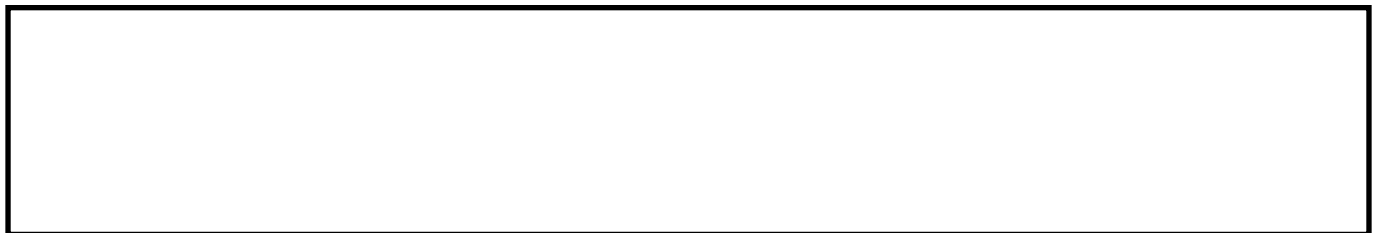


Comparing Nigeria's legal framework for combating gas flaring with that of Norway: lessons for Nigeria.

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Comparing Nigeria's Legal Framework for Combating Gas Flaring with That of Norway – Lessons for Nigeria

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Abstract : *The oil producing countries that have deliberately focused on the development of their oil and gas industry's structures and enforcement of their legal and regulatory frameworks have usually been able to dramatically reduce associated gas (AG) flaring. However, this is not always the case in places where investment is difficult, oil projects are extremely remote or where the legal and regulatory framework are so defective to the extent that it could be manipulated by the oil companies or a seeming lack of political will on the part of the government, a classical example is Nigeria. Therefore, this paper compared Nigeria's frameworks for combating gas flaring with that of Norway. It critically analysed the Nigeria's legislative and regulatory efforts towards combating AG flaring and the key barriers that hinder Nigeria's efforts to eliminate or achieve substantial reduction in AG flaring. It finally ironed out lessons for Nigeria based on the Norway's effort towards combating gas flaring in its oil and gas sector.*

1 INTRODUCTION

Nigeria is the sixth largest oil producing nation and the second largest gas-flaring nation in the world after Russia. It is estimated that about 20% - 40% of its AG production was flared in 2013; amounting to \$2.5 million USD, thereby contributing 10% of the total global gas flared annually according to the World Bankⁱ. The unabated continued AG flaring in Nigeria has significant adverse environmental, socio-economic and health effects on the oil producing communitiesⁱⁱ. Successive Nigerian Governments have adopted the strict hard-line stance of prohibiting flaring by means of legislation while imposing penalties, fines and environmental taxation as a means of discouraging the practice. However, absence of effective and efficient legal and regulatory mechanisms for monitoring and enforcing compliance of the law had led to sub-optimal outcomes in the Nigeria's effort to combat

AG flaring. On the other hand, ever since the beginning of hydrocarbon exploitation in Norway in 1971, the Norwegian government by law prohibited AG flaring by demanding that oil companies could not sell crude oil from fields on the Norwegian continental shelf (NCS) until they had found a way to dispose of the AG. This early legal prohibition significantly reduced Norway's AG flaring.

Consequently, the choice of Norway as a model is informed by several reasons among others include; firstly, Norway along with World Bank is the initiator of the voluntary global standards for combating gas flaring and currently, the only international voluntary initiative for combating AG flaringⁱⁱⁱ. Secondly, the Norwegian Petroleum Directorate is currently working closely with the Nigeria in assisting the country to combat AG flaring and has contributed its experience with the Norwegian system to the different projects^{iv}. Thirdly, Norway is generally highly regarded for the way in which it carries out its gas resource management and several developing countries have already gained experience or expressed an interest in learning from its system (E.g. Ghana)^v. Lastly, it has successfully eliminated AG flaring from its petroleum activities, by banning it and ensuring a positive value of gas at the source through comprehensive resource management that is similar to the approach taken by Nigerian authorities, however, unlike Norway, AG flaring in Nigeria is still a subject of discussion.

Therefore, this paper discussed in detail both country's frameworks for combating gas flaring,

It compared Nigeria's frameworks for combating gas flaring with that of Norway. It critically examined and analyses the Nigeria's legislative and regulatory efforts towards combating AG flaring and finally ironed out lessons for Nigeria based on the Norway's effort towards combating gas flaring in its oil and gas sector.

2 FRAMEWORK FOR COMBATING GAS FLARING IN NIGERIA

2.1 Overview of the Oil and Gas Industry

According to United States Energy Information Administration (US-EIA), Nigeria has an estimated 37.062 billion barrels of proven crude oil reserves as of December 2015 - equal to 2.2% of the world's share that brings the country in the top ten^{vi}. It also had an estimated 182 trillion cubic feet of proven natural gas reserves, which is equivalent to 2.7% of world's gas reserves and this makes Nigeria the ninth largest deposit of natural gas in the world and the largest in Africa^{vii}. As Africa's leading hydrocarbon producer, Nigeria accounted for 26% of African and 2.7% of total world crude oil production in 2012, where in the same year it accounted for 1.1% of global gas production^{viii}. The Nigeria's oil and gas dominate the extractive sector and is the mainstay of the country's economy; it was estimated to account for about 14% of Nigeria's real gross domestic product in 2013^{ix}. In 2012, the Nigeria's oil and gas industry accounted for 96% of export revenue, a more than USD \$100 billion of revenue to the government. The NNPC reported that, total crude oil production for the year 2013 was 800,488,102 barrels, giving a daily average of 2.19 mm/pad while a total of 2,325.14 Billion Standard Cubic Feet (bscf) of Natural Gas production was reported^x.

