



2016

NIGERIAN OIL AND GAS INDUSTRY

ANNUAL
REPORT

DPR
DEPARTMENT OF PETROLEUM RESOURCES



Department of Petroleum Resources

2016 OIL & GAS ANNUAL REPORT

Table of Contents

1	REMARKS FROM DIRECTOR OF PETROLEUM RESOURCES	6
2	REGULATORY STRUCTURE OF THE NIGERIAN OIL AND GAS INDUSTRY	8
3	ADAPTATION OF NEW TECHNOLOGY IN THE OIL AND GAS INDUSTRY	9
3.1	INTRODUCTION	9
3.1.1	Objective of Technology Qualification	9
3.1.2	Scope of Technology Qualification	9
3.2	TECHNOLOGY ADAPTATION PROCESS	10
3.2.1	Overview	10
3.2.2	Stages of Technology Qualification Process	12
4	STATISTICAL DATA	15
4.1	UPSTREAM	15
4.1.1	Concessions	15
4.1.2	Speculative Survey Data Status	25
4.1.3	Marginal Fields	28
4.1.4	Reserves	29
4.1.5	Exploration	30
4.1.6	Rig Activities	30
4.1.7	Drilling and Well completion	30
4.1.8	Production	31
4.1.9	Nigerian Crude / Condensate Export	38
4.2	DOWNSTREAM	42
4.2.1	Refinery Activities	42
4.2.2	Petroleum Product Importation	46
4.2.3	Petroleum Products Importation / Local Production	51
4.2.4	Petroleum Products Average Pricing	52
4.2.5	Retail Outlets	52
4.2.6	Petrochemicals	56
4.2.7	Lubricant Blending Plants	56
4.3	GAS	58
4.3.1	Domestic Gas Supply Obligation (DGSO)	58
4.3.2	Gas Production And Utilization	60
4.3.3	In Pursuit Of Increased Domestic Utilization Of LPG In Nigeria	62
4.3.4	Gas Infrastructures	66
4.3.5	Major Gas Projects	70
4.3.6	Gas Pipelines	72
4.4	HEALTH, SAFETY AND ENVIRONMENT	78
4.4.1	Accident Report	78
4.4.2	Spill Incidence Report	81
4.5	REVENUE PERFORMANCE	88
4.5.1	The Role of Value Monitoring & Benchmarking (VMB) of Oil & Gas Projects and Operations in Nigeria	88
5	Glossary of Terms	90

List Of Tables

Table 1: Status of Oil Mining Leases (OMLs).....	15
Table 2: Status of Oil Prospecting Licenses (OPLs)	19
Table 3: Summary Of Acreage Situation As At 31 December 2016	24
Table 4: Multi-Client Data Projects Status as at December 2016	25
Table 5: Contract Signed by Speculative Survey Companies in Nigeria.....	26
Table 6: List of Marginal Fields	28
Table 7: Oil and Gas Reserves.....	29
Table 8: Seismic Data Acquisition	30
Table 9: Active Rig Trend by Terrain.....	30
Table 10: Rig Disposition by Terrain from January to December 2016.....	30
Table 11: Number of Wells drilled by Terrain	30
Table 12: Number of Wells drilled by Class	31
Table 13: Wells Drilled by Contract and Class in 2016.....	31
Table 14: 2016 Production Performance#	31
Table 15: 2016 Monthly Production#	32
Table 16: 2016 Petroleum Production by Contract*	33
Table 17: 2016 Fields Summary	34
Table 18: 2016 Summary of Production Deferments	35
Table 19 : 2016 Monthly Summary of Stabilized Crude / Condensates Volumes by Streams#	36
Table 20: Summary of Stabilized Crude / Condensates Volumes by Streams#	37
Table 21: Summary of Crude / Condensate Export by Crude Stream 2016	38
Table 22: Summary of Crude / Condensate Export	40
Table 23: Average Price of Nigeria's Crude Streams as Quoted by Platts in USD#	41
Table 24: Refinery Plants in Nigeria	42
Table 25: Refinery Capacity Utilization	42
Table 26: 2016 PMS Production Summary.....	42
Table 27: PMS Production by Refineries.....	43
Table 28: 2016 AGO Production Summary.....	43
Table 29: AGO Production by Refineries	43
Table 30: 2016 DPK Production Summary	44
Table 31: DPK Production by Refineries.....	44
Table 32: Disposition of Licensed Refining Companies in Nigeria.....	45
Table 33: Petroleum Products Volumes as per Import Permits Issued (Metric Tonnes) *	46
Table 34: 2016 Petroleum Products Volumes as per Import Permits Issued (Metric Tonnes) *	47
Table 35: Petroleum Products Import Summary, Metric Tonnes.....	48
Table 36: 2016 Petroleum Products Import Summary, Metric Tonnes.....	48
Table 37: Summary of 2016 Petroleum Products Importation by Market Segment, Metric Tonnes	49
Table 38: Summary of Petroleum Products Importation by Market Segment (2010 – 2016).....	50
Table 39: Petroleum Products Average Consumer Price Range (Naira per Litre)	52
Table 40: Retail Outlets Summary - Filling Stations Count	52
Table 41: Storage Capacities of Retail Outlets by States	54
Table 42: Petrochemical Plants	56
Table 43: List of Licensed Base Oil Marketers and Storage Capacities.....	56
Table 44: Domestic Gas Supply Obligation Performance.....	58

Table 45: Domestic Gas Supply Obligation From 2014-2017 for E&P Companies	59
Table 46: Summary of 2016 Gas Production and Utilization	60
Table 47: Summary of Gas Production and Utilization	60
Table 48: Major Gas Facilities.....	66
Table 49: Gas Processing Plant Projects.....	70
Table 50: 2016 Accident Report – Industry-wide	78
Table 51: 2016 Accident Report – Upstream	78
Table 52: 2016 Accident Report – Downstream.....	78
Table 53: Accident Report – Industry-wide	79
Table 54: Accident Report – Upstream	80
Table 55: Accident Report – Downstream	80
Table 56: 2016 Spill Incidence Report.....	81
Table 57: Spill Incidence Summary.....	82
Table 58: Produced Water Volumes Generated.....	82
Table 59: 2016 Drilling Waste Volumes.....	82
Table 60: 2016 Accredited Waste Managers	83
Table 61: Summary Of Waste Management Facilities.....	84
Table 62: 2016 Oil Spill Contingency Plan Activation	84
Table 63: Number Of Petitions Received In 2016.....	85
Table 64: Request For Approvals – Chemicals.....	85
Table 65: Summary of Accredited Laboratories	85
Table 66: 2016 Approved Production Chemicals Inventory	85
Table 67: Summary of Drilling Chemicals	85
Table 68: Applications For Environmental Restoration Services.....	86
Table 69: Environmental Studies#.....	86
Table 70: Approved Safety And Medical Emergency Training Centres	86
Table 71: Offshore Safety Permit (OSP) Summary.....	87
Table 72: Revenue Performance Summary	88

List of Figures

Figure 1: The Nigeria Oil and Gas Industry	8
Figure 2: High-level Work Flow for Evaluating Novel Technologies in DPR.....	11
Figure 3: Approved Criteria	11
Figure 4: Stage 1 Technology Appraisal.....	12
Figure 5: Distribution of Nigeria Concession by Lease Contract Type.....	24
Figure 6: Concession Map showing Open Blocks & PGS 3D Seismic	27
Figure 7: Concession Map showing Open Blocks & Polarcus 2D Seismic Lines.....	27
Figure 8: Concession Map showing Open Blocks & TGS-Petrodata 2D Seismic	27
Figure 9: Concession Map showing Open Blocks & PGS's Nigeria MegaSurvey.....	28
Figure 10: Marginal Fields Map, 2002 - 2004.....	29
Figure 11: 2016 Average Monthly Production.....	33
Figure 12: 2016 Oil Production on Company Basis.....	33
Figure 13: Percentage Distribution of Production (BOPD).....	34
Figure 14: Average Price of Nigeria's Crude Streams as Quoted by Platts	41

Figure 15: PMS Local Production vs Importation	51
Figure 16: AGO Local Production vs Importation.....	51
Figure 17: DPK Local Production vs Importation	51
Figure 18: Gas Utilized Versus Gas Flared	61
Figure 19: Domestic Gas Sales Versus Sales to NLNG (Export)	62
Figure 20: Gas Pipeline Map	72
Figure 21: NGTNC Schematic	73
Figure 22: Regulatory Framework	74
Figure 23: Contractural Framework.....	74
Figure 24: Commerical Operations	75
Figure 25: Where We Are.....	77
Figure 26: Fatal Versus Non Fatal Incidents	79
Figure 27: Downstream Versus Upstream Incidents	80

1 REMARKS FROM DIRECTOR OF PETROLEUM RESOURCES

The global crude oil market has been relatively stable in the last few months but going by past experience, the stability is not expected to be a permanent fixture. The Nigerian petroleum sector has been especially affected by the disruption occasioned by the 2014 price crash. This is due mainly to the mistaken assumption that the pre-2014 bullish market could hold much longer as the world seemed to be in the threshold of post peak-oil era. Novel technology especially on extraction of shale oil opened the fresh vistas for unconventional oil with significant destabilizing effects on conventional producers like Nigeria.

Two major lessons are discernible from the surge in oil production from the unconventional sources. First, although it is impossible to exactly forecast how technology would impact producibility of the remaining global oil reserves, we are bound to witness more technological surprises in the near future that would lead to the coming onstream of hitherto discovered but unproducible reserves. Technology would also help to find and produce new reserves from tough environments. The future of oil will therefore continually be influenced by access to new reserves made possible by technological innovation. Second and important lesson is that renewable energy will increasingly play bigger roles in the future global energy mix. The environmental issues, often showcased by the polar bear on a melting Arctic ice, will not go away. The depleting Arctic ice and concerns on the ozone layer will continue to put the green energy agenda in the front burner of global energy politics challenging the dominance of oil in the energy market.

The new oil from unconventional frontiers and the rising profile of green energy are posing considerable challenges and opportunities for Nigeria. More noticeably, increased access to unconventional oil reserves in the shale sector and the lifting of the self-imposed US oil export embargo have significantly shrunk demands for Nigerian oil in the United States, a former prime destination for Bonny Light and other Nigerian crude blends. The US has since changed from being a major market to a being major competitor for markets across the globe. Nigeria like other conventional oil producers around the world is also grappling with the growing competition for market space from the renewable energy sector.

Those market challenges also have ingrained in them new vistas of opportunities on oil and gas activities in Nigeria. Particularly, the unfolding realities are dictating the need for more institutional and operational efficiency to effectively compete in the shrinking market place and

for new investment opportunities to explore and develop new prospects. To this end the Senate has recently passed the Petroleum Industry Governance Bill (PIGB) and is now awaiting passage in the House of Representatives. Speedy promulgation of this law and the pending bills, including on fiscal governance of the industry would situate the Nigerian oil and gas sector on better pedestal to compete in the increasingly complex global energy terrain.

The Nigerian oil and gas sector is also renewing efforts to improve on efficiency to reduce production costs across terrain. The industry has already established an impressive fabrication and integration infrastructure in-country on the back of Egina, on which future deep water projects could latch to reduce cost. The Value Monitoring and Benchmarking (VMB) of Oil and Gas Projects and Operations in Nigeria is an initiative by the Department of Petroleum Resources (DPR) that is aimed at strategically aligning technical and economic equations that govern industry businesses and activities in line with extant laws. It introduces unique cost coding indicators for empirical analysis of oil and gas projects and operations, launching an industry that exude operational excellence and performance efficiencies with higher degree of costs predictability. The overall effect of this will be the shrinking of the uncertainties usually associated with project costs in the industry, which will cause a revisit to previously suspended projects.

Furthermore, the Department of Petroleum Resources, in a drive to improve regulatory efficiency across the value-chain, has embarked on implementation of strategic programs, such as the automation of all business processes and comprehensive upgrade of its standard operating procedures to deliver prompt and quality service to the industry.

This annual activity report on the Nigerian Oil and Gas Industry is the 4th Edition since the initiative resumed in 2013. It aims to provide critical information to the public on the activities of the industry in the year under review. I recommend it to our numerous stakeholders.

M. D. B. Ladan

2 REGULATORY STRUCTURE OF THE NIGERIAN OIL AND GAS INDUSTRY

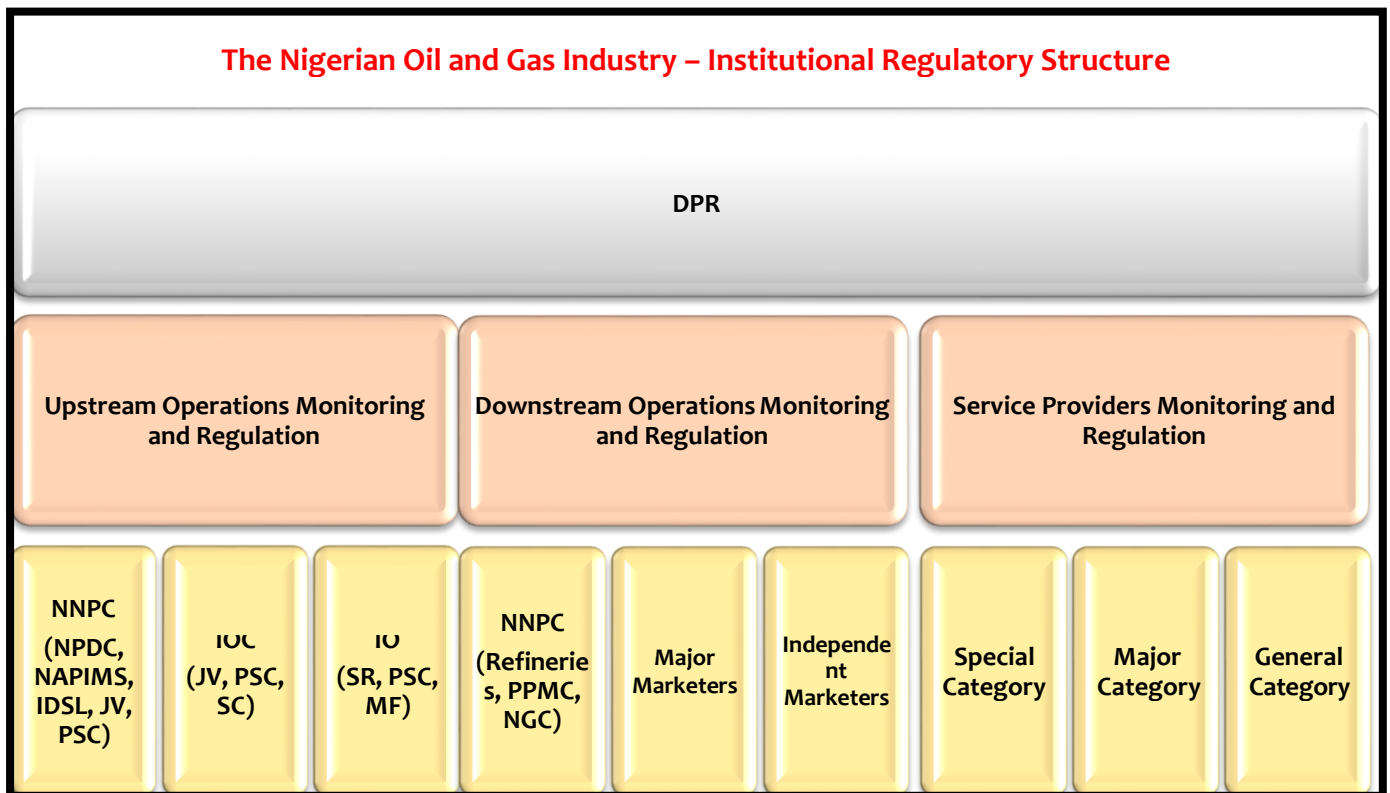


Figure 1: The Nigeria Oil and Gas Industry

Department of Petroleum Resources is the regulatory agency of the oil and gas industry in Nigeria. Specifically, the roles of the Department include:-

1. Conservation of Nigeria's Hydrocarbon Resources
2. Regulation and Monitoring of industry activities to ensure compliance with best standards & practices
3. Ensure safe, and environmentally sustainable development of the oil and gas operations' activities
4. Maintenance and administration of the national repository for archiving and retrieval of oil and gas data
5. Administration & management of acreages and concessions
6. Implementation of all government policies

3 ADAPTATION OF NEW TECHNOLOGY IN THE OIL AND GAS INDUSTRY

3.1 INTRODUCTION

Since the beginning of the modern age of the oil and gas industry, technology has played a fundamental role in supporting the efficient production of hydrocarbons. Oil and gas technologies are often destined for hostile, hard-to-reach environments such as deep offshore waters or in the high subsurface temperatures and pressures. New technologies can streamline the production, improve the recovery rate and provide economic benefits. The challenge is that new technology may involve potential threats with high uncertainties which must be properly mitigated and reduced to an acceptance level before the technology is implemented. New technology must therefore be qualified by a systematic process where the required performance is assured by identifying and managing these uncertainties.

DPR's Technology Qualification (TQ) process provides the industry with a systematic approach to the qualification of new technology. It is usually conducted by independent Testing, Inspection and Certification (TIC) agencies and / or regulatory authorities to validate the system and verify that it is fit for purpose and confirm its compliance with specifications.

3.1.1 Objective of Technology Qualification

The overall objective of the TQ is to provide a systematic approach on how the qualification should be carried out, in order to provide traceable evidence that the technology meets specified requirements for the intended use, within an acceptable level of confidence and that it is sufficiently reliable and safe for the people and the environment.

3.1.2 Scope of Technology Qualification

- Individual components in a system might be proven, however, when they are assembled in a novel way, the system as a whole may be considered a new technology with the attendant uncertainties.
- Proven technology in a new environment is considered new technology.
- Technologies that are not new but are yet to be covered by normative standards

To qualify new technologies, several industry standards and governing documentations are considered. These technical documents provide guidance, requirements, and input to the process. The DPR TA requirements cover both regulatory-specific requirements and compliance to industry standards.

3.1.2.1 Regulatory Specific Qualification Requirements

Proposals for new Technology Adaptation/Qualification must be accompanied by (a) DPR Oil Industry Service Company Permit, (b) letter of Relationship with Original Equipment Manufacturer(OEM) or Technology Provider and (c) evidence of Patents/ Intellectual Property Rights, where applicable

The TQ requirements cover the following technical activities:

- i. Technical Audit/Site Inspection of OEM and Nigerian Technology Partner
- ii. Laboratory evaluation of novel technology and on-site visits to facilities where technology has been deployed
- iii. Pilot implementation of qualified technology

Compliance to Nigerian oil and gas Legislation and subsisting regulations:

Technology Providers are required to comply with all relevant Nigerian Oil and Gas Legislation, Standards and Guidelines including but not limited to; (a) Petroleum Act 1969, (b) Petroleum Refining Act, (c) Oil Pipeline Act, (d) Petroleum (Drilling & Production) Regulations 1967 and (e) Mineral Oil (Safety) Regulation (MOSR) 1997

3.1.2.2 Compliance to Industry Standards

For any new technology to be accepted by DPR, it should demonstrate its compliance with relevant current industry rules or regulations by a relevant and documented qualification process:

International Rules, Standards and Guidance notes like IMO SOLAS (International Maritime Organization Safety of Life at Sea), BV (Bureau Veritas) rules, ISO (International Organization for Standardization) and API (American Petroleum Institute) are a few of the applicable qualifications guidelines, rules and regulations.

3.2 TECHNOLOGY ADAPTATION PROCESS

3.2.1 Overview

The Technology Adaptation process is a methodology developed with specific acceptance criteria for technology under review. This is focused on, but not limited to the **functionality, performance, reliability / maintainability, availability** and **safety & environmental considerations**.

The TA process includes, but is not limited to, the following activities:

- Identifying technology elements and their readiness levels
- Assessing risks posed by the elements
- Establishing acceptance criteria and goals
- Evidence collection
- Further analysis and testing including test failure analysis
- Performance review.

It can be implemented at any stage during the lifecycle of development of systems or technology. The outcomes of the process at one stage of the TA process will be used as inputs for the next stage. Traceability from qualification requirements, qualification activities, testing results, qualification results (including recommendations to mitigate identified risks) is ensured throughout the whole Technology Adaptation process.



Figure 2: High-level Work Flow for Evaluating Novel Technologies in DPR

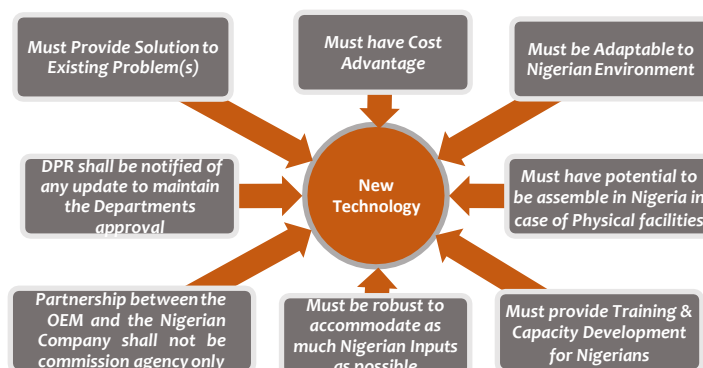


Figure 3: Approved Criteria

3.2.2 Stages of Technology Qualification Process

The technology qualification process deals with a structured set of steps assembled in series and connected to a modification stage. This ensures that uncertainties are reduced to an acceptable level and documented prior to approval.

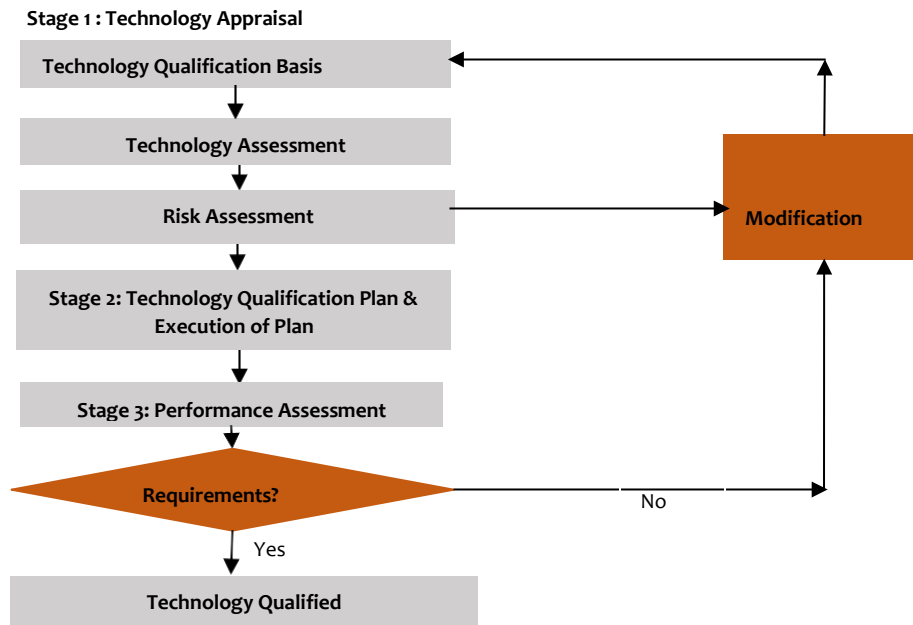


Figure 4: Stage 1 Technology Appraisal

The **Technology Adaptation Process** is described as follows:

1. **Technology Qualification Basis:** The first stage is where the qualification basis is established. It defines the technology's main objectives, where and how the technology is intended to be used, as well as expectations, technical specifications, functional requirements, environmental parameters, and acceptance criteria through the life cycle.
2. **Technology Assessment:** This step performs an assessment of the technology and determines its degree of novelty where its key challenges and uncertainties are identified. The input to the Technology Assessment includes but not limited to the following supporting documents, which are to be submitted by the applicant:
 - Equipment List
 - Detailed drawings of the items to be qualified
 - Drawings and description of control and safety systems
 - Material specifications
 - Outline fabrication, installation, inspection and maintenance procedures

- Existing evidence claimed to support qualification (e.g. test reports and documentation of experience).
3. **Risk Assessment:** This identifies the failure modes of the technology, and corresponding failure mechanisms as well as associated risk. The assessment process aims to ensure that all reasonably foreseeable hazards associated with a particular technology are identified and adequately controlled, such as hazards related to novel aspects of system integrity failure, and control/isolation failure.
 4. **Technology Qualification Plan:** This is used to provide necessary qualification evidence on how to manage potential unacceptable failure modes. The plan provides for activities that shall obtain reliable evidence and meet requirements stated in the technology qualification basis. The activities shall first of all seek to reduce the failure modes with highest uncertainties. The qualification method may be numerical or analytical analyses, experiments, testing, empirically justified through previous experience or similar methods which are intended to build confidence

In specifying qualification activities, the following are part of the aspects that are considered:

- Analysis to assess the performance of individual elements or the system evaluated
 - Detailed risk analyses where applicable
 - Modelling and numerical simulation might be used to predict the potential performance of the novel technology.
 - Prototyping can be used to provide confidence that the technology can function according to requirements
 - Manufacturability
 - Material (destructive or non-destructive) testing
 - Function testing to demonstrate the performance of the technology
 - Proof testing which will demonstrate the limits of the technology
 - Audits (e.g. personnel, manufacturing facilities, software,)
5. **Execution of the Plan:** The planned activities are executed and qualification evidence obtained through experience, numerical analysis and test.

