

## THE CHALLENGES IMPEDING THE THRIVE OF BIOFUEL INDUSTRY IN NIGERIA AND THE NEED FOR A LEGAL FRAMEWORK

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### Abstract:

The popular perception of renewable energy and its sustainability in Nigeria, tends to be concentrated more on solar and in some occasions on wind power. Not much has been seen on biofuel even though biofuel as a source of energy has been in use from ancient times. Biofuel is a kind of fuel that is produced from renewable organic materials from plants and animals. These renewable organic materials are otherwise referred to as biomass. Biofuel has been identified as potentially reliable and renewable energy resource, and it is promising in this regard, which is as a result of its numerous and overwhelming environmental and socio-economic benefits including rural development, land and soil reclamation, energy security and mitigation of greenhouse emissions. As beautiful as biofuel is being presented, not much has been done to encourage its industry in Nigeria. Lack of clear and functional legal framework in biofuel industry is the major constraint impeding the full implementation and utilization of biofuel in Nigeria. In other words, the absence of a legal framework, despite the existence of a Nigerian Bio-fuel Policy and Incentives (2007), no doubt is one of the primary challenges frustrating the growth and development of the biofuel industry in Nigeria. This study aims at identifying the factors impeding the full implementation of biofuel operations and utilisation in Nigeria, as well as specific areas of weak enforcement. The study adopts a doctrinal legal research method, exploring both primary and secondary sources of information to achieve its aim. The outcome from the study will strengthen the potency of the existing legal framework, improve the enforcement strategies and make reference for adoption of best practices.

**Key Words: Biofuel, Challenges, Legal, Framework**

### 1.0 Introduction:

Modern society cannot critically address the issues of development if such consideration is not based on the basis of effective energy planning and management that enhances optimal utilization, regular supply and availability of energy resources.<sup>4</sup> It is not in dispute that Nigeria is blessed with the finest crude oil which has attracted lots of foreign investors and communities thereby enhancing the economy of Nigeria. It is trite to state that this crude oil appears in non-renewable state; this is to say that it is not limitless and as such will be exhausted in the nearest future. The activities of oil companies in exploration and refining together with the marketing and transportation of crude oil product have also posed a lot of threats on humans, animals and plants. These threats ranges from greenhouse emission which studies have shown is the number one cause of cancer; to oil spillage that finds its way into streams, rivers and seas thereby threatening plants, human and aquatic life therein.

As a result of the recent happenings in the oil industry such as the underpricing of crude oil at the international level, the high cost of exploration and production as well as the reality that the available fossil fuel product cannot meet the energy requirements of the growing population. Many economies of the world are decisively depending on other energy sources that are cheap, accessible and harmless to the environment and at the same time be unable to compromise the ability of future generations to meet their own need.

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<sup>4</sup> M G Ojide, 'Impact of Gas Industry on Sustainable Economy in Nigeria' (2012) Journal of Applied Sciences <<http://csialert.net/abstract/?doi=jas.2012.2244.2251>> Last accessed on 17/02/2024 @ 2:14 pm.

Biofuel as an alternative to fossil fuel is one that is renewable, sustainable and has the capacity to meet the energy requirements of the growing population without causing harm to the future generation. Although, most Nigerians are still accustomed to the conventional energy source with little or no knowledge of the potentials of biofuel. However, in Nigeria there are various policies and institutions on biofuel with their numerous overlapping roles and responsibilities which has in turn been an impediment to utilization of biofuel in Nigeria. It is evident that policies are not enough to drive biofuel through as legislations form important tools to establish the foundation of its policies and objectives and the bedrock from which to coordinate implementations.