However, a substantial part of the production is being flared because of major factors that would be discussed later in this article. Even though petroleum activities in Nigeria started in 1908^{xi}, the AG flaring began at the commencement of the production in 1956 where 95% of the total gas produced was flared^{xii}. At that time there was no any legal framework regulating AG flaring but was only covered in general under the Nigerian Constitution where it provides that; *"The State shall protect and improve the environment and safeguard the water, air and land, forest and wildlife of Nigeria"*^{xiii}.

2.2 Legal and Regulatory Frameworks

The Nigerian authorities have passed various laws regulating the management of petroleum activities and safeguarding the environment. Examination of Nigerian legislation reveals many laws regulating the practice of flaring AG among these includes:

2.2.1 The Petroleum Act 1969^{xiv}

This is the primary basis for laws and policies regulating AG flaring in Nigeria. The Act gives petroleum minister power to make regulations relating to licences and other matters to which issues relating to prevention of pollution to the atmosphere are included^{xv} and **the Petroleum (Drilling and Production) Regulation^{xvi}** was made pursuant to the power. The Regulation required 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^{xvii}. Although, the Regulation requires oil companies to submit their plans for AG utilisation, however, the provision was not seen as legally obligatory and contained no penalty for non-compliance^{xviii}.

Moreover, there were also no measures to discourage flaring before or after the submission of the required feasibility study or programme for gas utilisation. Apparently, the Regulations merely required oil companies to submit a feasibility study or programme for gas utilisation and nothing more. Consequently, an oil company could engage in AG flaring prior or after submitting the required feasibility study or programme for gas utilisation without any penalty. Similarly, 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 an express permission of the oil companies to flare AG for a period of five years without any scrutiny^{xix}.

Therefore, the Regulation was "not fit for purpose" as it was neither adhered to by the oil companies nor enforced by the Nigerian government^{xx}. In any event, the Act was inherently flawed as regard AG flaring and therefore, could be suggested that, from the start of the oil exploration until 1979, there was practically no legal framework for combating gas flaring in Nigeria.

2.2.2 The Associated Gas Reinjection Act^{xxi} and the Regulation^{xxii}

This is the first significant legal framework specifically for combating AG flaring in Nigeria laid down in 1979. The Act required the oil companies to prepare and submit to the minister programmes for AG *utilisation or re-injection*^{xxiii} and expressly prohibited AG flaring after 1st January 1984 unless in exceptional cases^{xxiv} with a forfeiture of the concession/licence as a likely penalty for contravening the provision^{xxv}. These

goals proved to be unrealistic for reasons that include; the huge financial resources required for gas re-injection facilities, inability of the Nigerian government to meet its financial obligations under the various joint venture agreements and the insistence by the oil and gas companies of their inability to meet the deadline^{xxvi}.

Therefore, where it became apparent to the government that, the oil companies were not able and ready to meet the deadline, the prohibition was relaxed. The Petroleum Minister in the exercise of his power under the Act^{xxvii} established *the Associated Gas Re-injection (Continued Flaring of Gas) Regulation 1984*^{xxviii}. The Regulation allowed oil companies to continue flaring of AG under permits issued by the minister^{xxix}, but subject to payment of a penalty of two kobo (N0.02k) per 1000 standard cubic feet (scf) of gas flared at any place where the permission to flare was not granted^{xxx}.

However, it was observed that, the exemptions under the Regulations had the immediate effect of exempting a total of 86 out of 155 oil fields from anti-flaring provisions^{xxxi}, while, the remaining fields were subject to a fairly insignificant penalty that made it far more economical for the companies to flare the AG than to utilize or re-inject it^{xxxii}. For instance, an oil company was quoted to have said that, "it was cheaper to flare gas, while gas flaring would cost the company only \$1 million, the cost of switching from water to gas injection would cost \$56 million"^{xxxiii}. Therefore, following campaigns and pressures from environmental campaign groups^{xxxiv}, the Regulation was amended and the fine was increased to fifty Kobo (N0.50k) in 1990^{xxxv} and was further increased to ten naira (N10.00) in 1998 for every 1000 scf flared^{xxxvi}. In 2009 also, the government established the National Domestic Gas Pricing and Supply regulations, which also increased AG flaring fines to \$3.50 USD for every 1000 scf of gas flared^{xxxvii}. However, oil companies prefer to pay the meager penalty that is comparatively cheaper than utilising the AG.

Therefore, these sanctions appear not to have achieved its aim, in fact, the fines monetised AG flaring at a very cheap rate, and made it more economical for oil companies to flare AG rather than its utilisation or re-injection. Thus, despite the fact that the government adopted an economic approach to encourage AG flaring reduction, the approach failed to achieve the desired objectives. This state of affairs has continued to the present day as all efforts to end gas flaring has been without success^{xxxviii}.

2.2.3 The Petroleum Industry Bill, 2012^{xxxix}

The recently proposed Bill has been another significant legislative effort by the Nigerian authorities to combat the menace of AG flaring and promote its utilisation. The bill seeks to consolidate all the existing oil and gas laws in the country into one piece of legislation in accordance with the principles of good governance, transparency and the sustainable development of Nigeria^{xl}. The key aspect of the Bill touching on AG flaring has been the Chapter D^{xli} that addressed a wide range of issues. The Bill prohibits AG flaring, but provides certain exceptional situations, which permit may be granted^{xlii}. For instance, for safety reason, in cases of start-up, equipment failure shut down, or due to the inability of the gas customer to take-off delivery^{xliii}. The bill provides that, the oil companies must stop flaring of AG after the flare-out date, which is to be prescribed by the Minister in regulations to be made pursuant to the Act^{xliv}. It declared that, any company that flares or vents AG without a permit from the Minister shall liable to pay a fine, which shall not be less than the value of the gas flared^{xlv}. It also makes AG flaring without a permit a criminal offence^{xlvi}.

