AN APPRAISAL OF SUSTAINABLE DECOMMISSIONING OF PETROLEUM INSTALLATIONS AND ENVIRONMENTAL PROTECTION IN NIGERIA*

Abstract
Despite the fact that crude oil production has been undertaken for decades in Nigeria, there is no evidence to show that any facility has been properly decommissioned. In the oil and gas industry, decommissioning is the process whereby abandoned or disused and obsolete installations and facilities are dismantled and the land or sea is reclaimed as much as possible to their original situation, so that they can be used again for other purposes. This involves the removal of all process plants and equipment and the radiological decontamination of the structure as far as possible. This is because, decommissioning has phases and each phase must receive adequate attention in order to forestall any future problems with associated costs. It is on the basis of the above that the aim of this paper is to appraise the environmental risks that disused oil and gas installations poses to the environment. The objective of this paper amongst others includes appraising the adequacy and efficacy of the existing laws regulating decommissioning of oil and gas installations in Nigeria. The doctrinal research methodology was adopted in this paper as both the primary and secondary sources of laws were relied upon. This paper found that the increasing adverse impact of pollution of Nigeria's environment is increasingly becoming a concern to all stakeholders in the oil and gas industry, howbeit; the regulatory regime with respect to decommissioning is grossly inadequate. There is thus an obligation on the part of the Nigerian government to put in place appropriate and comprehensive decommissioning guidelines and rules that addresses the complex interaction of environment, health and safety, cost, legal, engineering or technical, and political considerations. It was recommended amongst others that decommissioning cost should be extracted from operators before or at the time of the grant of the licenses to the operators.

Keywords: Decommissioning, sustainable development, environmental protection, oil and gas

1. Introduction

Worldwide, the oil and gas industry is advancing and the concerns of the industry are changing with time.[1] During the infancy stage of oil exploration, there was the mad rush for the exploration of onshore reservoir, then production followed, which necessarily required transportation of crude and other product for both traditional markets nationally and globally. Thus, the oil and gas sector is not only concerned with upstream activities but midstream, such as storage and refining activities, as well as marketing of products - which are within the remits of downstream sectors.[2] Each stream requires strategic infrastructure and assets with technical, financial and environmental implications.[3] When petroleum activities started in Nigeria in the early part of the 20th century and the first commercial field was found in 1957 in Oloibiri, present day Bayelsa state, it is not likely that decommissioning of petroleum installations was thought of. Since then lots of fields have been found and facilities have been installed, and all of them will need decommissioning after shut down. At the end of the life of a facility, there is need for decommissioning and restoration of the site to a safe condition that minimizes potential residual environmental impact and permits re-instatement of activities. Decommissioning is however the strategic approach to deactivating a project or facility from service. There are over 7,300 offshore platforms and production facilities located in 53 countries consisting of different installation sizes, regulatory regimes, marine environment and technical expertise.[4] At the same time, decommissioning costs estimated at $40 billion are needed to remove these structures.[5] There are over 480 installations located off the coast of Africa, and Nigeria as the most important oil and gas producer on the continent is host to over 170 structures with attendant cost implications.[6]

The oil and gas sector worldwide was initially dominated by the seven sisters; Shell, Chevron, Gulf, Texaco, Mobil, Total and BP.[7] This domination soon paved way due to the challenge by the Organization of Petroleum

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[1] D Yergin, *The Prize: The Quest For Oil, Money and Power* (London: Simon Schuster 2010) 371 - 523

[2] J Seitz, *Global Issues: An Introduction* (3rd Edn, New York: Black Well Publishing 2008) 126

[3] A Kashfi and W Adibah, `Joint Development Agreement Scheme for Management of World's Largest Shared Oil and Gas Reservoir' [2015] (2)(12) *Journal of Scientific Research and Development*. 70 – 80.

[4] D E Jayawardena, 'Unique Considerations for Decommissioning of Floating Production Units and Subsea Facilities in Asia: The Economics of Platform Commissioning [1996] (12)(4) *Kuala Lumpur Law Review*. 13 – 14.

[5] *Ibid*

[6] *Ibid*

[7] G Etekerentse, *Nigeria Petroleum Law* (2nd Edn, Lagos: Dredew Publishers 2006) 5 - 10.

