

**ENFORCEMENT OF NIGERIA OIL AND GAS INDUSTRY CONTENT
DEVELOPMENT ACT 2010 AND TECHNOLOGY TRANSFER IN THE PETROLEUM
INDUSTRY**

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ABSTRACT

Nigeria is endowed with enormous natural resources including oil and gas; the sixth in global ranking. However the exploitation and utilization of these resources remains a critical challenge, largely on account of technology capacity gap. As a result Nigeria relies on International Oil Companies for major operations in the industry. The quest to address this challenge informed the enactment of the Nigeria Oil and Gas Industry Content Development Act 2010. Unfortunately, the enforcement of the Act has failed to address the technology gap, largely on account of the rentier character of the state which has encouraged violation of relevant provisions of the Act on technology transfer. The study adopted documentary method for data collection and analyzed using content analysis. The study recommends domiciliation of IOCs R&D departments in Nigeria and withdrawal of operational licenses among penalties for violation of the local content laws.

Keyword: Local Content, Petroleum, Technology Transfer, Joint Ventures, Rentier State, International Oil Companies

INTRODUCTION

Nigeria is endowed with abundant natural resources, particularly oil and gas. It is reported that Nigeria has the 6th largest hydrocarbon reserve and is the 4th producer of oil and gas in the world, contributing approximately 8% to global production. It also holds an estimated 36.5 billion barrel of crude oil and condensates and 192 trillion standard cubic feet of gas reserves mostly domiciled in the Niger-Delta .It is estimated that the petroleum industry contributes over 80% of Nigeria's export earnings, 70% of annual income and 30% of her gross domestic product, indeed the mainstay of Nigerian economy, including energy supply (NNPC2016).

Despite above impressive statistics and the centrality of the industry to Nigerian economy, the industry from inception is controlled and dominated by IOCs, largely on account of technological capacity gap. It is reported that an estimated \$8 billion is spent annually on servicing operations within the industry and this figure is projected to hit \$15 billion within the next few years (*Business Day*, August 4th, 2008). Unfortunately, very little proportion of the money is accruable to indigenous oil servicing firms. Majority of the amounts are paid to foreign firms for services such as Fabrication, Engineering Procurement Construction (EPC), Front End Engineering Design (FEED), Conceptual Designs and Seismic Studies. Even when the contracts are awarded to indigenous contractors, over 70% of the contracts are executed overseas as a result of death of indigenous capacity.

The result is capital flight as the profits from the contracts are repatriated abroad, where most of the equipment is manufactured; thus providing employment opportunities for citizens of those countries. In the light of the above the former executive secretary, NCDMB, Mr. Ernest Nwapa noted that “the industry exported two million job opportunities and suffered an estimated capital flight of about \$380 billion during the 30-year period, with over 95% of industry annual budget expended abroad” (*Vanguard Sweet Crude*, 22/12/2011).

Besides, the level of gas production and utilization in the country for both domestic and industrial purposes are relatively low. Research shows that Nigerians pay higher for gas products, which is not a reflection of the country’s natural endowment in this sector (NTWG Report on Energy, 2009). It is also estimated that Nigeria flares 17.2 billion m³ of associated natural gas per year in course of crude oil production. This volume of gas flared is equal to approximately one quarter of the current power consumption of the African Continent (Ajugwo 2013), largely on account of paucity of gas infrastructures.

Nigeria being a rentier state depends on oil and recently gas rents to run her economy. Hence relies on IOCs that have the technological capacity to harness her gas potentates including LNG. As such foreign investments in the gas sector are ran based on contractual regimes such as Joint Venture Contracts (JVC), Production Sharing Contracts (PSC), Sole Risk Contracts (SRC) and Pure Service Contract (PSC) with Nigeria National Petroleum Company (NNPC), largely on account of technology capacity gap.

Government efforts toward capacity building including technological development in the petroleum industry dates back to 1969, with the Amended Petroleum Act; this was shortly followed by Gulf Oil Company Fund Act No.25 of 1973. Others are the Petroleum Technology Development Fund Act of 1975, Amended Nigerian Petroleum Corporation Act of 1977 and NNPC directives. However Following decades of gas flaring, poor production and utilization, Federal Government in 1990 launched Nigeria Gas Policy, followed by Strategic Gas Master Plan in 2004; the latter saw to the enactment of Nigeria LNG (Fiscal Incentives, Guarantees and Assurance) Act, No. 39 of 1990, primarily aimed to attract foreign investment and development in the sector. Following these move; NNPC in 2008 organized the Nigeria Gas Master Plan Investors Road Show (NGMP): Abuja 15th May, London 19th May and Singapore 23rd May. In addition, the Federal Government since 1999 has taken far reaching steps aimed at liberalizing the sector including introduction of local content policy and lately the enactment of Nigeria Oil and Gas Content Development Act 2010.

