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CARBON TAXATION AS A POLICY INSTRUMENT FOR ENVIRONMENTAL MANAGEMENT AND CONTROL IN NIGERIA[*]

Abstract

Gas flaring, oil spills, and other environmental hazards resulting from the activities of oil companies in Nigeria remain major headaches for the country. Farm land, fish ponds, marine environment and the entire ecosystem are polluted and endangered in Nigeria at an alarming rate without concrete and effective regulatory regime put in place to curtail the ugly trend that is threatening our environment and every other living thing dependent on it. One policy instrument that could assist in regulating the effect of environmental pollution resulting from gas flaring and oil spills in Nigeria is the introduction of carbon tax. This type of taxation is expected to discourage gas flaring and oil spills emanating from the activities of oil companies in the country. Also, it is expected to raise enough revenues that could be ploughed back to combat threats to the environment. This paper discusses the essential elements in designing an effective carbon tax regime in Nigeria. The argument here is that taxation being an instrument for regulating taxpayer behaviour, carbon tax when properly enforced could serve as a veritable policy instrument for reducing environmental pollution and promoting healthy environment in Nigeria.

Keywords: Nigeria, Niger Delta, Carbon Tax, Environment, and Pollution.

1.0 Introduction:

Global warming resulting from the emissions of CO_2 and other chemical substances in the atmosphere is a serious challenge to the global community.[1] Regardless that developed countries are the worst culprits generating activities that cause global warming, the challenge for safe environment is exacerbated by the unregulated environmental pollutions taking place in some third world countries. This state of affair is, undoubtedly, worse in

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[1] For the purpose of this paper, it must be noted that the phrase "Carbon dioxide or $\mathbf{CO_2}$" is used to refer to not only carbon dioxide but also other greenhouse gases such as methane, nitrous oxide, and sulphur hexafluoride.

developing countries that produce oil and gas in commercial quantities. For instance, in Nigeria, gas flaring and other questionable exploratory activities are prevalent in the country causing untold environmental deterioration and economic hardship.[2] Since the discovery of oil in Nigeria and the commencement of exploratory activities by oil majors in the country, environmental pollution has constituted one of the greatest challenges facing the country. The evidence and disastrous consequences of environmental pollution in Nigeria are more pronounced in the Niger-Delta region of the country, where fossil fuels abound in commercial quantities and exploratory activities take place on daily basis. Oil majors carrying out the exploratory activities in this region do so with impunity; giving less regard to the environment that sustains the lives of people and the entire ecosystem. There is evidence that not the same precautions taken by these companies while carrying out the same activities in their home countries—within the Northern hemisphere—are, in the least, considered while operating in Nigeria or any other developing country within the Southern Pole who, unfortunately, lacks a well-informed leadership with a focused direction and determined political will to call the defaulting oil companies to order.[3] Thus, the activities of these oil majors give rise to series of environmental hazards such as acid rain; destruction of farmlands and marine environment; and the occurrence of other negative externalities. In addition, the prevalence of this unfortunate situation has given rise to high degree of criminality in not just the Niger-Delta region but also the entire country: as kidnapping and armed robbery activities

[2] Following the activities of oil companies in Nigeria, environmental pollutions resulting from gas flaring, and oil spills constitute major problems to the country. Indeed, Nigeria has been rated one of the worst places on earth where associated gaseous substances are intentionally flared by oil companies. See: Samuel Iyiola Oni and Mark Abioye Oyewo, "Gas Flaring, Transportation and Sustainable Energy Development in the Niger-Delta, Nigeria" (2011) *J. Hum. Ecol*, Vol. 33(1) pp. 21-28. See also: Friends of the Earth, "Gas Flaring in Nigeria", online: Friends of the Earth <http://www.foe.co.uk/resource/media_briefing/gasflaringinnigeria.pdf> (Last *accessed* on October 30, 2012). Anthony Uzodinma Egbu, "Constraints to Effective Pollution Control and Management in Nigeria" (2000) *The Environmentalist*, Vol. 20 at pp. 13-17.