Exporting Countries (OPEC) through the development of various National Oil Corporations.[8] This transition moved from the era of concessions to Joint Ventures Contracts (JVC'S) and Production Sharing Contracts (PSCs). Some very significant facts in the history of oil and gas in Nigeria are: oil wars, insecurity of supply, geopolitical conflict leading to acts of sabotage on pipeline and oil and gas infrastructure, embargos and pricing crises and the ever present wide spread environmental pollution and its attendant health hazards in oil and gas producing regions.[9] The sector is also constrained by the very fact that it is non-renewable source of energy and the emerging trends is to shift away from high carbon intensive energy to more environmental sustainable energy resources.[10] All these and more, culminated in the new energy direction of the world encapsulated in the 2015 Paris Agreement on climate change.[11]

The relatively long time span between the start-up and the end of an oil/gas project coupled with the relatively fresh international experience of decommissioning techniques have all led to neglect in relation to the deep analysis and preparation required for the decommissioning of these assets. In fact, these and other factors have led to decommissioning being seen as an 'unknown art'. However, the maturity of the world oil and gas industry has made the costs of decommissioning offshore and onshore oil and gas installations more apparent. This necessitates a fresh consideration of the rules and regulations surrounding the oil and gas decommissioning business. Whilst decommissioning expenditure is a capital expenditure for accounting purposes and attracts tax allowances, it differs from the initial capital expenditure (i.e. appraisal, exploration and development), in that it does not result in revenues. This is because decommissioning is a necessary expenditure to close an oil and gas investment cycle. It is a sort of a death-related cost. However, this cost should be planned well in advance by oil companies and a provision be calculated for it from the day of asset installation.

The oil and gas industry is very sensitive and technical in nature involving arrays of infrastructure such as wells, drill plants, rigs, pump, vessels, horse, pipelines, barges, platforms, buildings campsites, rods pipes, cuttings just to mention but a few. Each of these has significant use, application and inherent challenges, after deployment. If not well recycled after use could unleash danger to both its personnel and the environment. In view of the above, the certain event that exploration, production and other activities related to oil and gas will come to an end must be contemplated by the International oil operators, governments and the host communities – major stakeholders in the industry. Therefore, the need to provide for a robust legal regime for Decommissioning of oil and gas installations and assets that will become obsolete or disused has become the more imperative. Agreement that former oil and gas producing sites should be decommissioned is virtually universal in all oil producing states. There are several reasons for this:

a) Abandoned oil and gas facilities are unsafe. No matter how depleted an oil and gas field may be, there will always be residual hydrocarbons left below the surface. Unless secured underground, such products may leach out of the ground, polluting the surrounding environment and water sources. Such pollutants may not just be oil and methane, but include a variety of other materials notably toxic gases such as hydrogen sulphide, which are dangerous to human health.
b) Drilling for oil and gas invariably produces considerable quantities of industrial waste, notably drilling fluids, 'cuttings' and other solid waste that may remain on sight. Some of these wastes may be polluting and should be removed and disposed of in an approved manner.
c) Abandoned oil and gas infrastructure may get in the way of any alternative use for the land. Storage tanks, pipelines, buildings and roads may take up considerable space for no good reason and should be removed. Tanks, if left to themselves, may rust down leaving many potential safety concerns. Pipelines may present a hazard to future developments, particularly if their existence is forgotten and they are not completely cleaned or vented. Such infrastructure may take up a lot of space, which could be returned to local communities.
d) The potential hazards of abandoned offshore platforms are obvious in terms of both fishing and shipping. After abandonments, such structures present obvious navigational hazards. Undersea pipelines present a significant hazard to fishing nets and anchors. In addition, oil platforms contain

[8] G A Adam, 'Problems and Issues in the Development of Nigeria's Oil and Gas Resources' In C N Nwoke and D Omoweh (eds.), *The Management of Nigeria's Energy Resources for National Development* (Nigerian Institute of International Affairs 2006) 134 - 137.

[9] G S Akpan, 'Failure of Environmental Governance and Implication for Foreign Investors and Host State: A Study of the Niger Delta Region of Nigeria' [2005] (3)(3) *Oil and Gas Environmental Law Review*. 1, 15 - 16.

