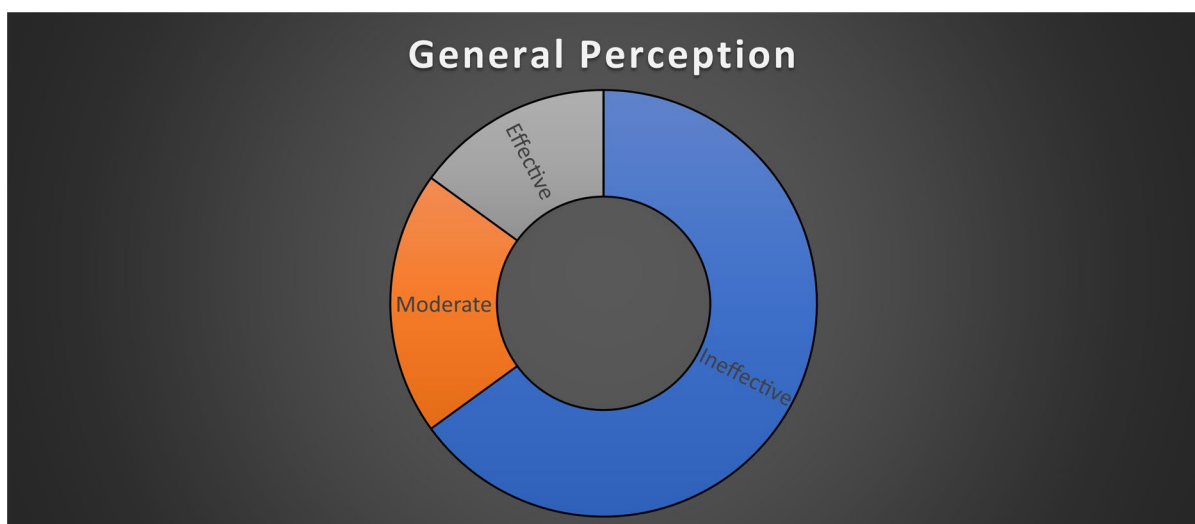
6.4.7 Effectiveness of the enforcement processes of the legal regime

World Bank experts believe that effective enforcement is crucial for gas flaring reduction. Regardless of how appropriate the design of the regimes is, it is unlikely to bring the expected results unless the regulatory breach is identified and effectively enforced by the regulator. Fang et al. have argued that environmental legislation must be appropriately designed and efficiently, and effectively enforced to achieve its objective. Effective enforcement may ensure and encourage compliance with anti-flaring laws and regulations, but it will also induce oil companies to adopt environmentally responsible measures that are not even required by the law. Nevertheless, this has always been an issue in Nigeria's petroleum industry. The literature has revealed this as the major issue hindering gas flaring reduction in Nigeria (see Chapter three – General Review and

Evaluation of Nigeria's Anti-Gas Flaring Law and Policy Regimes). The evaluation shows that the country currently has adequate legislative and regulatory frameworks to deal with the menace of routine flaring as well as appropriate policy measures.¹¹⁴⁵ Most of the factors that were shown to impact the effectiveness of the regimes have been adequately covered in the recent 2021 reforms. Nevertheless, the evaluation finds that the regimes suffer from ineffective enforcement and an inefficient regulatory agency.

Therefore, the interviews focus more on asking the stakeholders their opinions about this aspect. The study interviewed 13 respondents from the regulatory agency (the DPR) instead of three respondents from other groups of stakeholders. The major question concerned whether the stakeholders' perceptions allied with the findings in the literature in chapter three. Therefore, the responses were categorised into three themes: effective, ineffective, and moderate/fairly. The outcome reveals that the country is not effectively regulating the industry. This outcome is much like the findings in the reviewed literature. The majority of the respondents, including the regulators, affirmed the ineffectiveness of the enforcement processes. Below is the chart showing the summary of respondents' views.

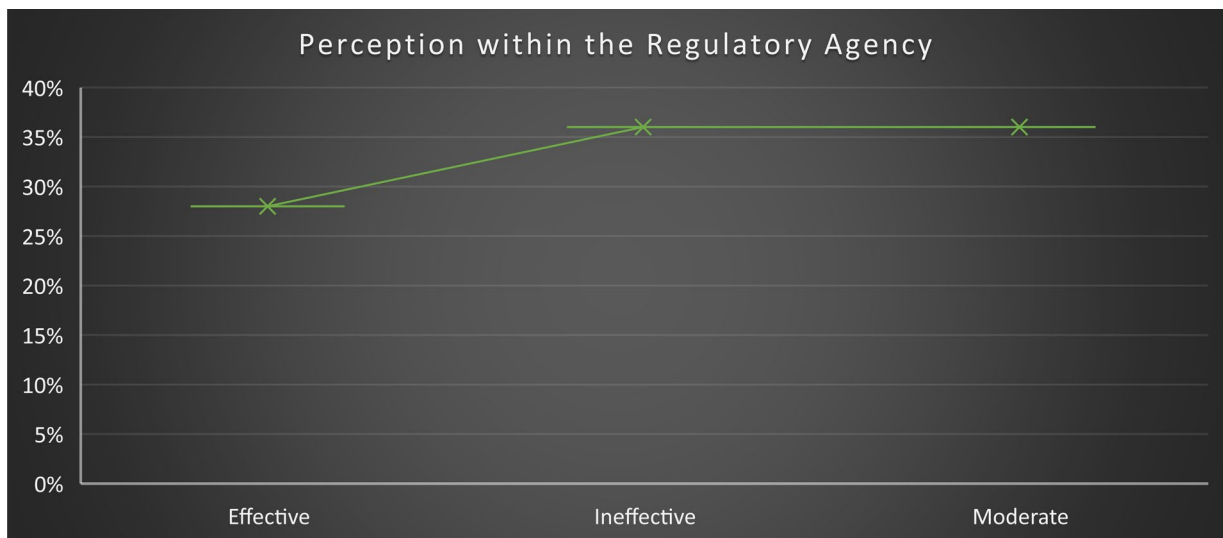
Figure 6.13: Stakeholders' Perceptions of Enforcement Effectiveness



¹¹⁴⁵ See the critical review under headings 3.3 and 3.4 as to the design of the law and policy regimes enabling the utilisation of AG in Nigeria.

As revealed by much of the literature (in chapter three), Figure 6.13 clearly shows that most respondents believe enforcement is an issue within Nigeria’s petroleum industry related to gas flaring. World Bank experts believe that effective enforcement is crucial for gas flaring reduction. Regardless of how appropriate the design of the regimes is, it is unlikely to bring the expected results unless the regulatory breach is identified and effectively enforced by the regulator.¹¹⁴⁶ As **R-011** argued, there would have been no need for the new PIA 2021 if the laws were effectively enforced. The figure shows that 65% of the respondents believe the regimes suffered from ineffective enforcement processes. While 20% believe the enforcement was fair or moderate, only a few (representing 15%, all taken from the regulatory agency) consider the enforcement effective.