## 2. **Factors Impeding the Thrive of Biofuel Industry in Nigeria:**

Currently in Nigeria, there are many issues impeding the growth and development of the biofuel energy projects which serve as a sustainable alternative to fossil generated energy. The challenges impeding the development and utilization of biofuel in Nigeria are numerous and in most cases are policy-related issues which has tremendously hindered the full implementation and utilization of biofuel in Nigeria despite the enormous availability of natural resources required for its production. There are a good number of policies relating to biofuel and other renewable energy sources in Nigeria and they include National Energy Policy (NEP)<sup>5</sup>, Renewable Energy Master Plan (REMP) 2005 and 2012, Nigerian Bio-fuel Policy and Incentives (2007), National Renewable Energy and Energy Efficiency Policy (NREEEP) and National Renewable Energy Action Plan. A critical examination of these policies relating to biofuel Nigeria will reveal a lot of promises and hopes for the country as provisions contained in these policies are laudable though most of them are merely produced and never implemented. Obviously, if these policies are diligently implemented, they will of course go a long way in uplifting the energy sector in Nigeria. It is worthy of note that the fossil fuel has been empirically proven to be unable to meet the energy requirement of Nigerians and a lot of factors are impeding the utilization of alternate energy source more especially biofuel in Nigeria. Below are some of the apparent multifaceted vices impeding implementation and utilisation of biofuel in Nigeria:

### 2.1 **Lack of Clear and Functional Legal Framework:**

The biofuel energy projects in Nigeria lacks a functional and clear legal framework.<sup>6</sup> It is noteworthy to state that most of the provisions of the policies relating to biofuel overlap and conflict with each other.<sup>7</sup> A critical study of the various policies relating to biofuel in Nigeria will reveal the overlapping and duplication of roles and functions of the various regulatory bodies and institutions charged with the implementation and utilization of biofuel in Nigeria. An instance of these overlapping roles of regulatory institutions are seen in the roles and responsibilities played by the Energy Commission of Nigeria (ECN), the Federal Ministry of Petroleum Resources, Nigerian Biofuel Policy and Incentives, 2007, National Energy Policy, 2018 and Nigerian National Petroleum Company Limited (NNPCL). From the regulatory perspectives of these bodies, the similar roles played in the management of renewable energy subsector is evident. Apparently, these unclear and indistinct roles amongst the regulators signifies that the investors and players in the industry would have to deal with lots of governmental institutions and agencies and this will undoubtedly create ambiguity, misconception and make the industry unattractive in the eyes of investors and active players in the biofuel industry. It is therefore better to have a single regulatory institution saddled with the responsibility of overseeing the affairs of the biofuel industry than having plethora of regulators with little and insignificant roles to play and its attendant duplications.

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<sup>5</sup> National Energy Policy, 2018.

<sup>6</sup> S.O Oyedepo “Toward ds achieving Energy for Sustainable Development in Nigeria” (2014) 34 *Renewable and Sustainable Energy Review* 255, 269.

<sup>7</sup> Emodi, N.V. and Ebele, N.E. (2017) *Policies Enhancing Renewable Energy Development and Implications for Nigeria*.<http://www.pubs.sciepub.com/rse/4/1/2/> accessed last on 3<sup>rd</sup> April, 2024 @ 10:54 pm.

The absence of a clear regulatory body in the biofuel energy subsector has negatively impeded its growth and development in Nigeria.<sup>8</sup>

It then follows that redefining the legal and regulatory bodies in the subsector may be desirable so as not to create confusion for the investors and active players in the industry in any way. Furthermore, the multiplicity of various policies relating to biofuel, if not properly harnessed will create confusion as to which body has what roles and responsibilities to play in the biofuel industry. Also, the absence of a specialized regulatory and legal framework for biofuel operations in Nigeria remain an impediment to the establishment of clear guidelines within the already existing petroleum regulations.

### 2.2 **Lack of Financing Option:**

Biofuel energy project is one that is capital intensive as such project requires and demands a huge capital outlay and financial resources for their effective implementation and utilisation. In other words, the cost of production of biofuel is not cost friendly and as such out of the reach of the poor. This therefore, implies that the development and growth of biofuel projects can be hindered where there is no regular cash flow and reliable financing options for such investment. It is well established that despite the potential benefits of biofuel, financing is a huge hindrance to the development of biofuel energy project in Nigeria. Unfortunately, this hindrance will continue except appropriate and sustainable financing options are put in place.