The execution of the Technology Qualification Plan consists of the following key steps:

- Carrying out the activities in the Technology Qualification Plan.
- Collecting and documenting the data generated by the respective qualification activities.
- Ensuring traceability of this data.
- Determining the performance margin for each failure mode

6. **Performance Assessment:** In this last step, the qualification evidence is assessed against the technology qualification basis. This is to provide confidence and remove uncertainty from the links between the evidence, failure modes and the requirements in the Technology Qualification Basis. The outcome constitutes the deliverable of the Technology Qualification Process and is the only measure of the confidence that has been established in the technology.

Finally, if the performance assessment concludes that some functional requirements of the new technology are not met, risk control options (modifications to the new technology) and further qualification activities are identified. This can include tightening of the operating envelope for the new technology or enhanced inspection and maintenance and repair strategies to meet the requirements based on the existing evidence. If none of these are feasible, the Technology Qualification has failed. Otherwise, if all functional requirements are met then the technology is qualified for deployment.

- ¹ *Guidance Notes for Technology Qualification*, 2014. Lloyd's Register, London, United Kingdom
- ² Mehrdad Sabetzadeha,_, Davide Falessib, Lionel Briand , Stefano Di Alesi. *Technology Qualification Technologies: Foundations, Tool Support, and Industrial Validation*, 2013. Reliability Engineering and System Safety Journal.
- ³ *Procedure for failure mode and effects analysis (FMEA)*. IEC 60812 (2006). International Electrotechnical Commission, Geneva.
- ⁴ *Qualification procedures for new technology*. DNV-RP-A203, Det Norske Veritas Høvik, Norway (DNV), 2011. Available at: <http://exchange.dnv.com/publishing/Codes/download.asp?url=2011-07/rp-a203.pdf>.
- ⁵ *Risk Based Qualification of New Technology - Methodological Guidelines*, NI 525 (2010), Seine Cedex – France
- ⁶ *Technology Qualification Management and Verification Service Specification*, DNVGL-SE-0160 (2015), Det Norske Veritas, Høvik, Norway
- ⁷ *Technology Qualification*, WR 1622 (2009).. Statoli ASA, 5.05 edition

4 STATISTICAL DATA

4.1 UPSTREAM

4.1.1 Concessions

Table 1: Status of Oil Mining Leases (OMLs)

S/N	CONCESSION HELD	TYPE OF GRANT	AREA (SQ.KM)	EQUITY DISTRIBUTION	BASIN / TERRAIN	OPERATOR	DATE OF GRANT	DATE OF LEASE EXPIRATION	REMARKS
1	OML 29	JVC	983	AITEO-45%, NNPC-55%	Niger Delta (Onshore)	AITEO EASTERN E&P CO. LTD (AITEO)	01.07.1989	30.06.2019	1. Aiteo acquired 45% interest from SPDC through divestment 2. Producing
2	OML 120	SR	910	ALLIED-97.5%, CAMAC-2.5%(ERIN ENERGY-100%)	Niger Delta (Deep Offshore)	ALLIED ENERGY RESOURCES NIG. LTD	27.02.2001	26.02.2021	Producing
3	OML 121	SR	885	ALLIED-97.5%, CAMAC-2.5%(ERIN ENERGY-100%)			27.02.2001	26.02.2021	Non-producing
4	OML 112	SR	438	AMNI-60%,ELF-40%	Niger Delta (Cont. Shelf)	AMNI INTERNATIONAL PETROLEUM LTD	12.02.1998	12.02.2018	Producing
5	OML 117	SR	51	AMNI-60%,ELF-40%			06.08.1999	5.08.2019	Non-producing
6	OML 52	JVC	247	AMNI OML 52-40% NNPC-60%	Niger Delta (Onshore)	AMNI INT'L PETR. DEV. CO. LTD	14.06.1997	13.06.2027	1. Acquired 40% equity from Chevron through divestment 2. Non-producing
7	OML 109	SR	772	ATLAS-70%, SUMMIT OIL-30%	Niger Delta (Continental Shelf)	ATLAS PETROLEUM NIG. LTD	25.05.1996	24.05.2016	1. Producing 2. Renewal process ongoing
8	OML 55	JVC	849	BELEMAOIL-40% NNPC-60%	Niger Delta (Onshore)	BELEMA OIL PRODUCING LTD.	14.06.1997	13.06.2027	1. Acquired 40% equity from Chevron through divestment 2. Producing
9	OML 110	SR	966	CAVENDISH-100%(CAVENDISH-100%, NIKOIL-40%)	Niger Delta (Cont. Shelf)	CAVENDISH PETROLEUM NIG. LTD	07.08.1996	6.08.2016	1. Non-producing 2. Applied for the lease renewal
10	OML 49	JVC	1707	NNPC-60%, CNL-40%	Niger Delta (Onshore)	CHEVRON NIG. LTD.	14.06.1997	13.06.2027	Producing
11	OML 51	JVC	145	NNPC-60%, CNL-40%	Niger Delta (Onshore)	CHEVRON NIG. LTD.	14.06.1997	13.06.2027	Non-producing
12	OML89	JVC	364	NNPC-60%, CNL-40%	Niger Delta (Cont. Shelf)	CHEVRON NIG. LTD.	18.08.2014	17.08.2034	Non-producing
13	OML 91	JVC	157	NNPC-60%, CNL-40%	Niger Delta (Continental Shelf)	CHEVRON NIG. LTD.	18.08.2014	17.08.2034	Non-producing
14	OML 86	JVC	385	NNPC-60%, CNL-40%	Niger Delta (Continental Shelf)	CHEVRON NIG. LTD.	18.08.2014	17.08.2034	Producing
15	OML 88	JVC	773	NNPC-60%, CNL-40%	Niger Delta (Continental Shelf)	CHEVRON NIG. LTD.	18.08.2014	17.08.2034	Producing
16	OML 90	JVC	653	NNPC-60%, CNL-40%	Niger Delta (Continental Shelf)	CHEVRON NIG. LTD.	18.08.2014	17.08.2034	Producing
17	OML 95	JVC	1217	NNPC-60%, CNL-40%	Niger Delta (Continental Shelf)	CHEVRON NIG. LTD.	18.08.2014	17.08.2034	Producing
18	OML 132	PSC	804	CHEVRON-100%	Niger Delta (Deep Offshore)	CHEVRON NIG. LTD.	20.12.2005	19.12.2025	Non-producing

S/N	CONCESSION HELD	TYPE OF GRANT	AREA (SQ.KM)	EQUITY DISTRIBUTION	BASIN / TERRAIN	OPERATOR	DATE OF GRANT	DATE OF LEASE EXPIRATION	REMARKS
19	OML 131	PSC	1210	OANDO-52.5%,EXXON MOBIL-47.5%	Niger Delta (Deep Offshore)	OANDO PLC	24.04.2005	23.04.2025	1. Acquired contractor's right from Conophillips through divestment 2. Non-Producing
20	OML 103	SR	914	CONOIL -100%	Niger Delta (Onshore)	CONOIL PRODUCING LTD	02.06.1993	01.06.2013	1. The lease renewal process ongoing 2. Producing
21	OML 136	SR	1295	CONOIL-60%,TOTAL-40%	Niger Delta (Continental Shelf)		27.07.2006	26.07.2026	Non-producing
22	OML 59	SR	836	CONOIL -100%	Niger Delta Onshore	CONTINENTAL OIL & GAS COMPANY LTD. (CONOG)	06.06.1998	05.06.2018	Producing
23	OML 150	PSC	428	CONOIL -100%	Niger Delta Onshore		10.03.2016	09.03.2036	Non-producing
24	OML 96	SR	221	DUBRI -100%	Niger Delta (Onshore)	DUBRI OIL CO. (NIG.) LIMITED	02.05.2013	01.05.2033	Producing
25	OML 138	PSC	656	SINOPEC-20%,EXXON-30%,CNL-30%,NEXEN-20%	Niger Delta (Deep Offshore)	TOTAL EXP & PROD.NIG. LTD.	17.05.2007	16.05.2017	Producing
26	OML 139	PSC	656	TOTAL-100%	Niger Delta (Deep Offshore)		17.05.2007	16.05.2017	Non-producing
27	OML 99	JVC	171	NNPC-60%, TOTAL-40%	Niger Delta (Continental Shelf)	TOTAL EXP & PROD.NIG. LTD.	02.05.2013	01.05.2033	Producing
28	OML100	JVC	179	NNPC-60%, TOTAL-40%	Niger Delta (Continental Shelf)		02.05.2013	01.05.2033	Producing
29	OML 102	JVC	796	NNPC-60%, TOTAL-40%	Niger Delta (Continental Shelf)		02.05.2013	01.05.2033	Producing
30	OML 58	JVC	518	NNPC-60%, TOTAL-40%	Niger Delta (Onshore)		14.06.2007	13.06.2027	Producing
31	OML 141	SR	1295	EMERALD-53.9%, AMNI INTNL-44.1%, SUPERNOVA ENERGY (BLUEWATER GROUP)-2%	Niger Delta (Onshore)	EMERALD ENERGY RES. LTD	08.11.2007	07.08.2027	Non-producing
32	OML 148	PSC	870	ENAGEED 100%	Niger Delta (Onshore)	ENAGEED RESOURCES LTD.	15.05.2015	14.05.2035	Non-producing
33	OML 18	JVC	1035	EROTON-45%, NNPC-55%	Niger Delta (Onshore)	EROTON E&P CO. (EROTON)	01.07.2009	30.06.2019	1. Acquired 45% through divetment from SPDC 2. Producing
34	OML 133	PSC	1100	EXXON -56.25%, SNEPCO-43.75%	Niger Delta (Deep Offshore)	ESSO E & P. LTD	08.02.2006	07.02.2026	Producing
35	OML 145	PSC	1293	ESSO 20%, Svenska 20%, Phillips 20%, Chevron 20%, NPDC 15%, Sasol 5%	Niger Delta (Deep Offshore)		30.05.2014	29.05.2034	Producing
36	OML 108	SR	759	EXPRESS-57.5%, SHEBBAH-40%, CAMAC-2.5%	Niger Delta (Continental Shelf)	EXPRESS PETROLEUM & GAS CO. LTD	01.11.1995	31.10.2015	1. Renewal process ongoing 2. Producing
37	OML 83	JVC	109	FIRST E&P/DANGOTE-45%, NNPC-55%	Niger Delta (Continental Shelf)	FIRST E&P	18.08.2014	17.08.2034	1. Acquired 40% equity from Chevron through divestment 2. Non-producing
38	OML 85	JVC	515	FIRST E&P/DANGOTE-45%, NNPC-55%	Niger Delta (Continental Shelf)		18.08.2014	17.08.2034	
39	OML 71	JVC	730	WAEP/DANGOTE-45%, NNPC-55%	Niger Delta (Continental Shelf)	WEST AFRICAN E&P CO. LTD (WAEP)	18.12.2014	17.12.2034	1. Acquired 45% equity from SPDC through divestment 2. Non-producing
40	OML 72	JVC	1129	WAEP/DANGOTE-45%, NNPC-55%	Niger Delta (Continental Shelf)		18.12.2014	17.12.2034	Producing
41	OML 149	PSC	941	NAOC - 48%, Global Energy 42%, BLJ Energy Ltd - 10%	Niger Delta (Onshore)	GEC PETROLEUM DEVELOPMENT COMPANY LTD (GLOBAL ENERGY)	05.02.2015	04.02.2035	Non-producing
42	OML 151	PSC	171	GPDC 51%, NAE 49%, EMO 40%	Niger Delta (Continental Shelf)		10.03.2016	09.03.2036	Non-producing

S/N	CONCESSION HELD	TYPE OF GRANT	AREA (SQ.KM)	EQUITY DISTRIBUTION	BASIN / TERRAIN	OPERATOR	DATE OF GRANT	DATE OF LEASE EXPIRATION	REMARKS
43	OML 127	SR	1281	NNPC-50%, CNL-32%, FAMFA-10% PETROBRAS-8%	Niger Delta (Deep Offshore)	STAR DEEP WATER PETROLEUM LIMITED	25.11.2004	24.11.2024	Producing
44	OML104	JVC	675	NNPC-60%, MPN-40%	Niger Delta (Continental Shelf)	MOBIL PRODUCING NIG. UNLIMITED	14.01.1998	13.01.2018	Producing
45	OML 67	JVC	119	NNPC-60%, MPN-40%	Niger Delta (Continental Shelf)		11.03.2011	10.03.2031	Producing
46	OML 68	JVC	119	NNPC-60%, MPN-40%	Niger Delta (Continental Shelf)		11.03.2011	10.03.2031	Producing
47	OML 70	JVC	1250	NNPC-60%, MPN-40%	Niger Delta (Continental Shelf)		11.03.2011	10.03.2031	Producing
48	OML 114	SR	464	MONIPULO-60%, CAMAC-40%	Niger Delta (Continental Shelf)	MONI PULO LTD.	03. 01.1999	02.01.2019	Producing
49	OML 24	JVC	162	NEWCROSS E&P-45%, NNPC-55%	Niger Delta (Onshore)	NEWCROSS E & P	01.07.2009	30.06.2019	1. Acquired 45% equity interest through divestment from SPDC. 2. Producing
50	OML 134	PSC	1131	ENI-85%, OANDO-15%	Niger Delta (Deep Offshore)	NIGERIA AGIP EXPLORATION (NAE)	31.05.2006	30.05.2026	Non-producing
51	OML 125	PSC	1219	ENI-85%, OANDO-15%	Niger Delta (Deep Offshore)		02.01.2003	01.01.2023	Producing
52	OML 60	JVC	358	OML 60	Niger Delta (Onshore)	NIGERIA AGIP OIL CO. LTD.	14.06.1997	13.06.2027	Producing
53	OML 61	JVC	1500	NNPC-60%, NAOC-20%,OANDO-20%	Niger Delta (Onshore)		14.06.1997	13.06.2027	Producing
54	OML 62	JVC	1211	NNPC-60%, NAOC-20%,OANDO-20%	Niger Delta (Onshore)		14.06.1997	13.06.2027	Producing
55	OML 63	JVC	2246	NNPC-60%, NAOC-20%,OANDO-20%	Niger Delta (Onshore)		14.06.1997	13.06.2027	Producing
56	OML 116	SC	360	ENI-100%	Niger Delta (Continental Shelf)	AGIP ENERGY AND NATURAL RESOURCES (AENR)	06.08.1979	05.08.2019	Producing
57	OML 126	PSC	705	ADDAX-100%	Niger Delta (Continental Shelf)	ADDAX PETROLEUM (ADDAX)	25.11.2004	24.11.2024	Producing
58	OML 137	PSC	849	ADDAX-100%	Niger Delta (Continental Shelf)		23.04.2007	22.04.2027	Producing
59	OML 123	PSC	401	ADDAX-100%	Niger Delta (Continental Shelf)		14.08.2002	13.04.2022	Producing
60	OML 124	PSC	300	ADDAX-100%	Niger Delta (Onshore)		14.08.2002	13.04.2022	Producing
61	OML 40	JVC	498	NPDC-55%, ELCREST-45%	Niger Delta (Onshore)	NPDC	01.07.1989	30.06.2019	Producing
62	OML 42	JVC	814	SINOPEC-20%, EXXON-30%, CNL-30%, NEXEN- 20%	Niger Delta (Onshore)	NPDC	01.07.1989	30.06.2019	Producing
63	OML 26	JVC	165	FIRST HYDROCARBON-45%, NPDC-55%	Niger Delta (Onshore)	NPDC	01.07.1989	30.06.2019	Producing
64	OML 34	JVC	950	NPDC-55%, ND WESTERN-45%	Niger Delta (Onshore)	NPDC	01.07.1989	30.06.2019	Producing
65	OML 119	SR	715	NPDC-55%, ND WESTERN-45%	Niger Delta (Continental Shelf)	NIGERIA PET. DEV. CO. (NPDC)	31.10.2000	30.10.2020	Producing
66	OML 111	SR	461	NPDC-100%	Niger Delta (Onshore)		1996	2016	Producing
67	OML 64	SR	278	NPDC-100%	Niger Delta (Onshore)		.09.1989	9.2019	Producing
68	OML 65	SR	1019	NPDC-100%	Niger Delta (Onshore)		.09.1989	9.2019	Producing
69	OML 66	SR	204	NPDC-100%	Niger Delta (Onshore)		07.09.1989	06.09.2019	Producing
70	OML 30	JVC	1097	NPDC-55%, SHORELINE NAT RESOURCES- 45%	Niger Delta (Onshore)		NPDC	01.07.89	30.06.2019
71	OML 140	SR	1220	PSA Partner:Oil&Gas 10%, Star Ultra Deep 40%; PSC Partner: NNPC 50%	Niger Delta (Deep Offshore)	OIL AND GAS NIG. LTD.	18.07.07	17.07.27	Non-producing
72	OML 115	SR	310	ORIENTAL-60%, AFREN-40%	Niger Delta (Continental Shelf)	ORIENTAL ENERGY RESOURCES LTD	20.5.1999	19.5.2019	Non-producing
73	OML 98	JVC	523	NNPC-60%, PANOCEAN-40%	Niger Delta (Onshore)	NNPC/PAN OCEAN OIL CORPORATION	.06.1976	7.7.2018	Producing

S/N	CONCESSION HELD	TYPE OF GRANT	AREA (SQ.KM)	EQUITY DISTRIBUTION	BASIN / TERRAIN	OPERATOR	DATE OF GRANT	DATE OF LEASE EXPIRATION	REMARKS	
74	OML 147	PSC	544	PANOCEAN 100%	Niger Delta (Onshore)	PAN OCEAN /ANIOMA	23.10.2014	22.10.2034	Non-producing	
75	OML 122	SR	1295	PEAK-(95 OIL/88 GAS), OANDO(5 OIL/12 GAS)	Niger Delta (Continental Shelf)	PEAK PETROLEUM INDUSTRIES NIG. LTD	17.05.2001	16.05.2021	Non-producing	
76	OML 4	JVC	267	SEPLAT-45%, NPDC-55%	Niger Delta (Onshore)	SEPLAT	01.07.1989	30.06.2019	Producing	
77	OML 38	JVC	2152	SEPLAT-45%, NPDC-55%	Niger Delta (Onshore)		01.07.1989	30.06.2019	Producing	
78	OML 41	JVC	291	SEPLAT-45%, NPDC-55%	Niger Delta (Onshore)		01.07.1989	30.06.2019	Producing	
79	OML 53	JVC	1562	SEPLAT-45%, NPDC-55%	Niger Delta (Onshore)		14.06.1997	13.06.2027	1. Acquired 40% equity from Chevron through divestment 2. Producing	
80	OML 11	JVC	3097		Niger Delta (Onshore)	SHELL PETROLEUM DEVELOPMENT COMPANY (SPDC)	01.07.1989	30.06.2019	Producing	
81	OML 17	JVC	1301	SEPLAT-45%, NPDC-55%	Niger Delta (Onshore)		01.07.1989	30.06.2019	Producing	
82	OML 20	JVC	405	NNPC-55%, SPDC-30%, ELF-10%, AGIP-5%	Niger Delta (Onshore)		01.07.1989	30.06.2019	Producing	
83	OML 21	JVC	372	NNPC-55%, SPDC-30%, ELF-10%, AGIP-5%	Niger Delta (Onshore)		01.07.1989	30.06.2019	Producing	
84	OML 22	JVC	722	NNPC-55%, SPDC-30%, ELF-10%, AGIP-5%	Niger Delta (Onshore)		01.07.1989	30.06.2019	Producing	
85	OML 23	JVC	483	NNPC-55%, SPDC-30%, ELF-10%, AGIP-5%	Niger Delta (Onshore)		01.07.1989	30.06.2019	Producing	
86	OML 25	JVC	429	NNPC-55%, SPDC-30%, ELF-10%, AGIP-5%	Niger Delta (Onshore)		01.07.1989	30.06.2019	Producing	
87	OML 27	JVC	165	NNPC-55%, SPDC-30%, ELF-10%, AGIP-5%	Niger Delta (Onshore)		01.07.1989	30.06.2019	Producing	
88	OML 28	JVC	936	NNPC-55%, SPDC-30%, ELF-10%, AGIP-5%	Niger Delta (Onshore)		01.07.1989	30.06.2019	Producing	
89	OML 31	JVC	1097	NNPC-55%, SPDC-30%, ELF-10%, AGIP-5%	Niger Delta (Onshore)		01.07.1989	30.06.2019	Non-producing	
90	OML 32	JVC	565	NNPC-55%, SPDC-30%, ELF-10%, AGIP-5%	Niger Delta (Onshore)		01.07.1989	30.06.2019	Producing	
91	OML 33	JVC	336	NNPC-55%, SPDC-30%, ELF-10%, AGIP-5%	Niger Delta (Onshore)		01.07.1989	30.06.2019	Non-producing	
92	OML 35	JVC	1144	NNPC-55%, SPDC-30%, ELF-10%, AGIP-5%	Niger Delta (Onshore)		01.07.1989	30.06.2019	Producing	
93	OML 36	JVC	338	NNPC-55%, SPDC-30%, ELF-10%, AGIP-5%	Niger Delta (Onshore)		01.07.1989	30.06.2019	Producing	
94	OML43	JVC	767	NNPC-55%, SPDC-30%, ELF-10%, AGIP-5%	Niger Delta (Onshore)		NNPC/SHELL PETROLEUM DEVELOPMENT COMPANY (SPDC)	01.07.1989	30.06.2019	Producing
95	OML 45	JVC	76	NNPC-55%, SPDC-30%, ELF-10%, AGIP-5%	Niger Delta (Onshore)			01.07.1989	30.06.2019	Producing
96	OML 46	JVC	1080	NNPC-55%, SPDC-30%, ELF-10%, AGIP-5%	Niger Delta (Onshore)			01.07.1989	30.06.2019	Producing
97	OML 74	JVC	1324	NNPC-55%, SPDC-30%, ELF-10%, AGIP-5%	Niger Delta (Continental Shelf)			18.12.2014	17.12.2034	Non-producing
98	OML 77	JVC	962	NNPC-55%, SPDC-30%, ELF-10%, AGIP-5%	Niger Delta (Continental Shelf)		18.12.2014	17.12.2034	Non-producing	
99	OML 79	JVC	970	NNPC-55%, SPDC-30%, ELF-10%, AGIP-5%	Niger Delta (Continental Shelf)	18.12.2014	17.12.2034	Producing		
100	OML 118	PSC	1167	SNEPCO-55%, EXXON-20%,ENI-12.5%, ELF-12.5%	Niger Delta (Deep Offshore)	SHELL NIG.EXP & PROD. CO. LTD	28.11.2005	27.11.2025	Producing	
101	OML 135	PSC	926	SNEPCO-55%, EXXON-20%,ENI-12.5%, ELF-12.5%	Niger Delta (Deep Offshore)		03.07.2006	02.07.2026	Non-producing	
102	OML 130	SR	1295	CNOOC-45%, SOUTH ATL.-15%, PETROBRAS-16%, TOTAL-24%	Niger Delta (Deep Offshore)	SOUTH ATLANTIC PET. LTD.	25.04.2005	24.04.2025	Producing	
103	OML 128	PSC	1198	STATOIL-53.85%, CNL-46.15%	Niger Delta (Deep Offshore)	STATOIL (NIGERIA) LIMITED	28.12.2004	27.12.2024	Producing	
104	OML 129	PSC	1023	STATOIL-53.85%, CNL-46.15%	Niger Delta (Deep Offshore)		28.12.2004	27.12.2024	Non-producing	
105	OML 142	SR	1295	SUMMIT-30%, SUNTERA-70%	Anambra Basin (Onshore)	SUMMIT OIL INTERNATIONAL	12.06.2009	11.06.2029	Non-producing	
106	OML 144	SR	96	SUNLINK-60%,SHELL-40%	Niger Delta (Continental Shelf)	SUNLINK PETROLEUM LIMITED	02.05.2013	01.05.2033	Non-producing	