[3] Christian Purefoy, "Nigerians Angry at Oil Pollution Double Standards" online: CNN available at <http://articles.cnn.com/ 2010-06-29/world/nigeria.oil_1_oil-spills-oil-production-oil-companies?_ s=PM:WORLD> last accessed on October 30, 2012).

have been on the increase following the criminal activities of some groups in the Niger-Delta region agitating and clamouring for resource control and the immediate manifestation in their communities of positive physical evidence of multibillion petro-dollars earned by the Nigerian government from their ancestral homes.

This paper is not prepared to recite the unfortunate environmental situations taking place in Nigeria – especially in the Niger-Delta region of the country. Rather, it is designed to advocate for the use of a tax regime that could help regulate the activities of oil majors, raise more revenues for the Nigerian government, and, thus, makes available financial resources that could be ploughed back to encourage clean and safe environment in the country. This is to say that taxation being an instrument for regulating taxpayer behaviour, the government could through tax policies – such as the introduction of carbon tax – regulate the conduct of oil companies operating in Nigeria from further polluting the environment or causing environmental hazards. Therefore, carbon tax could serve as a veritable instrument that could be deployed by the Nigerian government to achieve positive results in the campaign for safe environment. Consequently, this paper advocates for the introduction of carbon tax in Nigeria.

In presenting the argument that carbon tax could serve as a veritable instrument for regulating environmental pollution from source and also serve as means for generating revenues that could be ploughed back to combating environmental pollution, this paper is divided into two sections. The first section attempts to describe what "carbon tax" stands for and the justification for its introduction in Nigeria. The second section examines the four essential elements that must be seriously defined and considered to establish the contours, limits, use, and boundaries of operation for the proposed carbon tax. The four essential elements considered under this section are: defining the tax base for the operation of the carbon tax; identifying the subject(s) to be made liable to carbon tax (taxpayer/collection point); specifying the applicable tax rate; and the use of revenues generated from the tax.

2.0 Understanding Carbon Tax and the Need for its Introduction in Nigeria:

As earlier stated, this section of the paper attempts to explain, to the barest minimum, what "carbon tax" stands for. The definition is not intended to be holistic; rather it is defined to the extent that the phrase "carbon tax" is used to regulate the emissions of targeted substances causing environmental pollution in Nigeria; and overall, global warming. This section also attempts to justify the need for the imposition of carbon tax in Nigeria. It argues that Nigeria is ripe enough for the imposition of carbon tax as a policy instrument for the control of activities of major environmental polluters in the country.

2.1 Carbon Tax Defined:

First, carbon tax falls within the pigouvian group of taxes: that is, taxes that are designed to ensure that private parties feel the social and economic burdens of their actions.[4] Specifically, carbon tax could be defined as a brand of taxation that taxes the carbon content or the emitted carbon dioxide emanating from combusted fossil fuels. It is also known as carbon dioxide tax or CO_2 tax.[5] In every fossil fuel (such as coal, oil, and gas) there is always the ubiquitous presence of carbon and hydrogen atoms. It is the synergistic bond between carbon and hydrogen atoms that is the source of energy for every fossil fuel. This bond equally gives rise to the release of heat when fossil fuel is combusted. Indeed, when fuel is burnt, all carbon atoms are quickly converted into CO_2 and released into the atmosphere.[6] Though carbon dioxide is generally innocuous when released, it gets permanently settled in the atmosphere where it traps heat re-radiated from Earth's surface and thereby causes harmful climatic changes leading to global warming and other environmental hazards. It is in a bid to regulate the amount of heat or CO_2 released into the atmosphere that

[4] The phrase "Pigouvian Tax" is derived from the teachings of the 20th Century British economist named "Arthur Pigou". Arthur Pigou understood that in certain circumstances market forces fail to allocate resources efficiently and equitably; and that the transactions of individual(s) do impose cost on others who are entirely not a party to the transaction(s) giving rise to the cost or negative externalities impacting on them. Because of this, there must be a way to ensure that the economic and social burdens arising from the transactions of individuals are shifted back to them: so they can as well bear the cost. And for those whose activities benefit others who are not party to the transaction(s), they (purveyors of the transaction) must somehow be compensated according to the Pigou's teachings. See Greg Mankiw, "Smart Taxes: An Open Invitation to Join the Pigou Club" online: Harvard University, <http://www.economics.harvard.edu/files/faculty/40_ Smart%20Taxes.pdf> (Last *accessed* on October 30, 2012). See also: Gilbert E. Metcalf and David Weisbach, "The Design of a Carbon Tax" (2009) Vol. 33 *Harvard Environmental Law Review* 499 at pp. 500-503.

