Development of the Nigerian Content in the Oil and Gas Industry

By

Professor T. O. K. Audu,
Department of Chemical Engineering,
University of Benin,
Benin City, Nigeria.

Published in:
Petroleum Technology Development Journal (ISSN 1595-9104)
An International Journal

July 2009 - Vol. 2
Abstract

An overview of the Nigerian content (NC) development, through Nigerian National Petroleum Company, NNPC, by the Federal Government of Nigeria is presented. NNPC has been promoting Government desire for greater Nigerian Content in the Oil and Gas industry with some measures of success. Capacity building is being pursued vigorously. The multiplier effects of ensuring greater involvement of Nigerians in the Oil and Gas industry cannot be over-emphasized. The efforts by the Petroleum Technology Development Fund, PTDF, on manpower development through provision of post graduate scholarship in oil-and gas-related courses, and the endowment of Chairs are discussed. Unfortunately, however, an enabling legislation by the National Assembly is yet to be put in place.

Introduction

Nigeria became a major oil producer in 1970. Ever since, her economic fortunes have become increasingly dependent on the returns from oil in the world market. The oil and gas sector provides almost 70% of the total revenue with 90% of the foreign exchange earnings coming from oil exports. Government invests as much as US $10 billion per annum in the sector. With 5.5 billion USD spent annually on procurement and services, less than 20% of this investment is domesticated resulting in a net overflow of about 4.4 billion USD from the country through technical services executed and goods procured outside Nigeria. It is the International Oil companies (IOC) that are the major players in the Industry. The Nigerian content is minimal. To redress the imbalance, Government decided to develop the Nigerian content policy with a view to ensuring greater participation of Nigerians in the sector. The local content policy initiated through the NNPC is aimed at encouraging the joint venture partners (JVP) to award reasonable contracts to Nigerian contractors, thereby increasing the proportion of the expenditures in the upstream sector with value addition in the local economy. Government therefore set a minimum target of 30% local content in oil and gas projects by 2003, increasing to 45% by 2006 and 70% by 2010.

What is Nigerian Content?

Nigerian content has been defined as the quantum of composite value added or created in the Nigerian economy through the utilization of Nigerian human and material resources for the provision of goods and services to the petroleum industry within acceptable, health safety and environment standards in order to stimulate the development of indigenous capabilities. Thus the target of NC is to develop in-country capability through the use of systematic resources to make Nigerians acquire skills and capabilities to participate fully in oil and gas business activities without compromising safety or standards.

Presidential directives have been issued by the NNPC to ensure the realization of the Nigerian content with the aim of domesticking a significant portion of economic derivatives from the oil and gas industry. Consequently, NNPC envision Nigerian Content as the transformation of the oil and gas industry into the economic engine for job creation and National growth by developing in-country capacity and indigenous capabilities. That way, the greater proportion of the work done would be in Nigeria with active participation of all sectors of the economy and ultimately Nigeria would be positioned as the ‘hub for service delivery within the West Africa sub region and beyond.’

NNPC has stated that while only 14% is invested in Nigerian content, 25% is invested in Indonesia with 50% in Norway and 70% in Malaysia and Brazil. In order to realize Government aspirations on the Nigerian content policy for the 2007 and 2010 targets. NNPC has issued short-term directives to all the stakeholders in the oil and gas industry. The scope of work on all exploration and production (E&P) projects that should be executed in Nigeria has also been indicated as follows:

- **FEED and detailed engineering design for all projects is to be domiciled in Nigeria**
- **Projects Management Teams and Procurement Centres for all projects in the Nigerian oil and gas industry must be located in Nigeria.**
- **Henceforth all operators and project promoters must forecast procurement items required for projects and operational activities and forward the material list NCD on or before 31st January of every year. Also, a master procurement plan (MPP) for ongoing and approved projects should be submitted to the Nigerian content Division of NNPC on or before 31st January of every year.**
- **Fabrication of all fixed (offshore and onshore) greater than 10,000 tons all items in directive 5, pressure vessels and integration of the topside modules are to be carried out in Nigeria.**
- **Henceforth, fabrication of all piles decks, anchors busy, jackets, piperacks bridges flare booms and storage trails including all galvanizing works for LNG and process plants are to be done in Nigeria.**
- **Henceforth, all flow-lines and risers must be fixed and must be fabricated in Nigeria except for special cases to be demonstrated and approved by NCD**
- **Henceforth, assembling, testing and commissioning of all subsea values, Christmas trees, wellheads and system integration tests are to be carried onto in Nigeria.**
- **All FPSO contract packages are to be bid on the basis of carrying out to pride integration in Nigeria. A minimum of 50% of the total tonnage of FPSO, topside modules must be fabricated in Nigeria**
- **All third party services relating to fabrication and construction including out not limited to NDT, mechanical tests, PWHT as well as certification of welling procedures and welders must be carried out in Nigeria. Nigerian Institute of Welding must certify all such tests in collaboration with international accreditation bodies.**
- **All operators and project promoters must ensure that recommendations for contracts awards in respect of all major projects being forwarded to NNPC/constituted boards of such oil and gas companies for approval must include evidence of binding agreement by the main contractor with Nigerian content subcontractor(s). such agreements shall indicate the cost and detailed scope including total man-hours of fabrication and relevant defining parameters for materials to be procured locally as well as other services**