Regrettably, six decades of oil and gas production and seven years into the passage of the local content Act, Nigeria still largely rely on IOCs for oil and gas production on account of technology gap as evident in various joint venture regimes. It is expected that through Nigeria participation in the contractual regimes, over a period it will develop indigenous capacity in LNG production. This study therefore becomes imperative as it sought to examine the implications of poor enforcement of NOGICD Act on technology transfer in the petroleum industry.

Earlier studies on local content and technology transfer in the petroleum industry in Nigeria focused on poor investment infrastructures, capital limitations, corruption, bureaucratic bottlenecks and death of indigenous capabilities as major obstacles to Nigeria local content drive (Balouga, 2012; Ihua, Ajayi & Eloji, 2010; Ovadia, 2013; Sule, 2011; Olorunfemi, 2001; Ezirim,

2012 ; Aturu, 2010 and Fanimu, 2009). However the issues identified above as challenges are rather indicators of weak enforcement, given that enforcement entails addressing those issues which invariably will yield high local content utilization and technology transfer in the industry. Warner (2007); Vaaland, Alabi and Owusu (2012); Chima, Owoduokit and Ogoh (2002) and Neff (2005) examined strategies toward boosting local content. Scholars referred above merely stated the obvious, given that remedies suggested like human capacity development, liberalization of the capital market, investment in R&D, demystification of the bidding process and in-country manufacturing are invariably the core issues covered by local content policy and Act. Therefore implementation of these measures, translates to high local content utilization, hence their analysis failed to provide adequate explanation for poor technology adaptation in the industry. In sum literature reviewed entirely glossed over the implications of poor enforcement of the Act on local capacity building, especially technology transfer in the petroleum industry, seven years into the passage of the Act.

Theoretical Framework

The interface between poor enforcement of the NOGICD Act 2010 and technology transfer in the petroleum industry will be explained using the theory of the rentier state as framework of analysis. The theory of the rentier state is a complex of associated ideas concerning the patterns of development and the nature of states in economies dominated by external rent, particularly oil rent (Yates, 1996). The concept of the 'rentier state' was postulated by Hossein Mahdavy with respect to pre—revolutionary Iran in 1970. The idea however assumed new importance in the decades following Mahdavy 's work. His ideas experienced a kind of renaissance in the 1980s in the literature of scholars like Beblawi & Luciani (1987), who were interested in the impact of oil wind fall on the nature of Arab States.

According to Beblawi & Luciani (1987), four characteristics must be present in order for a state to be classified as rentier. First, the rentier economy of which the state is a subset must be one where rent situations predominate. Secondly, the origin of the rent must be external to the economy. Thirdly, in a rentier state, few are engaged in the generation of rents, while majority is involved in the distribution and consumption. Finally, the government must be the principal recipient of the external rent in the economy.

The implication of the above is that external rent largely liberates the state from the need to extract income from the domestic economy. Thus, unlike a 'production' state that relies on taxation of the domestic economy for its income and in which economic growth is therefore an imperative, an 'allocation' state does not depend mainly on domestic sources of revenue. Rather, an 'allocations' state is the primary source of revenue itself in the domestic economy (Yates, 1996; Beblawi and Luciani, 1987). The theory postulates that rentier states exhibits indifference towards their socio-economic and technological backwardness. This arise from the ability of the rentier state to use their huge foreign earnings to purchase 'welfare and prosperity' from outside. Thus, the rentier elites' ability to embark on massive spending and consumption pre-empts some of the urgency for change and rapid growth to enlarge state resources.

The economic behaviour of a rentier state is distinguished from conventional economic behaviour, in that it embodies a break in the work—reward causation (Beblawi & Luciani, 1987). As rightly noted by Yates (1996), rewards of income and wealth in the rentier state do not

come as a result of work, but rather are the result of chance or situation, as well as power capacities to secure rent capture. The economy of a rentier state is largely monocultural. In situations of decline in oil receipts, government public spending capacity is reduced. This makes a rentier economy more vulnerable to external manipulations (Beblawi & Luciani, 1987; Yates, 1996). The rentier state reproduces its own rentier mode of survival within the local economy. More importantly, it turns the state apparatus, including both politics and bureaucracy into a rent-distribution bazaar (Roll, 2011).