S/N	CONCESSION HELD	TYPE OF GRANT	AREA (SQ.KM)	EQUITY DISTRIBUTION	BASIN / TERRAIN	OPERATOR	DATE OF GRANT	DATE OF LEASE EXPIRATION	REMARKS
107	OML 146	PSC	29	STERLING GLOBAL 51%, DOMON 24%, KUNOCH 15%, PRIMETIME 10%	Niger Delta (Onshore)	STERLING OIL E&P PRODUCTION CO. LTD (SEEPCO)	25.10.2014	24.10.2034	Non-producing
108	OML 143	PSC	369	STERLING GLOBAL 80%,ALLENE 20%	Niger Delta (Onshore)		29.12.2010	28.12.2030	Producing
109	OML 113	SR	1670	YINKA PET-100%(YINKA-60,FHN-9,EER COLOBUS-9NEW AGE-12.83, PANORO ENERGY-6.502,MIX OIL PLC-2.667)	Benin Basin (Continental Shelf)	YINKA FOLAWIYO PET. CO. LTD	01.06.1998	31.05.2018	Producing

Table 2: Status of Oil Prospecting Licenses (OPLs)

S/N	CONCESSION HELD	CONTRACT TYPE	AREA (SQ.KM)	EQUITY DISTRIBUTION	BASIN/ TERRAIN	OPERATOR	DATE OF GRANT	DATE OF LICENSE EXPIRATION	COMMENTS
1	OPL 907	PSC	2498	AGER 41%, BUSTON ENERGY 25%, ALLENNE E&P 14%, KAZTEC 5%, VP ENERGY 3%, DE ATAL 2%, BEPTA 10%	Anambra Basin	AFREN GLOBAL ENERGY RESOURCES LIMITED	20.02.2008	19.02.2018	-
2	OPL 917	PSC	1710	AGER 42%, VP ENERGY 18%, PETROLOG 17%, DE ATAL 10%, GOLAND 13%	Anambra Basin		20.02.2008	19.02.2018	-
3	OPL 452	SR	522	ALMAGAMATED OIL-100%	Niger Delta (Onshore)	AMALGAMATED OIL CO. LTD.	25.05.2007	24.05.2016	Re-allocated in 2007 and extended for four (4) years due to militancy and insecurity in the Niger Delta.
4	OPL 325	PSC	1265	ASHBERT-80%, NPDC-20%	Niger Delta (Deep Offshore)	ASHBERT OIL & GAS LTD/NPDC/TRAIN-COSY ENERGY	-	-	1. Award re-validated in 2015. 2. In the process of executing Production Sharing Contract (PSC) with NNPC.
5	OPL 286	PSC	804	BG 66%, SAHARA 24%, EQUINOX 10%	Niger Delta (Deep Offshore)	SAHAHRA/BG EXP. NIC LTD.	08.03.2007	07.03.2017	-
6	OPL 240	PSC	48	BAYELSA OIL COMP? & TIANJIN ENERGY RESOURCES?	Niger Delta (Continental Shelf)	BOC JNHP CONSORTIUM	-	-	Production Sharing Contract (PSC) yet to be executed with NNPC.
7	OPL 471	PSC	1370	CNODC 90%, SEVEN WAVES 10%	Niger Delta (Continental Shelf)	CHINA NATIONAL OIL DEV. CO (CNODC)	23.04.2007	22.04.2017	-
8	OPL 257	PSC	426		Niger Delta (Deep Offshore)	CONOIL PRODUCING LTD	09.02.2006	08.02.2016	Expired
9	OPL 289	PSC	386	CLEANWATERS 90%, SEVEN WAVES 10%	Niger Delta (Continental Shelf)	CLEANWATERS CONSORTIUM	23.04.2007	22.04.2012	Expired
10	OPL 290	PSC	531	CONOIL 100%	Niger Delta (Continental Shelf)	CONOIL PRODUCING LTD	17.10.08	16.10.2013	Expired
11	OPL 305	SR	1558	CROWNWELL-60%,PLATINUM NATURAL RES.-40%	Benin Basin	CROWNWELL PETROLEUM LTD	26.06.2006	25.06.2016	-
12	OPL 306	SR	1889	CROWNWELL-60%,PLATINUM NATURAL RES.-40%	Benin Basin		26.06.2006	25.06.2016	-

S/N	CONCESSION HELD	CONTRACT TYPE	AREA (SQ.KM)	EQUITY DISTRIBUTION	BASIN/ TERRAIN	OPERATOR	DATE OF GRANT	DATE OF LICENSE EXPIRATION	COMMENTS
13	OPL 322	SR	1789	PSA: DAJO-10%, SNEPCo-40%	Niger Delta (Deep Offshore)	DAJO OIL LIMITED	30.03.2004	26-02 2019	1. Discovery made in the block. 2. Block expired in March 2014 and was granted 4 year extension effective 27.02.2015 to enable the company fully execute the work programme and convert the block to an OML
14	OPL 204	SR	1670	AFRICOIL-100%	Niger Delta (Onshore)	AFRICOIL & MARKETING CO. LTD.	09.07.2005	08.07.2010	Expired
15	OPL 251	PSC	940	DSV-100%	Niger Delta (Deep Offshore)	DSV PETROLEUM LIMITED	-	-	Signature bonus of \$50.5 million not paid. Approval sought to request company to pay within 90 days failure to which block will be withdrawn.
16	OPL 221	PSC	2286	TEPNG 60%, Chevron 40%	Niger Delta (Deep Offshore)	TOTAL EXP. & PROD. NIG. LTD.	19.11.2003	18.11.2013	Expired
17	OPL 227	SR	974	EXPRESS-39%, ADDAX-40%,PPI-15%,NIGER DELTA E&P-6%	Niger Delta (Continental Shelf)	EXPRESS PETROLEUM & GAS CO. LTD/PETROLEUM PROSPECTS INT'L LIMITED	30.04.2008	29.04.2013	1. Granted 2 years extension on 02.05.2013 2. Expired in 01.05.2015 3. Technical Partner (Addax) pulled out 4. Applied for another two year extension
18	OPL 226	PSC	1257	Essar 100%	Niger Delta (Continental Shelf)	ESSAR E&P LIMITED	10.03.2010	18.08.2015	1. Expired 2. Company has requested for extension of exploration phase of PSC.
19	OPL 223	PSC	920	ESSO 20%, Svenska 20%, Philips 20%, Chevron 20%, NPDC 15%, Sasol 5%	Niger Delta (Deep Offshore)	ESSO E & P LTD.	19.07.2005	18.07.2015	Conversion process yet to be completed
20	OPL 235	SR	1480	FIRST ARIES(OP) 60% MAJESTIC INT. 40%	Niger Delta (Onshore)	FIRST ARIES PETROLEUM LTD.	-	-	Under litigation
21	OPL 905	PSC	2600	GTPL-1005	Anambra	GAS TRANSMISSION & POWER LIMITED	23.04.2007	22.04.2017	-
22	OPL 2010	PSC	179	GPDC 100%	Niger Delta (Continental Shelf)	GEC PETROLEUM DEVELOPMENT COMPANY LTD (GLOBAL ENERGY)	16.12.2008	29.12.2015	1. Expired on 15.12.2013 2. Granted extension for 18 months effective from 30 June 2014
23	OPL 2012	PSC	849	SIGMUND-94% GRASSO & CONSORTIUM-6%	Niger Delta (Continental Shelf)	GRASSO NIG. LTD./SIGMUND OIL FIELDS LTD.	18.06.2014	17.06.2019	-
24	OPL 247	SR	1165	CNDWE 48.6%, Total 36%, Heritage 10%, Sasol 5.4%	Niger Delta (Deep Offshore)	HERITAGE OIL & GAS CO. LTD.	06.04.2004	05.04.2019	1. Expired on 05.04.14 2. Granted 5 year extension 3. The block is under litigation
25	OPL 2002	PSC	817	HI-REV-100%	Niger Delta (Onshore)	HI REV E&P LTD	-	-	1. Granted based on Out-of-Court Settlement Agreement. 2. Award process yet to be completed.
26	OPL 252	PSC	814	INC-100%	Niger Delta (Deep Offshore)	INC NATURAL RESOURCES	-	-	1. Paid US\$20million at the bidding conference

S/N	CONCESSION HELD	CONTRACT TYPE	AREA (SQ.KM)	EQUITY DISTRIBUTION	BASIN/ TERRAIN	OPERATOR	DATE OF GRANT	DATE OF LICENSE EXPIRATION	COMMENTS
27	OPL 292	PSC	1195	INC-100%	Niger Delta (Deep Offshore)		-	-	2. Required to: a) Pay US\$48million at signing of PSC signing b) Invest the remaining US\$32 million in Downstream Strategic Project (Ethanol project)
28	OPL 2001	PSC	372	JAHCON-100%	Niger Delta (Onshore)	JAHCON INTERNATIONAL LIMITED	-	-	1. Granted based on Out-of-Court Settlement Agreement. 2. Award process yet to be completed.
29	OPL 321	PSC	1166	KNOC 60%, EQUATOR 30%, TULIP 10%	Niger Delta (Deep Offshore)	KOREAN NATIONAL OIL CO. (KNOC) NIG.	10.03.2006	09.03.2016	Under litigation
30	OPL 323	PSC	993	NNPC 50%, KNOC 60%, EQUATOR 30%, NJ EXPL 10%	Niger Delta (Deep Offshore)		10.03.2006	09.03.2016	Under litigation
31	OPL 234	PSC	1214	MONIPULO 100%	Niger Delta (Onshore)	MONI PULO LTD.	16.12.2008	15.12.2013	1. Expired. 2. Request for extension is being evalauted
32	OPL 239	PSC	65	MONIPULO 100%	Niger Delta (Continental Shelf)		16.12.2008	15.12.2013	
33	OPL 231	PSC	244	MONIPULO 100%	Niger Delta (Onshore)		17.05.2011	16.05.2016	-
34	OPL 276	PSC	472	NEW CROSS- 60%, ALBRIGHT WAVES PET. DEV.-40%	Niger Delta (Onshore)	NEWCROSS PETROLEUM LTD.	21.01.2012	20.01.2017	-
35	OPL 283	PSC	990	NEWCROSS PET-90%, RAYFLOSH PET.-10%	Niger Delta (Onshore)		16.02.06	15.02.2015	1. Expired on 15.02.2011 2. In 2011, Newcross obtained a four (4) years extension to the Work Programme execution 3. Applied for conversion to OML
36	OPL 733	PSC	2611	NNDC-100%	Chad Basin	NEW NIGERIA DEVELOPMENT COMPANY LIMITED	08.08.2006	07.08.2016	-
37	OPL 809	PSC	2581	NNDC-100%	Benue Trough		08.08.2006	07.08.2016	
38	OPL 810	PSC	2584	NNDC-100%	Benue Trough		08.08.2006	07.08.2016	
39	OPL 722	PSC	2540	NNDC-100%	Chad Basin		08.08.2006	07.08.2016	
40	OPL 244	PSC	1700	NAE 60%, Svenska 30%, NPDC 10%	Niger Delta (Deep Offshore)	NIGERIA AGIP EXPLORATION	20.12.2001	19.12.2011	Expired
41	OPL 282	PSC	695	NAOC 90%, Alliance 10% (OANDO-4%,ARC OIL AND GAS-6%)	Niger Delta (Continental Shelf)	NIGERIA AGIP OIL CO. LTD.	08.08.2006	07.09.2015	Expired
42	OPL 291	PSC	1287	APENL 72.5%, STARCREST 27.5%	Niger Delta (Deep Offshore)	STARCREST LIMITED	16.10.2006	15.10.2016	-
43	OPL 702	SR	2574	NNPC/FES-100%	Chad Basin	NNPC/FES	.06.1967	Not applicable due to section 20 of NNPC Act Cap 320 of LFN 1990	NNPC blocks
44	OPL 703	SR	2772	NNPC/FES-100%	Chad Basin		.06.1967		
45	OPL 705	SR	2547	NNPC/FES-100%	Chad Basin		.06.1967		
46	OPL 707	SR	2582	NNPC/FES-100%	Chad Basin		.06.1967		

S/N	CONCESSION HELD	CONTRACT TYPE	AREA (SQ.KM)	EQUITY DISTRIBUTION	BASIN/ TERRAIN	OPERATOR	DATE OF GRANT	DATE OF LICENSE EXPIRATION	COMMENTS
47	OPL 242	PSC	1789	NPDC-50%, STARCREST-35%, CROSS RIVER-10%, OBEKPA-5%	Niger Delta (Deep Offshore)	NIGERIA PET. DEV. CO. (NPDC)	-	-	Re-allocated to NPDC-50%, Starcrest-35%, Cross River-10%, Obekpa-5%.
48	OPL 233	PSC	126	Nig. Del 100% (NIDGEL-60,EQUITY,ENERY RES-20,SACOIL-20)	Niger Delta (Continental Shelf)	NIG-DEL UNITED LTD.	.05.2007	29.06.2016	Extension granted for 24 months effective 30 June 2014
49	OPL 215	SR	2586	NOREAST-60%, TOTAL E & P-40%	Niger Delta (Deep Offshore)	NOREAST PET. NIG. LTD.	31.03.2005	20.04.2020	Granted 5 year extension effective 21 April 2015
50	OPL 326	SR	1652	NORTHSOUTH PET-100%	Niger Delta (Deep Offshore)	NORTHSOUTH PETROLEUM LTD	-	-	1. Re-awarded based on Out-of-Court Settlement Agreement. 2. Signature Bonus yet to be paid.
51	OPL 236	PSC	1652	OANDO-95%, RFO VENTURES-5%	Niger Delta (Onshore)	OANDO PLC	08.09.2006	07.09.2011	Expired
52	OPL 278	PSC	92	OANDO 100% (OANDO-60,CAMAC-15,ALLIED-15,,FIRST AXIS-10)	Niger Delta (Onshore)		19.01.2006	07.09.2015	Expired
53	OPL 241	PSC	1257	OILWORLD-20%, OWENA OIL AND GAS LTD-80%	Niger Delta (Continental Shelf)	OILWORLD LIMITED	10.03.2010	09.03.2020	Under litigation
54	OPL 2003	PSC	789	OISL-100%	Niger Delta (Onshore)	OIL AND INDUSTRIAL SERVICES LTD	-	-	1. Granted based on Out-of-Court Settlement Agreement. 2. Award process yet to be completed.
55	OPL 285	PSC	1167	OMEL 45.5%, TUPNI 14.5%, EMO 40%	Niger Delta (Deep Offshore)	EMO E&P/TOTAL E&P LTD	23.02.2007	22.02.2017	-
56	OPL 279-N	PSC	1103	OMEL 45.5%, TUPNI 14.5%, EMO 40%	Niger Delta (Deep Offshore)		23.02.2007	22.02.2017	-
57	OPL 297	PSC	1290	?	Niger Delta (Deep Offshore)	ONGC - MITTAL ENERGY NIGERIA LTD (OMEL)	-	-	1. Paid US\$25,000,000 paid on OPL 297. 2. Under litigation. 3. Requested for refund of the amount paid due to prolonged litigation. 4. Request forwarded to the President
58	OPL 310	SR	1935	OPTIMUM-60%, "Yet to be Assigned - 22.86%, MAYFAIR ASSETS & TRUST LTD-17.14%	Benin Basin	OPTIMUM PETROLEUM DEVELOPMENT LIMITED	10.06.2008	09.06.2018	Afren is in Administration
59	OPL 915	SR	1195	ORIENT PETROLEUM-100%	Anambra Basin	ORIENT PET. REFINERY LTD.	31.01.2005	29.01.2015	1. Applied for conversion of the two OPLs. 2. Application was not accompanied by the statutory application fee. Hence, the application was not processed.
60	OPL 916		963	ORIENT PETROLEUM-100%					
61	OPL 320	PSC	1789	ORANTO 32%, PIONEER 51%, ORANDI 17%	Niger Delta (Deep Offshore)	ORANTO PETROLEUM LTD.	20.02.2002	20.02.2012	1. Block has expired. 2. Applied for extension to compensate for time period to militancy and insecurity. 3. Request forwarded to the Minister
62	OPL 293	PSC	1023	ORANTO-100%	Niger Delta (Deep Offshore)		-	-	1. Re-instated to Oranto Petroleum Limited at offered Signature Bonus of US\$55 million. 2. Signature bonus to be paid in three tranches: 1st - US\$15 million, 2nd - US\$

S/N	CONCESSION HELD	CONTRACT TYPE	AREA (SQ.KM)	EQUITY DISTRIBUTION	BASIN/ TERRAIN	OPERATOR	DATE OF GRANT	DATE OF LICENSE EXPIRATION	COMMENTS
									20 million to be paid at conversion and 3rd - US\$20 million to be paid first oil.
63	OPL 284	PSC	1131	SAHARA 45%, BG 45%, LOTUS 10%	Niger Delta (Deep Offshore)	SAHARA ENERGY E&P	07.07.2007	06.07.2017	-
64	OPL 228	PSC	1915	SAHARA ENERGY FIELD-100%	Niger Delta (Onshore)		-	-	PSC yet to be signed
65	OPL 245	SR	1958	PSA: SNEPCo 50%, NAE 50%	Niger Delta (Deep Offshore)	NIGERIA AGIP EXPL. LTD (NAE)/SHELL NIG.ULTRA DEEP LTD.	11.05.2011	10.05.2021	-
66	OPL 206	SR	2020		Anambra Basin	SUMMIT OIL INTERNATIONAL	20.01.2004	19.01.2014	Expired.
67	OPL 2005	PSC	662	STERLING -100%	Niger Delta (Onshore)	STERLING EXPLORATION LTD (SEL)	30.04.2014	29.04.2019	-
68	OPL 2006	PSC	662	STERLING -100%	Niger Delta (Onshore)		-	-	1. Granted based on Out-of-Court Settlement Agreement. 2. Award process yet to be completed.
69	OPL 2004	JVC	103	STERLING -100%	Niger Delta (Onshore)		-	-	-
70	OPL 2008	PSC	41	TENOIL-100%	Niger Delta (Continental Shelf)	TENOIL PET. & ENERGY SERVICES LTD/CLAYFORD	26.05.2011	25.05.2016	-
71	OPL 281	PSC	122	TRANSCORP-100%	Niger Delta (Onshore)	TRANSNATIONAL CORPORATION	.05.2014	.05.2019	-
72	OPL 258	PSC	234	YORKSHIRE-100%	Niger Delta (Deep Offshore)	YORKSHIRE ENERGY WORLD LTD	-	-	1. Yorkshire posted the winning Signature Bonus of US\$60m and US\$105m for the OPLs 258 and 295 respectively. 2. Submitted two personal cheques for the sum of 30m and 55m Euros representing 50% of the offered signature bonus on OPLs 258 and 295 respectively instead of bank drafts in US Dollars. 3. The blocks were withdrawn along with other blocks based on the recommendation of Committee set up by then President to review 2006 – 2007 Bid rounds activities. The withdrawal was later overturned. 4. The company has been appealing for re-award of the two blocks in order to make payment.
73	OPL 295	PSC	1218	YORKSHIRE-100%	Niger Delta (Deep Offshore)		-	-	-
74	OPL 248	PSC	2448	NNPC-50%, CONOCO-28.8%, ESSO-11.2%, ZEBRA-10%	Niger Delta (Deep Offshore)	ZEBBRA ENERGY LIMITED	06.04.2014	.06.2019	-

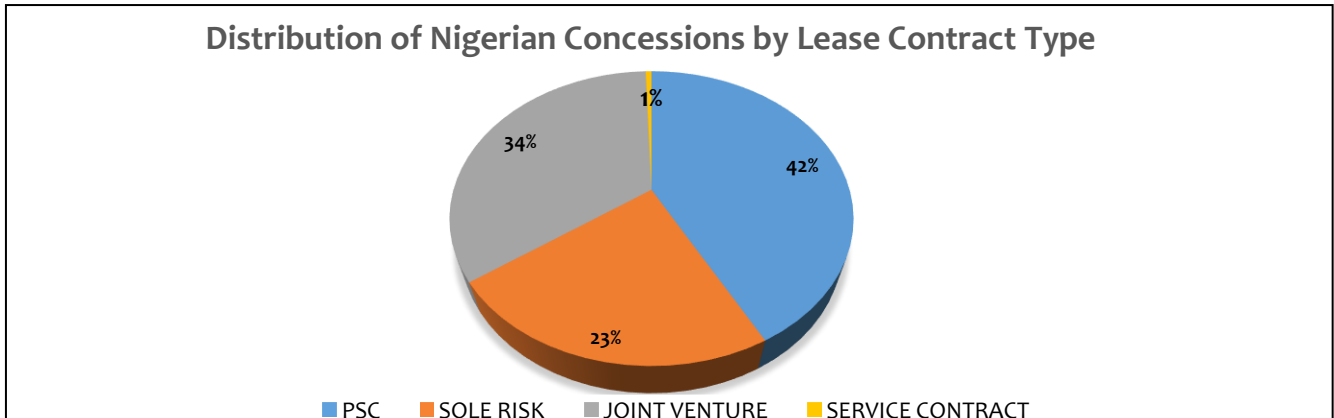


Figure 5: Distribution of Nigeria Concession by Lease Contract Type

Table 3: Summary Of Acreage Situation As At 31 December 2016

NAME OF BASIN	NO. OF BLOCKS ALLOCATED		NO OF OPEN BLOCKS	TOTAL NO. OF BLOCKS
	OPL	OML		
ANAMBRA	6	1	12	19
BENIN	9	3	36	48
BENUE	2	0	41	43
BIDA	0	0	17	17
CHAD	6	0	40	46
NIGER DELTA	53	105	34	192
SOKOTO	0	0	28	28
TOTAL	76	109	208	393