[5] Janet Milne, "Carbon Taxes in the United States: The Context for the Future" (2008) Vol. 10 *Vermont Journal of Environmental Law* 1 at 3-10.

[6] Richard L. Ottinger and William B. Moore, "The Case for State Pollution Taxes" (Fall 1994) Vol. 12(1) *Pace Environmental Law Review* 103 at 110- 111.

carbon tax resurfaced as a complementary instrument that could be used alongside other regulatory instruments to control the emission of CO_2 into the atmosphere.[7] Thus, it may be safe to say that carbon tax is an environmental tax or tax on pollution that is designed to impose a tax cost on some activities or products that are deleterious to the environment.[8] Because of its punitive nature, some American scholars have preferred to call it "sin tax".[9] At the same time, carbon tax could be designed to confer tax benefits to certain activities or products that are generally considered beneficial to the environment.[10]

2.2 Why Carbon Tax Must be Introduced in Nigeria:

The prevailing global expert-opinion is that human activities contribute immensely to the problem of global warming. As a result, the global community has been in search of ways to curb the growing intensity of global warming. This search gave rise to the 1992*United Nations Framework Convention on Climate Change* (UNFCCC). Expectedly, the UNFCCC is an international environmental treaty that is designed to achieve the "…stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system [and]…to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner."[11] Nigeria is a party to the UNFCCC, which gave birth to the Kyoto Protocol aimed at curbing global warming. Though Nigeria is not one of the Annex 1 countries with a higher and greater commitment to the Kyoto

[7] Ottinger and Moore, *ibid.* at 110.

[8] See Jim Corkery, "A Carbon Tax – Onward" (2009) Vol. 19(1) *Revenue Law Journal* 1. At page 2 of this editorial, the author contends that: "Carbon taxes also permanently encourage reduction of carbon."

[9] Ottinger and Moore, *loc. cit.* note 6 at 104. According to the authors, it is safer and reasonable to tax activities or functions the society discourages. In their own words at page 104 of the article, the authors argue that: It is much sounder social policy to tax functions society wishes to discourage than those which it seeks to encourage. Hence, increasing attention is being focused, particularly in Europe and Japan and in international forums, on taxing pollution. In the United States, there has been a tendency on the part of governmental entities in recent years to impose "sin taxes" as excises on activities society wishes to discourage, most prominently the sale of tobacco products, liquor, guns and the like. A pollution tax can be considered a type of "sin tax."

[10] *Ibid.*

[11] See Article 2 of the *United Nations Framework Convention on Climate Change, 1992* available online at: http://unfccc.int/essential_background/convention/background/items/1353.php, last accessed on October 30, 2012.

Protocol, it eventually ratified the Protocol on December 10, 2004. What this means is that, if not for anything, Nigeria owes the moral duty to curb anthropogenic activities giving rise to global warming threatening its own environment.

Regardless of Nigeria's general commitment to curb activities giving rise to global warming, the unwholesome activities of oil companies within its borders are threatening its people and the environment. Unfortunately, owing to the activities of oil companies in Niger-Delta region of Nigeria, acid rain, gas flaring, pollution of farm lands and destruction of aquatic environments are daily occurrences in the country. These negative externalities have also inspired violence and criminality in the Niger-Delta region of the country[12] because of the indifferent attitude, complicity, and alleged collusion of corrupt government officials with oil majors who are bent on destroying the Niger-Delta environment at the altar of corporate profit; and, also, violating the rights of inhabitants of the indigenous communities in the area. Unfortunately, the oil companies involved in destroying the Niger-Delta environment are only interested in the unconscionable maximization of petro-dollar profits arising from the sale of oil and gas products. The unholy killing of Ken Saro Wiwa and eight others of the Ogoni stock who fought oil companies for environmental atrocities committed in the Niger-Delta is a reminder of the terrible consequences of environmental pollution in Nigeria. Not quite long, armed conflict, gangsterism and criminality have surged up in the struggle for safe environment and resource-control. Simply put, the genesis of the criminality and environmental crises engulfing the Niger-Delta region of Nigeria emanates from the activities of oil companies: most of whom do not care about the negative effects of their activities to the host communities and the human environment at large.