Application of the Theory

The theory underscores Nigeria monocultural economy and reliance on rents from the petroleum industry. It also emphasises the poor development of its productive forces, especially technological capacity needed to harness the abundant mineral resources. Though ownership and control of all mineral rights in Nigeria are vested in the state, the prevailing state petroleum policy is that, through licensing it permits for the exploration and production of petroleum resources whether it is by a foreign or indigenous entity. The State also reserves the right to participate in any licensed bloc and to determine the type of contractual arrangements to or between members of allotted blocs.

However on account of poor petroleum technology infrastructures, Nigeria largely depends on IOCs to exploit her gas reserves in return for rents. Therefore given the strategic nature of the industry to Nigerian economy and the dominate roles IOCs play in the sustenance of petroleum production, most often strict enforcement of the local content Act and other laws are compromised in quest for greater revenue and financial gains. Besides, NCDMB is constrained by Federal Government drive to attract more foreign investments in the sector. Therefore strict enforcement of the Act may turn counterproductive, especially now demand for crude oil in the international market has drastically declined. In addition NNPC quest for profit maximization in joint ventures with IOCs also weakens the enforcement capacity of NCDMB, given that the board also depends on oil proceeds from those operations.

Furthermore the fact that Government does not rely on citizen's tax for revenue generation but rather on external revenue derived from oil and gas rents, the citizens show no interest on how these resources are utilized. And also are not affected by non compliance by IOCs to NOGICD Act 2010 provisions, especially on employment and training. Moreover since some of these external incomes are used to subsidize certain services for the wellbeing of the citizens, it renders them docile, corrupt, complacent and parasitic. This accounts for predominance of the public sector over private sector and even in the case of the latter the informal sector dominates over formal sector. The implication of this is that the government is the largest and ultimate employer of labour, creating a situation where the bureaucracy is grossly inefficient and ineffective to implement state laws in the petroleum industry.

The renterism of the Nigerian state has also created rentier mentality and class, that is, a group of government functionaries or elites of the Nigerian state who collude with foreign firms to subvert the Nigeria content policy by allowing them to operate under their business cover or names to win contracts in return for a proportion of the proceeds. The rentier class apart from acting as front for their foreign counterparts also struggle for greater portion of generated public fund. The above explains why the NCDMB lacks the capacity to effectively monitor and enforce

compliance with Nigerian content policy and legislations by operators in industry.

METHODOLOGY

The study adopted documentary method for data collection and synthesized using content analysis. The qualitative and non-experimental nature of the study accounts for the adoption of the above methodology. Moreover as an observer, contemporary experience in the petroleum industry was brought to bear, including opinions and views of stakeholders in the enforcement of the Act, to complement documentary evidence. In the same vein, content analysis was considered appropriate for the study not only because it suited contextual analysis but also useful when the task is to glean illuminate, interpret and extract valuable information, from which the researchers will draw inference from available evidence so as to reach conclusion.

RESULTS AND DISCUSSIONS

One of the basic theoretical propositions of this study is that Nigeria like other rentier state lack the will to enforce most of her legislations including NOGICD Act 2010. This is evident in the failure of the state to achieve its local content targets of 70% by 2015 in the petroleum industry. The NOGICD Act 2010 was enacted among other targets to accelerate technology transfer through employment, training and participation of indigenous firms in the industry. To achieve these objectives, the Act established Nigeria Content Development and Monitoring Board (NCDMB), charged with the responsibility to enforce provisions of the Act, make procedural guidelines and monitor compliance by operators within the industry. In relation to technology transfer, the Board is to ensure steady human and industrial capacity development. Specifically, the Board was mandated to enforce dominance of indigenous workforce in the managerial and technical positions and ensure steady development of human capital through deliberate and sustained efforts, programmes and policies.

The above are to be achieved through understudying, on-the-job training and project-driven training opportunities, such that over the life of a field development, local human capacity is developed in order to be available for another field development or project. Unfortunately seven years after the passage of the Act, the Board has not recorded significant improvement in the enforcement of the Act; especially in relation to technology transfer through employment, training and participation of indigenous firms in the industry.