For this challenge to be properly addressed, there is the impending need to enact a clear and functional law to navigate the entire affairs of biofuel sector including financing of biofuel projects in Nigeria.

### 2.3 **Poor Investment Environment:**

Another issue that discourages the implementation of biofuel industry in Nigeria is the poor investment environment, together with the limited access to technology and expertise. This has in turn discouraged private sector participation and has hampered the growth and development of the biofuel industry in Nigeria. It is no gainsaying that renewable energy (biofuel in particular) is still at its nascent stage because there has been a major focus on the development of the conventional traditional energy not minding that it has been discovered to be unable to meet the energy needs of the country. Developed nations like the United States of America and the United Kingdom have at least 25% coal, 30% gas, 20% nuclear and 20% renewable energy which altogether make up their energy mix. This undoubtedly has enabled them to adequately cater for their energy needs.<sup>9</sup> These developed nations do not focus on the conventional energy source but rather they diversify in other to meet up with the energy requirements of their nations. This is in sharp contrast with the position in Nigeria where energy consumption is basically from fossil fuel thereby leaving little or no interest in the development of other sources of energy especially biofuel.

Investment framework in Nigeria is weak. However, with the proper legislation put in place, private investors will be encouraged to invest in the biofuel industry in Nigeria.

### 2.4 **Low Access to Technological know-how:**

Biofuel development and growth requires up-to-date technologies which of course is capital intensive in nature. This is to say that biofuel project requires new and novel technologies so as to attain some level of sustainable growth.

Fermentation and transesterification are the common method used for the conversion of starch- based foods to fuel also referred to as 1<sup>st</sup> generation fuel. Due to food verses fuel that may be posed by the continued use of food crop for fuel production, scientists in biofuel field were able to come up with other sources of biomass that could be used without posing threats on the availability and accessibility of food challenge to

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<sup>8</sup> E.I. Efurumibe “Barriers to the Development of Renewable Energy in Nigeria” (2013) 2(1) Scholarly Journal of Biotechnology 11, 12.

<sup>9</sup> Ogunleye, E.C. (2017) ‘Political Economy of Nigerian Power Sector Reform’. <https://www.wider.unu.edu> accessed last on the 3<sup>rd</sup> April, 2024 @ 6:45 pm.

biofuel. These other sources of biomass are popularly referred to as 3<sup>rd</sup> and 4<sup>th</sup> generation biofuel and require advance technology for their production. The production of biofuel from different bioresources using various emerging technologies and biological processes is increasing worldwide due to the rise gasoline price, depletion of petroleum resources and environmental protection issues. The development of biofuel technologies then becomes imperative as biofuel is projected to play an essential role in the foreseeable transportation and automobile sector. Nigeria's technological capability is weak especially with respect to indicators such as research and industrial manpower, innovation and ideas generation, available resources, biofuel marketing and investment<sup>10</sup>. Improving technological capabilities for the sector include developing strategies that strengthen systems for improved research, technological development, production and business development. These strategies include improved access to appropriate financial, economic and commercial mechanisms for improved R&D activities; and improved professional advisory services for improvement in the Future Potential and Current Performance indicators<sup>11</sup>.

Presently, significant investments are needed for the realization of new infrastructures in biofuel industry in Nigeria. In Nigeria, not much has been invested in acquiring modern technologies that are needed in harnessing the huge potentials of biofuel energy and this has invariably constituted a challenge in the development and growth of biofuel industry in Nigeria. Lack of access to advance technology and high production cost is an impediment on the full implementation and utilization of biofuel in Nigeria. If more energy is directed to the provision of advanced infrastructures and technologies, investors will be attracted to the industry as that would help to curb the cost and intensive energy associated with purification of bioethanol for instance.

#### **2.5 Limited Public Awareness on the Potential Benefits of Biofuel:**

It is quite unfortunate that most Nigerians are so accustomed to the conventional energy source that is, fossil fuel, that there is little or no public knowledge about the huge potential benefits of biofuel implementation in Nigeria. This lack or little awareness of the immense potential benefits of biofuel implementation has a correlative effect on the amount of effort geared towards full development and implementation of biofuel project in Nigeria. This lack of information on the potential benefits of biofuel applies to both the consumer and the farmers who are potentially responsible for the growing of the natural resources needed for biofuel production. Unfortunately, this will continue to be so unless and until the appropriate steps are taken by the Nigerian government.