One question that has remained effectively unanswered is: how can the activities of oil companies operating in the Niger-Delta region be regulated and controlled to the extent that oil companies themselves will assist in checkmating their excesses;

[12] The same violence and criminality have snowballed into other parts of the country. For instance, kidnapping which was a political tool adopted by the Niger-Delta militants against foreign oil workers to press home their demands has turned out big money-making industry for many criminals in the entire country. At present, many high-net worth individuals and even middle class workers are kidnapped in Nigeria for ransom.

and probably bear the cost of the negative externalities they generate against other members of the society? One important instrument that is used to control and regulate the activities or behavioural patterns of taxpayers is taxation.[13] Apart from raising revenues needed for the provision of public goods, taxation is equally used to induce certain types of behaviours: that is, taxes could be imposed on certain goods, services, or activities to either encourage or discourage certain behavioural patterns.[14] In this case, the introduction of carbon tax in Nigeria is promoted in order to help tackle some of the unwanted behaviours of oil companies leading to oil spillage and other activities inimical to the environment. True to its pigouvian nature, the introduction of carbon tax will ensure oil companies are charged for the cost they impose on the society.[15]

Unfortunately, carbon tax is not meant to solve all the problems emanating from the activities of oil companies; but the argument is that it could help render oil companies accountable for their activities in Nigeria by instilling in them the culture of self-regulation, responsibility and accountability through the internalization of social and economic costs generated by the targeted companies. And monies realized therefrom could be ploughed back to lessen/correct the evil effects of environmental pollution in the society. Carbon tax in Nigeria is, therefore, proposed to mitigate the environmental hazards caused by the activities of oil companies by putting a cost on the consequences of burning fossil fuels.

Opponents of this mode of taxation are likely to complain of the imposition of double or multiple-taxation against oil companies; especially when it is realized that the targeted oil companies are equally subject to other types of taxation: such as

[13] Reuven Avi-Yonah, "The Three Goals of Taxation" (2006), 60 *Tax Law Rev*. 1-28. Indeed, taxation is often employed to regulate social and economic behaviours of taxpayers: provided compliance is assured. See also: Jirinwayo Jude Odinkonigbo, *Improving Tax Compliance in Nigeria: Challenges and Prospect*, (Germany: VDM Verlag Dr. Muller Aktiengesellschaft & Co., 2009) at 78-117; 176-347.
[14] Ottinger and Moore, *loc.cit*, note 6 at 104. See also: Odinkonigbo*, loc. cit,* note 13.
[15] Greg Mankiw, *loc.cit* note 4 at 5.

petroleum profit and education taxes.[16] But the good news is that these taxes, unlike the proposed carbon tax, are not punitive and cannot be legitimately avoided by any company without sanctions. Therefore, the criticism that carbon tax encourages multiplicity of taxation in Nigeria is unfounded because the proposed carbon tax is punitive and avoidable. It is not imposed on companies that do not violate certain environmental regulations. Put differently, the proposed carbon tax is designed to punish only companies that flare gases or allow the escape of oil and gas causing harm to the environment—because it is a "sin tax".

Some argue that carbon tax hampers economic progress. Their argument is that economic development and environmental growth are antithetical to each other. In their view, when a nation desires economic development, such a nation should be prepared to condone certain hazards that follow industrialization.[17] In rebutting this argument, it must be noted that anything that seems to be a "development" which, in fact, causes enormous hardship on the people and society is not development strictly so-called. It is conceded that every coin has two sides; that is, certain activities

[16] The *Petroleum Profit Tax Act, 2004* (PPTA) vests the ownership of all on-shore and off-shore revenues derivable from oil exploration activities within the territorial waters and continental shelf of Nigeria on the government of the Federal Republic of Nigeria. Considering that revenues accruing from oil explorations within the territorial waters and continental shelf of Nigeria belong to the Federal Government, the PPTA imposes a higher tax rate compared with the other tax legislation governing different sectors of the economy. Thus, the governing rate for new companies within the first five accounting periods of their operations is ***65.75%***; while companies carrying on business after the first five accounting periods of their operations are mandated to pay ***85%*** of their chargeable profits. On education tax, the *Education Tax Act, 2004* imposes on every incorporated company in Nigeria the payment of an education tax at the rate of ***2%*** of the company's profit, which are paid into the Federal Government's Education Trust Fund. See: Ade Ipaye, "Overview of the Tax Environment: Issues and Challenges" in M. T. Abdulrazaq, ed., *CITN Nigerian Tax Guide Statutes* (Lagos, Nigeria: The Chartered Institute of Taxation of Nigeria, 2002) 2 at 5.