Poor Compliance with NOGICD Act 2010 Provisions on Employment and Paucity of Indigenous Personnel in the Managerial and Technical Positions in Petroleum Industry

The failure of NCDMB to increase indigenous workforce in the managerial, technical and intermediary positions has led to continued dominance of the expatriates in all positions, in the industry, with attendant job losses and capital flight. The Act provides that operators in the industry shall employ only Nigerians in their junior and intermediate positions, while 5% of the managerial positions will be reserved for expatriates to protect investor's interests (NOGICD Act 2010). However, the present realities, is that indigenous work force occupy less than 9% of the

managerial and technical positions while intermediate positions are shared between foreign and indigenous staff. The most pathetic is that, half of the indigenous workforce under the junior and intermediate positions is on contract/casual appointment (Adewumi and Adenugba, 2014).

Though, Ozoigbo and Chukwuezi (2015) applauded the Act for having created about 40,000 jobs between 2010 and 2015, especially in petroleum production, servicing, distribution, bulk and retail marketing. The argument is that such has not translated into skill and knowledge development of the indigenous workforce, given that 50% of them are on contract/casual appointment. Therefore are not exposed to core training on how to manufacture, assemble and use critical petroleum equipments and machineries. The IOCs preference of casual/contract to permanent staff is rooted on capital accumulation “surplus value”, as the former do not enjoy most of the benefits accruable to permanent staff. Another explanation is fear of displacement, because if the casual workers are regularized, perhaps they may agitate for training in line with the provisions of NOGICD Act 2010 thereafter takes up positions and businesses previously controlled by the expatriates.

Besides the use of Nigerians as contract/casual workers, the deplorable manner at which they are relieved of duties has equally generated concern and criticism among stakeholders in the industry. The National Union of Petroleum and Natural Gas Workers (NUPENG) officials described the sack without notice of 94 staff of Mobile Producing Nigeria as barbaric and inhuman. They noted that the practice is common among IOCs, which constitute flagrant violation of relevant petroleum Acts, including the NOGICD Act 2010. They averred that the law provides only 5% for expatriate quota in the managerial position, the rest to be filled by Nigerians (*Sahara Reporters*, October 12th, 2011).

Ernest Nwapa in an interview collaborated the fact that displacement of indigenous staff by the expatriates in the industry is common, however implicated some government policies. According to him the Temporary Import Permit (TIP) for marine vessels, for instance is discouraging the ownership and registration of marine vessels in Nigeria, while empowering foreign vessel owners, since they are required to pay a token to government for bringing in vessels. This promotes the practice whereby vessels that work in Nigeria sail to neighboring countries to meet their TIP conditions and undergo repairs concurrently whereas such maintenance can be done at shipyards in Nigeria.

He also made reference to abuse of expatriate quota as another cause of job losses for indigenous personnel, not only in oil and gas industry, but virtually in other sectors of Nigerian economy. According to him the 1963 Act of Nigeria Immigration Service (NIS) made provision for the employment of foreigners in areas where Nigerians are lacking the required skills and knowledge. The NIS was mandated to issue business permit, enforce expatriate quota and monitor the quota granted in order to ensure effective transfer of technology to Nigerians and subsequently indigenize the position occupied by the expatriates. Unfortunately NIS has not be enforcing provisions of the law as foreigners are common in construction sites, factories, auto sale outlets, telecommunications and maritime companies doing semi-skilled and even menial jobs meant for Nigerians in line with local content policy (*Vanguard* December 22,2014).

In a related submission, Victor Briggs, National President, Rivers Youth Organization noted that the abuse of expatriate quota by foreign oil companies has rendered ineffective local contents initiatives:

Despite its good intention, the expatriate quota is now taking its toll on the nation's youths, as foreigners remain the preferred applicants in the labour market, especially in the oil and gas industry. Some of the oil companies are breaching the local content policy and were yet to key into the initiative, the failure of which is affecting the economy of the Niger Delta Region. Some of the companies have bluntly refused to engage locals for jobs that could be conveniently handled by them (*Sunday Vanguard*, February 26, 2015).

Table One: Composition of Nigerian and Expatriate Workforce in Leading Oil and Gas Firms in Nigeria: Shell, Total, Chevron, Mobile and Agip, 2010-2014