#### **2.6 Lack of Enforcement Mechanisms:**

The absence of a clear and functional legal framework in the biofuel industry despite the policies on biofuel, resulted to the absence of a legal enforcement machinery in the industry. One major problem of any legal system is the absence of strong, viable and effective legal enforcement machinery to drive home its objectives. It is of interest to point out here that there are hosts of regulations, policies and master plans relating to biofuel sector in Nigeria however they remain a toothless bulldog because there is no clear and functional law to give it a foundation. It then follows that the absence of a legal framework in the biofuel industry in Nigeria has inhibited the development of biofuel energy project development and growth in Nigeria and had made nonsense the existing policies and regulations.

From the points stated above, it can be deduced that the absence of a unified umbrella under which all the policies relating to biofuel could be effectively managed and implemented happens to give rise to the non-follow up of these policies. In fact, some of these policies need to be reviewed so as to be applicable in the

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<sup>10</sup> Adebayo, A. (2019): Project Planning of Jojoba Biodiesel Production in North Central Nigeria, An M.Sc. Thesis, African Institute for Science Policy and Innovation (AISPI), Obafemi Awolowo University, Ile-Ife, Nigeria

<sup>11</sup> Ibikunle O. Ogundari, 'Strategic Assessment of Technological Capabilities For Sustainable Biofuels Development In Nigeria' (2020) *African Journal of Science Policy and Innovation Management* (1)(2), 1 <ajspim.oauife.edu.ng> Accessed last on 8<sup>th</sup> August, 2024 @ 11:30 am.

reality of the present day oil and gas industry in Nigeria. Furthermore, it is evident that policies are not enough. For biofuel industry to thrive in Nigeria, legislations form important tools to establish the foundation of its policies and objectives and the spring-board from which to coordinate its implementations.

### 3.0 The Need for a Legal Framework (Law) for Biofuel Implementation and Utilisation in Nigeria:

A legal framework as a term can be described as a set of legislative, jurisprudential and managerial rules that regulate a defined institution or society. It can also be referred to as a set of laws, regulations and rules applicable in a particular country<sup>12</sup> or a subject matter as the case may be. Put differently, legal framework is a set of laws and regulations that govern individual and institutional behaviours within a society or a setting and provides the framework for the enforcement of laws that promote peace, order, justice and fairness.<sup>13</sup> Legal frameworks are essential in any society as they provide guidelines and regulations that govern the behaviour of individuals and organisations. The legal framework is the basis for enforcing laws and policies that promote order, justice and fairness in a country. Understanding the legal framework regulating any sector is crucial for anyone who seeks to operate within the confines of law and of course, avoid any form of legal complications.

As stated above, legal framework is essential in any sector of the economy as it provides a basis for enforcing laws in order to promote order, justice and fairness within an economy and in so doing protect the interests and rights of individuals and organisation as well as promotes accountability. Legal framework has several components which includes statutes, regulations, court decisions and legal precedents. Furthermore, the best practices for legal framework is consistency, fairness and transparency. A legal framework should be transparent and easily accessible to the general populace. To ensure that laws are applicable to all individuals equally, a legal framework should be fair and consistent. An example of a legal framework is the Nigerian Constitution<sup>14</sup> which provides the basis for the legal system in Nigeria and outlines the powers of the government as well as the limitations of the government. It also includes the fundamental rights and freedom of individual of Nigeria.<sup>15</sup> In summary, legal framework is essential for anyone who seeks to operate within the confines of the law and avoid legal complications as it sets out rights, obligations and limitations.

Legal framework or law exists as a way through which government codifies rules about how individuals and institutions should behave or work so as to achieve economic and socio-economic developments. Institutions and groups in a society use law as means of promoting, enforcing and institutionalizing interests and objectives. According to the Black's Law Dictionary,<sup>16</sup> law is defined as a body of rules of action or conduct having a binding legal force, and prescribed by a controlling authority.