Figure 6.14: Regulators’ Perceptions of Enforcement Effectiveness



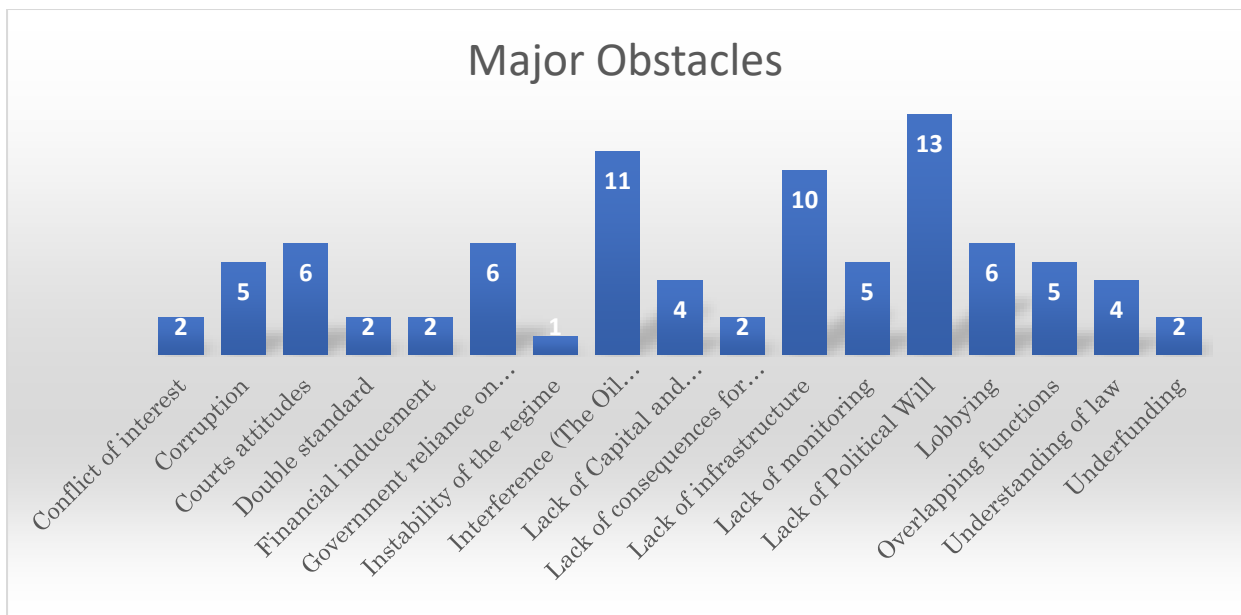
Likewise, one critical point to consider here is that a majority of the respondents from the regulatory agency, which constitutes 50% of the entire study respondents, believe that the enforcement was either ineffective or moderately enforced. The figure shows that 36% of the respondents believe that enforcement is ineffective or moderate. In comparison, 28% believed that the enforcement was effective, but they agreed that more needs to be done to ensure the elimination of gas flaring and unlock the country’s gas potential.

¹¹⁴⁶ The World Bank, 2009 (n. 1), and Coglianese and Coursey (n 64).

6.4.8 Obstacles Hindering Effective Enforcement

The respondents identified ineffective enforcement as the primary reason Nigeria could not achieve its policy objective to end gas flaring. Figure 6.13 shows that 65% of the respondents believe the regimes suffered from ineffective enforcement, including respondents from the regulatory agency. Respondents were then asked to state the major obstacle(s) they believed hindered effective enforcement. Below is a summary of the major reasons the respondents' cited, which the literature has already covered.

Figure 6.15: Stakeholders' Perceptions of Major Obstacles



The above figure clearly shows that a lack of political will and a lack of infrastructure as well as interference from politicians and oil companies, were the major obstacles hindering the effective realisation of Nigeria's policy objective of ending gas flaring and unlocking gas potential. Government reliance on revenue, lack of investment, and court attitudes toward imposing gas flaring prohibitions featured among the major obstacles. For instance, the Nigerian courts' attitudes toward deciding cases on environmental degradation violations have also been revealed as major obstacles hindering effective enforcement. The *Gbemre v. Shell & Others (Supra)* case is one of the classical examples in this regard. The court ordered Shell to stop gas flaring, declaring it a gross violation of the applicants' fundamental right to life, including their rights to a healthy environment and the dignity of the human person. However, there were no attempts to enforce the decision of the Nigerian Government. Instead, the Government joined Shell in

appealing the judgment through the Court of Appeal. Apparently, the case is still pending and appears to have been frustrated by the usual technicalities within the Nigerian judicial system.

Furthermore, the degree of government interference with the gas flaring regulations has been widely reported both in the literature and the interview responses. This interference cuts across meddling with the regulator's functions as well as the judicial system in the country. The slogan "The Oil Must Flow" was popularly cited within the DPR, the country's regulatory agency. Similarly, the Government's interference following the *Gbemre case* indicated a deliberate attempt to frustrate the enforcement of the decision. The Government was noted to have transferred the trial judge who originally heard the case to another jurisdiction, and the case file was immediately missing a few months after the transfer. Moreover, at the appeal hearing, it was discovered that the case had been wrongly adjourned by court staff without giving any notice to the respondent/applicant or their legal representatives.¹¹⁴⁷ While reacting to the judicial interference, Roderick posited: "the fact that the judge has been removed from the case, transferred, and there have been problems with the court file for a second time, suggests a degree of interference in the judicial system which is unacceptable in a purported democracy acting under the rule of law".¹¹⁴⁸

As further reported in Nigeria's media, the Government extended its interference to using other states' instruments, where Gbemre was reported to have been arrested and detained by the Nigerian army at a community interactive forum discussing the gas flaring impact and the pronounced decisions. Ukala viewed Gbemre's arrest and detention as the Government's inappropriate interference orchestrated to frustrate the enforcement of the court's decision and also to intimidate applicants from taking further steps towards the enforcement of the decision.¹¹⁴⁹ Interference by the Nigerian Government indicated its determination

¹¹⁴⁷ Rhuks Temitope, 'The Judicial recognition and enforcement of the Right to Environment: Differing Perspectives from Nigeria and India' (2010), 3 *NUJS Law Review* 438.

¹¹⁴⁸ Friends of the Earth International, 'Shell fails to obey court order to stop Nigeria flaring again', Press Briefing (Hague, Netherlands, 2 May 2007), cited in Temitope, R., 2010 above.

¹¹⁴⁹ E Ukala, 'Gas flaring in Nigeria's Niger Delta: failed promises and reviving community voices' (2011), 2 *Washington & Lee Journal of Energy, Climate & Environment* 117.

to use any means necessary, no matter how inappropriate, to sustain uninterrupted oil production, including disregarding the rule of law and violating the independence of the judiciary as well as interfering with the work of the regulators. To the Government, their interest in maximising revenue from oil and gas production supersedes all other interests. The Government will go to any extent to shield oil companies from obeying a decision that is perceived to be about decreasing oil production, which may potentially result in a decline in oil revenues. Supporting this view is a statement credited to Shell released immediately after Gbemre's decision was pronounced. Shell stated that "The only way to end flaring at flare sites without associated gas gathering equipment would be to stop oil production. This decision cannot be made by SPDC without direct support from other Joint Venture partners, including the government-owned majority partner NNPC.¹¹⁵⁰ Thereafter, the government instructed Shell and other oil companies to continue with production until instructed otherwise.¹¹⁵¹

Moreover, both the respondents and the literature indicate that Nigeria's dependence on oil as the major source of revenue has been cited as one of the major obstacles hindering the effective enforcement of the anti-gas flaring law and policy regimes. Therefore, it is a fact that the petroleum industry accounts for the largest source of the Government's foreign exchange earnings.¹¹⁵² This has placed the Government in a difficult position in terms of how to strike a balance between the maximisation of revenue generation and environmental protection. Consequently, the Government treats any perceived interruption of oil production as an obstacle to the fiscal regimes' sustainability. Studies by UNDP and Saheed into the fiscal sustainability of Nigeria's resource exploitation and management suggest that the country has not really moved from mere 'lip service' to practical reality.¹¹⁵³

¹¹⁵⁰ Shell Petroleum Development Company of Nigeria Limited (SPDC) et al. *Shell in Nigeria-Gas Flaring* (April 2011). Available at <http://www.shellnigeria.com>.