Year	Mgt				Professional				Intermediate Supervision				Clerical				Skilled Labour				Unskilled Labour				Others							
	Ng		Ex		Ng		Ex		Ng		Ex		Ng		Ex		Ng		Ex		Ng		Ex		Ng		Ex					
	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C
2010	11	-	40	-	3006	56	1291	1	1105	2089	3006	9	2465	2960	4	-	6270	4752	-	-	2870	2009	-	-	1109	89	-	-	-	-	-	-
2011	18	-	60	-	3662	102	1701	8	1471	2311	3488	4	2840	2134	3	-	7940	4971	-	-	3015	3153	-	-	987	1002	-	-	-	-	-	-
2012	17	-	61	-	3812	32	1602	2	1512	2004	681	15	2619	1974	11	2	8001	3842	-	-	3412	2986	-	-	1012	1032	-	-	-	-	-	-
2013	20	-	59	-	4117	403	1803	1	1484	1984	807	6	2432	2017	8	-	8021	4082	-	-	3017	2881	-	-	1213	1079	-	-	-	-	-	-
2014	22	-	58	-	4283	38	1752	3	1618	2001	816	2	2617	2092	17	3	8331	3947	-	-	3482	2947	-	-	982	1136	-	-	-	-	-	-
2015	23	-	60	-	4312	400	1810	15	1700	2042	900	20	2688	2300	10	-	8010	4000	-	-	3900	3000	-	-	1002	1042	-	-	-	-	-	-
2016	24	-	60	-	4562	400	1900	23	1712	2068	904	17	2800	2402	20	-	8772	4056	-	-	3912	3012	-	-	1080	1040	-	-	-	-	-	-

T	1	-	3	-	27	1	11	3	10	14	4	7	18	15	7	5	55	29	-	-	23	6	-	-	738	7	-	-
o	3		9		69	9	85	8	60	48	7	3	46	87	3		34	65			60	0			5	2		
t	6		9		2	5	9		2	7	6		1	9			5	0			8	1				2		
a	7		7			3					2											2				7		

Source: NCDMBM Monitoring and Evaluation Reports ,2010- 2016 (Researcher’s Compilation)

Data in table one implies that casual staff of indigenous workforce under the employment of IOCs between 2010 and 2016 stood at 75208 in all cadres except management position. While permanent staff of Nigerian origin was put at 143093, this implies that over 50% of indigenous workforce is under contract appointment, with no prospects for career development given their employment status. The table also vividly displays dominance of expatriates in the managerial and technical positions, contrary to the 5% provided in the NOGICD Act 2010 and other relevant laws in the industry.

In sum, the poor compliance of IOCs with the provisions of the Act on employment undermined diffusion of knowledge and skill between the expatriates and indigenous workforce. Beyond retarding technology transfer, poor compliance with the Act has encouraged capital flight given enormous emolument accruable to expatriates in the technical and managerial positions.

Poor Compliance with NOGICD Act 2010 Provisions on Training and Paucity of Indigenous Personnel with Requisite Skills and Knowledge in LNG Production

Training is one of the essential means through which capacity development and technology transfer could be achieved. This must have accounted for the emphasis laid on training of indigenous staff in the petroleum industry by the NOGICD Act 2010. Training involves the mastery and acquisition of the latest scientific skills and knowledge needed in the development and utilization of modern technologies. It is an essential component of any nation’s research and development programmes. Given that training is the practical and mental assimilation of the scientific know-how and its application. Training is essential in the industrialization process, given that newer technologies are emerging and human capital must reflect the development trends and challenges in science and technology.

Closely related to employment disparity between indigenous and expatriate staff is lopsided training in favour of expatriates in LNG production. This accounts for continued indigenous capacity gap in the sector, seven years after the enactment of NOGICD Act. Instead of IOCs investing on human capacity development of their indigenous workforce, they prefer inflow of skilled expatriates, who take up the jobs under the guise of skill gap and expatriate quota. By this, IOCs perpetuate the dominance of expatriates and confine indigenous work force to mere providers of support service.

The above explains why IOCs locate their R&D departments, especially in the Nigerian petroleum upstream sector abroad to prevent possible diffusion of technology. This equally is replicated in their training programmes in the major oil and gas operations. Given that R&D departments of IOCs are in charge of training, such centres are also located abroad. However, few yards exist where indigenous workforce are exposed to training on fabrication, welding and

other ancillary Services (Aturu, 2014). Table two shows upstream R&D location of some IOCs operating in Nigeria.