---

• Henceforth, all low voltage feathering cables of 450/750 V grade and control, power, lightening cables of 600/1000 V grade must be purchased from Nigerian cable manufacturers. Further directives given are as follows:9
  • Henceforth, all line pipes sacrificial anodes, electrical switch gear paints ropes, pigs, heat exchangers and any other locally manufactured material and equipment must be sourced from in-country manufacturers.
  • All carbon steel pressure vessels shall be fabricated in Nigeria
  • All seismic data acquisition projects, all seismic data processing projects all reservoir management and storage services are to be carried out in Nigeria
  • Henceforth, all waste management onshore and swamp integrated completions, onshore and swamp well simulation, onshore fluid and mud solids control onshore measurement while drilling (MW) logging while drilling (LWD) and directional drilling (DD) activities are to be performed by indigenous or indigenous companies having genuine alliances with multinational companies.
  • Henceforth coating of all line-pipes and threading of all oil country tubular goods (OCTG) are to be carried out in Nigeria
  • Henceforth, all concrete barges and concrete floating platforms are to be fabricated in-country
  • Henceforth, operation and maintenance of offshore production units FPSO, FSO in particular are to be performed by Nigeria companies.
  • All international codes and standards used in the industry are to be harmonized to support utilization of locally manufactured products such as paints, cables steel pipes, rods sections ropes etc and to improve capacity utilization in local industries clauses that create impediments for (exclude participation of local companies should not be included in any ITT.
  • Operators and project promotions must ensure that recommendations for contract award for all drilling contracts shall include a binding agreement at Technical evaluation stage for the sourcing of Barite and Bentonite from local manufacturers.
  • Henceforth, all projects and operations in the oil and gas industry must demonstrate strict compliance with provisions in Insurance Act 2003 and submit a certificate of compliance issued by NAICOM to NCD as part of technical evaluation requirements for insurance or reinsurance contracts.
    In this respect, NAICOM verified gross underwriting capacity of Nigerian registered insurance companies must be fully utilized to maximize, Nigerian content before ceding risk offshore.
  • Henceforth all projects and operations in the oil and gas industry must demonstrate strict compliance with provisions of the Cabotage Act
  • All operators and service providers must make provisions for target training and understudy programmes to maximize utilization of Nigerian personnel in all areas of their operations. All operators must therefore submit detailed training plans for each project and their operations.

Implementation Framework
To give legal backing for these directives to be implemented, the NNPC has to submit a draft Nigerian content development bill to the National Assembly. The National Assembly is said7 to be debating the bill which seeks to define and set targets for Nigerian content in terms of company

---

ownership participation and capacity building and ultimately total spending by the oil and gas industry Nigeria.

Another key initiative put in place to achieve the targets of Government Nigerian content is an organizational framework that will ensure the implementation of the policy. This was the setting up of the Nigerian content division (NCD) headed by a group general manager in March, 2005 in the Office of the NNPC Group Managing Director.

The NCD is empowered to collaborate with industry stakeholders and appropriate arms of government to develop strategies, drive implementation and ensure compliance with directives by the oil companies. A Nigerian Content Consultative Forum (NCF) was also inaugurated with 8 sectoral working committees covering fabrication, engineering, manufacturing, banking and insurance, shipping and marine, well, and drilling, as well as logistic services.

A Joint Qualification System (JQS) has also been introduced into the contracting process to provide a data bank of available contractors and suppliers of goods and services to the Nigerian Petroleum industry and streamline the prequalification process. The JQS was to be launched in 2005 to eliminate subjectivity and provide genuine opportunities for participation of qualified Nigerian contractors.

How well have these initiative fared?
The state of affairs can be summed up by the statement credited to the Minister of State for Energy (Petroleum), Mr. H. Odein Ajumogobia, and the observation of Mrs. U. J. Adeniji, General Manager, Nigeria Petroleum Exchange. The Minister stated that the contribution of the oil and gas sector to the Nation’s gross domestic product was still low at about 35 percent, in spite of the huge income accruing from the sector.