¹¹⁵¹ Kato Gogo Kingston, 'Shell Oil Company in Nigeria: Impediment or Catalyst of Socio-Economic Development?' (2011), 1 (1) *African Journal of Social Sciences* 15-36.

¹¹⁵² See chapter 3.2 above.

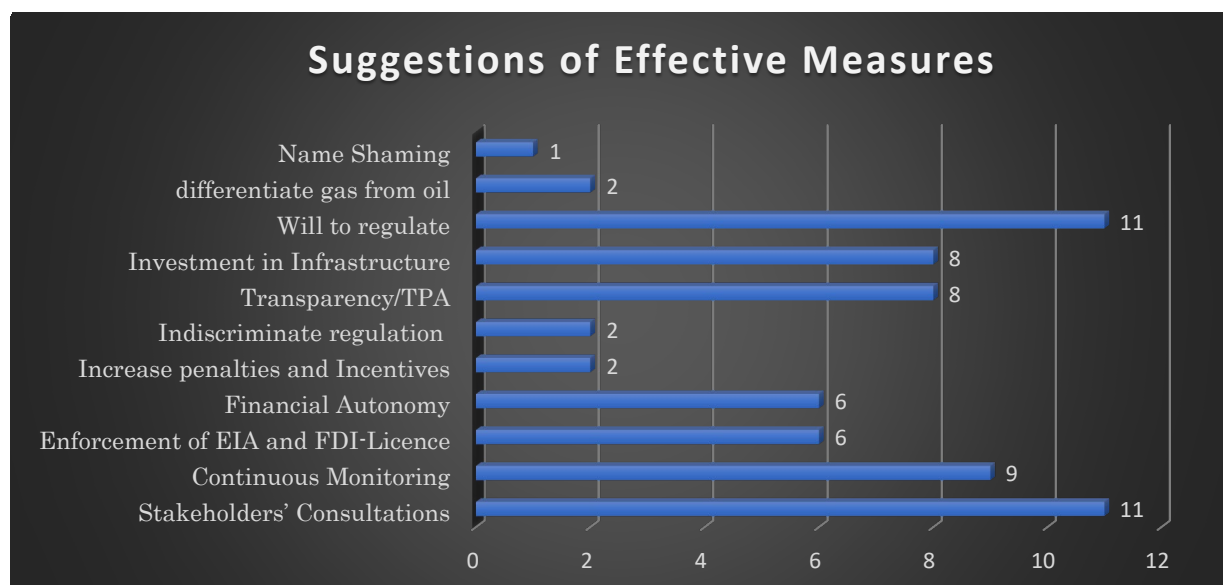
¹¹⁵³ United Nations Development Programme, *Environmental Assessment of Ogoniland* (United Nations: Nairobi, Kenya, 2011); and Alabi Saheed, "Country Report: Recent Developments in the Niger Delta of Nigeria", (2012), (1) *IUCN Academy of Environmental Law e-Journal* 162-169.

Finally, all of these challenges have exposed the seeming lack of political will of the FGN to ensure that environmental regulation receives the desired attention. As suggested by the former Nigeria Senate President, FGN’s lack of will to tackle gas flaring has been a major obstacle to achieving sustainable oil and gas operations in the country. In his words: ‘. . . I think the Government has never been able to develop a strong will to ensure the implementation of these basic policies, and the result, of course, is like any other law. The operators take the easiest line of resistance, which is to pay N2 or 1K or whatever maybe and flaring so many feet of gas . . . more importantly, the penalty for any defaulter is too meagre for anybody to go the hard way of reducing gas flaring. Whatever it is, it is cheaper for the companies or the operators to flare gas and pay the penalty than to stop’.¹¹⁵⁴

6.4.9 Measures to Sustain Environmental Regulatory Compliance

As earlier posited, the study asked this question to serve as a basis for recommending reforms that will address the identified obstacles hindering the effective enforcement of the anti-gas flaring regimes in Nigeria. The suggestions provided by the respondents are summarised below.

Figure 6.16: Stakeholders’ Perceptions of Effective Measures



¹¹⁵⁴ Senator David Mark (The Senate President of the Federal Republic of Nigeria). See Ojeifo, S., 2008. 'Nigeria: Mark-FG Lacks the Will to stop Gas Flaring', Thisday (25 November).

The above figure clearly shows that stakeholders' consultations, investment in critical infrastructure, transparency in TPA, adequate monitoring, and having the political will to regulate are the primary measures that could see Nigeria end gas flaring.

6.5 Conclusion

This chapter presented and analysed the empirical data gathered for the study. The aim was to ascertain whether the Nigerian anti-gas flaring law and policy regimes were appropriately designed and effectively enforced to achieve the country's objective in experts' opinions. The outcome of the analysis suggests that the respondents perceived that the legal and policy regimes were appropriate. The respondents found that the laws, regulations, and policies were sufficient and suitable for achieving the set objectives. However, the enforcement was perceived by most of the respondents as ineffective, and this perception was shared with respondents from the regulatory agency in charge of regulating gas flaring in Nigeria. The outcome explicitly shows that the legal regime has suffered from ineffective enforcement for many reasons, as presented above. The findings largely correlate with the literature review that enforcement of the regime is indeed ineffective.

Chapter Seven: Conclusion and Recommendations

7.1 Introduction

This chapter concludes the thesis and recommends measures to address the identified obstacles. Consequently, the chapter is structured into four sections. Section 7.2 presents the summary of the chapters and concludes based on the theoretical and empirical investigations. Section 7.3 offers recommendations that emerged from both theoretical and empirical investigations. Section 7.4, the penultimate section, presents the study's limitations, while section 7.5 provides recommendations for further research. Section 7.6 discusses the study's contribution to the body of knowledge and gives the researcher's final brief thoughts on the study.

7.2 Review of the Chapters and Conclusion

The overall study aimed to identify Nigeria's anti-gas flaring law and policy regimes' critical challenges while recommending measures that could improve the regimes. The aim was achieved by answering the principal research question of how appropriate and effective the design and enforcement of such regimes are. The reason for asking the question was to determine whether Nigeria's anti-gas flaring law and policy regimes were appropriately designed and effectively enforced to achieve the country's policy objective of ending gas flaring and unlocking gas potential. In doing so, the specific objective is to identify the regime's critical challenges and recommend measures that could improve the regime. The chosen methodology to achieve the aim of the study was primarily a qualitative approach to sociolegal research. Thus, documentary analysis and semi-structured interviews were deployed in gathering the data, which were also suggested as appropriate methods to most likely answer the research questions effectively. To accomplish the study's aim using the methodologies highlighted above, the following specific objectives were set and a summary of the findings addressing each of the objectives is presented below:

Objective 1: To critically review international and regional law and policy regimes relating to atmospheric and air quality pollution to assess their impacts on emission reduction and ascertain whether they obligate gas flaring nations, including Nigeria, to end gas flaring because of its negative effects on climate change.