Table Two: Upstream R and D Location of Selected IOCs Operating in Nigeria

Companies	Location of main R & D department
Royal Dutch Shell	Rijawijk, The Netherland, Bellaire, Wood Creek, Westhollow, New Orleans all in the United States
Exxon Mobil	Houston, Texas in United States
Chevron	Richmond, San Raman, and Bellaire all in United States
ENI (AGIP)	Milan, Rome, Messina (Italy)

Source: Ramlongan, R; Shackley, S & Tebepah, E. (2015). Technological Development in the Nigerian Oil Industry: Issues on Local Content. Petroleum Technology Development Journal, 1, 11

The need for human capacity development was identified at the inception of oil and gas exploration in Nigeria. It was to meet the training needs of indigenous workforce that led to the establishment of Gulf Oil Company Fund in 1969. Besides, the shortfall in training needs of indigenous workforce was equally captured in the Petroleum Technology Development Fund (PTDF) skill audit and survey conducted in 2010. The exercise was aimed at ascertaining the training needs and skill gaps in the oil and gas industry. The study revealed that the necessary human capital required to meeting Nigeria content policy by 2015 included stimulation of technology transfer through training in skills, mentoring and apprenticeship in designing engineering works, fabrication, construction, service, maintenance and upgrade of existing educational facilities (Mohammed, 2009). Table three shows summary of the skill gap audit as conducted by PTDF in 2010.

Table Three: PTDF Industry-Wide Skills Gap Audit Survey, Summary Report 2010

Activities	45% by 2006	75% by 2010
Deep Water	2,430	4050
Fabrication	11,820	19,700
Well Service	1,680	2,800
EPCI	9210	15,100
Facilities	3000	5000
Total	38,700	46,950

Source; Mohammed, K.A. (2009). Nigeria Content Development: The Petroleum Technology

Development Fund Initiative, Journal of Petroleum Technology Development, 6(2), p. 4.

The implication of the data shown in the table above is that at 2006, 45% local content was achieved in deep water (2430), fabrication (11,820), well service (1680), EPCL (9210) and facilities (3000). Which means to meet 75% by 2010, 1,620 skilled personnel were needed in deep water to meet (4050) while 7,880 needed in fabrication to meet (19700). Also 1120 were needed in well service to meet (2800) and 5890 needed in EPCL to meet (15,100). In the same vein, 2000 were needed in facilities to meet (5000) as indicated in the table (Mohammed, 2009). The above implies that the 75% target was lost in 2010, as the industry needed additional 18,510 indigenous skilled personnel in the areas indicated.

It is pathetic to note, that the gap has doubled between 2010 and 2017 as captured by Mr. Patrick Daziba Obah, the Acting Executive Secretary NCDMB, in his maiden address to the board following his appointment last year. He noted as follows:

The Board inherited enormous challenge, issues ranging from causalization of workers to streamlinization of bidding process to increase participation of indigenous firms in the industry. We need to invest on human capital, the industry needs about 30,000 skill personnel across major operational areas, especially fabrication, facilities and marine services. We shall encourage deep water exploration, partner with NNPC and FG, the anti corruption of the present regime will encourage presence of Nigerians in the industry and lend support to the local content Act (*Vanguard*, August 7, 2016).

Government disposition towards capacity building, training, innovation, research and development, which are major drivers of technological development, is not equally encouraging. Government indifference towards capacity development is implicated in the IOCs neglect of their corporate mandate on staff training. Given that Government ought to have set the pace and through strict enforcement compel IOCs to cue in. Indigenous oil companies also share in the flagrant neglect of staff training as reflected in the meager amount of money spent on staff training between, 2013-2016 as shown in the table four.

Table Four: Training Expenditure and Innovation of the Indigenous Oil and Gas Firms in Nigeria, 2013-2016

Expenditure (Million Naira)	2013 (%)	2014 (%)	2015 (%)	2016 (%)
Training				
Less than 1	10	12.5	17.5	17.5
Between 1 and 5	5	12.2	32.5	35

Between 5 and 10	Nil	Nil	Nil	5
Innovation				
Less than 1	12.5	12.5	12.5	12.5
Between 1 and 5	5	12.5	12.5	15
Between 5 and 10	Nil	Nil	Nil	2.5

Source: Jegede O.O., H.O., Jesuleye, O.A and Siyanbola W.O. (2016). Status of technological capacity building in the indigenous oilfield servicing firms in Nigeria vis-à-vis innovation capability. Greener Journal of Science Engineering and Technology, 2 (1), P. 14