Law becomes necessary for economic development and growth of any society. Though, economic development and growth may have series of meanings, nevertheless, it broadly exists to improve the economic well-being by making a country more prosperous. Law accomplishes economic development of any society firstly, by incentivizing behaviour change through compulsion or punishments, secondly, by serving as a central point for coordinating behavior and thirdly, by creating a culture of compliance. It is pertinent to state that adherence to the grassroots needs help policy makers and lawmakers to design

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<sup>12</sup> <[https://aceproject.org/ace-en/topics/lf/explore\\_topic\\_new](https://aceproject.org/ace-en/topics/lf/explore_topic_new)> Accessed last on the 16<sup>th</sup> February, 2024 @7:18 am.

<sup>13</sup> <https://fastercapital.com/content/Legal-Framework--Understanding-the-General-Provisions.html> > Accessed last on the 28<sup>th</sup> day of February, 2024 @2:13 pm.

<sup>14</sup> Constitution of the Federal Republic of Nigeria, 1999 (as amended)

<sup>15</sup> Chapter 4, *ibid.*

<sup>16</sup> Garner, B.A. (2004) 'Black's law dictionary'.

effective laws and strategies more likely to achieve economic growth and development. On the other hand, laws of the Federal Republic of Nigeria seek to attain economic development, so as to improve social welfare for every citizen of Nigeria. It then follows that law and economics are two areas that are quite closely linked with each other. Law and economics are both associated with concepts like custom, futurity, sovereignty, and scarcity.<sup>17</sup>

Again, law plays an essential role of defining governance process and equally provide means for citizens to challenge and contest the exercise of power. The primary concern of any nation is to enact rules and laws and equally put mechanisms for its enforcement which will bolster the economic development and growth of the nation. In order to bring economic development in Nigeria biofuel industry, law has two roles to play. The first concern is the allocative dimension, through which the law determines what resources are to be engaged and where the resources are to be sourced from as well as what those resources are to be used for. The second concern is the procedural dimension which determines how effective the legal enforcement is, and whether institutions of law are working in consistency with the objective to achieve economic development and growth. Hence, the Nigeria Nation can either be discretionary where the government might modify laws at its whims and fancy or rule-based where the government would have to adhere to certain legal rules or principles. These two aspects of law and legal systems are largely the determinants of economic development in any nation including Nigeria.

Furthermore, a clear legal framework can also help to improve the visibility and expansion of biofuel industry nationwide as well as in the biofuel global markets.

Again, a legal framework relating to biofuel industry is needed in order to make room for political support for the growth and development of biofuel industry in Nigeria. A critical look at the factors impeding the development and growth of biofuel industry makes it clear that these factors need political support to improve their chances of entering into existing energy markets. This political support is necessary because it will provide a level playing field, improve biofuel industry development, build up biofuel market capacities, make biofuel cost competitive, mitigate climate change to the barest minimum and decrease much dependency on fossil fuel. This political support should be able to offer initial support so that the biofuel industry can reach a point where it can independently compete against the conventional fossil fuel energy source. The support mentioned here can come in three distinct ways though overlapping, namely, as a direct promotion through support programs for biofuel, indirect promotion through measures that are aimed at disadvantaging the conventional fossil fuel and then creation of a favourable legal and regulatory framework.

Consequently, it then becomes necessary for Nigeria as a nation to have a robust legal regime that promotes and regulates the development, growth and utilization of biofuel so as to effectively harness the potential benefits of biofuel. Currently, there is no all-embracing law on biofuel energy in Nigeria thereby making the disparate pieces of policies relating to alternative energy sources in Nigeria inefficient and ineffective. Again, there is also limited support for renewable energy promotion generally in international law.<sup>18</sup> As a result, it becomes urgent and necessary for Nigeria to enact its own law on biofuel energy. This means that Nigeria must come up with a legal framework on biofuel energy that creatively takes into cognizance, all the challenges impeding the development and growth of biofuel industry while proffering provisions that promotes biofuel industry.