To realise objective No. 1, **chapter two** critically reviewed the global and regional contemporary issues around air quality and atmospheric protection. This is an aspect of environmental regulation needed to establish the genesis of countries' environmental laws and policies regarding the treatment of gas flaring. The contemporary issues discussed in the chapter were primarily global and regional concerns of oil-producing countries and public/private organisations and constituted the main agendas of the United Nations. Although the chapter has argued that neither an international nor regional instrument was specifically passed prohibiting AG flaring. Although an inference can be made under a regional instrument – the African Charter on Human and People's Rights instruments as conferring an obligation on its parties to end gas flaring within their jurisdiction but still debatable. Consequently, the chapter concludes since there are no specific international or regional instruments specifically obligating oil-producing nations to end gas flaring, it suggested that the burden depends on such nations to ensure appropriate design and effective enforcement of the relevant domestic laws and policies. Also depends upon the nation's adherence to the international and regional commitments voluntarily adopted to help end the menace.

To this end, the chapter then established an analytical framework for evaluating the appropriateness and effectiveness of the design and enforcement of Nigeria's anti-gas flaring law and policy regimes. It considered the available international voluntary commitment signed by Nigeria to help the country end gas flaring. It was found that Nigeria is committed to GGFRP, chaired by the World Bank. The GGFRP is currently the only renowned international initiative that explicitly considers AG utilisation as an essential process for reducing GHG emissions, which is the ultimate objective of the UNFCCC and its Protocols. The study adopted GGFRP's model framework that guides gas flaring nations' anti-gas flaring laws and policy regimes as best practices and models for practical application. The model covers these four areas: legislation (the legislative framework), the contractual framework, the fiscal framework, and the regulatory framework. These four areas are interdependent and constitute essential elements for the

success or otherwise of any flaring regime (see figure 2.1 and table 2.1). Therefore, this model framework was employed in evaluating the design and enforcement of Nigeria's anti-gas flaring law and policy regimes which is objective 2 of the study.

Objective 2: To critically evaluate the design of Nigeria's anti-gas flaring law and policy regimes and their enforcement processes to identify any deficiencies and challenges and examine their inability to establish effective compliance with the ideal of zero flaring and environmental sustainability.

To realise objective No. 2, **chapter three** critically evaluated the design and enforcement of Nigeria's anti-gas flaring law and policy regimes. Thus, the legislative, regulatory, fiscal, and contractual frameworks were analysed using the GGFRP's model framework. The evaluation revealed that Nigeria had made an incredible effort to having appropriately designed legal and policy regimes. Thus, the country has succeeded in updating its laws and fiscal measures, especially with the passage of the PIA 2021 and the Gas Flare Regulation 2018. Likewise, in terms of policies, the chapter revealed the two most significant achievements - NGFCP 2016 and NGP 2017 policy regimes. The NGFCP 2016 is the first programme that seeks to allow TPA to gas flare infrastructure. The GGFRP model emphasised that open and transparent TPA to a gas gathering, processing, and transmission facilities, as introduced by the NGFCP 2016, is essential for promoting AG utilisation and ensuring flare and vent reduction. While the NGP 2017 has introduced new critical measures that affect some of the country's long-standing policies regarding gas Re-injection, flare-out targets, gas flaring Penalties, new flare technologies, and fields' development. Overall, the chapter revealed that NGFCP 2016 and the NGP 2017 policy regimes had introduced robust policy reforms that, if stringently and consistently implemented, have the effect of helping the country realise its elusive goal of ending gas flaring and unlocking its gas sector.

Nevertheless, the review of the regulatory enforcement and policy implementation has revealed many obstacles ranging from weak regulatory oversight, conflicting responsibilities/interests, and inadequate funding, among the many issues that led to ineffective enforcement. Likewise, the country's petroleum agreements were silent on AG treatment. The review also revealed the seeming

inconsistencies in the regulatory approach for designing and enforcing the regimes. Consequently, a theoretical investigation of an appropriate and effective regulatory approach for designing and enforcing an environmental law and policy regime was investigated in chapter four. This is to determine how Nigeria could adopt an appropriate regulatory approach that could help the country sustain effective environmental regulatory compliance – which is objective No. 3 of the study.

Objective 3: To critically assess whether strengthening the current regulatory approach or devising a new approach would sustain environmental-friendly behaviour and make all stakeholders bound by their responsibilities.

To realise objective No. 3 of the study, **chapter four** critically reviewed the regulatory design and enforcement approaches to assess whether strengthening current Nigeria's regulatory approach or devising a new one would sustain environmental-friendly behaviour and make all stakeholders bound by their responsibilities. The evaluation is restricted to the two competing traditional approaches, CAC and MBIs, to consider the ranking approach. The alternative approaches are merely complementary strategies, and therefore their superiority over other approaches could not be assessed. Consequently, the central finding of this chapter is that policy instruments are not selected based on any ranking criteria (i.e., effectiveness or efficiency considerations). Instead, the practicability of their implementation is a factor that policymakers should consider when designing policy instruments. This is because no matter how appropriate the design of the regulatory instruments, they would not provide any meaningful result unless they are effectively enforced.

Likewise, an investigation concerning the effective enforcement approach a regulatory agency should adopt finds that neither total commitment to a cooperation-based nor legalistic approach is likely to provide the desired goal. The literature provides no clear guidance concerning which approach is optimal and effective. Rather suggested that the key to maximum compliance is an optimal combination of the approaches. In practice, cooperation is paired with legalistic, structured in a pyramid-like fashion, with initial or minor violations treated leniently. In contrast, repeated or significant violations are punished with

increasingly severe sanctions. Correspondingly, the interview findings also support this position as more than 90% of the respondents believe that combinations of penalties and incentives, as well as the cooperative and legalistic form of enforcement, would be optimal for regulating Nigeria's oil and gas industry. Therefore, the chapter concludes that regulators should consider cooperative techniques backed up with more occasional legalistic measures to provide more significant deterrence incentives.

Objective 4: To critically assess the extent to which the Nigerian Government, the oil companies operating in Nigeria, and other stakeholders perceive how the requirements of the laws regulating gas flaring could be complied with.

This objective is about obtaining stakeholders' perceptions using the instrument of semi-structured interviews. **Chapter five** discusses the methodology and methods the study adopted in conducting and reporting the empirical study findings, as contained in chapter six. The chapter has mainly addressed the study's research approach and philosophical underpinnings, the research design, the methods adopted to undertake such a study, the data collected, and how the data were analysed. As discussed in the chapter, it argued that the qualitative approach adopted is particularly appropriate for understanding the study participants' viewpoints and experiences regarding the design and enforcement of Nigeria's anti-gas flaring law and policy regimes, as well as the participants' relationship with the regimes. Consequently, **chapter six** presents the analyses of the interviews conducted with twenty-six respondents drawn from various groups of stakeholders (*see figure 6.1 & Appendix A2*). Thus, the chapter analyses the interview data collected and the data analysis procedure and then presents the findings. Borrowing from qualitative data analysis procedures and principles associated with thematic analysis, the study employed coding, sub-coding, and constant comparison to generate themes from the twenty-six interviews conducted.

Consequently, the respondents' opinions are generally consistent with the literature findings in chapter 3 that Nigeria's anti-gas flaring legal regime is appropriately designed to some extent, and the policy measures were effective to some extent too. The respondents applauded the adoption of the NGFCP 2016 and

the PIA 2021 to help the country end gas flaring and unlock gas potential. These regimes were specifically favoured as suitable for achieving the objective of ending gas flaring. Moreover, the findings regarding suitable regulatory approaches to the design and enforcement of regulatory regimes support a combination of approaches instead of selecting just one approach. However, the outcome regarding effective enforcement reveals that the country is not effectively regulating the industry. This outcome is much like the findings in the reviewed literature. The majority of the respondents, including the regulators, affirmed the ineffectiveness of the enforcement processes.

Objective 5: To recommend reforms that will address the identified deficiencies and challenges in order to strengthen the anti-gas flaring regimes.