4.1.2 Speculative Survey Data Status

Table 4: Multi-Client Data Projects Status as at December 2016

S/No	Company	Effective Date of Multi-Client Agreement	Area of Survey / Block	Type of Survey/Project	Quantum of Survey	Year of Survey / Project	Agreement Status
1	Mabon Limited/TGSI	1991	AR2	2D Seismic & Geochemistry	24,400.00km Regional/Infill	1992	Expired but yet to be renewed
2	Mabon Limited/TGSI	1993	AR3 Shelf Survey	2D Seismic & Interpretation Biostrat	6,990.40km Seismic / 6,990.40 Interp/Biostrat	1994	Expired but yet to be renewed
3	Mabon Limited/TGSI	1993	NDRDC	Niger Delta Regional Date Compilation / Well logging	7,600.3km / 216 wells	1996	Expired but yet to be renewed
4	Mabon Limited/TGSI	1993	AR3 (ABCD)	2D Seismic & Gravity Mag.	6,373.3km Seismic / 20,260 Sq. km Grav. Mag.	1994	Expired but yet to be renewed
5	Mabon Limited/TGSI	1993	AR3 Infill / AR3F	2D Seismic	10,899.50km Seismic	1997	Expired but yet to be renewed
6	Mabon Limited/TGSI	1999	Phase AR6 Very Deep Off-shore	2D Seismic Very Deep Off-shore	7,012.70km Seismic	2005	Expired but yet to be renewed
7	Mabon / GXT	2005	Nigeria Span I	2D Seismic Regional Survey	4,844.0km Seismic Data	2006	Good standing
8	Mabon / GXT	2014	Nigeria Span II	2D Seismic Regional Survey	7,350km Seismic Data	2011	Good standing
9	TGS-Petrodata JV Offshore Services Ltd	2016	Nigeria Offshore	2D Seismic	17,000km	2000	Good standing
10	TGS-Petrodata JV Offshore Services Ltd	2016	OPLs, 257,227, 471, OMLs 79, 83,85, 86, 88,	2D Seismic	2,000 Km	2001	
11	PGS Geophysical Nigeria Limited	2014	OPL 214/213	3D Siesmic	2814km ²	2003	Good standing
12	PGS Geophysical Nigeria Limited	2014	OPL 244	3D Siesmic	1700km ²	2002	Good standing
13	PGS Geophysical Nigeria Limited	2014	OPL 245	3D Siesmic	2247km ²	2002	Good standing
14	PGS Geophysical Nigeria Limited	2014	OPL 248	3D Siesmic	1940km ²	1999	Good standing
15	PGS Geophysical Nigeria Limited	2014	OPL 249	3D Siesmic	1954km ²	1999	Good standing
16	PGS Geophysical Nigeria Limited	2014	OPL 250	3D Siesmic	1265km ²	1999	Good standing
17	PGS Geophysical Nigeria Limited	2014	OPL 256	3D Siesmic	2655km ²	2003	Good standing
18	PGS Geophysical Nigeria Limited	2014	OPL 257	3D Siesmic	538km ²	2003	Good standing
19	PGS Geophysical Nigeria Limited	2014	OPL 314	3D Siesmic	1252km ²	2004	Good standing
20	PGS Geophysical Nigeria Limited	2014	OPL 315	3D Siesmic	1718km ²	2004	Good standing
21	PGS Geophysical Nigeria Limited	2009	OPLs 312, 313, 314	3D Siesmic	2,845 km ²	2010	Good standing
22	PGS Geophysical Nigeria Limited	2008	Offshore Niger Delta	3D Mega Survey	17,000km / 75,000 km ²	ongoing	Good standing
23	Sonar / Ikon Science	2009	Onshore & Offshore Niger Delta	Geo-pressure survey	Report	2014	Good standing

S/No	Company	Effective Date of Multi-Client Agreement	Area of Survey / Block	Type of Survey/Project	Quantum of Survey	Year of Survey / Project	Agreement Status
24	TDI-Brooks	2005	Offshore Niger Delta	Surface Geochemical Exploration and Heat Flow Study	Report	2005	Expired but yet to be renewed
25	Acorn Geophysical	2005	Offshore Niger Delta	CSEM Imaging	OPL 351, 323, 321, 325, 327 & 257	2005	Expired but yet to be renewed
26	Polarcus/ Ashbert Limited	2011	VERNG-99, VERNG-02, VERNG-03, VERNG-04	3D Siesmic	9,308km ²	1999-2004	Expired but yet to be renewed
27	Bilview Energy Services	2016	Offshore Niger Delta	Wells Log scanning, digitizing and marketing	Over 6,000 Digitized Well logs	2015	Good standing

Table 5: Contract Signed by Speculative Survey Companies in Nigeria

Company	Blocks	Quantum	Date of Contract Signing
TGS	OPLs 221, 223, 227, 233, 239, 471	Approx 5,000km of 2D and 2,000 of 3D	19th Dec, 2001
PGS	OPLs 242, 243, 244, 247, 248, 249, 250, 313, 314, 315, 245, 312	7463km ² of 3D	7th Jan, 1999
VEIRTAS		17,000 km acquired btw 1998 & 2000	18th Aug, 1998
MABON	Phase AR-2 (Brokerage), Phase AR-3 (Shelf-Survey), Phase AR-3 (ABCD), Phase AR-3 (Infill & 3Fill), Phase AR-6 (Survey)	Total of 56,773.3km & 15 Well Ties	1993, 1994 and 1999

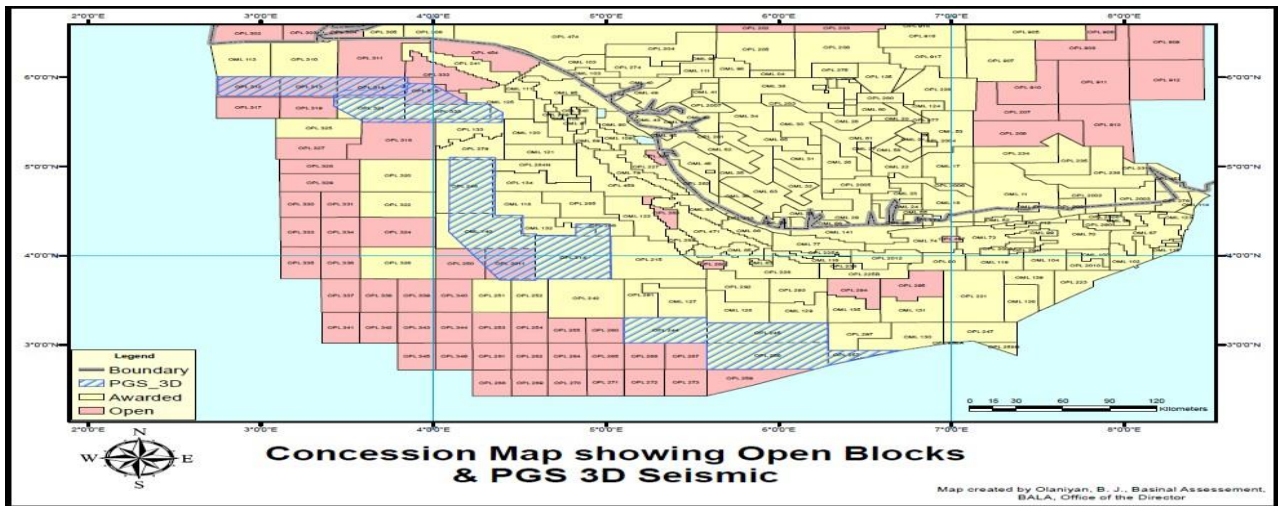


Figure 6: Concession Map showing Open Blocks & PGS 3D Seismic

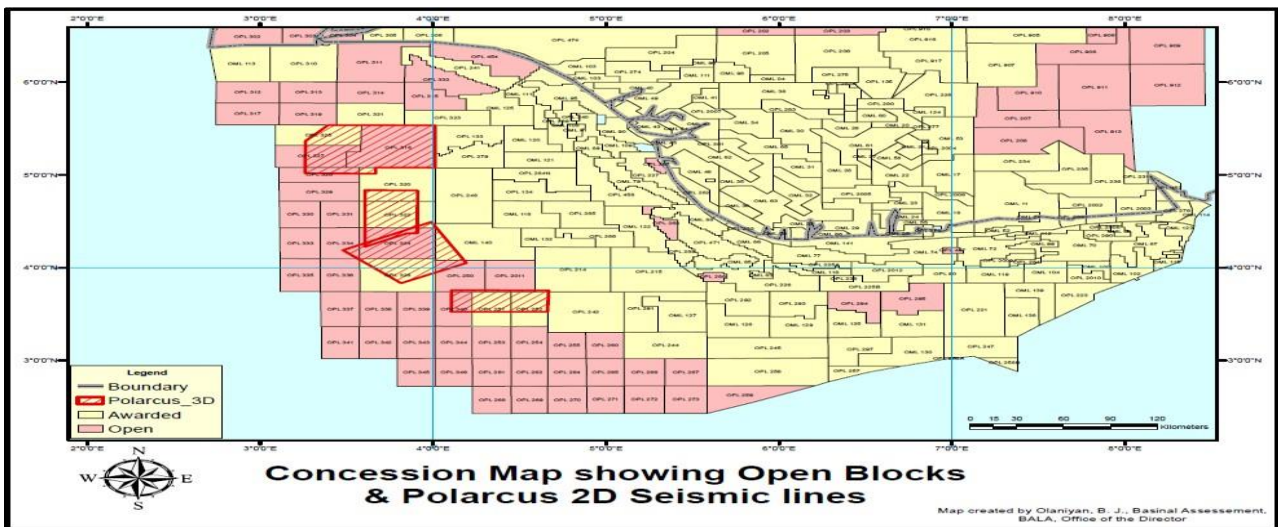


Figure 7: Concession Map showing Open Blocks & Polarcus 2D Seismic Lines

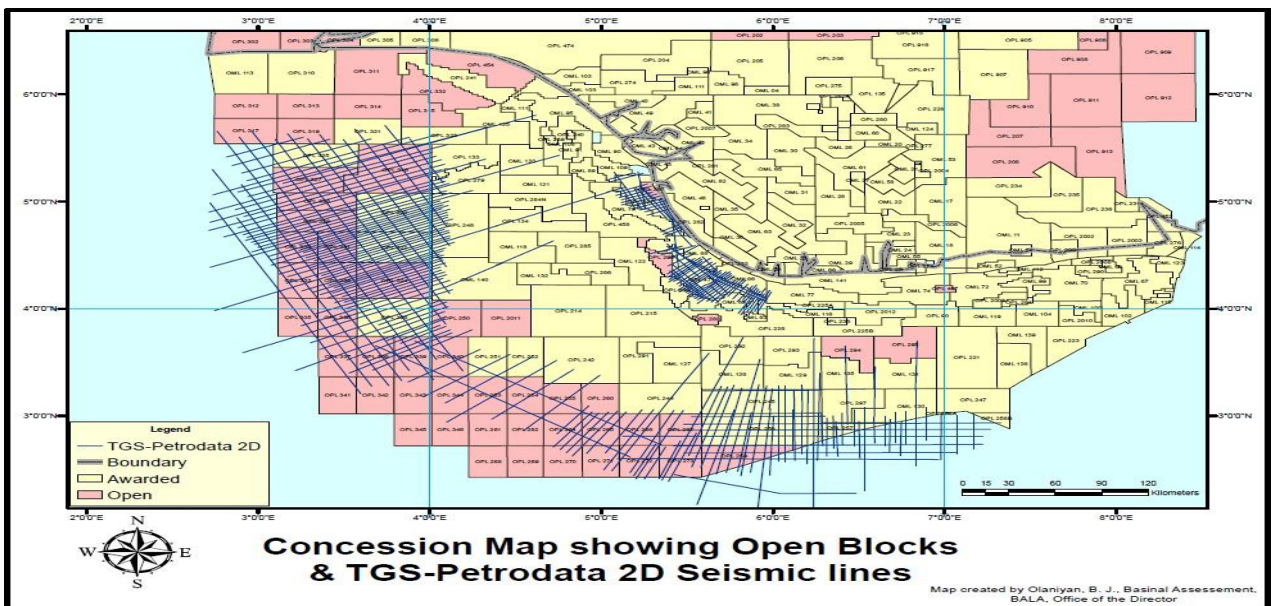


Figure 8: Concession Map showing Open Blocks & TGS-Petrodata 2D Seismic

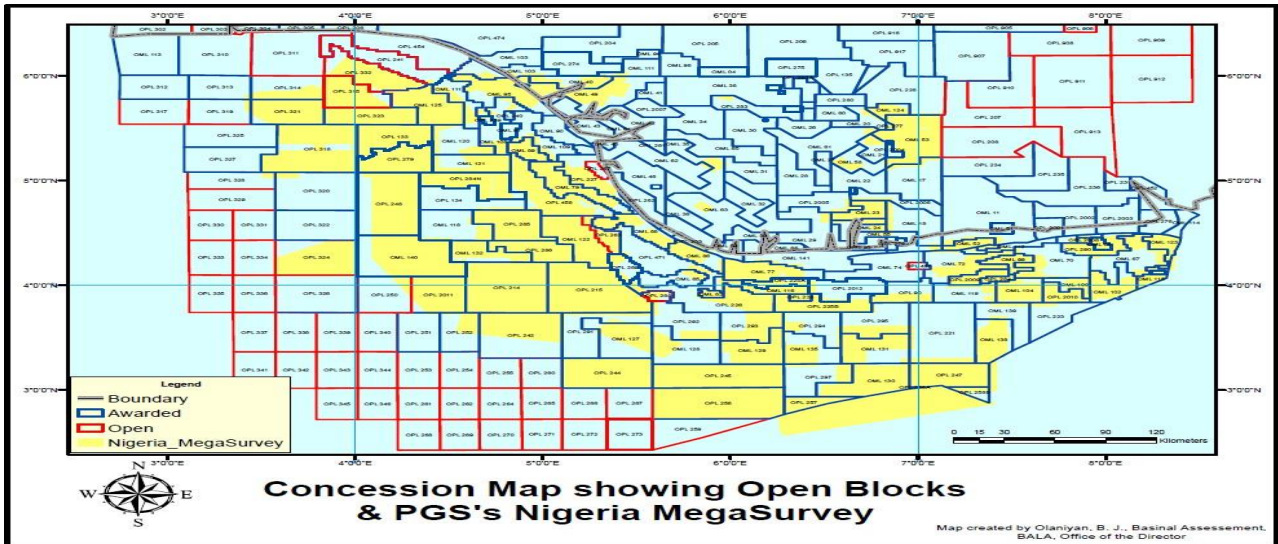


Figure 9: Concession Map showing Open Blocks & PGS's Nigeria MegaSurvey

4.1.3 Marginal Fields

Table 6: List of Marginal Fields

S/N	FIELD NAME	COMPANY NAME	BLOCK
1	Egbaoma	Platform Petroleum Ltd	38
2	Asaramatoru	Prime Exploration & Production Ltd / Suffolk Petroleum Services Ltd	11
3	Atala	Bayelsa Oil Company Ltd.	46
4	Eremor	Excel Exploration & Production	46
5	Ibigwe	Walter Smith Petroman Oil Ltd / Morris Petroleum Ltd	16
6	Ofa	Independent Energy Ltd	30
7	Oza	Millennium Oil & Gas Company Ltd	11
8	Qua Ibo	Network E & P Nigeria Ltd	13
9	Stubb Creek	Universal Energy Resources Ltd	14
10	Tom Shot Bank	Associated Oil & Gas Services Ltd / Dansaki Pet. Ltd	14
11	Tsekelewu	Sahara Energy Field Ltd/ African Oil & Gas Ltd	40
12	Uquo	Frontier Oil Ltd	13
13	Ororo	Guarantee Petroleum Company Ltd / Owena Oil & Gas Ltd	95
14	Akepo	Sogenal Ltd	90
15	Ogedeh	Bicta Energy and Management Systems Ltd	90
16	Ajapa	Brittania-U Nig. Ltd	90
17	Dawes Island	Eurafric Energy Ltd	54
18	KE	Del Sigma Ltd	54
19	Oriri	Goland E & P Ltd	88
20	Ekeh	Movido E & P Nigeria Ltd	88
21	Umusadege	Midwestern Oil & Gas / Suntrust Oil & Gas	56
22	Umuseti	Pillar Oil Ltd	56
23	Ebendo	Energia Ltd / Unipetrol Pet. Dev	56
24	Amoji	Chorus Energy Ltd	56
25	Ebok	Oriental Energy Resources Ltd	67
26	Okwok	Oriental Energy Resources Ltd	67
27	Ogbelle	Niger Delta Petroleum Ltd	54
28	Omerelu	Niger Delta Petroleum Ltd	53

S/N	FIELD NAME	COMPANY NAME	BLOCK
29	Ubima	All Grace Energy	17
30	Otakikpo	Green Energy International	11

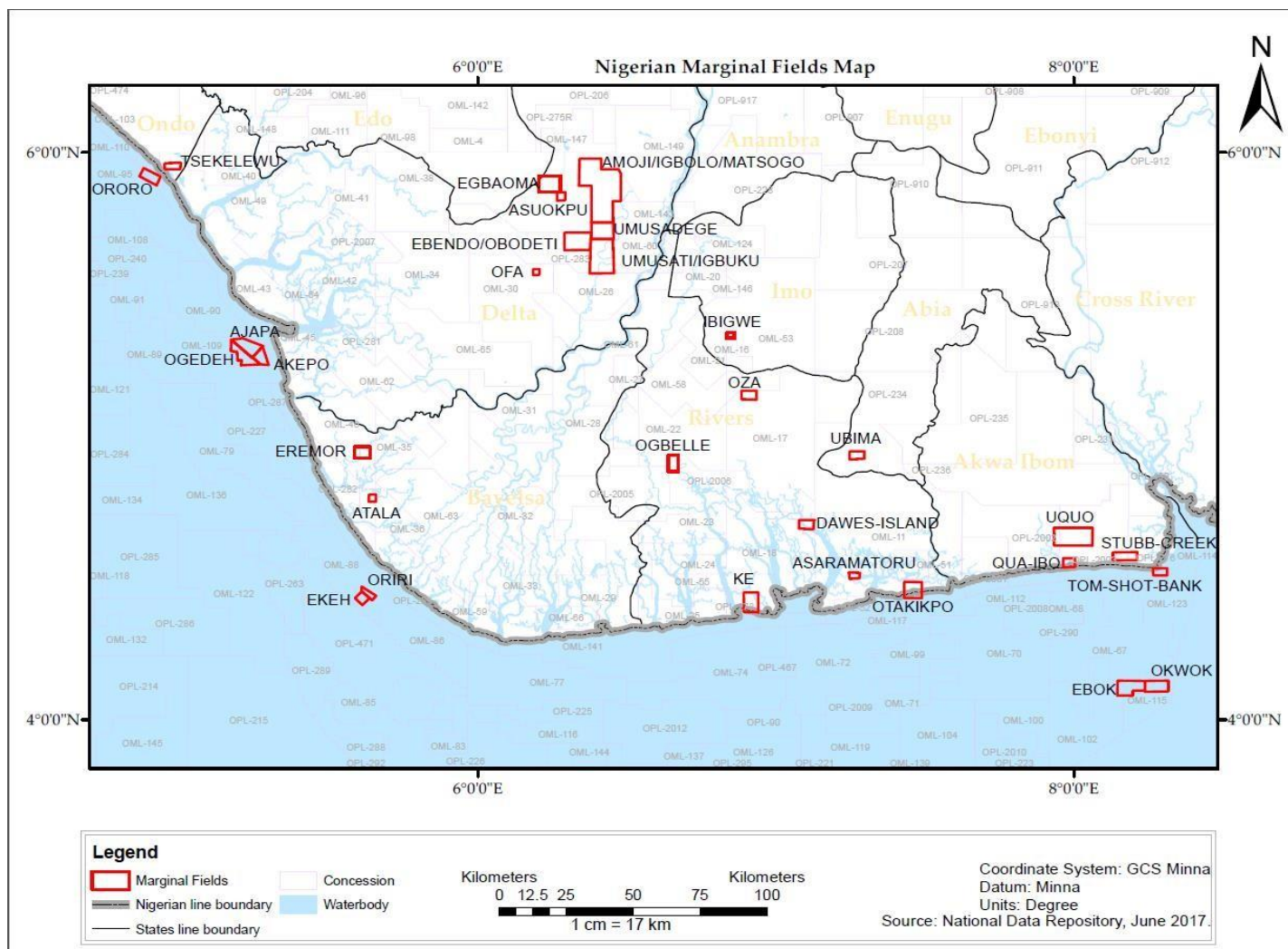


Figure 10: Marginal Fields Map, 2002 - 2004

4.1.4 Reserves

Table 7: Oil and Gas Reserves

	Oil Reserves, MMbbls	Condensate Reserves, MMbbls	Total (Oil + Condensates), MMbbls	Natural Gas Reserves (TCF)		
				Associated Gas, AG	Non Associated Gas, NAG	Total Gas
2010	31,219.00	5,313.97	36,532.97	92.945	89.872	182.817
2011	31,169.60	5,077.81	36,247.41	92.904	90.530	183.434
2012	32,233.24	4,905.86	37,139.10	89.729	92.529	182.258
2013	31,813.51	5,257.32	37,070.83	89.652	92.298	181.950
2014	31,870.00	5,578.24	37,448.24	90.094	97.904	187.998
2015	31,643.91	5,418.15	37,062.06	97.208	94.857	192.065
2016	31,271.77	5,467.41	36,739.18	97.253	101.485	198.738

* All Reserves above are as at 31st December of the reported year

4.1.5 Exploration

Table 8: Seismic Data Acquisition

YEAR	TYPE	LAND	OFFSHORE	DEEP OFFSHORE	TOTAL
2010	3-D, SQ.KM	1,300.94	841.28	2,672.79	4,815.01
2011	3-D, SQ.KM	638.27	1,127.59	-	1,765.86
	2-D, KM	-	278.43	-	278.43
2012	3-D, SQ.KM	1,913.00	568.24	1,742.29	4,223.53
2013	3-D, SQ.KM	1,588.08	1,690.24	961.81	4,240.13
2014	3-D, SQ.KM	804.35	2,833.03	572	4,209.38
2015	3-D, SQ.KM	675.7987	775.497	455.505	1,906.80
2016	3-D, SQ.KM	138.5	156	-	294.5

4.1.6 Rig Activities

Table 9: Active Rig Trend by Terrain

YEAR	LAND	SWAMP	SHALLOW OFFSHORE	DEEP OFFSHORE	TOTAL
2010	14	2	8	6	30
2011	13	3	11	6	33
2012	20	5	10	7	42
2013	20	6	13	7	46
2014	14	3	4	8	29
2015	15	3	3	8	29
2016	5	2	2	3	12

Table 10: Rig Disposition by Terrain from January to December 2016

TERRAIN	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Land	12	14	13	15	7	7	5	6	6	6	1	4
Swamp	2	3	3	2	1	1	2	2	2	2	2	2
Shallow Offshore	1	1	0	0	3	3	3	3	2	3	3	3
Deep Offshore	7	6	6	6	1	3	3	3	3	3	2	3
Total	22	24	22	23	12	14	13	14	13	14	8	12

4.1.7 Drilling and Well completion

Table 11: Number of Wells drilled by Terrain

YEAR	ONSHORE	OFFSHORE	DEEP OFFSHORE	TOTAL
2010	30	62	15	107
2011	44	64	12	120
2012	74	65	15	154
2013	59	61	30	150
2014	49	50	43	142
2015	41	27	45	113
2016	39	15	23	77

Table 12: Number of Wells drilled by Class

YEAR	EXPLORATORY	APPRAISAL (1 ST & 2 ND)	ORDINARY APPRAISAL	DEVELOPMENT	TOTAL
2010	4	4	9	90	107
2011	4	3	7	106	120
2012	2	8	15	129	154
2013	3	9	26	112	150
2014	4	8	10	120	142
2015	4	4	5	100	113
2016	1	5	2	69	77

Table 13: Wells Drilled by Contract and Class in 2016

TYPE OF CONTRACT	EXPLORATORY	APPRAISAL (1 ST & 2 ND)	ORDINARY APPRAISAL	DEVELOPMENT	TOTAL
JVC	0	0	1	26	27
PSC	0	4	5	31	40
SR	1	1	0	0	2
MF	0	0	0	14	14
Total	1	5	6	71	83