[10] G Boyle, *Renewable Energy: Power For Sustainable Future* (London: Oxford University Press 2004) 11.

[11] C Flarchsland, and U Kornek, 'Paris 2015 Climate Summit: The Conversion' <https://www.theconversion.com> accessed 23 May 2022.

wide variety of serious potential pollutants that, if left to rot down will leach into the sea causing serious pollution.

e) Both onshore and offshore oil and gas installations contains large quantities of recyclable material, from high grade steel and other metals to pumps and other machinery. This may not just be scrap. The 'top sides' of offshore platforms may be taken off completely and large parts re-used on other facilities. Much of this material will need to be cleaned and decontaminated, but it is likely to be highly valuable if well maintained. Unless this process is done in an orderly manner with expertise, it may be removed, piece by piece, by host communities that may not be aware of its hazardous nature.

2. Conceptual Clarifications

Decommissioning

There is no clear definition of decommission in international and many national legislation. Decommissioning is the physical removal and disposal of obsolete installations at the end of their working life and this include the plan of action as formulated by the operator and the government.[12] A robust decommissioning law or regulation will always provide for an operators' plan of action which must be reviewed from time to time. It shall also envisage an approval by the Government through its appropriate regulatory body or agency (in the case of Nigeria, Upstream Regulatory Commission URC) and this must be seen by government to have been implemented.[13] It is a complex process with an overall timescale lasting several years dealing with diverse issues and involving *inter alia* government agencies, oil producing companies, third-party contractors, local communities and non-governmental organizations.[14] Similarly, Decommissioning has been defined as 'stop using, to remove something from service.[15] In the oil and gas industry, decommissioning is the process whereby abandoned or disused and obsolete installations and facilities are dismantled and the land or sea is reclaimed as much as possible to their original situation, so that they can be used again for other purposes.[16] This involves the removal of all process plants and equipment and the radiological decontamination of the structure as far as possible. Depending on the level of contamination present, either robotic or manual techniques can be deployed. This phase may also include the installation of new equipment to aid the decommissioning process.[17] Decommissioning can be classified into two types namely: Onshore and offshore decommissioning. Onshore decommissioning involves the plugging down of oil and gas assets located onshore. Offshore decommissioning is however more technical as it has various stages namely: a detailed planning process to determine the option, cessation of oil and gas and safe plugging of the wells, removal of all or parts of the installation and then the disposal or recycling of all removed parts.

Abandonment

Nigerian laws do not also define the term abandonment. Therefore recourse must be sought elsewhere for a proper understanding of the difference between abandonment and decommissioning. Abandonment simply refers to the act of stopping an activity with no intention of returning to it.[18] The Black Law Dictionary defines Abandonment as the surrender, relinquishment, and disclaimer of cession of property or of rights, voluntary relinquishment of all rights, title or claim to property.[19] The Oxford Advanced learner's dictionary defines Abandonment as 'the relinquishing of all right or interest with the intension of never again claiming it.[20] In the oil industry, abandonment refers to the procedures that an operator uses to secure important requirements from the regulator when the operator wishes to temporarily abandon a well, or other oil and gas facilities.[21]

Environmental Protection

The quest for economic growth and development and the need to meet the demand in human population came with the increase in human activities within the environment. These increased and sophisticated development means of exploitation of natural resources remain unabated and on increase hence leading to environmental

[12] UK Energy Act 2008.

[13] *Ibid*

[14] A M Adedayo, 'Environmental Risk and Decommissioning of Offshore Oil Platforms in Nigeria' [2011] *NIALS Journal of Environmental Law 1*. P. 21

[15] Merriam-Websters Collegiate Dictionary Encyclopaedia Britannica Company (11 edn. 1883)

[16] United Nations Convention on Law of the Sea 1982.

[17] <https://www.sellafieldsites.com> accessed 4 August 2022.