The following **section 7.3** addressed objective No. 5 by recommending measures that could strengthen Nigeria's anti-gas flaring law and policy regimes to achieve objective No. 5 of the study.

Therefore, following the critical literature review and the analysis of the interview data in chapters 2 - 6, this thesis finds that the law and policy regimes were appropriately designed but ineffectively enforced. As emerged from the study, several reasons have led to ineffective enforcement. For instance, at the heart of Nigeria's anti-gas flaring policy regime is the ultimate objective to end gas flaring and unlock the gas's potential. However, this objective has been overshadowed by the government's desire to generate as much revenue as possible without interrupting petroleum operations. Most respondents perceived interference because the government's desire to generate more revenue led to the lack of political will to enforce the regulations effectively. Therefore, this thesis concludes that while Nigeria's anti-gas flaring law and policy regimes were appropriately designed, the regimes' enforcement is weak and requires further improvement. This conclusion is buttressed by the passage of the PIA 2021, which scrapped all upstream regulatory agencies and replaced them with a new single independent agency for the sector.

7.3 Recommendation

As discussed above, the study aimed to investigate the critical challenges of Nigeria's anti-gas flaring law and policy regimes and recommend measures that could improve the regimes. Consequently, following the investigation, it is suggested that a firm commitment is required to end gas flaring and unlock gas potential in Nigeria. The FGN must go beyond the ostentatious rhetoric of passing laws and establishing policies without effective implementation, as this alone would not end gas flaring in Nigeria. The FGN must agree that the anti-gas flaring regime is in a crisis of purpose, confidence, and, sadly, efficiency. Therefore, the first step is for the FGN to redefine its commitment to environmental protection and consider the following recommendations:

Firstly, regardless of the new development, optimal enforcement can only be achieved when the government balances its desire to generate revenue and its responsibility to protect the oil-producing environment. This can be done by prioritising sustainable petroleum operations over its desire to profit from the industry. Similarly, most respondents believed that providing adequate incentives for investment in critical infrastructure is one of the primary measures that could help Nigeria end gas flaring and unlock gas potential. Therefore, the FGN should provide an enabling environment for oil companies to invest in AG utilisation projects.

Secondly, lack of political will and interference have been viewed mainly as the major obstacle to ending gas flaring; the FGN must allow the new upstream regulatory agency to function without interference. This can be done by providing adequate political will for the agency to work effectively. The commitment should be all-inclusive to enable the stakeholders to make inputs so that the regulatory regime would incorporate legitimate expectations and reflect the wishes of all stakeholders. Likewise, the findings revealed that the government and oil companies have performed below legitimate expectations of incorporating host communities into decision-making. Therefore, the study strongly suggests that host communities should be engaged and consider their views for proper and effective enforcement of the regulations. The host communities' contribution toward ending gas flaring cannot be ignored, especially in curbing corruption and pipeline vandalism in oil and gas-producing areas.

Thirdly, lack of adequate monitoring and reliable data sources were featured among the major obstacles hindering effective enforcement of the regulations. Respondents, especially from the regulatory agency, have reported lacking effective monitoring equipment. As such, they usually rely on what the oil companies report. Therefore, it must be stressed here that environmental data through continuous monitoring is an indispensable element for effective upstream environmental regulation. First of all, it enables the regulator to assess any potential threat and promptly respond by implementing appropriate and effective countermeasures. Moreover, it would facilitate the identification and sanction of regulatory violators.

In retrospect, a lack of adequate monitoring and reliable data sources compromises the regulatory agency's independence and undermines the process's credibility entirely. It's unfortunate and makes a mockery of the whole system that the regulator would have to depend on the regulated entities for gas flaring volumes data to enable it to enforce the anti-gas flaring regulations, make a potential threat analysis, or develop regulatory policies. Therefore, FGN must invest in capacity building and appropriate technology for monitoring and quantifying the gas flaring data to demonstrate its commitment to environmental protection and guarantee the success of the new legislative and regulatory frameworks. If applied effectively, this measure would make a difference in Nigeria's enforcement and success of environmental regulation.

Fourthly, dialogue, persuasion, and compliance assistance, combined with sanctions, should be pursued and guide the enforcement strategy of the regulatory regimes. International best practices and the study's respondents suggest that this approach is more effective than absolute command and control regulation. This will likely mitigate the outcry of oil companies about the failure of the Nigerian government to consult them when making critical decisions that affect the entire petroleum operations in the country. On the other hand, the host communities must also retrace their steps from confrontational agitation and realign their campaign to a direct drive for sustainable development. They should adopt dialogue and pressure instead of vandalism as the best approach in pressing their demands for sustainable oil and gas operations in their areas. The FGN must also sensitise the host communities about the nature of relationships with the IOCs

vis-à-vis its responsibilities in protecting the environment. This would determine the basis of their claims against the companies and help give their campaign a clear focus.

Fifthly, Nigeria's contractual frameworks are currently silent about gas flaring treatment. The model contracts only mentioned environmental issues in abstract terms, i.e., "best environmental standards" or "good oilfield practice". These terms are ambiguous and need improvement. Experiences within Nigeria's industry show that such expressions do not represent a specific legal obligation or give the impression of the government's serious commitment to environmental management. This has underscored the modification of those contractual terms to make the regime unambiguous and purposeful in content while targeting specifics to create a sense of obligation towards the associated sanctions for breach of the contractual obligations. Therefore, it is recommended that the contractual regime be reviewed to reflect specific obligations and sanctions. For instance, terminology such as 'good oilfield practice' should be rephrased as 'the licensee or an operator (as the case may be) shall be liable for pollution resulting from gas flaring and venting'.

Sixthly, the new regulatory agency – NURC, should be empowered in capacity building to effectively implement the complexity of the new PIA 2021 and the Gas Flare Regulation 2018. While current capacity in the upstream sector has been built over the years, the new legal framework – PIA 2021, will need improved capacities to succeed. This challenge will be particularly critical regarding understanding, interpreting, and applying the law and environmental management for the new regulatory agency. For instance, it is clear from the literature and the interview responses that the DPR (now NURC) lacked qualified technical experts and resources to regulate the AG flaring in the country, and this has been agreed by most respondents, including the staff from the agency. In the years since it was established, few resources have been allocated to the regulatory agency, and it has no proactive capacity for upstream monitoring and inspection. In planning their monitoring and inspection visits to some flaring sites, the agency mostly relies on the oil companies for logistical support. Alternatively, they relied on data submitted by the oil companies, which was alleged to be unreliable by former Nigeria's petroleum minister.

Seventhly, the thesis found a lack of coordination among the agencies responsible for flaring regulation as one of the major obstacles. Although this has been addressed by the *Gas Flare Regulation 2018*, the enactment of CCA 2021 has created more avenues for conflict and lack of coordination than previously addressed. For instance, the NCCC's power arguably extends to overseeing and supervising Nigeria's petroleum sector as the country's largest source of CO₂ emissions. While the PIA 2021 and Gas Flare Regulation 2018, as discussed earlier, has limited any MDAs from regulating the upstream sector except the new NURC. Therefore, to ensure effective enforcement and successful environmental regulation of petroleum operations, the FGN should ensure that the agencies have defined responsibilities. The NURC should be empowered to function effectively and free from interference from the political actors within the industry. The agency should be truly independent with adequate financial and staff capability to ensure comprehensive monitoring and enforcement of the gas flaring regulation in the industry. Many respondents felt that the FGN should avoid interfering with the activities of the regulatory agency. Thus, the newly set up NURC could only work effectively when it is allowed to function freely but should be closely monitored and supervised by the FGN, as this will ensure transparency, honesty, and fairness for all the stakeholders.