In particular, the Bill imposes the requirement of a gas utilisation plan as a condition precedent for grant of an oil production lease or license in the Nigerian petroleum industry. It provides that; "*a license or lease for the production of oil and gas in Nigeria shall not be granted to a company unless the application is accompanied by a comprehensive gas utilisation or re-injection programme which is acceptable to the Minister*"^{xlvii}. It also mandates all operators to install metering equipment within three months of the Act coming into force to measure the volume of gas flared^{xlviii}. However, all these legislative efforts shown were in vein, as the bill is still with the National Assemblies without any certainty as to its passage into law and that the date line of 31 December 2012 set by the Minister for stopping AG flaring has already been passed and the PIB has not yet adopted.

Additionally, several other Bills were proposed between 2009/2010 for the prohibition of the flaring, which set up deadlines of 31 December 2012^{xlix}. Among the proposed Bills are, the *Gas Flaring (Prohibition and Punishment) Bill 2010*^l, which provides for higher financial penalties and the possibility of shutting down oil fields that default. While, the *Environmental Management Bill 2010* even went ahead to hold oil companies and the Directors criminally liable for not ending the AG flaring after the stated deadline and set a

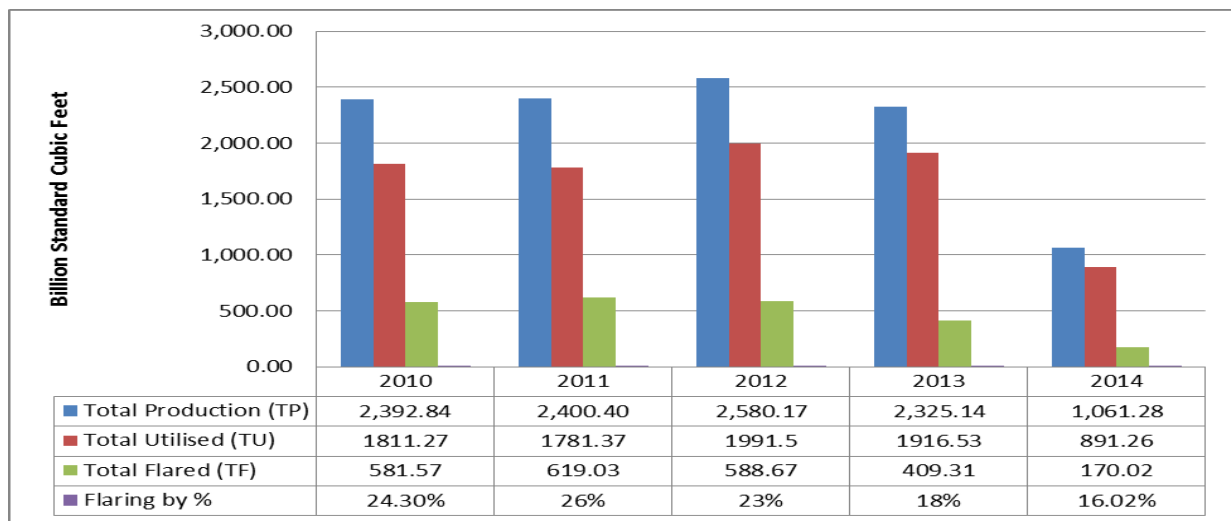
minimum of 10 years imprisonment or fine of N500 million Naira on conviction. However, these Bills were certainly not passed into law up till now, while the federal executive's preference for a longer deadline have scuttle efforts at progressive legislative changes^{li}.

2.3 Current Status

According to World Bank report, Nigeria is second to Russia in global gas flaring, the country flared

about 38% of its natural gas total production in 2010, or about a one third of the gross natural gas produced in 2010^{lii}, while the figures from the Nigerian government agency (NNPC) claimed that, only 24.30% was flared in the year. Similarly, the 2013 figures from the same department suggested that, the country flared only 409.31 bscf (*about 18% of its 2013 total production*)^{liii} a decreased of about 20% from that of the world Bank 2010 report.

Figure 1 - AG flared by production from 2010 – 2014(2014 represents the January – May period only)



Even though, this figure shows a substantial decrease from that of 2010, however, it cannot be relied upon as being the most accurate figure due to the conflicting statement revealed by the DPR (a subsidiary of NNPC) within the same period. The DPR claimed that, “the country is still flaring about 24% of its total production per day, worth an estimated \$2.5 billion annually, due to lack of infrastructure to harness the associated gas”^{liv}. The NNPC has at the same time also claimed that, flaring cost Nigeria N289.6 billion Naira (equivalent to USD \$2.5 billion) per year in lost revenue^{lv}. Moreover, recent investigation by the “Daily Independent” revealed that; *the oil majors, including their local counterparts, still flared about 85 per cent associated gas, even as the National Assembly has yet to announce a shift in the date, thereby creating a legal loophole for flaring*^{lvi}.

The Nigerian Government had 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^{lvii}. According to Professor Emeka Duruigbo “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 of it”^{lviii}. Recently, Nigeria issued statement permitting oil companies to flare substantial amount of the gas resources in the country until 2020, which, according to the parties involved, is the feasible year for the flare out deadline^{lix}.