4.1.8 Production

A total of **718,612,967 barrels of oil** (and field condensate) was produced at an estimated average daily production of **1.96 million barrels of oil per day**. There was a **9.6%** decline over the average production rate for 2015. This volume was produced by forty-four (44) oil producing companies as shown in the table below:

Table 14: 2016 Production Performance[#]

S/No	COMPANY	CONTRACT	TERRAIN (Onshore, Offshore, Deep Offshore)	ANNUAL PRODUCTION (BBLs)	AVERAGE DAILY (BOPD)	PERCENTAGE PRODUCTION
1	ALLIED ENERGY	SR	Deep Offshore	1,981,816	5,415	0.28
2	AMNI	SR	Offshore	4,038,448	11,034	0.56
3	ATLAS	SR	Offshore	233,113	637	0.03
4	CONSOLIDATED	SR	Offshore	456,173	1,246	0.06
5	CONTINENTAL	SR	Offshore	3,118,985	8,522	0.43
6	DUBRI	SR	Offshore	94,368	258	0.01
7	EXPRESS	SR	Offshore	18,070	49	0
8	NPDC	SR	Onshore/Onshore	32,546,950	88,926	4.53
9	MONI PULO	SR	Offshore	1,061,640	2,901	0.15
10	YINKA	SR	Offshore/Deep	497,057	1,358	0.07
11	STAR DEEP	PSC	Deep Offshore	83,664,822	228,592	11.64
12	TOTAL UPSTREAM	PSC	Deep Offshore	50,578,558	138,193	7.04
13	ADDAX	PSC	Onshore/Offshore	16,565,849	45,262	2.31
14	AENR	PSC	Offshore	2,206,918	6,030	0.31
15	ESSO ERHA		Deep Offshore	7,608,938	20,789	1.06
16	ESSO USAN	PSC	Deep Offshore	76,511,221	209,047	10.65
17	NAE	PSC	Deep Offshore	7,591,113	20,741	1.06
18	SNEPCO	PSC	Deep Offshore	74,376,914	203,216	10.35
19	SEEPCO	PSC	Onshore	10,651,451	29,102	1.48
20	BRITANNIA-U	MARGINAL	Offshore	457,744	1,251	0.06
21	ENERGIA	MARGINAL	Onshore	727,504	1,988	0.1
22	FRONTIER	MARGINAL	Onshore	285,138	779	0.04

S/No	COMPANY	CONTRACT	TERRAIN (Onshore, Offshore, Deep Offshore)	ANNUAL PRODUCTION (BBLs)	AVERAGE DAILY(BOPD)	PERCENTAGE PRODUCTION
23	ORIENTAL	MARGINAL	Offshore	8,126,735	22,204	1.13
24	PLATFORM	MARGINAL	Onshore	752,809	2,057	0.1
25	MIDWESTERN	MARGINAL	Onshore	2,611,169	7,134	0.36
26	NDPR	MARGINAL	Onshore	1,652,743	4,516	0.23
27	PILLAR	MARGINAL	Onshore	600,970	1,642	0.08
28	WALTERSMITH	MARGINAL	Onshore	1,042,874	2,849	0.15
29	UNIVERSAL	MARGINAL	Onshore	470,388	1,285	0.07
30	NETWORK	MARGINAL	Onshore	587,908	1,606	0.08
31	PRIME	MARGINAL	Onshore	0	0	0
32	EXCEL	MARGINAL	Onshore	18,886	205	0
33	CHEVRON	JV	Onshore/offshore	62,218,133	169,995	8.66
34	TOTAL E&P	JV	Onshore/Offshore	34,043,748	93,016	4.74
35	MOBIL	JV	Onshore/Offshore	104,125,527	284,496	14.49
36	NAOC	JV	Onshore/Onshore	29,345,308	80,178	4.08
37	PAN OCEAN	JV	Onshore	844,928	2,309	0.12
38	SPDC	JV	Onshore/Offshore	45,476,608	124,253	6.33
39	AITEO	JV	Onshore	21,789,803	59,535	3.03
40	NEWCROSS	JV	Onshore	8,960,984	24,484	1.25
41	EROTON	JV	Onshore	12,292,771	33,587	1.71
42	SEPLAT	JV	Onshore	6,005,208	16,408	0.84
43	NECONDE	JV	Onshore	1,000,856	2,735	0.14
44	BELEMA	JV	Onshore	1,371,822	3,748	0.19
TOTAL				718,612,968	1,963,578	100

#All volumes are provisional figures

Table 15: 2016 Monthly Production#

MONTH	PRODUCTION (BBLs)	AVERAGE DAILY
JANUARY	68,487,210	2,209,265
FEBRUARY	62,675,911	2,161,238
MARCH	68,414,161	2,206,908
APRIL	65,793,698	2,193,123
MAY	57,956,580	1,869,567
JUNE	58,207,166	1,940,239
JULY	57,227,309	1,846,042
AUGUST	50,228,864	1,620,286
SEPTEMBER	52,820,585	1,760,686
OCTOBER	59,248,446	1,911,240
NOVEMBER	61,921,308	2,064,044
DECEMBER	55,631,728	1,794,572
Total Annual Production (bbls)	718,612,967	
Average Annual Daily Production	1,963,577	

#All volumes are provisional figures

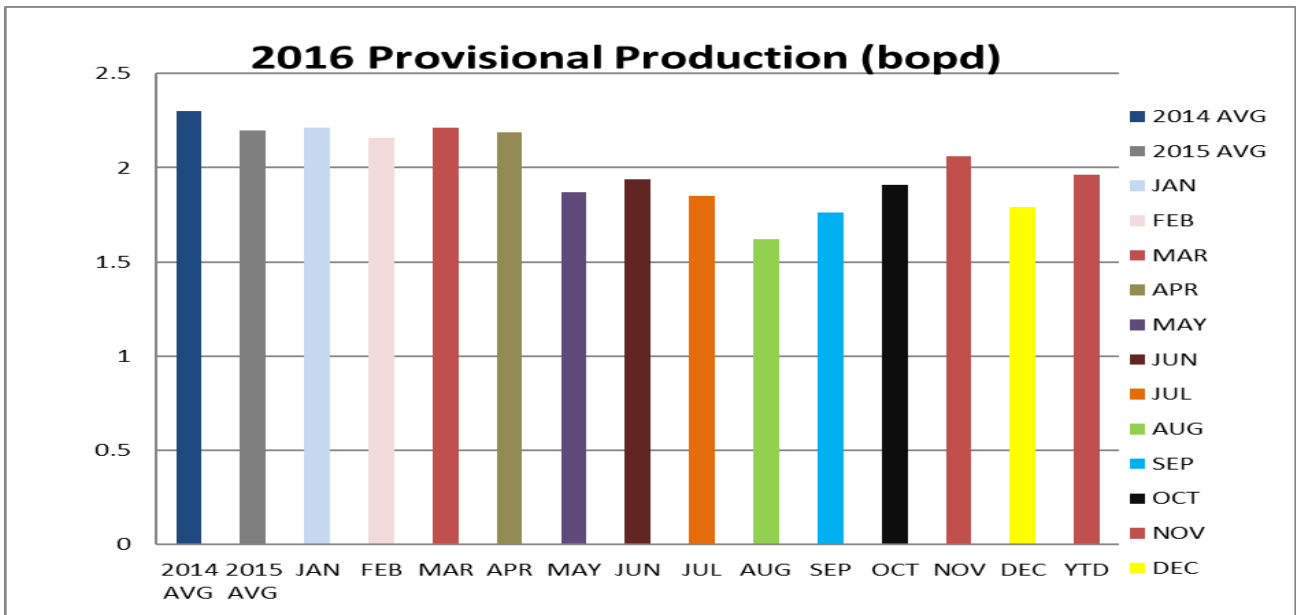


Figure 11: 2016 Average Monthly Production

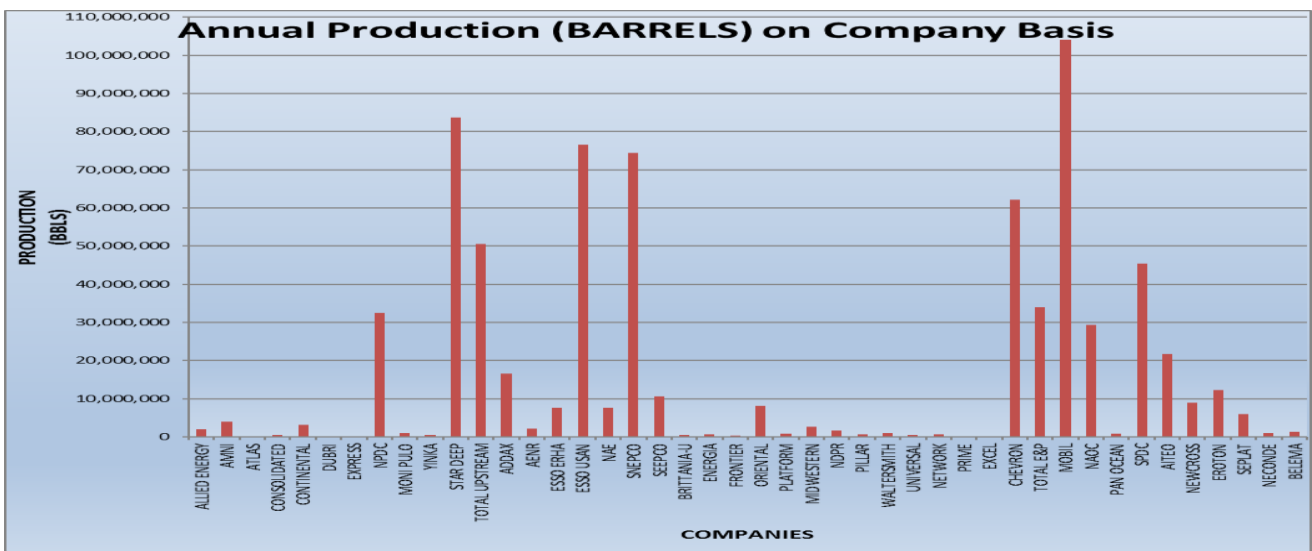


Figure 12: 2016 Oil Production on Company Basis

Table 16: 2016 Petroleum Production by Contract*

CONTRACT TYPE	PRODUCTION (BBLs)	AVERAGE PRODUCTION (BOPD)	PRODUCTION PERCENTAGE (%)
JOINT VENTURE, JV	327,475,696	894,742	45.57
PRODUCTION SHARING CONTRACT (PSC)	329,755,783	900,972	45.88
SOLE RISK, SR	44,046,619	120,346	6.13
MARGINAL FIELD OPERATORS	17,334,868	47,517	2.42

*All volumes are provisional figures

Percentage Distribution of Production (Bopd)

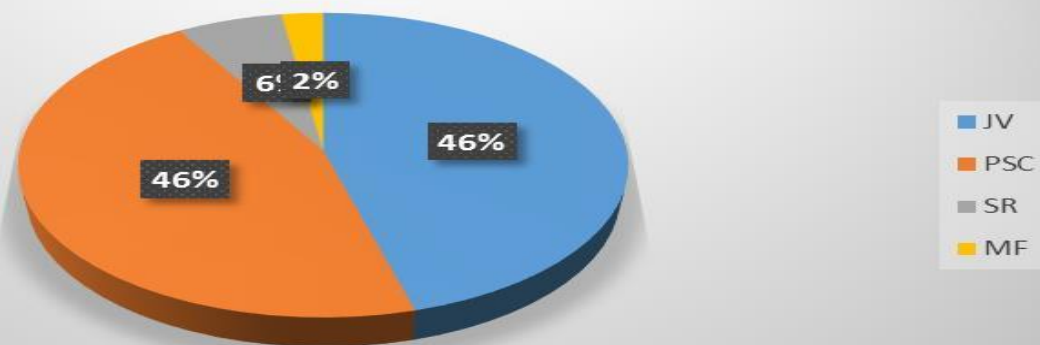


Figure 13: Percentage Distribution of Production (BOPD)

4.1.8.1 Number of Fields

The total number of fields (producing and shut-in) as at the end of December, 2016 stands at two hundred and eighty five (285) for the forty four (44) oil producing companies. The table below presents a summary of producing and non-producing fields as at December 2016.

Table 17: 2016 Fields Summary

COMPANY	FIELDS		
	PRODUCING FIELDS	SHUT-IN FIELDS	REMARKS ON SHUT-IN FIELDS
ADDAX	14	8	Contractual Reasons and operational issues
AENR	1	0	
ALLIED ENERGY	1	0	
AMNI	2	0	
AITEO	3	1	
ATLAS	1	0	
BRITANIA-U	1	0	
CAVENDISH	0	1	Operational reasons
CHEVRON	28	6	Operational Reasons
STARDEEP	1	0	
CONSOLIDATED	2	0	
CONTINENTAL	1	0	
DUBRI	1	0	
TOTAL E & P	10	8	Operational reasons and sabotage
TOTAL UPSTREAM	1	0	
ENERGIA	1	0	
EXPRESS	1	0	
ESSO	2	0	
MIDWESTERN	1	0	
MOBIL	20	15	QIT 48" Trunk Line was down
MONI PULO	1	0	
NAE	1	0	
NAOC	25	13	Facilities sabotage

COMPANY	FIELDS		
	PRODUCING FIELDS	SHUT-IN FIELDS	REMARKS ON SHUT-IN FIELDS
NDPR	1	0	
NPDC	10	14	TFP leak & Operational issues
ORIENTAL	1	0	
PAN OCEAN	1	7	
PLATFORM	1	0	
PILLAR	1	0	
PRIME	0	1	
SEPLAT	4	0	
SPDC	35	25	TFP & TNP down
SEEPCO	2	0	
EROTON	5	2	
SNEPCO	1	0	
WALTERSMITH	1	0	
NETWORK	1	0	
UNIVERSAL	1	0	
TOTAL	184	101	
	285		

4.1.8.2 Major Production Deferments

The average production deferment for 2016 was **741,495 bopd**. Deferments are attributed to shut down arising mainly from pipeline vandalism and some operational issues. The table below shows the summary of monthly deferments from all producing companies in 2016.

Table 18: 2016 Summary of Production Deferments

MONTH	DEFERMENTS	
	Average Daily Deferment, BOPD	Monthly Deferred Volume, Barrels
January	424,076	13,146,365
February	389,546	11,296,831
March	394,516	12,230,002
April	494,839	14,845,185
May	764,926	23,712,705
June	711,189	21,335,660
July	799,077	24,771,393
August	1,091,072	33,823,232
September	986,087	29,582,598
October	961,807	29,816,024
November	787,724	23,631,709
December	1,070,816	33,195,300
Total Deferment (BBLs)		271,387,005
Average Deferment (BOPD)		741,495

4.1.8.3 Stabilized Crude / Condensates Volumes by Streams

Table 19 : 2016 Monthly Summary of Stabilized Crude / Condensates Volumes by Streams#

STREAM	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL
Abo	710,611	636,987	640,633	600,658	594,595	559,106	558,669	595,721	573,559	562,128	501,089	506,279	7,040,035
Agbami	7,123,031	6,887,013	7,512,143	7,405,840	7,539,564	7,271,660	7,322,391	7,649,459	7,423,725	7,618,356	7,322,496	2,759,790	83,835,468
Ajapa	0	0	0	0	0	0	47,332	0	0	21,626	34,084	32,038	135,080
Aje	0	0	0	0	127,224	139,942	182,131	160,978	115,440	99,605	92,608	70,878	988,806
Akpo	4,410,471	3,063,899	3,604,293	4,361,153	4,154,820	4,301,827	4,541,295	4,533,059	4,339,078	4,258,580	4,126,139	4,152,415	49,847,029
Antan	1,318,438	1,018,399	1,076,504	985,856	1,025,152	959,457	968,809	912,219	865,147	861,857	881,660	937,254	11,810,752
Bonga	6,335,735	5,502,444	6,012,411	6,167,361	5,577,493	6,266,249	6,640,856	6,359,179	6,456,882	6,488,727	6,254,229	6,391,196	74,452,762
Bonny	6,063,326	7,575,954	7,891,581	8,103,458	4,000,179	4,332,799	5,390,384	3,899,967	6,569,560	4,347,654	6,310,239	5,043,755	69,528,856
Brass	2,786,356	2,869,790	2,942,655	2,803,772	2,756,554	2,157,096	2,699,605	2,730,049	2,631,659	2,507,001	2,543,768	2,621,142	32,049,447
Ebok*	734,064	716,903	786,621	740,866	733,838	668,572	667,263	650,569	643,797	632,388	591,667	374,230	7,940,778
Escravos	4,964,398	4,709,406	5,173,157	4,819,335	3,668,397	4,374,907	4,605,578	4,780,378	4,929,270	4,566,651	4,893,935	5,150,201	56,635,613
Ekanga	280,178	274,253	293,167	283,710	280,178	258,930	280,178	267,561	258,930	280,178	246,720	254,944	3,258,927
Erha	3,751,292	3,507,118	3,688,108	3,428,707	3,828,429	3,806,913	3,879,793	4,352,355	4,170,265	4,332,995	3,717,932	3,293,768	45,757,675
Forcados	7,113,382	3,080,531	200,233	304,345	678,972	803,824	1,118,840	697,719	641,197	1,852,787	1,840,241	824,830	19,156,901
Ima	22,287	26,401	23,815	17,493	31,180	32,592	34,258	34,795	32,498	31,219	32,961	48,365	367,864
Asaramatoru	48,943	66,189	63,415	59,697	38,880	0	2,258	5,855	0	0	0	0	285,237
Odudu	2,399,539	1,776,988	1,706,392	2,060,195	2,419,066	2,480,574	2,645,563	2,624,195	2,357,926	2,636,081	2,444,638	2,566,612	28,117,769
Okono	745,623	673,330	874,040	816,063	760,596	763,666	176,956	594,224	757,367	769,155	688,056	731,883	8,350,959
Okoro	302,184	239,207	117,547	150,867	238,251	229,994	279,015	377,921	355,367	394,491	416,653	372,834	3,474,331
Okwori	326,026	413,499	449,265	402,847	432,267	403,191	432,390	402,151	383,743	360,478	344,024	332,159	4,682,040
Okwuibome	972,620	764,464	938,219	1,052,753	617,492	996,007	415,360	736,241	526,085	885,823	712,022	940,690	9,557,776
Oyo	71,646	58,586	55,078	47,768	255,441	259,637	221,381	213,738	204,423	203,843	192,720	208,666	1,992,927
Pennington	434,486	426,192	484,582	499,206	494,030	468,315	247,744	425,523	444,040	449,173	508,006	550,928	5,432,225
Qua Iboe	10,789,182	9,498,247	10,324,515	9,117,287	6,588,585	7,311,571	4,317,683	61,630	349,490	5,825,343	8,421,460	6,600,815	79,205,809
Sea Eagle	384,872	1,013,234	964,415	935,264	1,010,696	985,828	1,006,296	1,026,970	946,904	934,166	921,431	818,329	10,948,405
Ukpokiti	73,535	47,245	76,186	56,172	52,055	37,479	66,469	18,922	18,471	41,587	53,105	50,777	592,003
Usan	3,534,341	3,419,780	3,492,567	3,250,208	3,380,935	2,592,763	2,520,073	3,454,152	2,784,676	3,152,812	3,255,304	2,547,833	37,385,444
Yoho	1,005,725	1,456,740	1,479,994	1,388,154	1,462,238	1,372,873	1,327,440	1,442,986	1,346,844	1,406,863	1,214,669	945,051	15,849,577
Grand Total	66,702,291	59,722,799	60,871,536	59,859,035	52,747,107	53,835,772	52,596,010	49,008,516	50,126,343	55,521,567	58,561,856	49,127,662	668,680,495

All volumes are in barrel

* Ebok volumes are unreconciled

Table 20: Summary of Stabilized Crude / Condensates Volumes by Streams#

STREAM NAME	2010	2011	2012	2013	2014	2015	2016
Bonny	92,219,866	98,033,224	85,516,915	64,667,075	77,754,786	68,599,842	69,528,856
Brass	45,917,620	45,771,536	38,431,094	31,339,249	36,494,930	39,120,881	32,049,447
Odudu	40,976,556	39,354,196	36,765,688	29,478,224	26,197,317	25,029,537	28,117,769
Qua Iboe	134,913,318	132,436,168	128,852,443	130,762,200	134,956,728	126,774,069	79,205,809
Ima	486,712	531,261	246,582	259,429	312,053	295,976	367,864
Antan	19,033,162	14,506,639	18,664,426	19,800,170	17,722,618	15,368,208	11,810,752
Okono	17,704,675	17,383,748	16,348,665	14,904,197	12,794,563	8,459,169	8,350,959
Yoho	32,845,220	30,324,058	27,685,727	25,141,246	19,315,490	17,345,249	15,849,577
Okwori	14,528,987	12,841,416	12,094,784	9,532,752	8,204,342	6,521,371	4,682,040
Okoro	5,917,922	5,767,803	6,170,120	6,601,054	6,011,655		3,474,331
Ebok ^{1,4}	N/A	2,655,667	11,143,721	12,881,551	10,159,963	10,254,615	7,940,778
Abo	11,000,680	10,381,433	8,489,519	8,022,897	8,010,447	8,062,126	7,040,035
Oyo	2,137,871	1,350,839	1,009,845	812,467	421,171	1,777,052	1,992,927
Escravos	95,768,747	90,240,005	82,992,947	75,172,726	70,697,665	62,999,068	56,635,613
Forcados	67,569,603	74,039,471	72,439,137	71,000,791	67,932,791	68,752,656	19,156,901
Pennington	10,468,651	10,545,422	9,102,862	7,357,435	5,505,439	4,719,541	5,432,225
Sea Eagle	29,524,473	23,082,127	21,075,517	15,626,909	7,199,842	14,013,061	10,948,405
Ukpokiti	464,078	276,419	842,252	684,048	565,887	341,189	592,003
Okwuibome ²	N/A	1,326,212	1,555,612	3,204,478	4,762,983	6,815,676	9,557,776
Bonga	65,023,519	52,336,416	64,067,957	50,904,162	58,238,730	70,030,598	74,452,762
Agbami	87,169,398	88,304,428	85,041,559	84,871,128	87,280,118	85,339,585	83,835,468
Erha	60,722,082	53,045,402	45,680,658	37,657,596	36,159,774	33,469,916	45,757,675
Akpo	58,444,734	55,628,907	56,650,647	60,851,269	55,311,051	55,503,303	49,847,029
Usan ³	0	0	29,409,511	39,191,504	44,520,502	39,387,436	37,385,444
Asaramatoru	0	0	0	0	560,856	516,972	285,237
Ekanga (Zaffiro)	0	0	0	0	4,073,185	3,700,353	3,258,927
Ajapa	0	0	0	0	0	0	135,080
Aje	0	0	0	0	0	0	988,806
Rapele	0	0	0	0	20,431,405	0	0
Addax Cluster	0	0	0	0	2,217,176	0	0
Platform Cluster	0	0	0	0	4,661,090	0	0
Midwestern	0	0	0	0	341,557	0	0
Grand Total	892,837,874	860,162,797	860,278,188	800,724,557	828,816,114	777,492,152	668,680,495

All volumes are in barrels.

*Crude and Condensate comingled at OIT (2012 & 2013).

¹ Ebok commenced operations in 2011.