Finally, the country should encourage industry multistakeholder partnerships representing different interest groups from government, industry, and non-governmental organisations, just like CASA in Alber-Canada. The partnership should be responsible for providing recommendations on policy and regulation and TPA to AG. As seen in *section 3.3.4.2*, the CASA was productive and included interested parties, and the consensus built helped forge a strong commitment that resulted in the elimination of substantial emissions. Although CASA was not a legislatively backed alliance, it provides valuable suggestions to the energy regulator, usually implemented in the subsequent regulations and guidelines as appropriate.

7.4 Limitations of the study

Three issues that limited the high responses planned earlier for the study are worth stating. Firstly, the COVID-19 pandemic has disrupted the initial plan for data collection. This led to changing the methods and collecting the data via audio-visual methods, which has affected the number of groups of stakeholders earlier envisaged in the study. This limitation has been mitigated by increasing the number of respondents from the regulatory agency to fill in the missing stakeholders' group. Consequently, the required minimum target initially planned has been met.

Secondly, the passing of the long-awaited PIA 2021 has occasioned a sudden change in the legal and institutional frameworks the study was investigating. This limited the researcher's ability to probe further the written responses provided by some of the respondents from the regulatory sector. The changes occurred on the day the researcher travelled to the field. Nevertheless, the researcher used the opportunity and interview parliament members who form part of the critical stakeholders planned for the study. Moreover, the earlier interviews conducted among the regulators were enough to provide the required data. Thirdly, in the representative sample, the respondents have the appropriate and sufficient knowledge of Nigeria's petroleum industry and whether they represent the population of groups of stakeholders to which they were drawn. On this latter point, every effort was made to seek assurances and advice from various individuals in positions of authority in Nigeria's upstream sector. The demography confirmed that the respondents have sufficient required experiences to answer the research questions (*See Figures 6.2 and 6.3*).

On the other hand, the researcher was also concerned about disseminating the study to the target audience. As policymakers sponsored the study, there is always a bureaucracy within the establishment that could prevent the study's outcome from being implemented or limits how it can be implemented. In the extreme, such barriers may lead to the study being overlooked and the resulting recommendations being much less effective. Therefore, to avoid that, I will employ the use of the most effective ways to communicate the outcome to the target audience, for instance, via conferences, traditional media, and publications of journals.

7.5 Further research

This study holistically investigated Nigeria's legal, regulatory, institutional, and contractual frameworks regulating gas flaring in Nigeria. It was undertaken in the hope of helping Nigeria achieve its policy objective of ending gas use and sustaining environmental regulatory compliance. Nevertheless, the study was not extended to cover an investigation of how the contractual frameworks, i.e. petroleum agreements, could improve enforcement of the gas flaring regulations. Therefore, it is recommended that further research be undertaken to investigate the possibility of inserting clauses in future petroleum agreements to treat gas flaring. As observed by the WB, AG flaring could be regulated by awarding a license for exploration and production. At this stage, oil companies may not be subjected to the unilateral imposition of anti-gas flaring regulations, which is one of the major obstacles perceived by the respondents. It could offer both parties the opportunity to negotiate their interest and mutually agree on handling the AG discovered in the field (*see chapter 3.3.3*).

Furthermore, further research is also recommended explicitly on policy implementation processes. While this study reveals that the NGFCP is effective, it is still in its early stage, and the first round was only recently awarded in 2018. Likewise, the enforcement processes of the legal regime could be researched further. While the present findings have met the objectives of this study, it would be interesting to undertake further research to uncover why the penalties and incentives could not influence the gas flaring reduction. Although this study's findings reveal that the regulatory agency was neither effective nor could detect and sanction those oil companies that failed to comply with the regulations, a study is required to investigate why the agency always behaves as such.

Moreover, further research is recommended to assess how industry stakeholders' interests could be captured in anti-gas flaring regulations. This study reveals that stakeholders' consultations are limited and need further improvement (*see figure 6.13*). Most of the respondents perceived a failure by the policymakers to consult in ensuring the industry is regulated effectively. Therefore, further research in this respect may put the government in a position to effectively capture the stakeholders' views on how the law and policies for treating gas flaring could be designed and enforced.

7.6 Contribution and Final Thoughts

This study is a holistic evaluation of Nigeria's anti-gas flaring law and policy regimes, assessing the appropriateness of the design of the legislative, regulatory, fiscal, and contractual frameworks aimed at ending gas flaring and unlocking the country's vast gas potential. I can say that this is the first time a study is undertaken applying a critical evaluation of all measures deployed by FGN to combat gas flaring since it started in 1956. Although previous studies have been done, hardly find one applying critical evaluation of laws and policies as regards their design and enforcement. Consequently, while evaluating the regimes' design and enforcement, this thesis has contributed to highlighting the critical challenges of the regimes. The findings show that Nigeria has always had sound laws and policies for combating gas flaring, but the main challenge is the enforcement and implementation of such laws and policies.

The thesis investigated the major obstacles impeding the enforcement and implementation of such laws and policies. This led to another key methodological contribution. As highlighted in this thesis, hardly find an empirical study on gas flaring regulations in Nigeria. But this study has combined two methodologies – documentary legal analysis and empirical data collection using semi-structured interviews to understand the major obstacles that serve as impediments to ending gas flaring and also asked the stakeholders their opinion on how best to end the practice of gas flaring. The methodologies used provided the possibility of comparing the critical literature review findings vis-a-vis the empirical study findings and concluded that Nigeria has always had appropriate anti-gas flaring laws and policies but with ineffective enforcement processes. This was a novel approach, as none of the previous studies combined the two methodologies in investigating Nigeria's anti-gas flaring law and policy regimes.

Nevertheless, this research does not claim to have covered the factual exhaustion of Nigeria's upstream environmental regulation. Rather, it has been done to critically analyse the obstacles responsible for the failure of the anti-gas flaring law and policy regimes. Moreover, as regards the suggested measures for ending gas flaring, there are no quick fixes; enormous political will and investment in critical infrastructure are necessary to achieve the required effective regulation in Nigeria's oil and gas industry. Therefore, it is hoped that the research has laid an

academic foundation for a better understanding of the regulatory dynamics of the Nigerian oil industry and provides headway for future research in this area of law and policy.

Finally, it's the author's understanding that the economic, environmental, and social obstacles to ending gas flaring are well known, and the solutions are well known, and the focus now should be on implementing the solutions. The solutions are finances, technology, and strong institution at one level. Ultimately, however, these are just the 'mechanisms'. The critical issue is about changing attitudes, values, and approaches. Essentially, it is about having the political will and acting in non-traditional ways. It is about considering new measures that could sustain environmental regulatory compliance at both the societal and corporate levels.