The Nigerian government later in 1999 vigorously pursued the objectives of reducing AG flaring by encouraging accelerated gas development and utilisation projects through its pro- gas utilization fiscal incentives framework, rather than rely on gas flaring penalties and prescriptive approach^{lx}. The MPR has established an accelerated gas development and utilisation programme, whereby the Ministry will give the AG to any third party company that is ready to invest in gas utilisation and monetisation projects just as the case in Norway^{lxi}. The Nigerian Government has directed more efforts at constructing a network of gas pipelines across the country in order to deliver flared gas to domestic markets and this has led to some reduction in AG flaring^{lxii}. However, despite all efforts and rigorous frameworks for combating

AG flaring, Nigeria remains the second largest flaring country in the world.

3 FRAMEWORKS FOR COMBATING AG FLARING IN NORWAY

3.1 Overview of the Oil and Gas Industry

The right to the petroleum resources on the Norwegian Continental Shelf (NCS) is vested in the Norwegian state. Petroleum activities in Norway began in 1960; just two years later than Nigeria and the first oil field came on stream in 1971^{lxiii}. Norway is one of the significant oil producers with offshore oil fields on the continental shelf. It is the largest holder of oil and natural gas reserves in Europe as it has provided much of the oil and natural gas consumed on the continent^{lxiv}. In 2013, Norway was the 3rd largest exporter of natural gas in the world after Russia and Qatar, and the 12th largest net exporter of oil^{lxv}. The petroleum activities have been crucial for Norway's financial growth and in financing the welfare state. Thus, petroleum activities have an enormous income potential, with crude oil, natural gas, and pipeline transport services accounted for 52% of Norway's exports revenues, 23% of gross domestic product (GDP), and 30% of government revenues in year 2013^{lxvi}. Norway's oil production has almost doubled since 1990, increased six fold since 1981^{lxvii} and peaked at 2001 with oil production of 3.4 million barrels per day (bbl/d)^{lxviii} while natural gas production on the other hand, increased nearly every year since 1993^{lxix}. Currently, there are 76 fields in production and these fields produce 1.8 million barrels of oil per day and 111 billion standard cubic metres of gas^{lxx}.

However, despite the huge increased in its oil and gas production, the AG flaring volumes as a percentage of oil production has decreased substantially over the last decades. The Norwegian authorities have always imposed strict environmental regulations on the petroleum activities; the legal measures for safeguarding environment were legislated well since the activities started on the NCS. For example, permanent AG flaring was prohibited by the parliament since 1971 under the parliamentary principles known as “10 Oil Commandments” which later formed the basis for the Norway’s current legal and regulatory framework. The No. 5 principle provides that, “flaring of exploitable gas on the NCS must not be accepted except during brief periods of testing”^{lxxi}. Later, Norway

introduced petroleum Activities Act confirms the prohibition and carbon tax Act that made the industry players took a number of steps to reduce the AG flaring.

3.2 Legal and Regulatory Framework

The rule of law, and stable framework conditions including the timely honouring of commitments were the second nature to the Norwegian authorities since the inception of petroleum activities in the country^{lxxii}. Norway had a well-developed legal tradition for dealing with and compelling utilisation of the AG that may have been flared from its oil and gas industry. The full realisation of the AG utilisation was approached when the oil and gas activities started^{lxxiii}, thus, the current legal framework for combating flaring in Norway is the *The Petroleum Activities Act* (PA Act)^{lxxiv}. This Act, is the primary and significant legislation regulating the practice of flaring in Norway, it provides that: “*Burning of petroleum in excess of the quantities needed for normal operational safety shall not be allowed unless approved by the Ministry*”^{lxxv}. However, upon application of the licensee, the Ministry of Petroleum and Energy is empowered by the Act to stipulate the quantity that may be *produced, injected or cold vented* for a fixed period. This section whilst recognizing the need to flare gas for operational needs takes a tough line against the unnecessary flaring in very precise and unambiguous language.

Moreover, the Regulation made pursuant to the PA Act also makes it a condition precedent that, before any development of a discovery and/or operation of such discovered deposits, “*a plan for installation and operation of the facility for transport has to be approved by the ministry of Petroleum and Energy*”^{lxxvi}. This requirement makes the rule against flaring *an operational policy* also, making it impossible to develop a field unless adequate provisions have been made for AG utilisation facilities. This provision treats AG utilisation as an integral part of oil development and thus, can be suggested as placing the state on the offensive rather than defensive in its efforts to combat AG flaring.

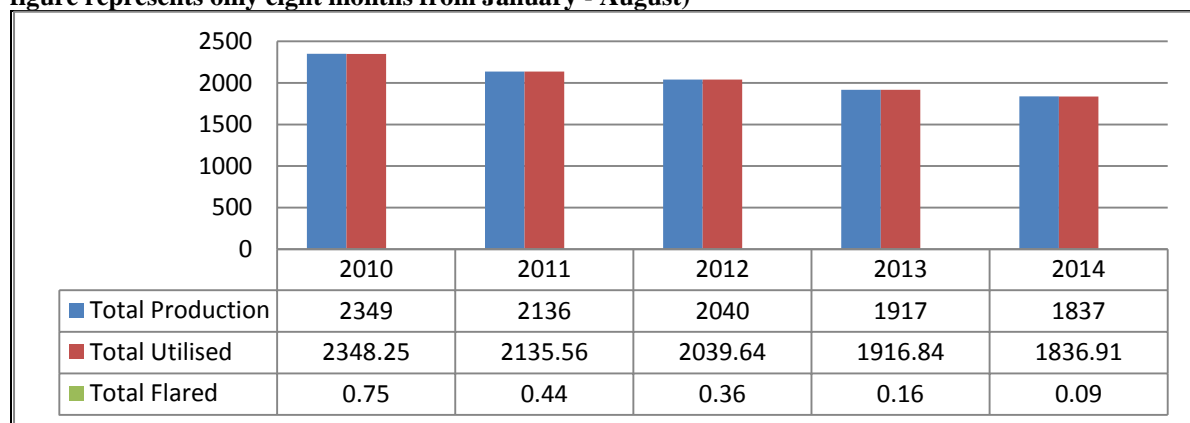
3.3 Current Status

With this single legislation, Norway has recorded a huge success in combating AG flaring in the last decades, AG flaring volumes as a percentage of oil production has decreased substantially while the production of crude oil within the same period has