#### 4.0 Conclusion:

The absence of a legal framework, despite the existence of a Nigerian Bio-fuel Policy and Incentives (2007), no doubt is one of the primary challenges frustrating the growth and development of the biofuel industry in

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<sup>17</sup> Commons, J.R. (1924) 'Law and economics', *Yale LJ*, 34(4), pp. 371-382.

<sup>18</sup> Chitzi C. Ogbumbada, 'Developing an effective framework for renewable energy utilization in Nigeria' (2018) 8(3) *Renewable Energy Law and Policy Review*, 45-52.

Nigeria. This means that the lack of a legal and institutional foundation has limited the efficacy of the Nigerian Bio-fuel Policy and Incentives (2007). In the last quarter of the year 2023, the House of Representatives took a very important step towards the development of the nation's biofuel industry by passing for a second reading, a Bill for an Act to provide a legal framework for the development of the biofuel industry which is a crucial step to combat climate change and diversify and grow the nation's domestic economy. The aim of the proposed legislation is to establish a legal framework for biofuel energy industry in Nigeria. The proposed legislation will also create two distinct entities, namely: the biofuel Energy Regulatory Commission and the Biofuel Research Agency.

Although, biofuel stands out with great promises as an alternative to fossil fuel, its integration have several challenges including policy inconsistencies. However, to successfully incorporate biofuel in the nation's energy mix, Nigeria should prioritize incentives, research and development, technology transfer, clear regulations, infrastructure development, collaboration, sustainable practices market expansion and capacity building all in one document. When all these mechanisms are implemented and addressed, Nigeria can decrease its over-reliance on fossil fuels and in so doing boost energy security, sprout economic growth and development and aid in sustainability.

It is pertinent to state here that addressing the challenges impeding the growth and development of biofuel industry in Nigeria requires a coordinated effort from various stakeholders such as the government, farmers, and private sector, and research institutes. This will in turn aid in promoting sustainable energy, reduction of greenhouse gas emissions to its barest minimum, enhancement of energy security for Nigeria's economic development and growth, and the nation's general well-being.

## **5.0 Recommendations:**

It is hereby recommended:

1. That a feasible and clear legal framework be enacted to regulate and entrench an encouraging legal environment for the development of the biofuel industry.
2. That the legal framework recommended should be able to state in clear terms the roles and responsibilities of the stakeholders in the biofuel industry and also, address the issues of the natural resources required for biofuel production such as their cultivation and environmental regulations so as not to pose danger on availability of those natural resources for food.
3. That provisions be made for incentives in favour of the key players in biofuel production and utilization in Nigeria.
4. Additionally, that production Tax Incentives/investment Tax Credits should be put in place in the biofuel subsector. By doing so companies in their formative years of operation will be relieved of tax bill at their early stage of operation which will in turn entrench operational efficiencies. With this biofuel industry will be able to expand as technological efficient companies will be attracted to invest and utilize the advantage of these fiscal benefits.
5. That the Federal Government of Nigeria must support the development and growth of the biofuel energy sector by providing subsidies to support Research and Development (R&D) in the biofuel sector. This is necessary because biofuel industry is one that is innovation driven and requires intensive technology and by doing so, the industry will be eased of the technological barriers it is currently facing.
6. That the Legal framework should accommodate the participation of both the Federal and State Governments in the development and growth of the biofuel industry. The States should be able to

- make their respective laws on biofuel development, growth and utilization apart from the one made by the Federal Government. Obviously, this will enable the federating States to have a coordinated and diversified initiatives to support biofuel growth within their respective States.
7. The Federal and State Government must play a vital role of disseminating information on biofuel energy resources availability, its benefits and opportunity to the general public in a bid to raise public awareness which will entice private and public bodies to invest in biofuel industry.
  8. Importantly, there should be a political will power on the part of the Government to move from the conventional non-renewable energy source to biofuel which is a sustainable renewable energy source by firming-up the recommended legal framework for developing biofuel energy industry in Nigeria.