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Appendixes

Appendix A: Sample of Interview Documents

1. Interview Guide

Main Question		Attempt	
A.	<i>Introductory Questions</i>		
Subquestions			
	<ul style="list-style-type: none"> i. Name ii. Place of Work iii. Occupation and Position iv. Years of working experience v. Statement of confidentiality 		
B.	<i>Are Nigeria's gas flaring legal and policy regimes appropriately designed to achieve the country's objective? In other words, are the existing laws, policies, and regulations appropriately formulated to influence gas flaring reduction and utilisation?</i>		
Subquestions			
	<ul style="list-style-type: none"> i. Is the current legal regime appropriately designed to achieve the country's objective? ii. Are the policy measures appropriately designed to achieve the country's objective? iii. Do you think the current penalty regime is appropriate and suitable for achieving the objective to end gas flaring? iv. What is your view of the incentives for the utilisation of associated gas? Are the incentives provided adequate to influence investment in AG utilisation projects? v. Overall, what is the impact of the existing laws and regulations on AG flaring reduction and utilisation? 		
C.	How effective and efficient is the enforcement of the AG laws and regulations by the responsible agency?		
D.	What would you describe as the major obstacles limiting Nigeria's effort to end gas flaring?		
E.	What are measures to put in place that could sustain environmental regulatory compliance?		
F.	How can Nigeria eliminate associated gas flaring through an appropriately and effectively enforced approach?		
Subquestions			
	<ul style="list-style-type: none"> A) Can a cooperatively enforced "command and control" regime provide an alternative approach and induce compliance with Nigeria's associated gas flaring regulations? B) Can punishment or persuasion for violating anti-gas flaring laws and regulations be effective, or a combination of punishment and persuasion? 		

2. Study Participants

S/N	Stakeholders	Group Representing	Population
1.	The NASS	Lawmakers	3
2.	The MPR and FMEVN	Policymakers	3
3.	The DPR	Regulator	3
4.	The NGFCP	Policy Implementer	3
5.	The NNPC	Regulator's Overseer	3
6.	The oil companies	Operators and gas flares	3
7.	The host communities	The immediate victims	3
8.	Other industry players	Lawyers, industry experts & NGOs	3
9.	University Lecturers	Academics/Researchers	3
	Total Participants		27

3. Respondents' Consent Form

CONSENT FORM FOR INDIVIDUAL INTERVIEWS

An Investigation into the Design and Enforcement of Nigeria's Anti-gas Flaring Law and Policy Regimes and Consideration of an Approach that could Sustain Environmental Regulatory Compliance.

Researcher: Jamilu Ibn Mohammed

Please tick the box

1. I agree that I have read and understood the information sheet dated for the above study.
I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.
3. I agree to take part in the above study.
4. I agree with the interview being recorded.
5. I agree to the publication of direct quotations from my interview on the basis that they will not be attributable to me as a named individual.

Name..... Date.....

Signature..... Telephone contact.....

Email contact.....

Researcher's name..... Date.....

Signature.....

4. Supervisor Letter

SUPERVISOR'S INTRODUCTORY LETTER SAMPLE

Date:

To:
.....
.....

Dear Sir/Madam,

This is to confirm that I am the supervisor of **Mr Jamilu Ibn Mohammed**, who is a fulltime PhD research candidate at Robert Gordon University, Aberdeen, Scotland.

Mr Mohammed's research focuses on the legal regime for gas flaring in Nigeria, including its design and enforcement. The programme involves mainly library/desk-based research at our University. However, the research would greatly benefit from empirical evidence-gathering through interviews with relevant parties including lawmakers, industry, regulators, local communities and interested parties. It is for this reason that I would humbly request your kind assistance to Mr Mohammed during his empirical study, which was explained in more detail in the 'Participant Information Sheet'.

In addition to my role as a supervisor, I am a course leader for Oil and Gas Law at Robert Gordon University, Aberdeen. Overall I find Mr Mohammed, a hard-working researcher. He is always punctual with all his assignments and applies himself diligently to his research and produces high-quality work. Personally, I find Mr Mohammed highly professional and genuine. Thank you for your support.

Yours sincerely,

Dr Leon Moller

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Appendix B: Publications and Presentations in Conferences/Workshops

1. Publications

- I. J Mohammed and L. Moller, 'The Problem of Gas Flaring – A review of Current Legal and Policy Efforts in the UK and Nigeria' (2022) 20 (2) *OGEL*.



The Problem of Gas
Flaring - A Review of

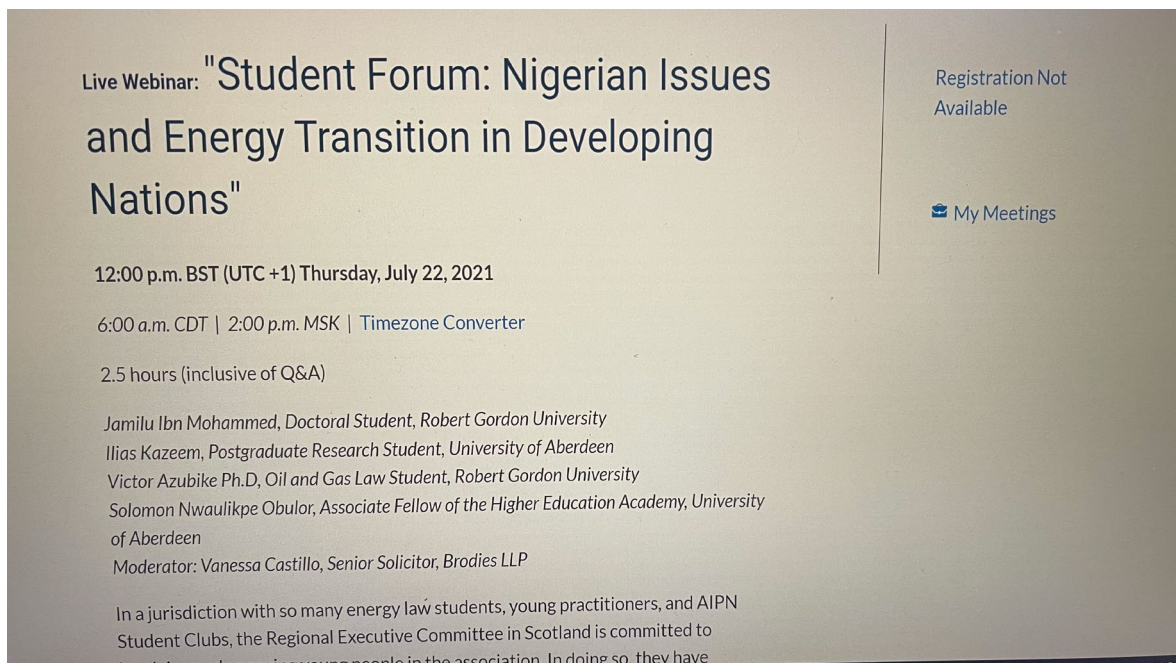
- II. J Mohammed, 'How Sustainable is Nigeria's Effort of Ending Gas Flaring and Unlocking Gas Potentials? A Review of the Country's Anti-gas Flaring Legal and Policy Frameworks' (2021) *Inderscience Publishers*



Inderscience
Publishers_publisher

2. Conference Presentations

- I. J Mohammed and L. Moller, 'The Problem of Gas Flaring – A review of Current Legal and Policy Efforts in the UK and Nigeria' (2021) *AIPN Webinar*, 22nd July 2021.