almost increased by six folds^{lxxvii}. For instance, the total petroleum production for the first eight months in 2014 is about 183.7 million standard cubic meters (Sm³) of oil equivalents, while only 0.09% of the total production was flared. The total oil production in 2013 was 191.7 million Sm³ of oil equivalent, while only 0.16% of the total

production was flared. According to the IEA 2013 report, there are many reasons for the success of Norway’s petroleum resource management and these include; “*strong and competent regulation, prudence in health, safety and environmental issues, and a stable, fair and attractive fiscal framework*”^{lxxviii}.

Figure 2 - Norwegian AG Utilisation and Flaring by Total Production from 2010 – 2014 (Note: the 2014 figure represents only eight months from January - August)

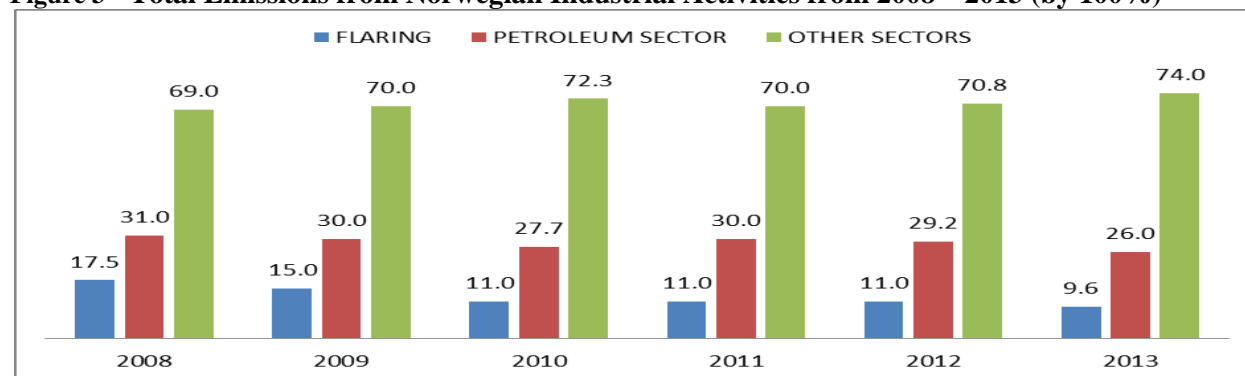


Source: NPD^{lxxix}

The reduction in a flaring means reduction in GHG emissions and thus, petroleum operations from the NCS releases less CO₂ emissions than any other sector in Norway and accordingly among the sources of emissions in the petroleum activities, AG flaring carries the minimal percentage of

emissions. Furthermore, a recent study conducted on the sources of emissions on the NCS and other sector confirmed that, AG flaring tends to produce fewer emissions compared to other sector like roads and other industries^{lxxx}.

Figure 3 - Total Emissions from Norwegian Industrial Activities from 2008 – 2013 (by 100%)^{lxxxi}



The success achieved by Norway can partly be attributed to its strong legal and regulatory framework for combating the practices and the strong political will on the part of the Norwegian authority to get rid of the menace. The stringent restrictions on flaring under the PA Act has led to technological development and triggered measures that have yielded considerable emission

reductions and keep the general flaring level on the NCS low, compared with the rest of the world^{lxxxii}.

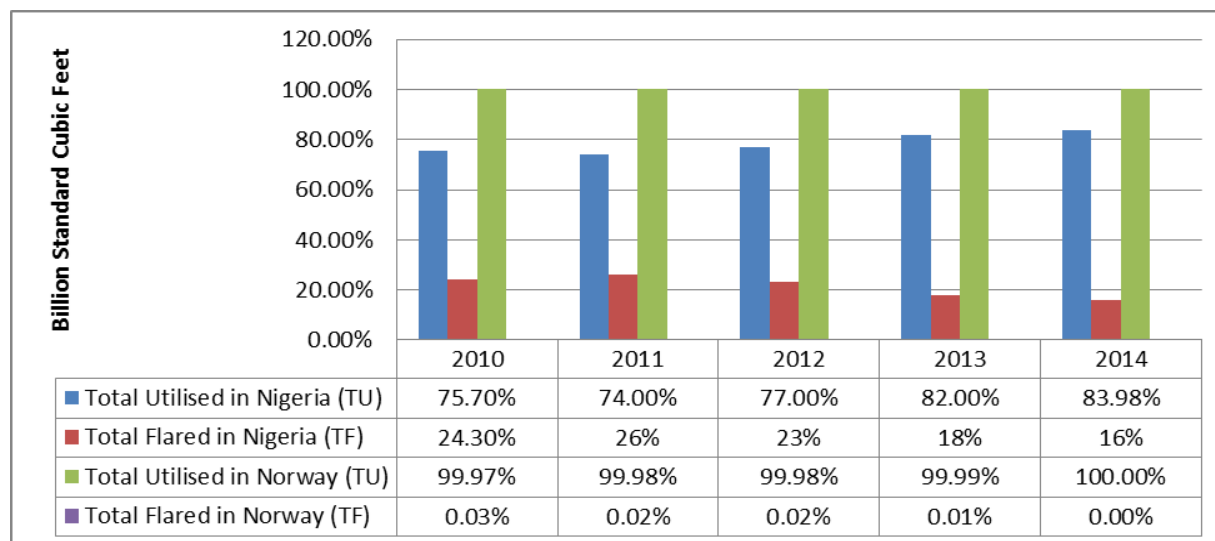
4 ANALYSIS, LESSONS AND CONCLUSION

It is now obvious from the preceding discussion, Nigeria and Norway have both utilises similar approach towards reducing the flaring of AG^{lxxxiii}. At the same time also, both countries are experiencing a boom in oil and gas production and it has generally understood that increase in oil production is increasing the amount of flaring. However, while, Norway utilises almost all of its