[18] G Etekerentse, *Nigeria Petroleum Law* (2nd edn, Lagos: Dredew Publishers 2006) 37

[19] B Garner, *Black's Law Dictionary* (10th edn, New York: Thompson Reuters 2018)

[20] Oxford Advanced Learners Dictionary

[21] J S Lowe, *Oil and Gas Law in a Nutshell* (New York: West and Thomson Reuters 2009) 32 - 39

degradation. This ugly trend is indeed a problem, which does not just affect only the respective individual States that caused them but the global community as a whole. An extensive range of environmental problems is now the subject of serious international concern. These problems includes atmospheric pollution, marine pollution, global warming and ozone layer depletion, the dangers of nuclear and other extra hazardous substances that threatened wild life species of flora and fauna etc.[22] In the light of the above ugly trend, individual States cannot solve environmental problems alone hence the reason for the evolution of international environmental protection laws and bodies. The environmental monitoring body of the United Nations Environmental Programme monitors and ensures that these laws which are inform of treaties, agreements, conventions, pacts, protocol etc are complied with by the comity of nations who are signatories to them. According to Weiss, legal instruments have been adopted to put a halt to human sophisticated activities to protect the environment. Environmental protection has been perceived from angle of town planning, wherein various town planning laws are tools for physical land development and environment protection.[23] This obvious observation by the author in his work is the basic inter-governmental conflicting policies with regards to town and country planning laws for the development and protection of the environment. Therefore environmental protection law imposes statutory duty on individuals, organizations and even government, a breach of which becomes actionable at the instance of the aggrieved or affected person(s) or party who may be thereafter awarded damages in compensation for injury suffered. Okonkwo opined that environmental protection law presents itself as a salient tool for social ordering. Its aim is to reverse specific human attitudes, activities and beliefs which are obliviously environmentally unfriendly in other to secure a safe and healthy environment for the present and the generations unborn.[24]

Sustainable Development

The concept of sustainable development underpins the need to act equitably and sustainably by the present generation in order not to compromise the existence of the future generations. This assertion is supported by the 1972 United Nations Stockholm Conference on the Human Environment where it was generally agreed by the international community that 'the present generations have a responsibility to protect and improve the environment for both present and future generations'.[25] Since then, the concept has been widely recognized officially by developed and developing countries and they have enshrined it in their national and international policies on development and the environment.[26] The international community has continued to call for the strict adherence to the concept and has been working with the various governments, role players and stakeholders in order to implement this commitment to future generations in the context of environmentally sustainable development.[27] The concept continues to receive the support of the international community. This is why it featured in many international environmental conventions, multilateral development policies, national environmental strategies and legislation.[28] The concept promotes responsible economic growth that utilizes the resources in a sustainable manner and conserves the environment.[29] The policy principle it supports has been stated as follows: 'This goal is supported by a range of policy principles, such as the 'polluter pays' principle, the precautionary principle, and the principles of inter and intra-generational equity'. [30] In practical terms, sustainable development should be a continuum that brings about positive impact on the environment notwithstanding economic activities.[31] The concern is that 'there is abundant evidence that the world is continuing to live as though there is no tomorrow. This is evident in huge strain on 'the natural functions of the

[22] M N Shaw, *International Law* (5th edn, Cambridge: Cambridge University Press 2003) 753 - 754.

[23] A A Utuama, 'Planning Law and Environmental Protection' in J A Omotola (ed), *Environmental Law in Nigeria Including Compensations* (Lagos: Wisdom Publishers 1990) 33

[24] T Okonkwo, *The Law of Environmental Liability* (3rd edn., Abidjan: Afrique Environmental Development and Education 2014) 3

[25] D Narum, 'International Cooperation on Global Warming and the Rights of Future Generations' [1993] (21)(2) *Policy Sciences*. 21-40.

[26] C Heijden, and D Jesse, 'Corporate Environmental Accountability as a Means for Intra-Generational Equity: "Hidden" Environmental Impacts in the North-South Conflict' in C. Voigt and H. Bugge (eds), *Sustainable Development in International and National Law* (Groningen: Europa Law Publishing 2008) 348 - 375.

[27] B Weston, 'Climate Change and Intergenerational Justice: Foundational Reflections' [2008] 9 *Vermont Journal of Environmental Law*. 375 - 388.