Live Webinar: "Student Forum: Nigerian Issues and Energy Transition in Developing Nations"

Registration Not Available

[My Meetings](#)

12:00 p.m. BST (UTC +1) Thursday, July 22, 2021

6:00 a.m. CDT | 2:00 p.m. MSK | [Timezone Converter](#)

2.5 hours (inclusive of Q&A)

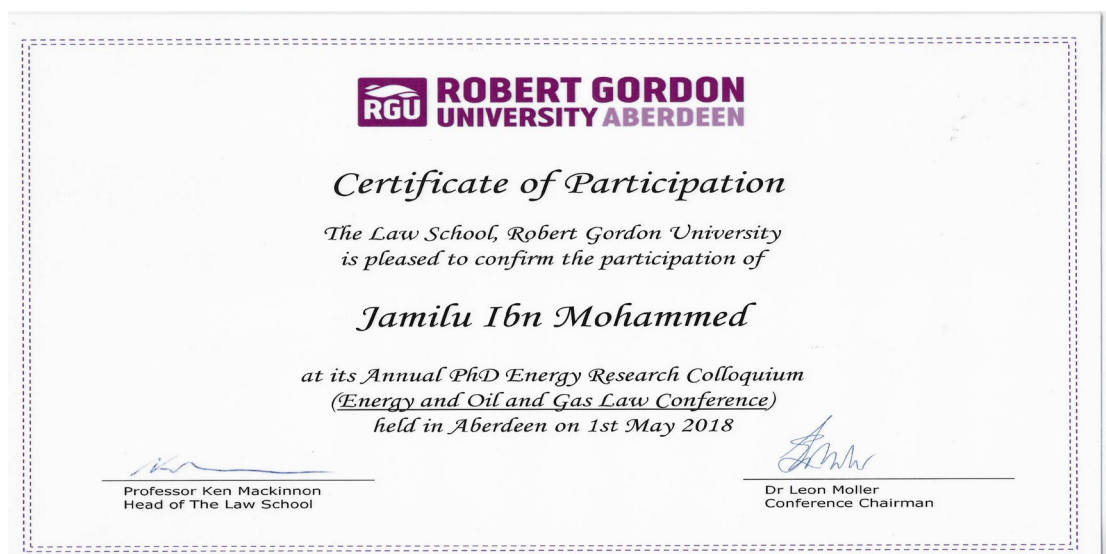
Jamilu Ibn Mohammed, Doctoral Student, Robert Gordon University
Ilias Kazeem, Postgraduate Research Student, University of Aberdeen
Victor Azubike Ph.D, Oil and Gas Law Student, Robert Gordon University
Solomon Nwaulikpe Obulor, Associate Fellow of the Higher Education Academy, University of Aberdeen
Moderator: Vanessa Castillo, Senior Solicitor, Brodies LLP

In a jurisdiction with so many energy law students, young practitioners, and AIPN Student Clubs, the Regional Executive Committee in Scotland is committed to involving and engaging young people in the association. In doing so, they have

- II. J Mohammed and L. Moller, 'How sustainable is Nigeria's effort of ending gas flaring and unlocking gas potentials – A review of the country's anti-gas flaring legal and policy frameworks' The Fifth International Conference on Emerging Research Paradigms in Business and Social Sciences (ERPSS) held at Middlesex University Dubai from 14th - 16th January 2020.



- III. J Mohammed, 'Comparing Legal and Regulatory Framework for Combating Gas Flaring in Nigeria and Norway: Take home for Nigeria' At Energy, Oil And Gas PhD Research Student Colloquium Organised By The Law School, School Of Engineering And The Graduate School – Robert Gordon University Tuesday 1st May, 2018 Venue: RGU- SIWB N204.



5. Workshops/Seminars

- I. J Mohammed, Presentation on the research proposal titled 'An Investigation of Nigeria's Gas Flaring Regime and the Consideration of a New Approach that could improve Environmental Regulatory Compliance' at the Postgraduate Certificate Research Methods - MODULE GSM005 Developing Research: Principles and Practice Oral Presentation Of Proposed Research 24th November 2017.



Appendix C: Vitae RDF Planner (Personal Development Plan)



Researcher Development Framework Planner

myRDF - Action plan - Jamilu MOHAMMED

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Knowledge and intellectual abilities (A)					
Knowledge base (A1)					
Subject knowledge	Achieved	Achieved		Achieved	
Research methods - theoretical knowledge	Achieved	Achieved	Achieved	Achieved	
Research methods - practical application	Achieved	Achieved	Achieved	Achieved	
Information seeking	Achieved	Achieved	Achieved		
Information literacy and management	Achieved	Achieved	Achieved	-	
Languages	Achieved	Achieved	-		
Academic literacy and numeracy	Achieved	Achieved	-		
Cognitive abilities (A2)					
Analysing	Achieved	Achieved		-	
Synthesising	Achieved	Achieved	Achieved		
Critical thinking	Achieved	Achieved	Achieved	Achieved	
Evaluating	Achieved	Achieved	Achieved	-	
Problem solving	Achieved	Achieved	Achieved	Achieved	
Creativity (A3)					
Inquiring mind	Achieved	Achieved	Achieved	-	
Intellectual insight	Achieved	Achieved	Achieved	-	-
Innovation	Achieved	Achieved	Achieved		-
Argument construction	Achieved	Achieved	-		
Intellectual risk	Achieved	Achieved		-	
Personal effectiveness (B)					
Personal qualities (B1)					
Enthusiasm	Achieved		Achieved		Achieved
Perseverance	Achieved		Achieved	Achieved	-
Integrity	Achieved	Achieved	Achieved	-	-
Self-confidence	Achieved	Achieved	Achieved	Achieved	-
Self-reflection	Achieved	Achieved	Achieved		
Responsibility	Achieved	Achieved	-	-	
Self-management (B2)					

Preparation and prioritisation	Achieved	Achieved	Achieved	Achieved	
Commitment to research	Achieved	Achieved	Achieved		-
Time management	Achieved	Achieved	Achieved		
Responsiveness to change	Achieved	Achieved	Achieved	-	-
Work-life balance	Achieved	Achieved	Achieved		
Professional and career development (B3)					
Career management	Achieved	Achieved	Achieved	-	-
Continuing professional development	Achieved	Achieved	Achieved	-	
Responsiveness to opportunities	Achieved	Achieved	Achieved		
Networking	Achieved		Achieved	Achieved	-
Reputation and esteem	Achieved	Achieved	Achieved	-	-
Research organisation and governance (C)					
Professional conduct (C1)					
Health and safety	Achieved	Achieved	Achieved	-	-
Ethics, principles and sustainability	Achieved	Achieved	Achieved	-	-
Legal requirements	Achieved	Achieved	Achieved	-	-
IPR and copyright	Achieved	Achieved	-		-
Respect and confidentiality	Achieved	Achieved	-	-	-
Attribution and co-authorship	Achieved	Achieved	Achieved	-	-
Appropriate practice	Achieved	Achieved	Achieved	-	-
Research management (C2)					
Research strategy	Achieved	Achieved		-	
Project planning and delivery	Achieved	Achieved	Achieved	-	
Risk management	Achieved	Achieved	-	-	-
Finance, funding and resources (C3)					
Income and funding generation	Achieved	Achieved	-		-
Financial management	Achieved	Achieved	-	-	
Infrastructure and resources	Achieved	Achieved	-	-	
Communication, influence and impact (D)					
Working with others (D1)					
Collegiality	Achieved	Achieved	Achieved	-	
Team working	Achieved	Achieved	Achieved	-	
People management	Achieved	Achieved	Achieved	-	
Supervision	Achieved	Achieved	-		
Mentoring	Achieved	Achieved	Achieved	-	
Influence and leadership	Achieved	Achieved	Achieved	-	-
Collaboration	Achieved	Achieved	Achieved	-	
Equality and diversity	Achieved	Achieved	Achieved	-	

Communication and dissemination (D2)					
Communication methods	Achieved	Achieved	Achieved	-	
Communication media	Achieved	Achieved	Achieved	-	-
Publication	Achieved	Achieved	-	-	-
Engagement and impact (D3)					
Teaching	Achieved	Achieved	Achieved	-	
Public engagement	Achieved	Achieved	-	-	
Enterprise	Achieved	Achieved	-	-	
Policy	Achieved	Achieved	Achieved	-	-
Society and culture	Achieved	Achieved	Achieved	-	
Global citizenship	Achieved	Achieved	-		-