On her own part, Mrs Adeniji observed that, capacity-wise, Nigeria had not been able to develop expertise in the deep water sector and onshore operation. She lamented the absence of an enabling legislation to back up Nigerian Content drive. She identified inadequate technical resource gaps in the curriculum and weak linkage between private sector and tertiary institutions as some of the factors militating against local content growth. Nigeria remains without specific local content legislation years after a bill to that effect was first presented to the National Assembly.

The consequence of the delay is that years of capacity building in skills and facilities are being lost. Massive investment by Nigerians encouraged by the Nigerian content policy, are also imperiled as they are not generated patronage and are further hamstrung by a tariff regime that is not supportive of local content aspirations. The loss to the economy is projected at USD 67 billion over five years.

In the absence of specific legislation the NNPC has been relying on existing laws to issue regulations and directives on local content.

10 NNPC (2008), Nigeria content Division, www.nnpcgroup.com/ncd.htm
Banking and Insurance

The Banking and Insurance sectors of the economy have not been left out in the NCD directives. Nigerian insurance companies are now involved in the issuance of oil and gas assets. There is high demand for funds in Nigerian oil service providers to

- obtain working capital for contract execution
- secure investment funds for upgrade of facilities
- finance manpower development plans
- procure tools equipment and machinery
- purchase and maintain service and support vessels
- build new facilities and plants

The need for funds has given birth to the establishment of the Nigerian Content Support Fund (NCSF) to provide local companies a lifeline to grow and compete for work in the industry\(^4\). The multiplier effects of the Fund include job creation and, domiciliation of industry spend.

Capacity Building

In the area of capacity building the NCD had undertaken to build capacity to

- train 1000 engineers in basic engineering design in 2006 in collaboration with PTDF (Petroleum Technology Development Trust Fund)
- facilitate certification and training of 1000 welders
- work with industry stakeholders to enable local manufacture of steel plate and pipes.
- work with PTDF and INTSOK to commence upgrade of selected fabrication yards in readiness for increased local fabrication\(^5\)

It was envisaged that there was potential for the creation of 10000 new jobs within the fabrication industry between 2006 and 2009.

To increase capacity utilization of local fabrication yards from an average of 30% per annum to full capacity required a fabrication-yards-programme upgrade. Consequently, new fabrication yards and expansion of existing ones were planned\(^6\).

Successes Recorded

Some successes have been recorded in Engineering as a result of Governments Directives on FEED and detailed engineering design, in-country:

- Emergence of mega engineering companies such as DELTAFRIK to enable local engineers acquire the technical competence for executing oil and gas jobs.
- Mobil Producing Nigeria Unlimited (MPNU) set aside for Nigerian companies over 75% of the engineering man hours in the exploration and production (E&P) projects of its satellite field Development Project. MPNU engaged a consortium of 8 indigenous engineering companies to provide local resources for execution of the job.
- Chevron Nigeria Limited (CNL) is said to have increased the contracts signed with selected local engineering companies from 3 to 5 years, the contract value of USD 16 million for each selected Nigerian engineering company.
- Also for the EGP3 Onshore project, Chevron and HHI awarded 10,000 man-hours of FEED to CAKASA Nigeria Limited an indigenous engineering company with a total of 15000 man-hours of design work planned for local companies in 2008\(^7\).

\(^7\) Nigerian Content (2008); Engineering, www.nigcontent.com/index.php
• Fabrication of flare boom for East Area Gas Project by WECO at Neptune Yard Port Harcourt, and fabrication Jacket by Grinaker at Rumuolumeni Yard. The East Area Gas Project is for enhancing production of additional oil recovery (AOR) through adequate maintenance of existing reservoirs, increasingly NGL (Natural gas Liquid) sales and eliminating flaring of produced gas.\textsuperscript{18}

• Breakthrough in Domiciliation of steel pipes supply;
  \begin{itemize}
  \item There is a marked growth in the utilization of locally manufactured products
  \item Commitments by international pipe manufacturers to establish pipe mills in Nigeria, Mittal Steel, for example, plans to establish a 300,000 Ton/annum capacity secondary steel pipe mills.
  \end{itemize}

• Road maps for Heat Exchanger and Air Fin Cooler fabrication (Assembly )
  \begin{itemize}
  \item NCD initiatives for promoting heat exchangers and air fin cooler fabrication in-county have attracted the interest of some foreign companies that are willing to enter into technical partnership with local fabricators like Niger Dock, Cakasa, etc.\textsuperscript{19}
  \end{itemize}

• Unprecedented Growth in the fabrication industry
  \begin{itemize}
  \item Annual tonnage has from 10,000 tons to 120,000 tons per annum with players like Nigerdock, Dorman Long Frezone upgrading and expanding their facilities to meet growing demand\textsuperscript{20}
  \end{itemize}