² Okwuibome commenced operations in 2011

³ Usan commenced operations in 2012

⁴ Ebok 2016 volumes are subject to reconciliation

4.1.9 Nigerian Crude / Condensate Export

Table 21: Summary of Crude / Condensate Export by Crude Stream 2016

STREAM NAME	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL
Abo	699,313	-	698,712	699,154	681,552	699,964	699,384	698,332	0	698,113	525,674	880,948	6981146
Agbami	7,775,155	6,770,999	7,797,371	6,776,147	7,793,730	6,940,655	7,791,557	7,795,843	6,865,907	7,733,898	7,750,009	2,919,709	84,710,980
Ajapa	0	0	0	0	0	0	0	0	0	0	0	128,874	128,874
Aje	0	0	0	0	0	0	0	0	618,240	0	0	304,463	922703
Akpo	4,943,815	2,950,607	3,948,812	3,949,147	4,858,085	3,862,434	3,997,891	5,048,097	4,002,236	3,998,935	5,043,522	4,035,673	50,639,254
Antan	2,351,397	948,354	947,340	995,246	996,283	798,776	949,049	448,858	946,167	995,906	1,597,006	399,227	12,373,609
Asaramatoru- Prime	0	0	0	301,120	0	0	0	0	0	0	0	0	301,120
Bonga	6,572,149	5,691,744	6,135,298	6,147,890	5,875,308	5,832,313	5,929,002	6,529,065	6,854,383	5,637,622	6,632,887	7,135,485	74,973,146
Bonny	5,660,064	7,057,785	7,387,852	5,592,239	3,298,896	2,895,715	3,555,251	3,537,015	4,868,375	3,933,272	4,987,690	3,207,174	55,981,328
Brass	3,440,461	2,742,221	3,094,392	2,761,736	3,144,278	1,408,765	3375238	2,373,672	2,054,092	2,276,429	3,628,045	2,849,094	33,148,423
Ebok'	849,639	569,474	1,181,207	589,072	586,799	590,641	609,453	579,814	1,206,327	621,198	605,565	0	7,989,189
Ekanga	906,705	0	951,802	0	0	0	0	978,605	0	0	995,785	0	3,832,897
Erha	3,953,192	3,942,791	2,996,130	3,942,708	4,008,385	3,106,204	4,003,877	4,857,811	3,927,107	4,170,270	3,995,986	2,931,933	45,836,394
Escravos	4,877,149	3,787,494	3,769,693	3,779,427	3,794,793	4,474,592	3,783,302	3,787,203	3,756,575	2,840,676	3,793,206	4,709,205	47,153,315
Forcados	6,316,303	2,816,270	0	0	389028	281923	488680	395602	287392	1,628,772	2,333,840	590444	15,528,254
Ima	0	0	0	0	122,141	0	0	0	0	0	0	120,010	242,151
Odudu	2,948,142	1,906,638	949,364	1,947,930	2,926,094	1,997,514	1,899,250	3,995,008	1,997,914	3,001,310	1,899,378	2,946,237	28,414,779
Okono	0	899,768	901,168	899,821	900,206	299,543	0	897,155	899,672	899,904	397,132	699,720	7,694,089
Okoro	0	0	996,563	0	0	0	0	824,254	0	950,210	0	0	2,771,027
Okwori	0	648,215	647,683	0	651,980	671,984	0	672,842	0	647,845	647,879	0	4,588,428
Okwuibome ²	-	924,477	907,189	988,356	922,937	949,452	-	905,385	790,537		1,237,304	1,000,718	8,626,355
Oyo	0	183,430	0	158,709	0	418,454	0	431,046	231,698	0	400,822	121,443	1,945,602
Pennington	0	969,412	0	972,576	0	975,086	0	0	967,243	0	966,547	971,587	5,822,451
Qua Iboe	11,400,152	9,688,693	9,500,288	9,458,157	7,600,433	7,597,579	1,899,596	0	951,577	6,650,811	8,550,764	6,651,004	79,949,054
Sea Eagle	946,906	948,852	948,517	948,105	995,586	947,443	995,154	946,623	949,282	947,369	499,770	995,347	11,068,954

STREAM NAME	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL
Ukpokiti	0	0	0	0	0	0	0	0	195,247	0	0	207,599	402,846
Usan³	2,948,240	3,996,499	3,044,745	3,994,489	3,146,665	2,077,800	2,998,075	3,047,052	3,047,931	2,998,090	3,998,410	1,999,115	37,297,111
Yoho	950,344	1,898,664	948,887	1,943,993	1,218,082	996,862	1,901,845	1,578,603	949,024	1,263,425	1,264,354	1,263,267	16,177,350
Grand Total	67,539,126	59,342,387	57,753,013	56,846,022	53,911,261	47,823,699	44,876,604	50,327,885	46,271,759	51,894,055	61,751,575	47,068,276	645,500,829

All volumes are in barrels

¹ Ebok commenced operations in 2011.

² Okwuibome commenced operations in 2011

³ Usan commenced operations in 2012

Table 22: Summary of Crude / Condensate Export

STREAM NAME	2010	2011	2012	2013	2014	2015	2016
Ajapa	0	0	0	0	0	0	128,874
Aje	0	0	0	0	0	0	922,703
Abo	11,122,508	10,435,925	8,318,864	7,973,515	8,298,092	8,184,624	6,981,146
Agbami	86,914,891	88,318,131	85,216,347	84,752,375	86,171,532	85,628,159	84,710,980
Akpo	60,310,968	56,874,365	57,429,881	60,787,043	51,618,224	55,354,492	50,639,254
Antan	19,161,225	14,201,969	18,551,764	19,936,820	18,112,986	14,396,706	12,373,609
Asaramatoru	0	0	0	0	544,421	422,934	301,120
Bonga	65,062,445	51,637,104	64,283,129	50,858,029	58,282,931	69,715,081	74,973,146
Bonny	84,732,535	85,632,150	74,644,120	56,983,360	67,745,358	65,601,732	55,981,328
Brass	46,807,579	46,321,912	38,935,783	30,866,918	36,400,244	38,946,913	33,148,423
Ebok*	0	2,632,888	11,083,168	13,118,644	9,772,103	10,274,484	7,989,189
Ekanga Zaffiro	0	0	0	0	3,763,224	3,710,955	3,832,897
Erha	61,312,426	52,491,417	46,411,568	37,031,702	35,959,867	33,431,160	45,836,394
Escravos	67,842,754	64,008,180	60,861,373	49,395,756	59,259,056	59,054,243	47,153,315
Forcados	66,334,530	74,836,802	69,586,326	66,228,558	66,442,803	69,510,040	15,528,254
Ima	587,031	443,148	360,694	209,822	231,712	448,182	242,151
Odudu	40,678,097	39,129,520	37,841,145	28,080,832	26,478,183	25,321,991	28,414,779
Okono	18,051,652	17,051,254	16,630,272	14,831,286	12,053,749	9,296,812	7,694,089
Okoro	5,948,727	5,375,374	6,358,125	6,431,941	5,608,008	4,840,795	2,771,027
Okwori	14,455,280	12,913,267	11,767,917	9,057,835	8,460,061	6,859,162	4,588,428
Oso Condensate ¹	4,604,786	5,384,790	0	0	0	0	0
Oyo	3,612,118	1,350,055	1,015,747	671,221	5,455,256	1,646,071	1,945,602
Pennington	10,845,935	10,766,479	8,792,567	6,891,180	5,834,616	4,939,155	5,822,451
Qua Iboe	127,265,111	127,473,827	129,434,223	130,387,983	134,322,114	125,618,831	79,949,054
Sea Eagle	29,852,439	22,449,218	20,830,329	16,175,525	7,028,594	13,629,727	11,068,954
Okwuibome ²	0	587,591	2,132,939	2,957,822	4,202,870	7,422,126	8,626,355
Ukpokiti	326,047	295,409	804,835	982,136	546,255	0	402,846
Usan ³	0	0	28,942,683	38,357,661	44,518,002	39,729,126	37,297,111
Yoho	33,188,540	30,675,473	27,699,067	24,969,999	18,971,337	17,461,456	16,177,350
Grand Total	859,017,624	821,286,248	827,932,866	757,937,963	776,081,598	771,444,957	645,500,829

All volumes are in barrels

*Ebok commenced operations in 2011.

¹Crude and Condensate comingled at QIT since 2012

²Okwuibome commenced operations in 2011

³Usan commenced operations in 2012

Table 23: Average Price of Nigeria's Crude Streams as Quoted by Platts in USD#

YEAR	ESCRAVOS	BRASS	AGBAMI	FORCADOS	BONNY	QUA IBOE	AKPO	BONGA
2011	111.9434	112.0184	110.4980	112.9252	111.9684	112.1366	*	*
2012	113.1028	112.8231	110.7121	114.2121	112.8378	113.2087	*	*
2013	111.2222	110.2312	108.9569	111.9453	110.4733	110.8774	110.4490	112.8663
2014	100.6580	99.8366	99.3597	101.3490	100.7018	100.8022	99.3726	101.1330
2015	53.8629	53.1415	52.6413	54.4807	54.1593	54.2862	52.6848	54.1808
2016	44.8551	44.8379	44.4953	44.5397	45.2293	45.4899	44.4833	45.0547

Source: Platts

* Price assessment not available

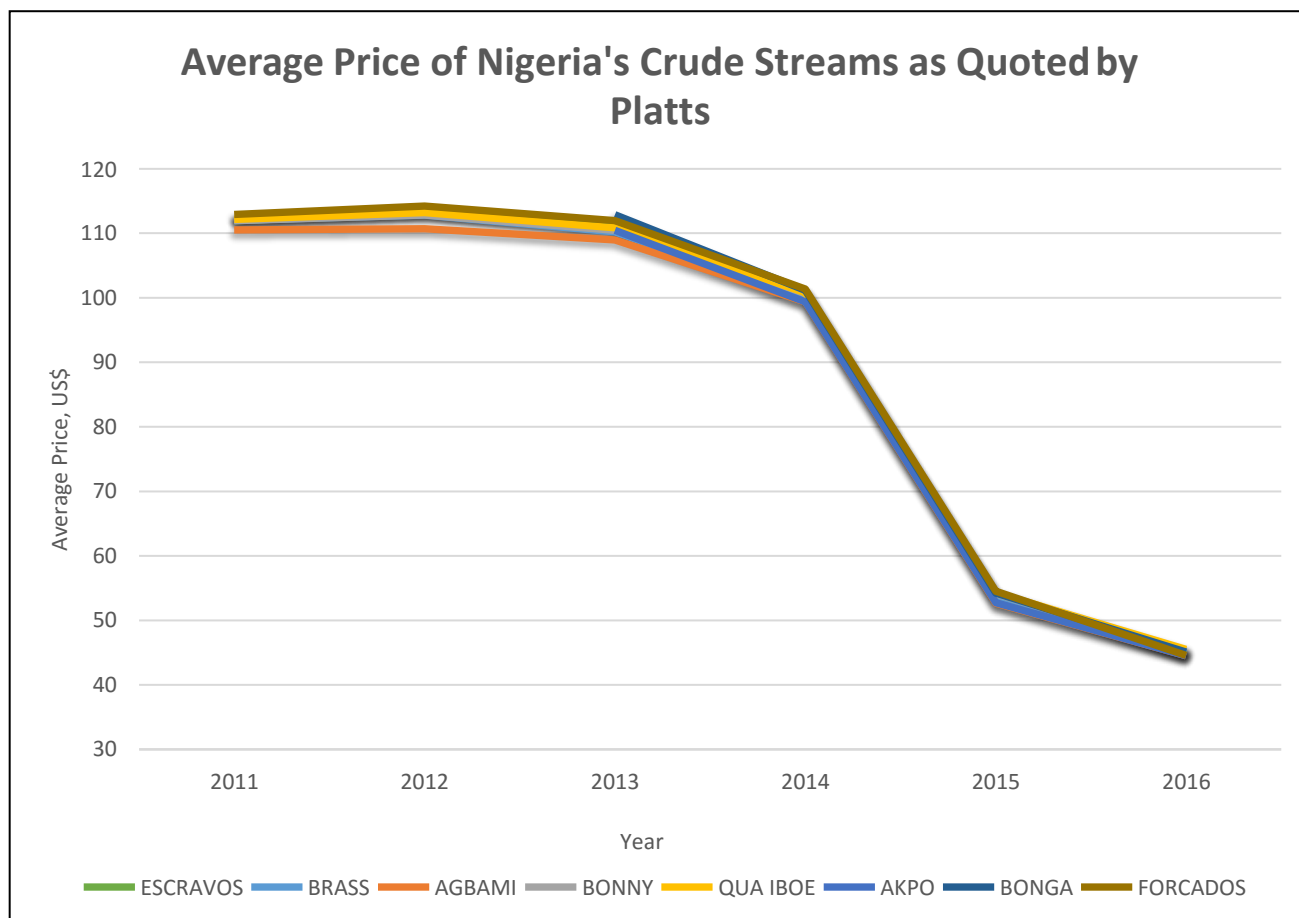


Figure 14: Average Price of Nigeria's Crude Streams as Quoted by Platts

4.2 DOWNSTREAM

4.2.1 Refinery Activities

Table 24: Refinery Plants in Nigeria

S/N	REFINERY	OWNERSHIP	CONFIGURATION	FEEDSTOCK	PRODUCTS
1	Old PHRC, Rivers State	NNPC	Hydroskimming	Bonny light	Fuels
2	New PHRC, Rivers State	NNPC	Conversion	Bonny light	Fuels
3	WRPC, Delta State	NNPC	Conversion	i. Escravos ii. Ughelli blend.	a. Fuels b. Petrochemicals (Polypropylene & Carbon black)
4	KRPC, Kaduna State	NNPC	Conversion	i. Escravos ii. Ughelli blend iii. Basra iv. Urals	a. Fuels b. Petrochemicals c. Base Oil
5	NDPR, Rivers State	NDPR	Topping	Ogbelle	Diesel

Table 25: Refinery Capacity Utilization

	KRPC	WRPC	New PHRC	Old* PHRC	NDPR#	Total	Capacity Utilization, %	
Designed Capacity, BPSD	110,000.00	125,000.00	150,000.00	60,000.00	1,000.00	446,000.00		
Crude Oil Processed, BPSD	2010	21,986.72	53,345.20	19,345.38	-	-	94,677.30	21.23%
	2011	20,896.79	49,731.41	31,853.02	-	222.03	102,703.25	23.03%
	2012	31,981.86	34,868.71	24,530.97	-	557.45	91,938.99	20.61%
	2013	32,452.43	20,925.04	44,937.47	-	185.18	98,500.12	22.09%
	2014	12,160.39	24,049.59	23,557.15	-	503.71	60,270.84	13.51%
	2015	3,297.36	8,337.64	9,274.21	-	714.66	21,623.87	4.85%
2016	10,310.69	14,746.13	32,669.98	-	605.43	58,332.23	13.08%	

* The Old Port Harcourt Refinery (Old PHRC) was down during the period being reported.

NDPR commenced AGO production in May 2011.

Table 26: 2016 PMS Production Summary

YEARS	PMS 2016 REFINERY PRODUCTION IN MT				Total, Litres
	KRPC	New PHRC	WRPC	Total	
January	21,707.00	49,568.00	31,663.69	102,938.70	138,040,796.70
February	0.00	48,134.00	2,808.72	50,942.72	68,314,187.52
March	0.00	27,568.00	6,393.55	33,961.55	45,542,438.55
April	3,086.00	10,481.00	15,830.15	29,397.15	39,421,578.15
May	12,798.00	11,303.00	20,943.26	45,044.26	60,404,352.66
June	13,670.00	33,876.00	22,293.65	69,839.65	93,654,970.65
July	4,256.00	2	22,502.21	26,760.21	35,885,441.61
August	14,683.00	17,798.00	28,815.64	61,296.64	82,198,794.24
September	29,386.00	24,425.00	11,182.45	64,993.45	87,156,216.45
October	15,603.00	11,507.00	13,432.66	40,542.66	54,367,707.06
November	5,020.00	8,113.00	19,553.79	32,686.79	43,832,985.39
December	0.00	24,026.00	14,216.74	38,242.74	51,283,514.34
Total	120,209.00	266,801.00	209,636.50	596,646.50	800,102,983.32

* Old PHRC was not operational during the period under review.

Table 27: PMS Production by Refineries

YEARS	PMS PRODUCTION, Metric Tonnes				Total, Litres
	KRPC	New PHRC	WRPC	Total	
2010	178,036.37	199,611.02	479,027.07	856,674.46	1,148,800,451.54
2011	305,657.11	393,919.52	501,974.35	1,201,550.98	1,611,279,865.13
2012	309,449.02	226,217.10	330,212.60	865,878.72	1,161,143,364.20
2013	399,536.00	258,326.82	357,720.45	1,015,583.27	1,361,897,160.51
2014	139,350.99	65,110.14	298,876.36	503,337.49	674,975,574.49
2015	40,663.68	56,379.57	84,758.39	281,801.64	377,896,000.22
2016	120,209.00	266,801.00	209,636.51	596,646.50	800,102,983.32

Table 28: 2016 AGO Production Summary

YEARS	AGO 2016 REFINERY PRODUCTION in Metric Tonnes					Total, Litres
	KRPC	New PHRC	NDPR	WRPC	Total	
January	11,973.00	43,515.00	1,113.96	0.00	56,601.96	65,884,677.00
February	9,648.00	454.00	1,918.38	0.00	12,020.38	13,991,724.00
March	845.00	27,087.00	1,936.55	33,254.00	63,122.55	73,474,647.00
April	2,494.00	40,262.00	190.28	8,037.93	50,984.21	59,345,619.19
May	9,453.00	88,743.00	985.01	18,025.09	117,206.10	136,427,897.76
June	7,622.00	52,621.00	1,562.82	28,999.33	90,805.15	105,697,191.12
July	9,541.00	31,898.00	1,216.95	0.00	42,655.95	49,651,527.00
August	10,889.00	66,532.00	1,858.69	23,746.02	103,025.70	119,921,924.28
September	30,952.00	97,457.00	1,778.78	24,055.98	154,243.80	179,539,734.72
October	9,835.00	25,154.00	1,126.80	28,128.26	64,244.06	74,780,081.64
November	6,066.00	70,424.00	1,692.45	0.00	78,182.45	91,004,370.00
December	394.00	28,588.00	1,306.83	0.00	30,288.83	35,256,201.00
Total	109,712.00	572,735.00	16,687.49	164,246.60	863,381.10	1,004,975,594.71

Table 29: AGO Production by Refineries

YEARS	AGO PRODUCTION, Metric Tonnes					Total, Litres
	KRPC	NEW PHRC	NDPR*	WRPC	Total	
2010	259,389.13	191,363.89	-	665,285.40	1,116,038.42	1,299,068,721.38
2011	224,750.40	354,710.79	4,325.82	637,286.77	1,221,073.78	1,421,329,877.73
2012	295,094.99	290,817.56	13,299.31	420,117.96	1,019,329.82	1,186,499,913.09
2013	308,460.00	175,646.88	4,579.31	542,428.49	1,031,114.68	1,200,217,487.14
2014	137,831.00	573,017.61	13,479.89	283,063.14	1,007,391.64	1,172,603,874.45
2015	24,055.84	120,184.71	19,167.42	92,874.57	256,282.54	298,312,876.99
2016	109,712.00	572,735.00	16,687.49	164,246.60	863,381.09	1,004,975,588.76

* NDPR commenced AGO production in May 2011.

Table 30: 2016 DPK Production Summary

YEARS	DPK 2016 REFINERY PRODUCTION in Metric Tonnes				Total, Litres
	KRPC	NEW PHRC	WRPC	Total	
January	6,902	13,054	0	19,956	24,585,792
February	3,262	3,782	0	7,044	8,678,208
March	1,315	12,665	20,936	34,916	43,016,795
April	4,319	30,153	5,189	39,662	48,863,190
May	4,955	30,078	11,817	46,850	57,719,582
June	0	28,034	20,491	48,525	59,783,330
July	4,030	20,754	0	24,784	30,533,888
August	8,225	18,808	16,624	43,657	53,785,461
September	14,340	29,203	17,643	61,186	75,381,312
October	10,469	6,236	26,307	43,012	52,991,252
November	0	28,161	0	28,161	34,694,352
December	0	21,345	0	21,345	26,297,040
Total	57,817	242,273	119,009	419,099	516,330,202

Table 31: DPK Production by Refineries

YEARS	DPK PRODUCTION, Metric Tonnes				Total, Litres
	KRPC	New PHRC	WRPC	Total	
2010	120,740.93	148,250.59	403,943.34	672,934.86	829,055,748.07
2011	119,243.93	237,189.30	385,651.46	742,084.69	914,248,338.68
2012	162,269.01	158,058.35	276,130.76	596,458.12	734,836,404.33
2013	200,361.99	138,622.59	381,348.00	720,332.58	887,449,739.15
2014	89,083.95	182,192.37	196,719.64	467,995.96	576,571,023.10
2015	20,603.90	68,732.95	74,272.73	163,609.58	201,567,000.13
2016	57,817.00	242,273.00	119,009.20	419,099.20	516,330,202.08

Table 32: Disposition of Licensed Refining Companies in Nigeria

S/N	Ownership	Plant Site	Capacity (Bpsd)	License / Approval Granted	Current Status	Cumulative Capacity Additions (Bpsd)		
						Short Term	Medium Term	Long Term
1	Amakpe International Refinery Inc.	Eket, Akwa Ibom State	12,000	ATC (revalidated Dec. 2007)	Fabricated process units were inspected certified fit but were not shipped to Nigeria.	-	12,000	12,000
2	Resource Petroleum & Petrochemicals International Incorporated	Ibeno, Akwa Ibom State	100,000	ATC (revalidated in 2015)	Signed contract with Foster Wheeler France and Axens for FEED.	-	-	100,000
3	Hi Rev Oil Limited	Utapate, Akwa Ibom State	50,000	Approval to Construct (ATC)	Detailed Engineering approval granted	-	10,000	50,000
4	Azikel Petroleum Limited	Obunagha, Bayelsa State	12,000	Approval to Construct (ATC)	Detailed Engineering approval granted	-	12,000	12,000
5	Dee Jones	New Port Extension, Calabar Port, Cross Rivers State	6,000	Approval to Construct/Relocate (ATC)	Project yet to commence	-	6,000	-
6	Niger Delta Petroleum Resources	Ogbele, Rivers state	10,000	Approval to Relocate/Construct	Project ongoing	-	-	10,000
7	Dangote Oil Refinery Company	Lekki Free Trade Zone, Lagos	500,000	License to establish (LTE)	FEED approval granted	-	500,000	500,000
8	Kainji Resources Limited	Oguta, Imo State	24,000	License to establish (LTE)	Request for ATC being processed	-	12,000	24,000
9	Masters Energy Oil & Gas Limited	Rumoulumeni, Rivers State	30,000	License to establish (LTE)	Project yet to commence	-	-	30,000
10	Cross Country Oil & Gas Limited	Obile, Imo State	20,000	License to establish (LTE)	Project yet to commence	-	-	20,000
11	Waltersmith Refining & Petrochemical Company Limited	Ibigwe, Imo State	5,000	License to establish (LTE)	Project yet to commence	5,000	5,000	5,000
12	Grifon Energy Limited	Ipoke, Ondo State	10,000	License to establish (LTE)	Preliminary activities ongoing	2,000	10,000	10,000
13	Sifax Oil & Gas Company Limited	Snake Island, Lagos	120,000	License to establish (LTE)	Project yet to commence	-	-	30,000
14	Capital Oil & Gas Industries Limited	Snake Island, Lagos	100,000	License to establish (LTE)	Project yet to commence	-	-	100,000
15	Aiteo Energy Resources Limited	Ajagbodudu, Delta State	100,000	License to establish (LTE)	Project yet to commence	-	-	100,000
16	RG Shinjin Petrochemicals Limited	Koko, Delta State	10,000	License to establish (LTE)	Project yet to commence	-	10,000	10,000
17	Epic Refinery & Petrochemical Industries Limited	Oporoma, Bayelsa State	107,000	License to establish (LTE)	Project yet to commence	-	20,000	107,000
18	Frao Oil Nigeria Limited	Uzere, Delta State	12,000	License to establish (LTE)	Project yet to commence	-	-	12,000
19	All Grace Energy Limited	Ubima, Rivers State	5,000	License to establish (LTE)	Project yet to commence	-	-	5,000
20	Green Energy International Limited	Otakikpo, Rivers State	5,000	License to establish (LTE)	Project yet to commence	-	-	5,000
21	Petrolex Oil & Gas Limited	Ibefun Ijebu, Ogun State	100,000	License to establish (LTE)	Project yet to commence	-	-	100,000
22	Clairgold Oil & Gas Engineering Limited	Koko, Delta State	20,000	License to establish (LTE)	Project yet to commence	-	-	20,000
23	Fresh Energy Limited	Igbomotoru, Bayelsa State	10,000	License to establish (LTE)	Project yet to commence	-	-	20,000
24	Chyzob Oil & Gas Limited	Obuzor, Abia State	10,000	License to establish (LTE)	Project yet to commence	-	-	20,000