[28] M Segger, and A Khalfan, *Sustainable Development Law: Principles, Practices, and Prospects* (New York: Oxford University Press) 122

[29] K Bosselmann, *The Principle of Sustainability: Transforming Law and Governance* (*Aldershot*: Ashgate Publishers 2008) 210

[30] U Antharvedi, 'Environment: Principles and Interpretation of the Judiciary <http://papers.ssrn.com/sol3/papers.cfm?abstract_ id=1053181> accessed 10 June 2022.

[31] K Bosselmann (n 32)

earth that the ability of the planet's ecosystems to sustain future generations can no longer be taken for granted'.[32] It has been stated that: 'Despite the fact that such bleak findings are echoed by many other international studies, such as the United Nations Environment Programme's 2007 Global Environmental Outlook Report, there have not been any remarkable change in attitude and the atmospheric temperature has continued to increase on a yearly basis.'

It is against this backdrop that South Africa clearly enshrined the concepts and principles of sustainable development and environmental ecological rights in section 24 of the Constitution of the Republic of South Africa, 1996. Section 24 is far more comprehensive and currently provides the constitutional foundation for all environmental governance efforts in South Africa. The section falls within the purview of the Bill of Rights therefore classified as a justiciable fundamental right.[33] The implication of this is that the principle of sustainable development is constitutionally enforceable in South Africa.[34] By explicitly providing for environmental rights presupposes that they are enforceable at the appropriate court up to the highest possible constitutional level.[35]

3. Environmental Concerns Associated with Decommissioning of Oil and Gas Installations in Nigeria

The concept of environmental risk refers to both hazardous outcome and a probability of its occurrence as a consequence of man's activities in the environment. It is noteworthy that the natural environment is not totally benign and scientific understanding is far from comprehensive.[36] Usually, before decommissioning operation takes place, the installation's process systems have to be depressurized, drained and cleaned. Parts of the operational discharges and system effluent will be taken ashore for disposal, and other waste will be re-injected down hole or discharged into the sea under licence.[37] Nigerian offshore platforms will have accumulated tons of radioactive scale in the course of their operation, some of which may escape into the onshore or marine environment. Deactivated structures even when drained will not be completely free from toxins. Clean decommissioned platforms contain at least a residual amount of low specific activity (LSA) scale, heavy metals, PCBs and hydrocarbons. Any structures left over in the marine environment will ultimately corrode and leach contaminants into the marine environment and accumulate within fish and other marine organisms consumed within the human food chain. Removal of structures through explosive cutting activity impacts on the immediate marine environment. Shock waves, for instance, are likely to kill or harm sea life. Research reports from Scottish, Norwegian and US Gulf of Mexico Fishermen Associations have expressed concern about explosive detonations killing substantial numbers of whales, fishes, turtles, and plankton.[38] It is considered that as far as possible, cold cutting (mechanical shears, abrasive water jets, cryogenics and diamond wire cutting) as well as thermal technology (e.g. themic lance, laser touch and plasma beam) be utilized in Nigerian waters. It is important to state that the external impact of explosives can be reduced through the use of shaped charges and limiting the amount of explosives. 530 of the 758 decommissioning operations carried out in the GOM between 1985-1994 utilised explosives. Greater use can be made of other subsea cutting techniques like cold cutting (mechanical shears, abrasive water jets, cryogenics, and diamond wire cutting) and thermal cutting (plasma, torch, laser beam and themic lance).[39] Unfortunately, non-explosive techniques are not particularly effective in the decommissioning of large offshore installations. Significant contamination can also result from drill cuttings. Drilling oil and gas wells results in contaminated cuttings that are dumped around the platform on the seabed.

[32] Millennium Environmental Assessment Board Living Beyond Our Means: Natural Assets and Human Well-Being (MEAB), Statement from the Board. <http://www.maweb.org/documents/document.429.aspx.pdf> accessed 8 May 2021.

[33] J Glazewski, *Environmental Law in South Africa* (Durban: LexisNexis Butterworths 2005)

[34] C Barnett, and D. Scott, 'The Reach of Citizenship Locating the Politics of Industrial Air Pollution in Durban and Beyond' [2007] *Urban Forum.* 18:289–309.

[35] L T Kotzé, 'The Judiciary, the Environmental Right and the Quest for Sustainability in South Africa: A Critical Reflection' [2007] (16)(3) *Review of European Community and International Environmental Law.* 298 - 311.