production with flaring only 0.09% in 2013, in the same year, Nigeria flares major percentage of its production. According to the NNPC – DPR

conflicting figures, almost 20%^{lxxxiv} - 40% of the natural gas production was flared in 2013^{lxxxv}.

Figure 4 - Percentage of utilised and flared AG productions in Nigeria and Norway from 2010 - 2014



The above figure shows that, despite an increase in oil production, Norway’s AG flaring volumes as a percentage of oil production have substantially decreased or suffice to say eliminated over the last 5 years. Therefore, before arriving at any conclusions, some analysis and observations would be made based on their current legal and regulatory frameworks for combating AG flaring in order to highlight areas where Nigeria goes wrong and with hope; it can acquire some lessons from Norwegian experience.

4.1 ANALYSIS

The legal and regulatory framework for combating AG flaring must be clear, precise and unambiguous. Therefore, the key driving force behind the reduction in AG flaring in Norway has been the country’s efficient, clear and precise legal and regulatory framework for combating AG flaring. While, prohibiting AG flaring, the framework makes it virtually impossible for the oil companies to proceed with a field development until oil companies proffer solution to AG utilisation through submission of PDO/PIO that must be approved by the Norwegian authorities^{lxxxvi}. As part of the process also, the operator must submit EIA describing any environmental effects of expected emissions and discharges from AG flaring and includes a systematic review of costs and benefits of any mitigating measures. Similarly, the PDO/PIO and

the actual EIA are subject to public consultation. Therefore, the strict restrictions on flaring imposed by the Norway’s PA Act contribute to keeping the general flaring level on the Norwegian shelf below one per cent.

While the Nigerian government on the other hand has persistently enacting laws prohibiting flaring AG flaring, however, it provides relatively wide exemption to the contrary as discussed above^{lxxxvii}. The framework was inherently flawed as it failed to achieve its ultimate objectives. *Thus, it may be argued also that, the problem is not the framework itself, rather the deficiencies and the loopholes in the framework. Apart from being unclear and not precise, the legislation has created a vacuum that oil companies use to manoeuvre and obtain permit by simply claiming that gas recovery is not feasible in particular field*^{lxxxviii}.

4.2 LESSONS

Therefore, there are many **generic lessons** from the Norwegian experience in combating the AG flaring, which, if learn and utilises by Nigeria may assist the country in reducing or suffice to say total elimination of AG flaring:

- I. The legislation governing petroleum operations and the contractual agreement between the host country and the oil companies should be clear, comprehensive and unambiguous on the treatment of AG.

- II. The regulations for combating AG flaring should be clear, with effective monitoring, reporting and enforcement capacity.
- III. Setting flare out deadlines should be a cooperative approach in consultation with key stakeholders, particularly the operators.
- IV. New Licenses, Production Sharing Agreements and Joint Venture Agreements should include provision for AG utilisation: For instance, AG utilisation should be an integral part of the field development planning process.

4.3 CONCLUSION

This article has attempted to examine and analyse approaches Norway and Nigeria applied in combating AG flaring, studied how Norway's approach contributed to the decrease or suffice to say total elimination of AG flaring and the lesson Nigeria should learn from Norway experience. It has been understood that, is the responsibility of every government of oil producing countries to set out a legal and regulatory framework governing environmental policy. As part of developing this framework, Norway has provided good framework that specifies the strategy and the measures to achieve overall environmental and resource management objectives. Norway is well in the forefront when it comes to using efficient legal and regulatory framework to provide environmental solutions, and the country has since utilises legal instruments and effect measures in its efforts to reduce AG flaring. The restraint on flaring under the PA Act contributes to keeping the flaring level on the Norwegian NCS low.

Therefore, the conclusion that can be drawn based on the above analysis is that, despite its *deficiency*, Nigerian frameworks lacked punitive approach that can motivate oil companies to initiate gas utilisation projects. Hence, it can now be safely concluded that, the failure of the Nigerian government to combat the practice of AG flaring is the lack of both adequate and efficient legal and regulatory measures coupled with the lack of political will to do so. For strong political will presupposes that, Nigeria needs to make sure oil companies comply with the requirements set by the regulators, as well as taking necessary measures for expanding her gas export facilities beyond the volume the country currently exports.

