Opportunities and Challenges of Effective Inspection Industry in Nigerian Petroleum Sector

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ABSTRACT

Nigeria plays a key role in the Gulf of Guinea, which has recently assumed remarkable importance in the global energy market. Effective deployment of appropriate inspection technology to the existing infrastructure and the upcoming ones are undoubtedly indispensable in ensuring the reliability, safe and economic use of these facilities, as well as, pivotal to achieving reserves target of 40bbl and daily production of 4mbd. Furthermore, the Nigerian content of 70 per cent by 2010 would also be enhanced. However, there are a number of challenges that must be addressed in order to actualise the expected aspirations. Among these challenges are technology transfer mechanisms, market intelligence, searching for technologies offering competitive advantage, keeping up to date with scientific / technological changes, and establishment of clear national policies and regulations. These challenges could best be seen as opportunities for ensuring safe engineering components and systems, and hence, a sustainable development. Such opportunities include: NDT education and research, training and certification, sales and services of NDT equipment, devices and consumables, transportation, storage and handling. Undoubtedly, a reasonable measure of economic independence would have been earned; this is the thrust of the Nigerian Content Initiative. This paper reviews the current trends and challenges in the inspection industry in the Nigerian petroleum upstream sector with a view to exploiting the opportunities towards achieving national aspirations.

Keywords: Nigerian Content, Upstream Petroleum Sector, Inspection Industry

1.0 INTRODUCTION

Today, Nigeria is one of the world’s top ten oil producers and Africa's leading producer with oil and gas reserves of over 31.5 billion barrels and 160 trillion standard cubic feet (seventh largest globally), respectively, with estimated average daily crude production in excess of 2.5 million barrels per day. Furthermore, national aspiration for 2010 is 40 billion bbls reserves and 4.5 million b/d production. Undeniably, the oil and gas sector is the economic mainstay of the Nigerian economy.

A lot of focus and obviously a lot of effort are currently geared towards getting Nigerians to be involved in the oil and gas activities. As a matter of fact, the industry and other stakeholders have upped activities on measuring and improving on the quantum. There are several levels of committee seeking ways to implement this. Besides, there are several legislative initiatives including bills and stakeholders meetings in pursuit of the national objective. The pertinent question however remains “How do we maximize local participation in Exploration and Production (E & P) operations in Nigeria and optimize its impact on the general economy of the nation in the face of daunting challenges?” This paper seeks to answer this question in general but with particular interest in the inspection activities given the recent increase in oil and gas industry activities in the country.

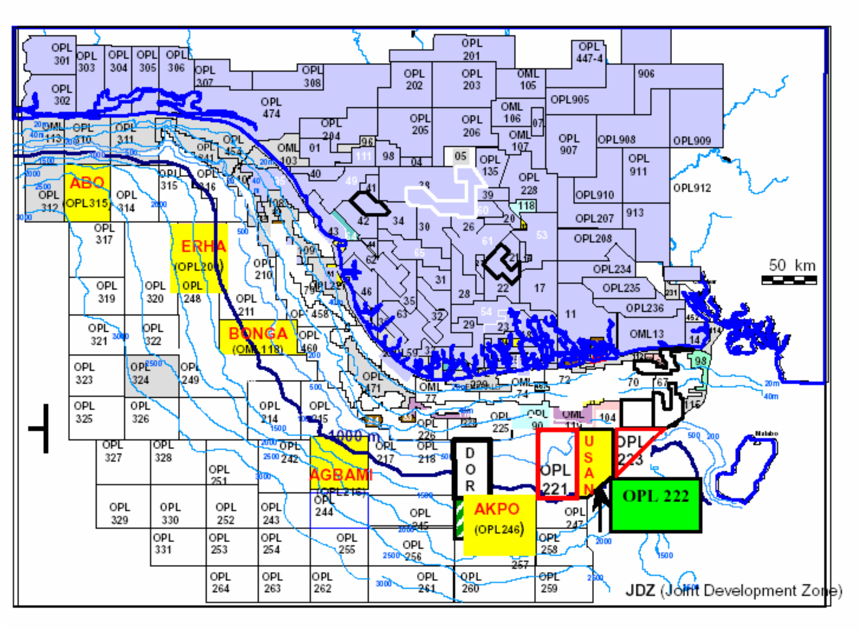

Figure 1: Oil and Gas concessions in Nigerian Offshore.