[36] T O'Riordan, 'Scope of Environmental Risk Management: Royal Swedish Academic Sciences' [1979] <http://www.jstor.org/pss/4312498> accessed 24 March 2022; M D Mehta, 'Risk Assessment and Sustainable Development: Towards a Concept of Sustainable Risk' *<http://www.piercelaw.edu/risk/vol8/spring/mehta.htm>* accessed 24 March 2022.

[37] G M Tilling, 'The Maureen Alpha Platform Decommissioning: Early Stages of Decommissioning Planning' (1996) The Economics of Platform Decommissioning, (Kuala Lumpur, 13-14 November, 1996) 9.

[38] A Pulsipher, *An International Workshop on Offshore lease Abandonment and Platform Disposal: Technology Regulations and Environmental Effects* (New Orleans: Louisiana 1996) 82; B G Twoney and S T S Al-Hassan, 'The Use of Explosive Technology for the Decommissioning of Offshore Installations' [1996] The Economics of Platform Decommissioning (Kualar Lumpur, 13-14 November 1996) 3. Further note that Nigeria has international commitments under the Biodiversity Convention to protect specie, habitat, fauna and flora.

[39] B G Twoney and S. T. S Al-Hassan (n 51)

Removal of structures or pipelines may disturb such drill cuttings and thus pollute the environment. These drill cuttings sometimes contain oil, drilling mud, and toxic chemicals with the potential to adversely affect any fish or organism on the sea bed. Once the installation is dismantled, the issue of disposal becomes pertinent. If an onshore disposal option is chosen, then there is the need to transport the structure to land. Such an act raises the risk of collision or grounding near shore causing significant environmental damage. When the decommissioned structure reaches shore, it contains many toxic chemicals and materials that must be carefully treated. Any waste material that is treated and disposed of in a land fill may in future years result in contamination of drinking or ground water in that area. Also storing such material over many years runs the risk of the hazardous chemicals escaping into the local environment. Even recycling that seems beneficial to the environment may cause problems. Removing the marine growths that have attached to the platform in decades of immersion in sea water will cause visual, smell, noise and atmospheric disturbance for the local community. The recycling advantage, however, is that such process will generate jobs and contracts for Nigerian shipyards. Where sea disposal of the decommissioned equipment is the preferred option, there are also repercussions of this action. Large steel structures and facilities such as the jacket, topsides, pipelines and footings consist mainly of steel materials. A typical large steel installation weighing around 40,000 tonnes is composed of 90% steel, 2% aluminum and 0.3% copper.[40] When the structure eventually deteriorates, the surrounding area will be exposed to materials ranging from iron to ecotoxicologically critical metals like lead, cadmium and mercury.[41] This is likely to impact on marine organisms as well as human populations through consumption of sea food.[42]

4. Challenges of Decommissioning of Oil and Gas Installations in Nigeria

Nigeria's decommissioning and abandonment legal regime faces many challenges. However, it is worthy of note that the Nigerian offshore oil and gas industry has not reached the maturity seen in the US Gulf of Mexico and the UK North Sea, and as a result, its fields are still in their productive phase.[43] Therefore, no decommissioning of offshore structures has taken place yet and to that extent, decommissioning is a future event. Having said this and noting the complexity of offshore decommissioning, it is essential that domestic law and regulations be established that takes cognizance of Nigeria's international law obligations (especially in the area of the environment) in order to properly plan for the end phase of offshore operations. The following are some of the challenges facing decommissioning and abandonment program in Nigeria.

Financial/Cost Implications

Deconstructing or dismantling a disused offshore rig from a technical or engineering perspective is usually more costly and difficult than the original installation process. While it may be possible to reverse the installation procedure in respect of some structures; other installations require some amount of innovation e.g. concrete gravity platforms. This is a legacy of the fact that the design and installation of platforms from the 1950s to the 1980s did not consider the need to remove such structures at the end of the lifespan of an oil facility. The Nigeria laws are ambiguous on who bear the cost of abandonment hence this is most times shifted to the government and NNPC. This is not so in other countries where decommissioning funds are deposited by operators before any license is given.