Besides, (PTDF) that supposed to integrate R&D in the oil industry, through creating synergy between research institutions and the oil industry is equally underperforming. The Fund has done very little towards capacity and technological development in the industry. From the mandate it is apparent that PTDF is not properly oriented towards capacity development. Chikwem (2014) had argued that instead of facilitating petroleum technology development through skill acquisition and training, the agency, by aligning with Federal Ministry of Education, freely encourages knowledge acquisition which though necessary, but insufficient to improve technology development in the oil and gas industry. This largely accounts for skill and knowledge gap in the industry, despite thousands of graduates that have acquired higher degrees in petroleum related disciplines through PTDF sponsorship. It is evident that IOCs and Government run few scholarship programmes as a way of addressing indigenous technological gap, however the problem is that they lacked precise plan for absorbing those graduates into the petroleum industry. Hence there is lack of synergy between universities and the industry such that researches and curricular are often not geared towards solving nagging national issues. Following the skill audit/survey report, PTDF and PTI are presently encouraging training programmes for indigenous workforce in the industry. The few participants were selected from IOCs, States and Federal Government. Candidates were meant to undergo training on welding and fabrication including under-water operations. However, the thrust of the argument is that IOCs have not done much in this regard, hence the failure to attain the local content targets in training at the end of 2010. Even after enactment of the Act in 2010, the situation has not changed as significant portion of indigenous workforce are not yet exposed to core training in LNG production as indicated in the skill and employment disparity between expatriates and Nigerians in the petroleum industry. Table five depicts the paucity of indigenous workforce selected for various training programme under PTI (Momoh, 2015).

Table Five: A Summary of PTI Consultancy Services Unit Training on Skill Acquisition for International Oil Companies and other Government Organizations

Name of Companies/Organizations	No. of Youths on Skill Acquisition
Shell Petroleum Development Company (SPDC)	203

Brass LNG	102
OSOPADEC	224
Chevron	87
Rivers State Government	120
UNOPS/UNDP	137
Presidential Amnesty Trainees	178
Scottville Consortium	320
Ministry of Niger Delta Affairs	103
Nigerian Agip Oil Company (NAOC)	46

Source: PTI Consultancy Service Unit, 2016.

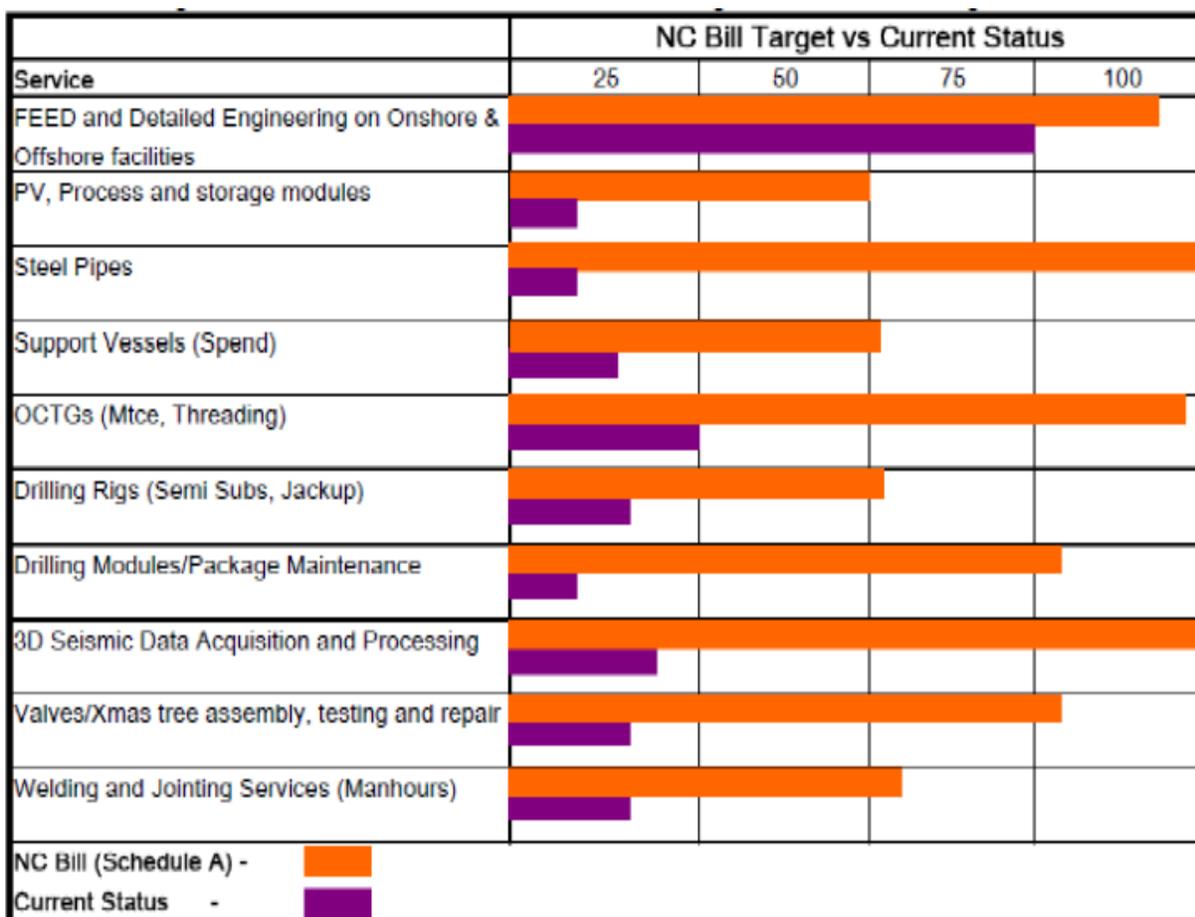
As indicated in the table, skills available to these trainees are not within the mainstream of oil and gas operations but on ancillary services like welding and fabrication. Though is a welcomed development, but quite poor compared to the capacity of the institution, skill gap and the numerical strength of casual/contract staff working with IOCs in the industry. These challenges account for inadequate indigenous skilled personnel to occupy managerial and technical positions in the industry. This also gives vent to reliance of indigenous oil companies on their foreign counterparts for expertise, which also limits the chances available for local workforce. Bello (2014) had noted that there exist over \$2 billion opportunities every year. But that inadequate indigenous skilled personnel to handle Front End Engineering Design (FEED), Detailed Engineering Design (DEED) and Conceptual Design Job inevitably deny indigenous firms such jobs and income.