[17] Thomas Conefrey, *et al* "The Impact of a Carbon Tax on Economic Growth and Carbon Dioxide Emissions in Ireland" online: The Economic and Social Research Institute <http://www.esri.ie/UserFiles/publications /20080821092420/WP251.pdf> last accessed on October 30, 2012). In this article, the authors argue that carbon tax could inspire economic growth or the reverse. This, according to them, depends largely on the use of realized revenues. In the case of Ireland, which is the focus of their study, economic growth could be achieved if revenue realized from the imposition of carbon tax is used to reduce income tax rather than as lump sum payout to families.

that are helpful to humans may at the same time constitute a problem if not well managed. That is why it is necessary that a balance is struck. Hence, every activity that stimulates development is controlled to the extent that its adverse effect is either avoided or mitigated. Therefore, we cannot sacrifice our environment and safety on the altar of corporate profit. Beside this, Mankiw whose view is widely respected in matters of economics argues that carbon tax, being Pigouvian in nature, is admirable and could be implemented to transfer the cost of externalities to those who impose such cost on the society. He likened the opposition to the introduction of carbon tax to the behaviours of ignorant voters who are not well informed of the rationality and technicalities of their decisions. Same is said of politicians who may be well informed but must flow with ignorant voters in order to earn popularity amongst them (ignorant voters).[18]

3.0 Factors Governing the Introduction of Carbon Tax in Nigeria:

Having examined the rationale behind the introduction of carbon tax in Nigeria, it is necessary to consider certain factors or indices that will govern the introduction of the proposed tax. Janet Milne[19] and David Duff[20] respectively highlighted the factors that ought to be considered before the imposition of carbon tax. The factors are: defining the tax base for the operation of the carbon tax; identifying the subject(s) to be made liable to carbon tax (taxpayer/ collection point); specifying the applicable tax rate; and the use of revenues generated from the tax.[21]This paper considers the above factors relevant for consideration in the Nigerian case. So, let us start with the first factor.

[18] For this, see Mankiw, *loc. cit.* note 4 at page 4. It is interesting to note that Mankiw copiously cited the Bryan Caplan's book entitled "*The Myth of the Rational Voter: Why Democracies Choose Bad Policies"*. In this book, Caplan discusses the irrationality of the so-called rational voters in exercising their democratic choices. When scrutinized by experts, these choices made by ordinary people, who are in the majority, are generally not favourable to them and society at large. This situation leads to divided opinions between experts on one hand and uninformed voters, who are in the majority, on the other: thus, giving rise to parallel division amongst the two camps.

[19] Milne, *loc. cit*, note 5 at 1-30.

[20] David G. Duff, "Carbon Taxation in British Columbia" (2008) Vol. 10 *Vermont Journal of Environmental Law* 87-107.

[21] See, Milne, *loc. cit*. note 5; and Duff, *loc. cit*, note 20.

3.1 Determining the Tax Base for the Proposed Carbon Tax:

Generally, tax base is seen as the sum of taxable assets, incomes and assessed values of taxable properties in a given tax jurisdiction. This is to show that tax base is the identified subject matter that is legally presented for taxation in a given tax jurisdiction.[22] In calculating the total revenue realizable in any tax regime, the tax base must be identified and known. Hence, the basic formula for the computation of total revenue in a tax jurisdiction is simply: *Tax Revenue =Tax Base x Tax Rate*. This formula justifies the understanding that tax base must first be identified, and in addition to the rate at which the base will be taxed before the expected or realizable total revenue (subject to compliance rate) can be projected or determined.