S/N	Ownership	Plant Site	Capacity (Bpsd)	License / Approval Granted	Current Status	Cumulative Capacity Additions (Bpsd)		
						Short Term	Medium Term	Long Term
25	Eko Petrochem & Refining Company Ltd.	Tomaro Island, Lagos State	20,000	License to Establish (LTE)	Project yet to commence	-	20,000	20,000
26	Associated Worldwide Company Limited	Eket, Akwa Ibom State	20,000	License to Establish (LTE)	Project yet to commence	-	-	20,000
27	Energia Limited	Kwale, Delta State	20,000	License to Establish (LTE)	Project yet to commence	-	-	20,000
28	Shepha Petroleum & Petrochemicals Co. Ltd	Ovrode, Delta State	30,000	License to Establish (LTE)	Project yet to commence	-	30000	-
29	Conodit Refinery Nigeria Limited	Umukwata, Delta State	20,000	License to Establish (LTE)	Project yet to commence	-	20000	-
30	Don Mac Ltd.	Oben, Edo State	10,000	License to Establish (LTE)	Project yet to commence	-	10000	-
31	Ikwe-Onna Refinery Ltd	Ikwe, Akwa Ibom State	5,000	License to Establish (LTE)	Project yet to commence	-	5000	-
32	Southfield Petrochemical & Refinery Ltd.	Owanoba, Edo State	20,000	License to Establish (LTE)	Project yet to commence	-	20000	-
33	Mondonat Nigeria Ltd.	Okpaka, Delta State	20,000	License to Establish (LTE)	Project yet to commence	-	20000	-
34	Kingdom Global Trading Petroleum & Gas Nig. Ltd.	Okwagbe, Ughelli south L.G.A., Delta state	12,000	License to Establish (LTE)	Project yet to commence	-	12000	-
35	Platinum Hydrocarbon Resources Ltd.	Ikwewu-Amukpe, Sapele, L.G.A. Delts state	10,000	License to Establish (LTE)	Project yet to commence	-	10000	-
Anticipated Capacity Additions						7,000	744,000	1,362,000

4.2.2 Petroleum Product Importation

Table 33: Petroleum Products Volumes as per Import Permits Issued (Metric Tonnes) *

YEARS	PMS	AGO	DPK	ATK	LPFO	BASE OIL	CHEMICALS	BITUMEN	ADDITIVES
2014	10,665,337	14,356,908	705,000	2,623,500	1,640,000	1,327,400	90,000	1,105,500	120,000
2015	10,104,300	14,981,597	1,312,000	3,884,500	2,340,800	1,602,680	-	952,300	-
2016	14,052,500	20,116,000	3,708,500	3,733,000	1,853,000	1,616,450	-	665,250	-

*This excludes importation by NNPC

Table 34: 2016 Petroleum Products Volumes as per Import Permits Issued (Metric Tonnes) *

MONTHS	PMS (MT)	AGO (MT)	HHK (MT)	ATK (MT)	FUEL OIL (MT)	BASE OIL (MT)	BITUMEN (MT)
JANUARY	620,000	4,124,000	300,000	420,000	205,000	166,000	120,000
FEBRUARY	485,000	1,370,000	190,000	510,000	215,000	225,900	30,000
MARCH	1,705,000	1,839,000	280,000	200,000	70,000	145,000	30,000
APRIL	1,340,000	1,821,000	252,500	565,000	330,000	207,000	130,000
MAY	325,000	712,000	10,000	155,000	190,000	57,000	30,000
JUNE	1,045,000	2,623,500	420,000	198,000	70,000	178,050	60,000
JULY	1,630,000	1,670,000	445,000	365,000	145,000	117,000	95,000
AUGUST	1,613,000	1,546,000	390,000	333,000	295,000	200,500	15,000
SEPTEMBER	1,080,000	1,181,000	316,000	215,000	133,000	58,500	3,700
OCTOBER	1,480,500	1,048,000	400,000	132,000	15,000	43,500	30,000
NOVEMBER	2,145,000	1,624,000	570,000	525,000	175,000	163,000	90,000
DECEMBER	584,000	557,500	135,000	115,000	10,000	55,000	31,550
TOTAL	14,052,500	20,116,000	3,708,500	3,733,000	1,853,000	1,616,450	665,250

*This excludes importation by NNPC

Table 35: Petroleum Products Import Summary, Metric Tonnes

YEARS	PMS	AGO	DPK	ATK	LPG	LPFO	BASE OIL	BITUMEN
2008	8,633,472.14	2,198,744.97	1,496,246.81					
2009	10,476,266.37	3,292,612.00	1,403,004.77					
2010	11,902,519.70	2,605,288.11	1,512,236.07					
2011	15,278,901.22	2,055,338.23	1,471,863.10					
2012	11,349,633.48	1,803,929.68	1,753,309.69					
2013	12,390,826.30	2,143,910.22	2,136,631.32					
2014	13,505,465.72	3,253,232.85	2,316,190.02	344,110.39	-	153,423.34	205,861.86	350,215.47
2015	13,393,574.20	3,776,495.79	1,530,164.48	418,243.20	8,158.52	58,028.41	211,529.12	109,601.28
2016	13,557,231.82	3,833,316.28	483,345.40	538,838.94	-	296,663.12	257,876.67	144,765.90

Table 36: 2016 Petroleum Products Import Summary, Metric Tonnes

	PMS	AGO	DPK	ATK	LPG	LPFO	Base Oil	Bitumen
January	1,219,683.45	327,546.73	64,438.98	0.00	-	23,016.85	24,063.12	5,678.55
February	900,506.84	443,485.52	128,809.52	43,122.58	-	16,926.01	19,925.29	17,236.48
March	1,111,013.11	400,704.57	67,059.22	38,116.72	-	24,174.90	19,880.82	23,500.82
April	1,146,933.64	373,466.84	23,982.25	55,323.10	-	56,376.10	12,364.97	12,076.52
May	1,496,059.75	335,126.51	72,532.94	66,752.53	-	29,650.42	16,461.25	10,414.64
June	1,092,924.14	287,113.15	14,507.49	41,859.26	-	34,532.49	7,000.00	11,603.82
July	1,044,943.52	432,589.08	54,772.72	79,795.95	-	59,952.94	25,576.97	2,614.40
August	1,151,409.62	475,481.27	29,100.74	35,686.01	-	21,555.19	27,184.20	11,563.94
September	930,942.54	195,528.81	17,836.61	89,820.30	-	10,018.94	51,946.07	10,105.87
October	1,083,422.49	126,113.22	0.00	19,185.62	-	13,519.88	33,141.45	5,457.36
November	1,150,163.49	199,728.09	10,304.93	22,460.97	-	6,939.39	-	11,604.37
December	1,229,229.23	236,432.50	0.00	46,715.90	-	-	20,332.54	22,909.15
Total	13,557,231.82	3,833,316.28	483,345.40	538,838.94	-	296,663.12	257,876.67	144,765.90

Table 37: Summary of 2016 Petroleum Products Importation by Market Segment, Metric Tonnes

MARKET SEGMENT / PRODUCT		JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL	TOTAL, Litres
PPMC	PMS	584,802.36	703,596.55	667,169.69	719,159.05	895,439.86	711,437.14	649,231.74	518,065.73	248,771.17	574,459.81	607,732.07	424,203.47	7,304,068.64	9,794,756,046.24
	AGO	0	0	0	0	0	0	0	9,888.76	0	0	19,580.90	0	29,469.66	34,302,684.24
	DPK	49,423.51	59,615.62	38,438.98	9,913.92	38,877.93	0	0	0	0	0	0	0	196,269.96	241,804,590.72
	ATK	0	0	0	0	0	0	0	0	55,821.94	0	0	32,264.90	88,086.84	108,522,986.88
	LPFO	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	BASE OIL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	BITUMEN	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MAJOR MARKETERS	PMS	222,414.83	37,318.82	215,273.39	89,355.92	278,968.14	220,664.12	94,067.37	185,601.29	108,934.29	86,719.16	168,546.21	129,759.07	1,837,622.61	2,464,251,920.01
	AGO	32,783.72	6,373.75	0	20,101.10	14,981.22	35,136.06	14,994.40	42,678.65	15,867.72	37,764.40	5,019.04	62,412.85	283,093.86	329,521,253.04
	DPK	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ATK	0	23,131.71	0	38,402.90	31,427.17	26,640.20	27,217.83	12,737.39	10,893.00	0	0	14,451.00	184,901.20	227,798,274.70
	LPFO	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	BASE OIL	8,907.00	8,334.90	3,895.06	0	3,880.22	0	10,954.00	12,300.27	3,980.38	3,873.50	0	4,196.91	60,322.24	64,363,830.08
	BITUMEN	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDEPENDENT MARKETERS	PMS	412,466.26	159,591.47	228,570.03	338,418.67	321,651.75	160,822.88	301,644.41	447,742.60	573,237.08	422,243.52	373,885.21	675,266.68	4,415,540.56	5,921,239,890.96
	AGO	294,763.01	437,111.77	400,704.57	353,365.74	320,145.29	251,977.09	417,594.68	422,913.86	179,661.09	88,348.82	175,128.14	174,019.65	3,515,733.71	4,092,314,038.44
	DPK	15,015.47	69,193.90	28,620.24	14,068.33	33,655.01	14,507.49	54,772.72	29,100.74	17,836.61	0	10,304.93	0	287,075.44	353,676,942.08
	ATK	0	19,990.87	38,116.72	16,920.20	35,325.36	15,219.06	52,578.12	22,948.63	23,105.36	19,185.62	22,460.97	0	265,850.91	327,528,317.42
	LPFO	23,016.85	16,926.01	24,174.90	56,376.10	29,650.42	34,532.49	59,952.94	21,555.19	10,018.94	13,519.88	6,939.39	0	296,663.12	0
	BASE OIL	15,156.12	11,590.39	15,985.76	12,364.97	12,581.03	7,000.00	14,622.97	14,883.93	47,965.69	29,267.95	0	16,135.63	197,554.43	210,790,578.94
	BITUMEN	5,678.55	17,236.48	23,500.82	12,076.52	10,414.64	11,603.82	2,614.40	11,563.94	10,105.87	5,457.36	11,604.37	22,909.15	144,765.90	139,264,676.40

All volumes are in Metric tonnes

Table 38: Summary of Petroleum Products Importation by Market Segment (2010 – 2016)

MARKET SEGMENT / PRODUCT		2010	2011	2012	2013	2014	2015	2016	TOTAL	Total, Litres
PPMC	PMS	6,375,558.77	5,419,528.90	5,368,476.91	4,873,097.95	4,893,264.66	5,289,031.18	7,304,068.64	39,523,027.01	53,000,379,220.41
	AGO	301,543.91	513,474.51	29,146.94	31,470.15	96,777.60	13,034.75	29,469.66	1,014,917.52	1,181,363,993.28
	DPK	1,275,822.65	1,244,513.78	1,310,101.18	1,341,844.70	1,348,224.50	888,733.01	196,269.96	7,605,509.78	9,369,988,048.96
	ATK	0	0	0	0	0	0	88,086.84	88,086.84	108,522,986.88
	LPFO	10,005.86	0	0	0	0	0	0	10,005.86	10,506,153.00
	BASE OIL	0	0	0	0	0	0	0	0	0
	BITUMEN	0	0	0	0	0	0	0	0	0
MAJOR MARKETERS	PMS	1,799,245.07	2,902,728.13	1,759,150.28	1,930,515.51	2,228,000.82	1,831,560.30	1,837,622.61	14,288,822.72	19,161,311,267.52
	AGO	269,274.93	321,129.72	363,802.16	435,171.93	368,267.47	230,854.77	283,093.86	2,271,594.84	2,644,136,393.76
	DPK	34,742.79	4,688.54	4,998.35	14,912.59	9,871.29	4,987.36	0	74,200.92	91,415,533.44
	ATK	332,152.00	409,190.11	412,145.93	342,319.63	279,138.00	189,477.17	184,901.20	2,149,324.04	2,647,967,213.58
	LPFO	11,471.05	37,188.47	61,365.05	0	6,698	9,609.00	0	126,331.57	132,648,148.50
	BASE OIL	0	0	0	0	0	0	60,322.24	60,322.24	64,363,830.08
	BITUMEN	0	0	0	0	0	0	0	0	0
INDEPENDENT MARKETERS	PMS	3,727,715.85	6,956,644.19	4,222,006.28	5,587,212.84	6,384,200.25	6,396,124.53	4,415,540.56	37,689,444.50	50,541,545,074.50
	AGO	2,034,469.27	1,220,734.00	1,410,980.58	1,677,268.13	2,788,187.78	3,537,364.10	3,515,733.71	16,184,737.57	18,839,034,531.48
	DPK	201,670.63	222,660.78	438,210.16	779,874.03	958,094.23	636,444.11	287,075.44	3,524,029.38	4,341,604,196.16
	ATK	122,125.29	70,150.55	112,930.98	70,662.48	64,972.39	251,212.03	265,850.91	957,904.63	1,180,138,500.46
	LPFO	149,049.79	66,613.02	27,067.05	14,953.80	146,725.34	53,931.19	296,663.12	755,003.31	792,753,479.70
	BASE OIL	0	0	0	0	0	0	197,554.43	197,554.43	210,790,578.94
	BITUMEN	0	0	0	0	0	0	144,765.90	144,765.90	139,264,676.40

4.2.3 Petroleum Products Importation / Local Production

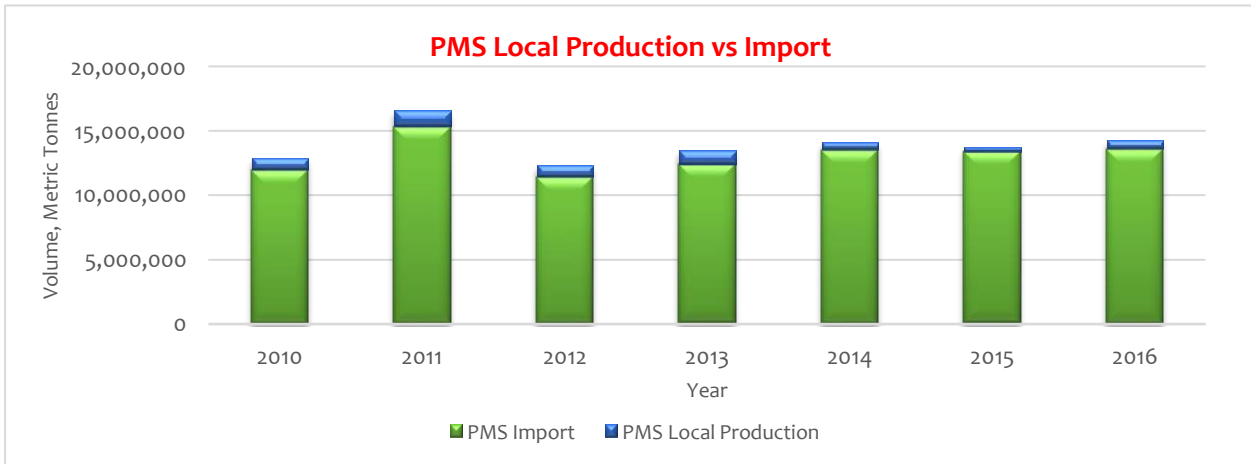


Figure 15: PMS Local Production vs Importation

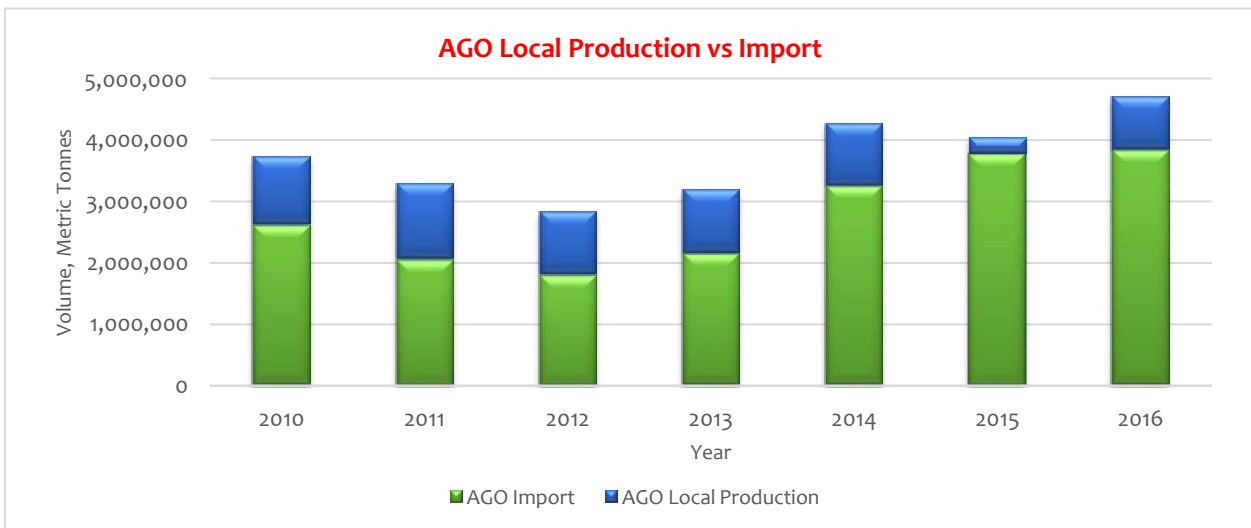


Figure 16: AGO Local Production vs Importation

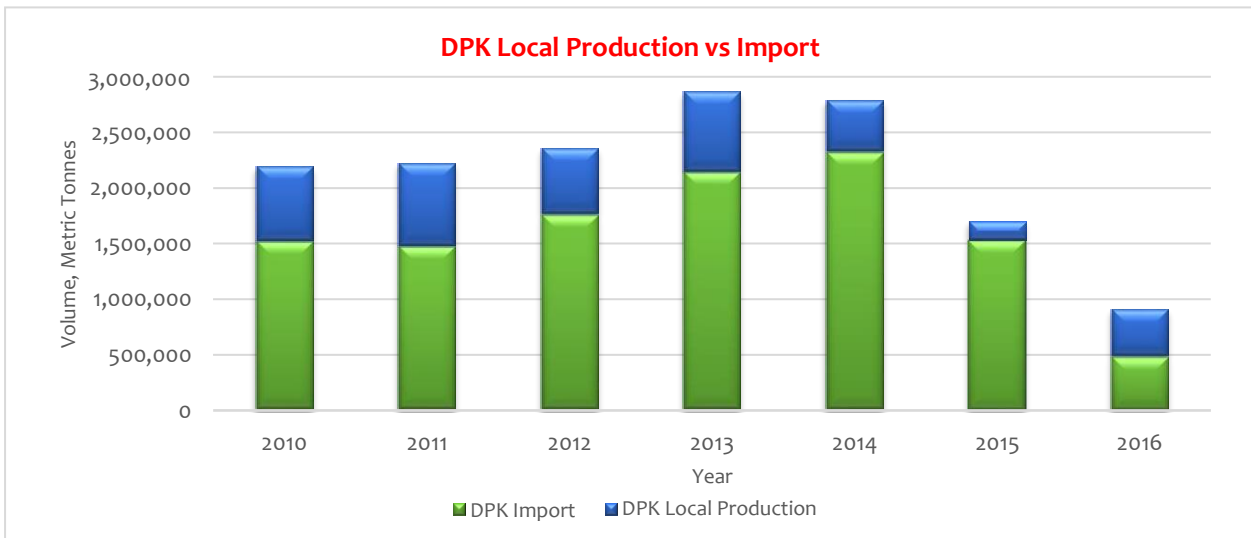


Figure 17: DPK Local Production vs Importation

4.2.4 Petroleum Products Average Pricing

Table 39: Petroleum Products Average Consumer Price Range (Naira per Litre)

		PMS	AGO	DPK
2010	Major	64-65	100-117	50-70
	Independent Marketers	65-70	100-130	50-85
	NNPC	65	106	50
2011	Major	64-65	115-170	50-70
	Independent Marketers	65-70	120-180	100-160
	NNPC	65	110-115	50
2012	Major	97	145-170	50
	Independent Marketers	97-120	150-180	110-140
	NNPC	97	145	50
2013	Major	97	150-170	135-140
	Independent Marketers	97-130	140-170	135-140
	NNPC	97	160	50
2014	Major	97	145-170	50
	Independent Marketers	97-100	150-180	100-150
	NNPC	97	150-175	50
2015	Major	86.50-97	150-170	50
	Independent Marketers	86.50-180	130-175	50-150
	NNPC	86.50-97	150-155	50
2016	Major			
	Independent Marketers			
	NNPC			

4.2.5 Retail Outlets

Table 40: Retail Outlets Summary - Filling Stations Count

STATE	MAJOR MAKETERS	INDEPENDENT MAKETERS	TOTAL
Abia	778	77	855
Adamawa	251	129	380
Akwa-Ibom	467	110	577
Anambra	1650	35	1685
Bauchi	698	51	749
Bayelsa	326	61	387
Benue	112	8	120
Borno	437	95	532
Cross River	1072	86	1158
Delta	312	62	374
Ebonyi	834	94	928
Edo	167	20	187
Ekiti	422	63	485
Enugu	160	30	190
FCT	540	80	620
Gombe	246	71	317
Imo	1007	111	1118
Jigawa	399	54	453
Kaduna	1239	230	1469
Kano	1322	263	1585
Katsina	667	65	732
Kebbi	759	99	858
Kogi	574	57	631
Kwara	1128	165	1293
Lagos	1516	943	2459
Nasarawa	438	70	508

STATE	MAJOR MAKETERS	INDEPENDENT MAKETERS	TOTAL
Niger	681	105	786
Ogun	2093	304	2397
Ondo	612	109	721
Osun	894	125	1019
Oyo	1613	278	1891
Plateau	437	133	570
Rivers	940	239	1179
Sokoto	560	85	645
Taraba	535	98	633
Yobe	388	59	447
Zamfara	236	46	282
Total	26510	4710	31220