• Development of Deepwater infrastructure for offshore oil and gas activities support\textsuperscript{20} \textsuperscript{21}

• Oil and Gas Supplier Upgrade Programme (OGSUP)
  \begin{itemize}
  \item NCD together with operators, local manufactures and industry stakeholders brainstormed on building capacity for some bulk materials for the industry --- paints, cements, electrical cables, drilling mud, ropes, pipe coatings and bolts and nuts -- to enhance the capacity of local manufacturers and suppliers of the items\textsuperscript{22}.
  \end{itemize}

• Bridging of skill gaps
  \begin{itemize}
  \item Welding certification and training in modern welding techniques\textsuperscript{23}.
  \item Training in Engineering Design Software of 200 to 300 engineers, out of which number, 100 engineers have been trained in the use of HYSYS and 120 engineers in plant Design Management System (PDMS) with prospects for post training development\textsuperscript{24}.
  \end{itemize}

• Compliance with the Nigerian Content policy by Joint Venture Companies (JVC)
  \begin{itemize}
  \item In its tender number: S19176, (Invitation for Prequalification, Provision of Smart Well Equipment and Services), the Shell Petroleum Development Company of Nigeria Ltd stated as follows:
  \end{itemize}

\textit{Pursuant to SPDC and Federal Government Policy to provide opportunities for Nigerian contractors and the development of local expertise, all the applicants must comply fully with the Federal Government preference to Nigerian based companies or foreign companies with

\textsuperscript{18} Nigerian content (2008); Success stories, \url{www.nigcontent.com/index.php}
\textsuperscript{19} Nigerian content (2008) Materials and Manufacturing, \url{www.nigcontent.com/index.php}
\textsuperscript{21} also Nigerian content (2008): Fabrication and Construction page 3, \url{www.nigcontent.com/index.php}
\textsuperscript{22} Nigerian content (2008): OGSUP, \url{www.nigcontent.com/index.php}
\textsuperscript{23} Nigerian content (2008): Welding Certification and Training, \url{www.nigcontent.com/index.php}
\textsuperscript{24} Nigerian content (2008): Engineering Design Software Training, \url{www.nigcontent.com/index.php}
Nigerian affiliate which demonstrate willingness to execute the projects to the satisfaction of the Nigerian Content requirements and guidelines. Each applicant is enjoined to avail themselves of the Federal Government Directives on Nigerian Content for full compliance.

Suffice it to state that the Nigerian Content Policy is succeeding. The Oil and Gas Industry is a Large-Scale System. It is not surprising therefore, that the Nigerian nation and her people rely so overwhelmingly on the results, opportunities and benefits that can only be delivered from Large-Scale Systems. A nation that is capable and willing can create enormous opportunities and benefits for its citizens due to scope and scale. But for a nation that is incapable of creating enormous opportunities and benefits for its citizen, the process works in reverse: the nation reaps scarcity of opportunities as well as benefits for its citizens due to lack of scope and scale\textsuperscript{25}. The scope and scale for manpower development are enormous given the technology required in the industry. The role of the Petroleum Technology Development Fund (PTDF) in this area has become pertinent.

**PTDF**  
The PTDF is supporting Government effort in the Nigerian Content Policy through provision of scholarship for graduate students in subjects relevant to the oil and gas industry. The Fund is however unhappy that products of the programme are not being readily employed by the industry.

PTDF has also instituted some Chairs in some Nigerian Universities to promote local content. Unfortunately, however, the Executive Secretary of the Fund was credited with a statement, in one of the Nigerian daily newspaper, that some of the Chairs were not performing. The observation is not surprising given the fact that appointments to some of the Chairs are being politicized. A Chair in a University is an academic position that should be occupied through merit.

Consequently, PTDF should explore the possibility of expanding the scope and scale of each Chair by identifying the research areas in the subject matter of the Chair. Thereafter individuals or group of researchers could then send their proposals for research funding for consideration by PTDF. In addition to reducing politicization more hands will be on deck for better results.

**Conclusion**  
The Nigerian Content Policy implementation is well on course, and should be pursued vigorously. Nigeria stands to reap enormous strategic gains from the Policy. The National Assembly should expedite action on the Nigerian Content Legislation. The industry activities currently domiciled in foreign countries should be moved back to Nigeria for execution by local companies. The multiplier effects can best be imagined.

\textsuperscript{25} Asalor O. J. (2006): ‘Researching Large Scale Systems: A tool for Piloting Nigeria into the first World, Inaugural Lecture Series 87, University of Benin, October, 26 pg 10