For the purpose of successful implementation of carbon tax in Nigeria, there is a need to identify the very subject(s) that carbon tax could be levied on. The clear identification of the subject(s) that is/are available for carbon taxation shows that it is not everything or persons within jurisdiction that will be imposed the carbon tax. Now, considering that the main essence of introducing carbon tax in Nigeria is to instil in the major culprits of environmental pollution the spirit of self-administered control and compliance to the extent that environmental pollution is drastically reduced, it is pertinent to identify the targeted taxpayers whose behaviours need to be influenced by the imposition of carbon tax. In order to realize the goals of the proposed carbon tax, the targeted taxpayers must be the major contributors or causes of environmental pollution in Nigeria; so that a noticeable effect could be witnessed when their conducts or activities are regulated. This could come in the form of abstinence from activities causing environmental pollution or the payment of financial penalties in the form of taxation that could be ploughed back to remedy the negative effects caused by taxpayer(s). Presently, there is no enforceable price payable by oil companies that pollute the environment through uncontrolled emissions discharged into the Nigerian environment. Further, on the negative impacts of global warming in Nigeria, springs that are sources of natural water supply in most communities are drying up; desert encroachment accelerated by drought is threatening the country; and poor harvest worsening poverty in the country has led to over reliance on the importation of food items. Our tax

[22] Vern Krishna, *The Fundamentals of Canadian Income Tax,* 8th Edition (Toronto: Thomson Carswell, 2004) at 24.

regime is expected to deter actions or omissions inimical to the country and at the same time encourage responsible actions based on choice.

In the context of environmental management and control designed to prevent or control environmental pollution, the use of carbon or CO_2 as a tax base offers the most direct link to the environmental problem that is the target of carbon tax.[23] It must be noted that the major environmental problem facing Nigeria is the problem of oil spills, gas flaring, and other negative results of energy-related activities that are directly linked to oil companies involved in oil exploration in the country. Therefore, the targeted tax base (taxable commodities) open to the proposed carbon tax in Nigeria must be energy-related. Already, it is a known fact that the carbon content of any fuel or emitted CO_2 is directly linked to a source of energy: fossil fuel in this case. Bearing in mind that the proposed tax intends to trigger a desired behavioural change on the part of the major emitters, it may be better to target the carbon content of combusted fuel or emitted $CO_{2,}$ which is the cause of pollution in the environment. The carbon content of combusted fuel or the emitted $\mathbf{CO_2}$ are easily measured in tons. The ability to measure (with the aid of scientific equipment) combusted carbon content of any fuel and that of emitted CO_2 solves the problem of measuring the tax base for the purpose of taxation. In order to avoid arguments relating to culpability and guilt,[24] it is advocated that the tax base here should be restricted to emitted $CO_{2.}$[25]

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[23] Janet Milne *supra* note 5 at 4.

[24] In Nigeria, there is the incessant and uncontrolled emission of gaseous substances from the activities of oil companies involved in oil exploration; and at the same time, the prevalence of oil spills in surrounding environment. Considering that the proposed carbon tax is expected to discourage these unwanted incidents, the tax base must be able to capture these. If we decide to tax only flared gaseous substances, the tax regime will not cover spilled oil destroying the environment. Therefore, both flared gaseous substances and the contents of spilled oil substances must be taxed. The problem here is that oil companies are likely to argue that most spilled oil in the environment are due to criminal activities in the Delta region; and that they will not be punished for crime committed by others. The problem then will be how to identify spilled oil directly blameable on the activities of oil companies; such as those resulting from negligent conducts. Even when these are detected, the oil companies could contest it; leading to litigations and other forms of judicial or quasi-judicial contests without end. Regardless of the argument above, the activities of oil companies leading to the emission of gaseous substance and even oil spills first involve the combustion of fuel from its natural state resulting to the emission of $CO_{2.}$ And emitted CO_2 are readily taxable regardless of whether the final

3.2 Identification of Subject(s) Liable to the Proposed Carbon Tax (Taxpayer/ Collection Point)

Now that we have identified what the tax base should be, the next in line is the determination of the subject(s) that will be liable to the proposed carbon tax. It is Janet Milne who observed that:

> …an important design question is determining who will pay the tax. From an environmental perspective, the tax or ultimate incidence of the tax should fall on taxpayers who are most able to change their behaviour in ways that will achieve the environmental goal. Political, economic, and administrative considerations, however, may come into play.[26]