It is pathetic to note that even when contracts are awarded to Nigerian indigenous contractors, over 70% of them are executed overseas, thereby defeating the core objective of Nigeria content development which is to develop in-country capacity by executing contracts in Nigeria using local content. This practice provides wealth and employment opportunities for the recipient countries, while only a fraction comes to Nigeria. This scenario is what the local content policy is meant to address. For instance, the former Executive Secretary, NCDMB, Mr. Ernest Nwapa asserted that oil industry exported two million job opportunities and suffered an estimated capital flight of about \$380 billion before 2010, with over 95% of industry annual budget expended abroad (*Vanguard*, December 22, 2011).

The common explanation for IOCs poor attitude towards capacity development of indigenous workforce is fear of losing their dominance in the industry. The calculation is that indigenous staff will displace the expatriates in the technical and managerial positions should IOCs encourage massive training, in line with the provisions of NOGICD Act 2010. Moreover IOCs training for indigenous workforce is akin to transfer of technology, which is never in their agenda. Government on its part is only interested in revenue collection, typical of a rentier state. Furthermore, the sustenance of the bond between Government (NNPC) and IOCs in joint ventures and the quest for higher profits by the former are achieved at the expense of proper

enforcement of the relevant laws, including the NOGICD Act 2010. Moreover since Government shares potential profits without having to make direct investment in exploration and production in the joint ventures, IOCs who provide such funds and materials will hardly observe Nigeria laws on technology transfer, local contents and environment issues. Hence the enforcement of NOGICD Act 2010 has not recorded a substantial success, especially in areas of capacity building. Figure one shows current status of selected Nigeria content targets as at 2016.

Figure One: Current status of selected Nigerian Content targets



Source: NCDMB, Local Content Initiatives: The Nigerian Experience [Powerpoint Presentation]

CONCLUSION AND RECOMMENDATIONS

The study examined the enforcement of the NOGICD Act 2010 and technology transfer in the petroleum industry. The study reveals that Nigeria is endowed with enormous petroleum

potentials, however that the exploitation and utilization of these resources remains a critical challenge to the country, largely on account of technology capacity gap. As a result Nigeria relies on IOCs for major operations in the industry. The quest to address this challenge informed the enactment of the NOGICD Act 2010. Unfortunately the enforcement of the Act has failed to address the technology gap, largely on account of the rentier character of the Nigerian state which has encouraged violation of relevant provisions of the Act on technology transfer. This position contradicts earlier studies that tend to implicate investment infrastructures for poor technological development in the industry. In view of the foregoing, the study recommends amendment of NOGICD Act 2010, to include provisions making it mandatory for operators in the industry, especially in the upstream to domicile their R&D departments in Nigeria before issuance or renewal of petroleum licenses, awards of contracts and involvement in joint ventures with NNPC. In addition penalties for non compliance with NOGICD Act 2010 provisions on employment, training and other capacity development initiatives in the industry should include withdrawal of operational licenses.

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