Environmental Implications

Environmental implication and cost to the impacted Niger delta region is equally a challenge. Once a platform is actually decommissioned and removed, there is a waste management problem concerning the way in which the structure is treated. Before any of the above outlined disposal options can be adopted, certain processes have to be undertaken. The most important is that all wells and well conductors have to be severed and plugged in line with applicable regulations. Tanks, pipelines and other process systems must be drained and cleaned. Operational consumables are removed to leave the bare steel or concrete structure. This process is important to ensure that decommissioned waste is not dumped indiscriminately into the marine ecosystem.

Environmental Risks

Environmental risk happens as a result of hazardous actions that occur due to the activities of man in the environment. Prior to decommissioning, the installation process systems have to be depressurized, drained and

[40] K Haker, M Sattler, J Scheelhaase and T Tschudin, *Socio-Economic Impact of Varying Decommissioning Options* (Basel: Prognosis AG August 1997) 41.

[41] *Ibid*

[42] A Finney, Oil Tanker Source Pollution, Prevention and Liability under International Conventions and Other Accords, Diploma thesis, University of Dundee, May 1982, 4; J. Burger, *Oil Spills* (New Jersey: Rutgers University Press, 1997) 79.

[43] The maturity of oil platforms flows from the inter-relationship among the oil reserve, market trends and the duration of the contract between the producing state and production companies accessed 7/8/2017

cleaned. Parts of the operational discharges and system effluent will be re-injected down hole or discharged into the sea under license.[44] It will be observed that the platforms used for jobs will still contain radioactive materials which could escape into the marine environment with the possibility of the sea being contaminated and poses danger to marine lives. Another harmful effect could occur when exposures are used to blow up installations. The danger here is the killing of whales, fishes etc. when the installations are dismantled and the decision is made to dispose them onshore, they are transported and in the process the environment gets affected due to collision. Where the decommissioned structure reaches shore, the toxic materials that it contains can also affect the land when they are being treated and it could affect drinking or ground water in the process.

Lack of Technological Capacity and Expertise

The lack of established expertise in technical oil and gas infrastructure is a great challenge in Nigeria. Most oil and gas infrastructure are imported abroad and merely assembled in Nigeria. It would therefore require experts from these importing countries to dismantle these gigantic facilities. At moment, Nigeria is yet to optimize her potential and capacity in this regard and this poses a great setback to decommissioning and abandonment.

Timing of decommissioning is left to multinational corporations

In Nigeria, the timing to kick start the decommissioning process is not explicitly defined in any legislation. Currently, the practice reflects a situation where multinational corporations are allowed to leave installations until the end of the lease, regardless of whether they are producing.[45] Thus, it would appear that the decision on the timing of decommissioning whether it is due or otherwise is completely left to the company's discretion. In addition, the EGASPIN demands that decommissioning process should be carried out within a year of abandonment,[46] but there is no apparent requirement for the multinational corporations operating in the industry to report to the regulator when a field has been abandoned or ceased production.

Unclear Plan for Financial Liability of Decommissioning

In practice, the decommissioning of oil and gas installations may be more costly than the initial construction.[47] Paterson noted that '[A]t the outset, part of the reason for these substantial sums is the fact that when the first generation of structures were designed and built, the practicalities of decommissioning were not considered.'[48] It is for this reason that clear plan for financial liability of decommissioning should be spelt out in the National petroleum legislation. Such provision would create a legally enforceable obligation on multinational corporations or contractors/licensees to ensure that there will be sufficient funds available for decommissioning as at when due.[49] The tradition of including a simple clause in the Production Sharing Contracts (PSCs)/Joint Venture Agreements (JVAs) in respect of who should bear decommissioning liability appears to be inadequate. This should be done with clear and specific responsibilities that will not be subjected to negotiations or become subject of disputes when the issue of decommissioning arises in the future.

Lack of specific decommissioning process in the system

A notable aspect of setting standards for decommissioning practices in oil-producing jurisdictions is by outlining a series of stages that define the obligatory process of decommissioning.[50] A cursory look at the EGASPIN will give the impression that there is in place a specific decommissioning process in the system, but by comparison with other oil-producing jurisdictions, it is not prescriptive and therefore only serves as a mere guidance. The provisions of EGASPIN on this require licensees to provide environment evaluation or plan if they have not included one in the original project from outset. As stated earlier, the implication of this is that multinational corporations can produce whatever they originally put in the construction plans which would have been already approved. Certainly, this will not encourage sustainable decommissioning practice in the industry.