In determining who this proposed carbon tax should be levied on, we must consider the taxpayer whose behavioural changes will most likely bring forth good result in the fight against environmental pollution. Also, the economy of ability to pay and the state of our national development must be considered. Presently, Nigeria is desirous of encouraging industrialization in non-oil sectors of the economy and overall improvement in raising the populace out of poverty through job creation and employment. Therefore, the design of any tax regime in Nigeria must be geared towards supporting government policies. It follows that an extension of the proposed carbon tax to non-oil sector may discourage prospective investors. In order to avoid this, it is the position of this paper that the non-oil sector of Nigerian economy should be exempted from the imposition of carbon tax: instead, there should be tax incentive in this area of the economy. The oil sector is an area most companies, especially the multinational oil companies, compete to edge out competitors, including local investors. It is desirable that companies involved in oil exploration who emit carbon dioxide should be the targeted taxpayers for now. This could extend to non-oil companies as the country's economy grows.

The next issue is the determination of the point of collection for the proposed tax. Commenting on this, Janet Milne maintains that: "In finding the right collection point, a tax proponent

product is spilled, flared or not. So, having emitted CO_2 as the tax base is advisable and could place a check on the oil companies.

[25] The Canadian Province of British Columbia carbon tax does not apply to all greenhouse gas (GHG) emissions but to only emissions from combustion of fossil fuel and other specified combustibles.

[26] Milne, *loc. cit.* note 5 at 5.

needs to balance the administrative considerations, the environmental impacts, and the political repercussions…"[27]

Oil and gas issues are matters generally reserved for the Federal government of Nigeria by the Constitution of the Federal Republic of Nigeria, 1999.[28] They are issues that can only be legislated upon by the National Assembly. And the duty to collect taxes directly payable by companies regardless of their locality in the country falls within the province of the Federal Inland Revenue Service (FIRS) – a collecting agency for the Federal Government of Nigeria.[29] The collection of the payment of carbon tax, if eventually implemented, will definitely be the duty of the FIRS. For administrative convenience and the need to emphasis the much needed behavioural change(s)expected of the oil companies, the collection of the proposed carbon tax should be as far upstream as possible. With the aid of experts, the FIRS should be in a position to measure tons of emitted carbon dioxide by each defaulting oil company.

3.3 Determining a Tax Rate for the Proposed Carbon Tax:

In determining the rate at which the proposed tax will be imposed, it may be necessary to consider a rate capable of inducing the desired change. Very often, it may be difficult to state, without equivocation, the exact rate at which penalties could be set to deter the doing of prohibited act(s). Psychologists and other social scientists have propounded theories and hypothesis pointing to what could be done to encourage compliance. The economic theory of compliance is one of the earliest theories imported into the field of taxation. Alligham and Sandmo argue that punishment must be set at a level that culprit will feel the pain and see that there is no benefit to disobedience or non-compliance.[30]

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[27] Milne, *loc. cit.* note 5 at 14.

[28] See Section 44(3) of the Constitution of the Federal Republic of Nigeria, 1999; and Item 39, Exclusive Legislative List, Part 1 of the Second Schedule to the Constitution of the Federal Republic of Nigeria, 1999.

[29] Taxes and Levies (Approved List for Collection) Act Cap. T12, L.F.N. 2004.

[30] See Michael G. Alligham and Agnar Sandmo, "Income Tax Evasion: A Theoretical Analysis" (1972) 1 *Journal of Public Economics* 323-338. Amongst the works of early protagonists of this theory, the classical work of Michael G. Alligham and Agnar Sandmo stands out as a *locus classicus* in this area. The puzzle that this work seeks to unravel is the reason why people pay taxes. It is based on the economic theory of crime discussed by Gary Becker in one of his literal classics. See Gary Becker, "Crime and Punishment: An Economic Approach" (1968) 76 *Journal of Political Economy* 169-217. Thus, the economic theory of crime incorporated into taxation by the duo of Alligham and Sandmo maintains that taxpayer behaviours are generally determined by the interactions of the

To set a tax rate that will be effective, it must be remembered that the main essence of the proposed tax is to influence a behavioural change on the part of oil companies whose activities contribute immensely to polluting the environment and contributing to the problems of global warming. Again, it may be necessary while considering the rate at which the proposed carbon tax will be imposed, to ensure that consequent tax burden is not transferred to Nigerian final consumers—who are generally considered poor. Also, the government must consider the competitiveness of the Nigerian oil in the international market place.