Consequently, Norway's success in eliminating AG flaring can be credited to its sound legal and regulatory framework as well as the result of a collaborative process that is comprehensive and long lasting. Hence, apart from the above generic recommendations, the measures Nigeria should

now specifically focus and establish are, *an efficient legal and regulatory framework, independent regulatory body, reforming and restructuring natural gas domestic market, allowing private participation in the development of gas infrastructure, and creating financial incentives that encouraged operators to utilise AG.*

ⁱ B.E. Umukoro, 'Gas Flaring, Environmental Corporate Responsibility and the Right to a Healthy Environment: The case of Niger Delta' in Festus Emiri and Gwong Deinduomo, 'Law and Petroleum Industry in Nigeria' (Malthouse Press Limited 2009) ch. 4 p 49

ⁱⁱ Dung, E., et al., 'The Effect of Gas Flaring on Crops in the Niger Delta, Nigeria' (2008) 73 Geo Journal 297-305

ⁱⁱⁱ World Bank/Government of Norway, *Global Gas Flaring Reduction: A Public-private Partnership* (World Bank, 2004) 2

^{iv} Norwegian Petroleum Directorate, 'Helping Nigeria to Reduce Gas Flaring' NPD News of 17-09-2007, available at: <http://www.npd.no/en/news/news/2007/helping-nigeria-to-reduce-gas-flaring/> accessed on 18/08/2014

^v Norwegian Petroleum Directorate, 'Oil for Development: Norwegian assistance to Ghana dominated by the Oil for Development programme' Launched in 2008 and signed in 2010, the agreement comprises two-five year collaboration agreements on resource and environmental management. Last updated 17-01-2013

^{vi} OPEC Annual Statistical Bulletin "Overview of Nigeria's Oil and Gas Sector", available at: http://www.opec.org/opec_web/en/about_us/167.htm accessed on 31/07/2016 last updated 2016

^{vii} British Petroleum (BP), 'Statistical Review of World Energy' June 2014, available at: <http://www.bp.com/content/dam/bp/pdf/Energy-economics/statistical-review-2014/BP-statistical-review-of-world-energy-2014-full-report.pdf> accessed on 14/09/2014, However, nearly half of the Nigeria's stated natural gas is associated gas (i.e., natural gas found mixed with crude oil in underground reservoirs)

^{viii} Ibid

^{ix} Ibid

^x Nigerian National Petroleum Corporation (NNPC), *2013 Annual Statistical Bulletin* Corporate Planning and Strategy Division, available at: <http://www.nnpcgroup.com/Portals/0/Monthly%20Performance/2013%20ASB%201st%20edition.pdf> accessed on 14/09/2014

^{xi} Zhiguo Gao, *Environmental Regulation of Oil and Gas* (Kluwer Law International, 1998) 11

^{xii} 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*

^{xiii} The Nigerian Constitution 1999, (as amended) s 20

^{xiv} Cap 350 L.F.N 1990

^{xv} Ibid s 9 (1) (b) & 12

^{xvi} The Regulation is made pursuant to Section 9 of the Petroleum Act, Decree No. 51 of 1969

^{xvii} Ibid Regulation 42

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- ^{xx} Garba I.M, 'Phase-Out of Gas Flaring in Nigeria by 2008: The Prospects of a Multi-Win Project' (2007) *Petroleum Training Journal (PTJ)* Vol. 1 (4) No. 2 1-40
- ^{xxi} Decree No. 99 of 1979, Cap 26 LFN 1990 (now Cap. A 25 LFN 2004)
- ^{xxii} *The Associated Gas Re-injection (Continued Flaring of Gas) Regulation 1984*, Supplement to Official Gazette No. 67 Vol. 71 of 29 November 1984 (SI 43 of 1984, Cap A 25 LFN 2004)
- ^{xxiii} *Ibid* s 2
- ^{xxiv} *Ibid* s 3
- ^{xxv} *Ibid* s 4 (1)
- ^{xxvi} Yinka Omorogbe, *Oil and Gas Law in Nigeria: Simplified* (1ST Edition Malthouse Press 2003) 59
- ^{xxvii} Decree No. 99 of 1979, Op. Cit s 3&4
- ^{xxviii} *The Associated Gas Re-injection (Continued Flaring of Gas) Regulation 1984*, Op. Cit.
- ^{xxix} *Ibid*
- ^{xxx} *The Associated Gas Re-injection (Amendment) Act* 1985 Decree No. 7 of 1985
- ^{xxxi} Y. Omorogbe, *Oil and Gas Law in Nigeria: Simplified* (1ST Edition Malthouse Press 2003) 59
- ^{xxxii} *Ibid*
- ^{xxxiii} Y. Omorogbe, 'An appraisal of Nigerian natural gas legislation' (1985) 4 (2) *Oil and Gas Law Taxation Review*, 51
- ^{xxxiv} The Environmental Rights Action (ERA), *Gas Flaring: Assaulting Communities, Jeopardizing the World* (Environmental Rights Action: Nigeria, 10–11 December 2008), p. 6
- ^{xxxv} *The Associated Gas Re-Injection (Amendment) Regulations, 1990*
- ^{xxxvi} *The Petroleum Drilling and Production (Amendment) Regulation 1998*
- ^{xxxvii} 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
- ^{xxxviii} *Ibid*
- ^{xxxix} The Bill was presented to the both Chambers of the National Assembly by the Nigerian President in July 19, 2012
- ^{xl} The Petroleum Industry Bill 2012, s 8 – 9
- ^{xli} *Ibid* on Gas Flaring (Prohibition and Punishment), Sections 251-259
- ^{xlii} *Ibid* s 251
- ^{xliiii} *Ibid* s 253 (1) (b)
- ^{xliv} *Ibid*
- ^{xlv} *Ibid* s 277(3)
- ^{xlvi} *Ibid* s 281
- ^{xlvii} *Ibid* s 278
- ^{xlviii} *Ibid* s 279
- ^{lix} Among the Bills also includes Natural Gas Bill 2009
- ^l Passed by the Nigerian Senate in July 2009
- ^{li} M. Olise and T. Nria-Dappa, 'Overcoming Nigeria's Energy Crisis: Towards Effective Utilisation of Associated Gas and Renewable Energy Resources in the Niger-Delta' Social Action Briefing No. 2 December 2009
- ^{lii} The World Bank, 'Greenhouse Gas Analysis at the World Bank' Washington DC- 21ST June 2012, available at: <https://openknowledge.worldbank.org/bitstream/handle/10986/18365/697110P11055700as0Analysis00PUBLIC0.pdf?sequence=1> accessed 13/08/2014
- ^{liii} Nigerian National Petroleum Corporation (NNPC), 'Oil and Gas Annual Statistical Bulletin 2013' *Corporate Planning & Strategy Division (CP&S) NNPC ABS 2013 – 1ST Edition*
- ^{liv} DPR Group Managing Director (Andrew Yakubu) at the 42nd Annual General Meeting of the Nigerian Society of Engineers
- ^{lv} Daily Independent Newspaper, 'Oil Majors Fail to Meet Dec3ember 31st Gas-Flaring Deadline', available at: <http://dailyindependentnig.com/2013/01/oil-majors-fail-to-meet-december-31-gas-flaring-deadline/> accessed on 13/08/2014. Last updated Wednesday, August 13, 2014
- ^{lvi} 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
- ^{lvii} *Ibid*
- ^{lviii} E.Duruigbo, 'The World Bank, Multinational Oil Corporations and Resource Course in Africa' (2005) 26 (1) Pa. J. Intl. Econ L.
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- ^{lx} Sarah Ahmed Khan, *Nigeria: The Political Economy of Oil* (Oxford University Press, 1994) 168
- ^{lxi} 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 - 18
- ^{lxii} Ministry of Petroleum Resources, 'Achievements of the Ministry of Petroleum Resources and its Parastatals during Mr. President's First One Year in Office' 4 Bulletin of May 22, 2012
- ^{lxiii} International Business Publication USA, *Norway Oil and Gas Exploration Laws and Regulations Handbook* (International Business Publication 2013) 54
- ^{lxiv} United States Energy Information Agency (EIA) – Countries Overview – Norway, available at: <http://www.eia.gov/countries/analysisbriefs/Norway/norway.pdf>.> accessed on 06/09/2014 Last updated 28/04/2014
- ^{lxv} *Ibid*
- ^{lxvi} NPD, 'The Petroleum Sector – Norway's Largest Industry' (Facts Sheet 2013), available at: <http://npd.no/en/Publications/Facts/Facts-2013/Figures/>.> accessed on 06/09/2014
- ^{lxvii} NPD – *Offshore Norway-2000*, the Norwegian Petroleum Directorate Annual Report (April 18, 2001)
- ^{lxviii} Though it was said to declined to 1.8 million bbl/d in 2013
- ^{lix} International Business Publication USA, *Norway Oil and Gas Exploration Laws and Regulations Handbook* (International Business Publication 2013) 54
- ^{lxx} Ministry of Petroleum and Energy (MPE), 'The Norwegian Petroleum Sector' Fact Sheet 2014