Unclear Provision for Consultation with Interested Parties

The role played by the act of consultation with interested parties/stakeholders in the build up to decommissioning process cannot be overemphasized. It has been argued that consultation could be instrumental

[44] G M Tilling, 'The Maureen Alpha Platform Decommissioning: Early Stages of Decommissioning Planning' *The Economics of Platform Decommissioning* (Kuala Lumpur, 13-14 November, 1996) 9.

[45] G M Tilling (n 44)

[46] PART VIII-G (A) 2.1 of the EGASPIN

[47] L Moller, 'The Cost of Decommissioning: Government and Industry Attempt at Addressing Decommissioning Liabilities' [2007] 4 *OGEL* 265.

[48] J Paterson 'Decommissioning of Offshore Oil and Gas Installations' in G. Gordon, J Paterson and E Uusemez (eds.), *Oil and Gas Law Current Practices and Emerging Trends* (2nd edn, Dundee: Dundee University Press 2011) 287.

[49] *Ibid*

[50] Stakeholder Democracy Network

in improving any bad relationship between host communities and multinational corporations.[51] Although EGASPIN suggests consultation with host communities,[52] however, coupled with its unenforceability, it is not clear who should do this or how it is to be carried out. A major contribution to sustainable decommissioning practice in oil-producing jurisdictions is by engaging host communities and other stakeholders by way of consultation particularly in the case of onshore decommissioning.

Lack of post-decommissioning monitoring or evaluation plan

Another challenge that the current system in place may have to deal with in the future is the fact that there is little provision for monitoring the well sites for escaped gas after the decommissioning process. The decommissioning of an oilfield does not end with the removal of installations and other associated activities as required by relevant statues, there should be a robust system in place that will provide for subsequent monitoring of the field, perhaps for years after the decommissioning process has been carried out. In addition, there may be circumstances where the issue of residual liability may arise. This constitutes the potential obligation remaining after the successful decommissioning and disposal of petroleum installations and pipelines.[53] Unfortunately, this issue is not addressed under any of the international conventions. As regards Nigeria, it is presently unclear what those liabilities are under the current legal framework for decommissioning of energy installations in the industry.

5. Conclusion and Recommendations

The paper started by noting the need for a comprehensive decommissioning strategy to take care of the extant lacunae in Nigerian oil and gas law. It further observed that decommissioning is a future event that has not become a significant policy problem unlike the United Kingdom which endured the Brent Spar saga. The absence of state practice might unfortunately breed complacency. Nevertheless, decommissioning is a complex issue that needs to be resolved before offshore oil and gas fields reach the end of their productive span. Under international law, the obligation to decommission and dispose obsolete offshore platforms is imposed on host countries and not oil producing companies. There is thus an obligation on the part of the Nigerian government to put in place appropriate and comprehensive decommissioning guidelines and rules that address the complex interaction of environment, health and safety, cost, legal, engineering or technical, and political considerations. In the light of the forgoing and drawing from international best practices the following recommendations are made. This research reveals that laws on decommissioning and abandonment started at the international level, and international laws have better provisions on these issues. It is humbly recommended that such international laws be domesticated in other to get a more effective legal regime on decommissioning and abandonment. Nigeria laws are archaic and ambiguous and do not meet modern realities in the industry. Our laws are too clandestine, the host communities and the public are entirely shaded from the process, whereas, the effects are more on them. The process of decommissioning and abandonment should be open to the public as was in the case of Brent spar in Britain where public opinion helped in arriving at a more generally acceptable decommissioning process. There is need for site restoration. This is to ensure that the place should be kept much better than the company met it. Example is Jisike oil field which was owned by Chevron in Imo State; during restoration, contracts were given for economic trees to be planted which later boost the economy of the community.

[51] *Ibid* 6.

[52] PART VIII-G (A) 2.1 of the EGASPIN.

[53] J Paterson (n 48) 10.