Definitely, the tax rate will not be imposed *per barrel* because we have already chosen to tax the emitted CO_2. Therefore, the tax rate will be based on emitted CO_2. For instance, the Nigerian government could decide to impose N200 per ton of emitted CO_2.

3.4 The Use of Revenues Generated from the Proposed Carbon Tax:

With the high rate of gas flaring and consequent environmental pollution arising from huge emissions of CO_2 by oil companies operating in the Niger-Delta region of Nigeria, it may be convenient to say that hundreds of millions of US dollars are likely to be realized from the implementation of the proposed carbon tax. But the next question is: of what use will the realized funds be put into? In Milne's opinion, "…the revenue from the tax can help build a package that reduces the regressivity of the tax itself and may produce broader benefits that can have significant political and policy implications"**.**[31]

From our previous discussions, it is obvious that the major reason for the proposed introduction of carbon tax in

following variable: the effects of discovery of tax non-compliance (maybe through investigation, audits, or any other means); and the severity of possible punishments attractable by the offence committed in relation to taxpayer's gain from non-compliance. The economic theory explains the decision to evade tax as a matter of maximizing possible utilities. It considers taxpayers as rational and amoral beings who always seek to maximize personal gains over moral issues. As stated above, the benefits of evasion; the probability of detection; and severity of punishment that the system could hand down to a defaulting taxpayer determine whether or not a taxpayer will comply with tax laws. Based on this, the economic theory postulates that a decrease in the severity of punishment and the likelihood of audits or investigation capable of exposing none compliance leads to non-compliance behaviours: because it will be beneficial for a taxpayer to default.

[31] Janet Milne, "Carbon Taxes in the United States: The Context for the Future" (2008) Vol. 10, *Vermont Journal of Environmental Law* 1 at 15.

Nigeria is to help alleviate some of the environmental problems facing the country. Oil companies are the major cause of environmental hazards in the Niger-Delta. That is why the proposed carbon tax is designed to target them for possible behavioural changes or payment of penalties in the form of carbon tax—which is generally seen as "sin tax". For proper use of realized revenue, the benefit of the oil companies; inhabitants of the polluted environment; and the society at large must be factored in. Restoration of damaged environment and prevention of future pollution will, obviously, benefit all stakeholders in the environment. To this extent, funds realized from the imposition of carbon tax could be ploughed back to support different clean-the-environment programs in the country; especially in the Niger-Delta region. Also, certain percentage of the funds may be directed towards alleviating poverty and the sufferings of inhabitants of polluted environment in the Niger-Delta.

4.0 Conclusion

The problem of environmental pollution in Nigeria is well-known globally. Gas flaring, oil spills and other activities of oil companies leading to destruction of the environment have remained unchecked in the country. These have led to protest, violence and series of criminal activities in the Niger-Delta region of the country. This paper recognizes these socio-economic problems threatening the country. It argues that in addition to existing regulations, taxation could be employed to induce or compel desirable behavioural changes on the part of oil companies. It identifies taxation as a socio-economic instrument that could be deployed by government to augment other existing instruments in achieving targeted goal(s). In this instance, carbon tax, which is considered a "sin tax" – one of the Pigouvian taxes – can be employed to shift the socio-economic costs or burdens placed on the society back to the major polluters of the environment. Oil companies have been identified as the major polluters of the environment in Nigeria and, therefore, must be held accountable for their actions. In designing the carbon tax regime, four essential elements must be identified and clarified. They are: defining the tax base for the operation of the carbon tax; identifying the subject(s) to be made liable to carbon tax (taxpayer/collection point); specifying the applicable tax rate; and the use of revenues generated from the tax. These factors are considered in this paper and the finding is that the introduction of carbon tax in Nigeria will be beneficial to the country. If well implemented, the introduction of carbon tax in Nigeria will encourage desired behavioural changes on the part of the targeted oil companies; and also make available appreciable revenue that could be ploughed back to keep the environment safe and clean. What is needed to carry these into effect is the enactment of appropriate legislation by the National Assembly on the subject discussed in this paper and effective implementation of the law thereof by the appropriate enforcement bodies and or agencies.