^{lxxi} L.V Maier, 'Norwegian Oil and Gas Technology and Know-How Driving Deep Water Activity' (2013) Andrews Kurth Middle East Newsletter

^{lxxii} 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

^{lxxiii} Ibid

^{lxxiv} 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

^{lxxv} Ibid Section 4-4

^{lxxvi} *Regulations to Act relating to Petroleum Activities*, s 22 Laid down by Royal Decree 27 June 1997 pursuant to Act 29 November 1996 No. 72 relating to petroleum activities, section 10-18 and Act 10 February 1967 relating to procedure in cases concerning the public administration, section 13 c third paragraph and section 19 third paragraph. Last amended by Royal Decree 2 July 2012 No 729

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^{lxxviii} International Energy Agency (IEA), 'Norwegian Petroleum Production and Resources' 2014 *Energy Policy Highlights*

^{lxxix} NPD – Production Figures, available at: <http://www.npd.no/en/news/Production-figures/> accessed on 20/09/2014

^{lxxx} E. Gavenas, 'On the way to Cleaner Energy: A Study of CO₂ Emissions on Norwegian Continental Shelf' (2014) *Norwegian University of Life Sciences*

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^{lxxxii} T. K Svensen, S. Simonsen and K.M. Lind, 'Oil and Gas Regulation in Norway: Overview' Practical Law 01-06-2014

^{lxxxiii} one major factor that unite the countries is that, both countries are using a combination of regulations and non-regulatory incentives – fiscal policies to combat AG flaring

^{lxxxiv} Nigerian National Petroleum Corporation (NNPC), 2013 *Annual Statistical Bulletin* Corporate Planning and Strategy Division, available at: <http://www.nnpcgroup.com/Portals/0/Monthly%20Performance/2013%20ASB%201st%20edition.pdf> accessed on 14/09/2014: **The figures declared by NNPC in 2013 are:** Total crude oil and condensate production for the year was 800,488,102 barrels giving a daily average of 2.19 mmb/pd and a total of 2,325.14 Billion Standard Cubic Feet of natural gas production of which the quantity produced was 82% while 18% was flared

^{lxxxv} There are also conflicting figures from other departments of MPR, for instance, DPR declared that, 40% of the natural gas produced in 2013 was flared, but for the purpose of this article, NNPC figures were used.

^{lxxxvi} See PAA 1996 and also GGFR, 'Guidance on Upstream Flaring and Venting Policy and Regulation' Washington DC March 2009

^{lxxxvii} The current AGRA 2004 and the PIB 2012 also contained provisions providing exemption to the oil companies to flare AG at the discretion of the minister

^{lxxxviii} Ibrionke T. Odumosu, 'Transferring Alberta's Gas Flaring Reduction Regulatory Framework To Nigeria: Potentials and Limitations' (2007)44 (4) *Alberta Law Review*