Local Content Development

At present, over $5.5 billion is annually budgeted in the industry with about $1.5 billion spent annually in the shipping segment of the industry. Out of this huge sum of money, Nigerians, unlike other producing countries, have an inconsequential share of the Oil and Gas business of their country as local participation is very low.

Worried by this situation, the Federal Government in 2003 initiated the Local Content Policy and consequently directed oil companies operating in the country to commence in-country fabrication of equipment as well as other major components used in the Oil and Gas exploration.

What this translates to is the inclusion of a Nigerian content percentage by the major oil operators in their bidding process. Thus, it is now necessary for foreign contractors and manufacturers to be realistic on the fact that no remote business is possible in Nigeria without at least, a commercial investment which means to get close to local partners. Previously also, local agents were recommended for doing business in Nigeria but the trend in the industry currently is to form alliances, joint ventures and technical partnerships in order to meet local content requirements.

In actualizing these achievements the role of the Government as a major stakeholder and driver of the process within the oil and gas industry has included to promote local content input in engineering and construction, supplies and materials utilization through in-country technological capability; to enhance Nigerianization in the industry and facilitate technology transfer and to stimulate the (exploration) interest of indigenous and foreign companies in frontier areas.

Inspite of all the positive changes highlighted, the oil and gas industry estimate puts current local content in the upstream oil and gas industry operations at 25% as against 80% for Brazil, 70% for Malaysia, and 50% for Norway, which are all oil and gas producing nations. This means that local indigenous participation in Nigeria is still grossly too low as against even some other third world oil producing countries.

The New Way

In order to address the aforementioned trend and to achieve 70% local content in 2010, the Nigerian National Petroleum Corporation (NNPC) has adopted a comprehensive and structured approach through establishment of:

- Legal framework
- Dedicated National Content Division in NNPC
- Multi-Sectorial Network
- Private / Public Sector Partnership

The "Nigerian Content" vision is to transform the oil and gas industry into the economic engine for job creation and growth. Nigerian content is simply 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". Such goods and services must be within acceptable quality, health, safety and environmental standards in order to stimulate the development of indigenous capabilities. This measure is aimed to:

- Develop in-country capacity and indigenous capabilities
- Ensure greater proportion of the work is done in Nigeria with active participation of all sectors
- Position Nigeria as hub for service delivery within the West African sub region and beyond
- Take Nigeria on path to industrialization – producer Nation

Quite a number of successes have been recorded. For instance, the Nigerian Content on Agbami FPSO is currently in excess of 6400T. Some of the national content components on Agbami include Flare Boom, Flare Scrubber Module, Suction Piles, Laydown Decks and Chemical Storage. [1]

2.0 CHALLENGES IN THE INSPECTION INDUSTRY

Many opportunities exist for capturing a larger local content share of the planned exploration and production spend across all activity areas. An analysis shows that Fabrication, Construction, and Engineering together account for about 35% of planned cumulative industry capex spend. (By contract activity, Engineering 9%, Procurement 54%, Fabrication 15%, Construction 11% and Installation 11%.)[2]

Major challenge is the capacity limitation in local infrastructure, companies, institutions and individual skills in:

- Fabrication
- Engineering Design
- Petroleum services
- Banking and Insurance
- Shipping

Some challenges and issues that are currently militating against the entrenchment of non-destructive testing (NDT) into the Nigerian quality system include the lack of the following:

- Establishment of clear national policies and regulations
- Acceptance and integration into national quality management system
- Technology transfer mechanisms

- Establishment of alliances
- Relationship between research, development and commercial activities
- Weak manufacturing facilities
- Technical personnel with necessary skills

3.0 OPPORTUNITIES

The abovementioned issues and challenges could best be seen as opportunities for ensuring safe engineering components and systems, and hence, a sustainable development of inspection infrastructure, especially in the Nigerian petroleum and allied industry. Such opportunities include: NDT education and research, training and certification, sales and services of NDT equipment, devices and consumables, transportation, storage and handling. Maintenance of existing infrastructure and the construction / operation of the upcoming ones provide a wide range of opportunities for the inspection industry. The upstream expenditure outlay in Table 1 and the few major projects in Table 2 corroborate this. Needless to mention are thousands of kilometres of intra- and inter- country pipelines, refineries, chemical plants and other onshore / offshore facilities.

It is worth mentioning the contribution of the National Centre for Non-Destructive Testing over the years in the area of training and certification. Successes had been made in the development of personnel in few NDT methods. However, a lot still has to be done for this nascent Centre to fulfil her role in popularising inspection in Nigeria. This also presents opportunities for collaboration.

Table 1: Nigeria Upstream Oil and Gas Expenditure Outlay. [3]

Expenditure Head	**2005 M (US$)**	**2006 M (US$)**	**2007 M (US$)**	**2008 M (US$)**
Offshore Capex	3,061	3,178	3,640	2,861
Onshore Capex	1,327	1,374	1,389	1,256
Offshore Opex	1,455	1,610	1,730	1,758
Onshore Opex	1,472	1,486	1,501	1,765
Total Expenditure	**7,315**	**7,648**	**8,260**	**7,640**

4.0 CONCLUSION

Nigeria, at present, needs a vibrant oil and gas industry that is anchored on sound, home-grown, human and technological initiatives, which can spur the revitalization of the oil and gas industry in particular (by increasing the Gross Domestic Product contribution of the oil sector) and the national economy at large. A real local content driven oil and gas development stands to be the wheel that could drive our country into the long-awaited era of productivity and prosperity. This need is made only more pressing today as we witness the demand by Nigerians for social and economic equity and more tangible benefits from our nation's abundant natural endowment of oil and gas resources.

The Nigerian petroleum and allied industry currently offers an ocean of opportunities for the inspection industry. Effective and efficient alliance with indigenous firms within a well articulated management system approach are essential in order to access and sustain the inspection business in the country, and indeed, the West African Offshore.

Table 3: Some Major Projects of Operator Companies[4]

S/N	COMPANY	MAJOR PROJECTS	ESTIMATED VALUE	PLANNED
1	CHEVRON NIG. LTD.	(i)Agbami Field Development (ii) Olokola (iii) West Africa Gas Pipeline (iv) EGP Onshore (v) EGP Offshore (vi) EGTL	$4.0B $7.0B $590M $500M $2.5B $1.7B	2000-2008 2005-2009 2005-2006 2005-2008 2005-2009 2005-
2	EXXON MOBIL	(i) ERHA Project (ii) Bosi Project (iii) East Area Gas Project	$2.6B $1.2B $1.5B	2002-2007 2004- 2005-
3	SHELL PETROLUEM DEVLOPMENT COMPANY [SPDC] SNEPCO	(I) BONGA Main (ii) BONGA S.W (iii) BONGA N.W (iv) GBARAN UBIE (v) BOLIA (vi) DORO Gas Project	$4.0B ON - HOLD	2003-2005 2006-2009 2009-2012 2005-2009 2005-2010 2006-2012
4	TOTAL	(i) AKPO Field Development (ii) OFON Oil & Gas Export (iii) USAN Project	$3.5B $500M Not Available	2005- 2004- 2005-
5	CONOCO PHILIPS	(i) Brass LNG Project	$3.5B	2005-2009

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