Table 41: Storage Capacities of Retail Outlets by States

S/N	STATES	MAJORS			INDEPENDENT			NNPC			TOTAL		
		PMS(ltrs)	AGO (ltrs)	DPK (ltrs)	PMS (ltrs)	AGO (ltrs)	DPK (ltrs)	PMS	AGO	DPK	PMS (ltrs)	AGO (ltrs)	DPK (ltrs)
1	Abia	65,190,259	30,453,646	26,503,875	5,839,060	2,395,780	2,021,420	200,000	100,000	100,000	71,229,319	32,949,426	28,625,295
2	Adamawa	29,258,509	11,372,800	9,376,770	16,536,100	5,400,050	4,690,950	200,000	100,000	100,000	45,994,609	16,872,850	14,167,720
3	Akwa- Ibom	31,676,800	17,049,200	16,528,700	8,073,500	3,877,300	3,760,700	200,000	100,000	100,000	39,950,300	21,026,500	20,389,400
4	Anambra	53,346,273	25,808,934	25,061,915	2,329,260	911,480	831,860	200,000	100,000	100,000	55,875,533	26,820,414	25,993,775
5	Bauchi	58,266,800	27,321,170	22,701,480	3,930,660	1,638,080	1,349,520	200,000	100,000	100,000	62,397,460	29,059,250	24,151,000
6	Bayelsa	23,643,560	12,056,212	11,141,210	5,266,680	2,219,200	1,968,140	200,000	100,000	100,000	29,110,240	14,375,412	13,209,350
7	Benue	10,026,500	4,194,000	4,216,000	10,026,500	4,194,000	4,216,000	200,000	100,000	100,000	20,253,000	8,488,000	8,532,000
8	Borno	33,128,660	16,936,250	15,202,180	7,097,800	3,367,860	2,901,580	200,000	100,000	100,000	40,426,460	20,404,110	18,203,760
9	Cross River	73,986,500	39,877,300	36,304,300	73,986,500	39,877,300	36,304,300	200,000	100,000	100,000	148,173,000	79,854,600	72,708,600
10	Delta	24,643,100	11,619,370	10,690,410	4,412,160	1,801,480	1,884,980	200,000	100,000	100,000	29,255,260	13,520,850	12,675,390
11	Ebonyi	58,998,220	31,217,500	27,511,020	6,740,600	3,224,940	2,694,980	200,000	100,000	100,000	65,938,820	34,542,440	30,306,000
12	Edo	10,720,158	5,994,140	5,118,850	772,690	635,560	426,860	200,000	100,000	100,000	11,692,848	6,729,700	5,645,710
13	Ekiti	28,767,965	17,133,500	13,640,580	4,350,415	1,975,960	1,581,200	200,000	100,000	100,000	33,318,380	19,209,460	15,321,780
14	Enugu	9,679,650	5,017,710	4,704,540	1,972,910	673,240	753,120	200,000	100,000	100,000	11,852,560	5,790,950	5,557,660
15	FCT	40,026,135	21,345,158	17,612,097	5,262,964	1,971,560	1,660,180	200,000	100,000	100,000	45,489,099	23,416,718	19,372,277
16	Gombe	18,887,400	9,120,600	8,832,890	4,916,900	2,468,920	2,217,260	200,000	100,000	100,000	24,004,300	11,689,520	11,150,150
17	Imo	80,528,693	38,015,085	33,282,780	7,130,630	3,451,840	3,017,260	200,000	100,000	100,000	87,859,323	41,566,925	36,400,040
18	Jigawa	24,292,500	13,715,000	12,771,000	3,314,940	1,877,000	1,574,660	200,000	100,000	100,000	27,807,440	15,692,000	14,445,660
19	Kaduna	78,442,128	44,835,880	41,039,780	19,619,260	7,773,160	7,054,030	200,000	100,000	100,000	98,261,388	52,709,040	48,193,810
20	Kano	109,242,314	50,337,294	43,976,980	109,242,314	50,337,294	43,976,980	200,000	100,000	100,000	218,684,628	100,774,588	88,053,960
21	Katsina	49,080,588	24,064,400	22,395,170	5,117,460	2,235,960	2,020,400	200,000	100,000	100,000	54,398,048	26,400,360	24,515,570
22	Kebbi	50,390,000	25,812,500	25,191,500	50,390,000	25,812,500	25,191,500	200,000	100,000	100,000	100,980,000	51,725,000	50,483,000
23	Kogi	39,293,790	20,331,440	18,662,520	3,402,700	1,709,460	1,692,280	200,000	100,000	100,000	42,896,490	22,140,900	20,454,800
24	Kwara	68,052,760	38,320,680	34,816,132	3,402,700	1,709,460	1,692,280	200,000	100,000	100,000	71,655,460	40,130,140	36,608,412
25	Lagos	145,415,360	66,323,160	57,580,780	98,035,399	34,759,600	30,794,380	200,000	100,000	100,000	243,650,759	101,182,760	88,475,160
26	Nasarawa	33,042,160	16,790,440	15,062,280	5,059,170	2,633,000	2,333,000	200,000	100,000	100,000	38,301,330	19,523,440	17,495,280
27	Niger	44,658,960	24,885,089	22,720,610	8,551,000	3,863,860	3,544,470	200,000	100,000	100,000	53,409,960	28,848,949	26,365,080
28	Ogun	150,338,550	84,269,080	75,793,760	23,802,920	10,774,780	9,288,300	200,000	100,000	100,000	174,341,470	95,143,860	85,182,060
29	Ondo	35,123,510	16,875,350	17,309,450	7,018,650	23,291,840	2,961,260	200,000	100,000	100,000	42,342,160	40,267,190	20,370,710
30	Osun	53,623,220	29,035,790	28,281,140	7,553,660	2,960,000	3,086,680	200,000	100,000	100,000	61,376,880	32,095,790	31,467,820
31	Oyo	101,417,480	54,526,770	50,662,880	18,632,700	7,056,580	6,833,560	200,000	100,000	100,000	120,250,180	61,683,350	57,596,440
32	Plateau	30,620,495	15,794,671	14,189,540	11,040,956	5,213,980	4,009,540	200,000	100,000	100,000	41,861,451	21,108,651	18,299,080
33	Rivers	82,069,609	38,954,866	35,496,328	20,887,730	8,430,796	7,927,392	200,000	100,000	100,000	103,157,339	47,485,662	43,523,720
34	Sokoto	42,683,000	20,436,000	19,236,300	6,032,000	3,248,000	2,939,000	200,000	100,000	100,000	48,915,000	23,784,000	22,275,300

S/N	STATES	MAJORS			INDEPENDENT			NNPC			TOTAL		
		PMS(ltrs)	AGO (ltrs)	DPK (ltrs)	PMS (ltrs)	AGO (ltrs)	DPK (ltrs)	PMS	AGO	DPK	PMS (ltrs)	AGO (ltrs)	DPK (ltrs)
35	Taraba	38,578,900	20,940,500	18,945,100	6,158,814	3,895,112	3,331,400	200,000	100,000	100,000	44,937,714	24,935,612	22,376,500
36	Yobe	24,130,900	14,305,500	13,116,800	4,406,200	2,194,200	2,006,000	200,000	100,000	100,000	28,737,100	16,599,700	15,222,800
37	Zamfara	17,266,000	8,043,000	7,800,810	2,999,910	1,467,000	1,345,510	200,000	100,000	100,000	20,465,910	9,610,000	9,246,320
	Total	1,868,537,406	953,129,985	863,478,457	583,313,812	281,328,132	235,882,932	7,400,000	3,700,000	3,700,000	2,459,251,218	1,238,158,117	1,103,061,389

4.2.6 Petrochemicals

Table 42: Petrochemical Plants

S/N	PLANT LOCATION	OWNERSHIP	PROCESSING PLANT & CAPACITY		FEEDSTOCK	PRODUCTS
			TYPE	MTPA		
1	Warri, Delta State	NNPC	Polypropylene (PP)	35,000	Propylene-rich Feed (PRF)	Polypropylene (PP)
			Carbon Black (CB)	18,000	Decant oil	Carbon Black (CB)
2	Kaduna, Kaduna State	NNPC	Linear Alkyl Benzene (LAB)	30,000	i. Raw kerosene	i. Linear Alkyl Benzene (LAB)
					ii. Reformate	ii. Heavy 2
						iii. Kero solvent
3	Eleme, Rivers State	i. Indorama	Polypropylene (PP)	120,000	i. Propylene-rich Feed (PRF)	i. Polypropylene Homopolymer (PPHP)
		ii. Federal Govt.			ii. Natural Gas Liquid (NGL)	ii. Polypropylene Copolymer (PPCP)
		iii. Rivers State Govt.	Polyethylene (PE)	360,000		i. High Density Polyethylene (HDPE)
			Olefin		440,000	
					Olefin	

4.2.7 Lubricant Blending Plants

Table 43: List of Licensed Base Oil Marketers and Storage Capacities.

S/N	MARKETER CATEGORY	NAME OF COMPANY	LOCATION	BASE OIL STORAGE CAPACITY (LITERS)
1	Majors	Total Nigeria Plc	Apapa, Lagos	9,825,400
2		MRS Oil Nigeria Plc	Apapa, Lagos	11,000,000
3		Conoil Plc	Apapa, Lagos	9,075,130
4		Mobil Oil Nig. Plc	Apapa, Lagos	7,080,000
5		Forte Oil Plc (Forte)	Apapa, Lagos	8,000,000
6		Total Nigeria Plc	Koko, Delta	10,050,000
7		Total Nig Plc	Kudenda, Kaduna South	1,300,000
8		Oando Plc II	Chikun, Kaduna.	7,200,000
9		Oando Plc I	Rido Chikun, Kaduna	8,067,170
10		Oando Marketing Plc	Apapa, Lagos	9350000
		Subtotal		80,947,700
11	Independent	Grand Petroleum & Chemicals Ltd.	Amuwo-Odofin, Lagos	10,000,000
12		Bestlub International Nig.Ltd.	Apapa Lagos	360,000
13		Fudia Petrochemical Ltd.	Isolo Lagos	540,000
14		Honeywell Oil & Gas Ltd.	Ilupeju, Lagos	165,000
15		Highlight Oil and Gas Limited	Agbodi Village, Ogun	375,000
16		Eterna Industries Plc.	Sagamu, Ogun	935,000
17		Ascon Oil Company Ltd	Magboro, Ifo, Ogun	335,000
18		Moye Oil & Chemical Limited	Osogbo, Osun	926,179
19		Lubcon Limited	Ilorin west, Kwara	5,000,000
20		Equatorial Pet. Coastal & Process Ltd.	Ilorin, Kwara	2,000,000

S/N	MARKETER CATEGORY	NAME OF COMPANY	LOCATION	BASE OIL STORAGE CAPACITY (LITERS)
20		Zico Pet. Marketing Company	Benin, Edo	226,597
21		Specialty Oil Company Nig Ltd	Onitsha, Anambra	425,600
22		Dozzy Oil & Gas Ltd	Onitsha, Anambra	3,000,000
23		Ibeto Petrochemicals Industry Limited	Nnewi, Anambra	1,200,000
24		Whiz Products W.A Limited	Isofia, Anambra	900,000
25		Abbnx Oil Limited	Ogbaru, Anambra	99,000
26		A-Z Petroleum Products Limited	Nnewi, Anambra	2,110,000
27		Jezco Oil Nigeria Ltd	Awka, Anambra	360,000
28		Tonimas Nigeria Limited	Arongwa, Abia	4,427,096
29		Dezern Nigeria Limited	Okigwe, Imo	990,000
30		Onyx Crown Oil Limited	Owerri West, Imo	355,000
31		Ronad Oil and Gas (WA) Ltd	Ideato North, Imo	6,684,000
32		Ammasco International Limited	Bompai Ind. Area, Kano	6,600,000
33		Veee Oil resources Limited	Independence Road, Kano	264,000
34		T.Y Chemicals Limited	Chikun, Kaduna	700,000
35		Techno Oil Limited	Elegushi Layout, Lagos	210000
36		Premier Petroleum Limited	Osisioma, Abia State.	3135000
37		Alsa Petrochemical Industries Ltd	Agbodi Village, Ogun State	350000
38		Necit Nigeria Limited	Canteen Daji, Sokoto	300000
39		I.M.N Auto Parts Ltd,	Sokoto Road Niger	245000
40		Mubeco Petroleum Company Ltd	Zaria Expressway, Kaduna	1500000
41		Petroleum Managers Ltd	Isolo, Lagos	270000
42		Peace Petroleum Nigeria Ltd	Emene, Enugu East, Enugu State	450000
43		Saclux Industries Nigeria Ltd	Umuahia North, Abia State	1150000
44		Ejide Energy Limited	Laduba, Asa L.G.A, Kwara State	3135000
45		Vital Allied Energy Limited	Lagos-Ibadan Expressway	60500
		Subtotal		59,782,972
Grand Total				140,730,672

4.3 GAS

4.3.1 Domestic Gas Supply Obligation (DGSO)

Table 44: Domestic Gas Supply Obligation Performance

YEARS	PERFORMAN CE	SPDC	CNL	EXXON MOBIL	NAOC	TOTAL/ EPNL	NPDC	ADDAX/ NNPC PSC	PAN OCEAN	SEPLAT	MONIPULO	NIGER DELTA	PLATFORM	FRONTIER	Universal	AMNI	CONOIL	CONOG	Brittania U	Dubr i	NNPC PSC	Total
2008	Obligation	849	351	459	245	217	45	0	65	0												2231
	Supply	355	185	0	176	0	0	0	0	0												716
	% Perf	41.81	52.71	0	71.84	0	0	N/A	0	N/A												32.09
2009	Obligation	1100	455	517	328	270	120	140	65	0												2995
	Supply	379	185	0	188	0	0	0	0	0												752
	% Perf	34.45	40.66	0	57.32	0	0	0	0	N/A												25.11
2010	Obligation	1364	564	640	415	327	120	140	65	0												3635
	Supply	530	168	0	97	0	0	0	0	0												795
	% Perf.	38.86	29.79	0	23.37	0	0	0	0	N/A												21.87
2011	Obligation	1559	644	732	479	368	120	140	65	0												4107
	Supply	553	268	0	101	0	0	0	44.4	0												966.4
	% Perf.	35.47	41.61	0	21.09	0	0	0	68.31	N/A												23.53
2012	Obligation	1753	725	823	544	410	120	144	65	0												4584
	Supply	538	358	0	120	0	65	0	36	0												1117
	% Perf.	30.69	49.38	0	22.06	0	54.17	0	55.38	N/A												24.37
2013	Obligation	1948	805	915	608	452	120	160	65	0												5073
	Supply	156.6	318.28	0	87.29	0	321	0	17.39	130												1030.6
	% Perf.	8.04	39.54	0	14.36	0	267.5	0	26.75	0												20.32
2014	Obligation	550	500	400	300	250	700	0	20	150	11	5	20	7.5	5	8	5	5	1	3	1000	3940.5
	Supply	209.4	494	0	95	0	344	0	12.86	125	0	0	0	19.01	0	0	0	0	0	0	0	1299.2
	% Perf.	38.07	98.8	0	31.67	0	49.14	N/A	64.3	83.33	0	0	0	253.47	0	0	0	0	0	0	0	32.97
2015	Obligation	750	500	400	350	280	800	0	20	210	13	7	23	9	7	8	6	5	1	40	1000	4429
	Supply	128.3	436	0	101.93	0	450	0	28.58	172.5	0	0	0	81.49	0	0	0	0	0	0	0	1398.8
	% Perf.	17.11	87.2	0	29.12	0	56.25	N/A	142.9	82.14	0	0	0	905.44	0	0	0	0	0	0	0	31.58
2016	Obligation	400	270 (+200)	250	300	180	300	0	20	130	10	7	20	15	5	10	7	6	0.7	4	350	2567.7
	Supply	73.85	197.856	0	149.37	0	280.06	0	5.128	203.39	0	0	0	70.63	0	0	0	0	0	0	0	980
	% Perf.	18.46	98.928	0	49.791	0	93.355	0	25.64	156.46	0	0		470.86	0	0	0	0	0	0	0	38.18

* All values are in MMSCF/D

* DSO was allocated to the NNPC PSC in 2014

Table 45: Domestic Gas Supply Obligation From 2014-2017 for E&P Companies

GAS PRODUCERS	2014 DGSO, MMSCF/day	2015 DGSO, MMSCF/day	2016 DGSO, MMSCF/day	2017 DGSO, MMSCF/day
Chevron JV	500	500	470	440
SPDC JV	550	750	400	390
NAOC JV	300	350	300	280
Exxon Mobil JV	400	400	250	230
TEPNL JV	250	280	180	160
NPDC	700	800	300	300
Pan Ocean	20	20	20	8
SEPLAT	150	210	130	120
Monipulo	11	13	10	8
Niger Delta	5	7	7	6
Platform	20	23	20	18
Frontier	7.5	9	15	13
Universal	5	7	5	4
AMNI	8	8	10	8
Consolidated	5	6	7	2
Continental	5	5	0	3
Brittania-U	1	1	0.7	0.5
Dubri	3	4	4	3.5
NNPC PSC	1000	1000	350	450
AITEO	0	0	25	25
Eroton	0	0	34	32
Energia	0	0	20	18
Newcross	0	0	10	8
Atlas	0	0	0	5
Midwestern Allied Energy	0	0	0	5
Allied Energy	0	0	0	5
Pillar oil	0	0	0	5
Network E & P Prime Energy	0	0	0	5
Prime Energy	0	0	0	5
Waltersmith	0	0	0	5
Phillips/Oando	0	0	0	5
Gec Petroleum Dev Company	0	0	0	5
Statoil	0	0	0	5
WAEP/Dangote	0	0	0	5
Sunlink	0	0	0	5
Yinka Folawiyo	0	0	0	5
Millenium	0	0	0	5
Total	3940.5	4393	2567.7	2597

4.3.2 Gas Production And Utilization

Table 46: Summary of 2016 Gas Production and Utilization

YEARS	GAS PRODUCTION			FUEL GAS	GAS LIFT	RE-INJECTION	(NGL/LPG)	SALES			TOTAL GAS UTILIZED	% UTILIZED	TOTAL GAS FLARED	% FLARED
	AG	NAG	TOTAL					Gas to NIPP	Local (Others)	NLNG (Export)				
January	143,839,534	116,827,346	260,666,880	13,085,428	5,992,697	64,492,833	5,997,256	1,624,832	40,895,427	99,295,809	230,629,471	88%	26,844,654	10%
February	125,840,012	102,503,568	228,343,580	12,012,243	5,378,070	57,798,542	4,871,286	4,690,315	31,340,557	83,735,768	199,267,047	87%	24,970,588	11%
March	136,239,612	93,786,950	230,026,562	13,040,006	6,086,254	66,969,485	6,149,589	4,864,982	28,910,704	77,226,984	202,573,822	88%	24,986,027	11%
April	136,705,305	100,230,405	236,935,710	12,521,772	5,044,595	67,340,877	5,604,702	2,007,748	31,048,958	89,537,101	212,483,831	90%	21,566,759	9%
May	127,204,575	107,816,949	235,021,523	12,220,194	4,785,851	63,897,857	4,919,664	2,930,276	23,919,809	100,883,959	212,770,057	91%	18,986,538	8%
June	129,415,486	94,399,060	223,814,546	11,913,749	4,630,659	67,616,709	5,821,137	3,049,691	19,429,917	91,074,822	202,811,731	91%	18,364,776	8%
July	121,297,233	98,828,702	220,125,935	11,140,382	4,954,083	55,992,348	3,675,874	2,102,324	25,059,883	90,173,742	192,214,906	87%	25,761,644	12%
August	107,025,232	72,917,446	179,942,678	9,761,643	4,014,674	45,577,692	1,717,505	1,019,510	29,597,051	63,067,250	153,883,717	86%	24,973,495	12%
September	112,965,811	99,405,738	212,371,549	10,743,942	5,347,090	49,558,448	2,706,723	1,334,182	31,449,465	90,078,216	190,326,002	90%	24,763,021	12%
October	129,786,109	97,821,046	227,607,155	11,797,126	5,893,864	58,648,422	4,559,796	1,235,623	34,029,088	85,945,534	201,206,465	88%	26,510,982	12%
November	130,741,532	105,546,379	236,287,911	12,055,450	8,061,941	57,233,216	4,390,557	2,505,481	28,010,187	98,359,300	209,900,140	89%	27,504,448	12%
December	116,606,975	104,052,033	220,659,007	11,312,688	5,344,671	47,731,907	3,972,334	4,309,018	26,861,951	97,366,484	196,063,574	89%	23,649,362	11%
Total	1,517,667,415	1,194,135,621	2,711,803,036	141,604,622	65,534,450	702,858,337	54,386,423	31,673,983	350,552,997	1,066,744,968	2,404,130,764	89%	288,882,293	11%

All volumes are in MMSCF

Table 47: Summary of Gas Production and Utilization

YEARS	GAS PRODUCTION			FUEL GAS	GAS LIFT	RE-INJECTION	(NGL/LPG)	SALES		TOTAL GAS UTILIZED	% UTILIZED	TOTAL GAS FLARED	% FLARED
	AG	NAG	Total					Domestic Sales	NLNG (Export)				
2001	1,551,912,250	391,683,723	1,943,595,973	80,269,287	26,142,438	336,523,011	52,033,317	141,067,615	306,812,223	942,847,891	48.51	1,000,748,082	51.49
2002	1,340,591,744	410,542,712	1,751,134,456	75,008,164	28,948,137	306,475,680	27,435,764	111,435,703	280,903,198	830,206,646	47.41	920,927,810	52.59
2003	1,387,104,460	516,223,961	1,903,328,421	71,590,002	28,973,434	272,481,721	36,648,692	214,182,219	477,983,042	1,101,859,110	57.89	801,469,311	42.11
2004	1,584,922,039	525,256,005	2,110,178,044	83,627,321	26,611,460	398,179,304	43,181,065	262,897,801	444,033,291	1,258,530,242	59.64	851,647,802	40.36
2005	1,626,444,779	508,893,962	2,135,338,741	88,786,060	43,781,302	402,390,225	57,345,709	234,780,140	502,737,873	1,329,821,309	62.28	805,517,432	37.72
2006	1,542,136,671	747,754,914	2,289,891,585	89,025,509	59,662,180	391,968,180	44,295,798	326,264,627	558,246,752	1,469,463,046	64.17	820,428,539	35.83
2007	1,599,190,078	1,007,675,245	2,606,865,323	99,705,731	49,204,125	485,642,132	31,751,276	279,970,609	843,948,502	1,790,222,375	68.67	816,642,948	31.33
2008	1,593,835,503	986,561,109	2,580,396,612	100,058,117	64,822,893	507,947,176	35,720,163	232,164,155	968,898,071	1,909,610,576	74.00	670,786,036	26.00
2009	1,582,137,295	645,978,947	2,228,116,241	108,676,564	58,655,769	599,618,597	46,874,213	237,287,426	640,635,350	1,691,747,917	75.93	536,368,324	24.07
2010	1,865,159,719	954,522,126	2,819,681,845	133,431,927	65,128,415	751,705,008	46,591,153	285,802,520	992,293,989	2,274,953,012	80.68	544,728,832	19.32
2011	1,839,230,068	1,127,423,119	2,966,653,187	139,425,042	91,970,753	703,579,860	68,391,658	344,481,029	1,114,860,569	2,462,708,911	83.01	503,944,277	16.99
2012	1,872,875,894	1,123,160,177	2,996,036,072	146,168,448	88,839,035	724,648,283	67,756,862	372,044,969	1,131,321,835	2,530,779,433	84.47	465,256,639	15.53
2013	1,786,603,702	1,025,377,681	2,811,981,383	152,134,470	54,264,412	758,079,412	63,286,195	391,435,743	964,809,782	2,384,010,015	84.78	427,971,368	15.22

YEARS	GAS PRODUCTION			FUEL GAS	GAS LIFT	RE-INJECTION	(NGL/LPG)	SALES		TOTAL GAS UTILIZED	% UTILIZED	TOTAL GAS FLARED	% FLARED
	AG	NAG	Total					Domestic Sales	NLNG (Export)				
2014	1,880,374,658	1,168,171,828	3,048,546,486	154,037,918	87,130,036	808,503,665	56,785,229	424,738,371	1,123,511,431	2,654,706,650	87.08	393,839,836	12.92
2015	1,740,550,000	1,262,629,000	3,003,179,000	152,799,000	84,396,000	743,029,000	85,912,000	445,260,000	1,157,835,000	2,672,247,000	88.98	330,933,000	11.02
2016	1,517,667,415	1,194,135,621	2,711,803,036	141,604,622	65,499,545	702,858,337	54,386,423	382,226,980	1,066,744,968	2,404,095,859	88.65	288,917,198	10.65

All volumes are in MSCF

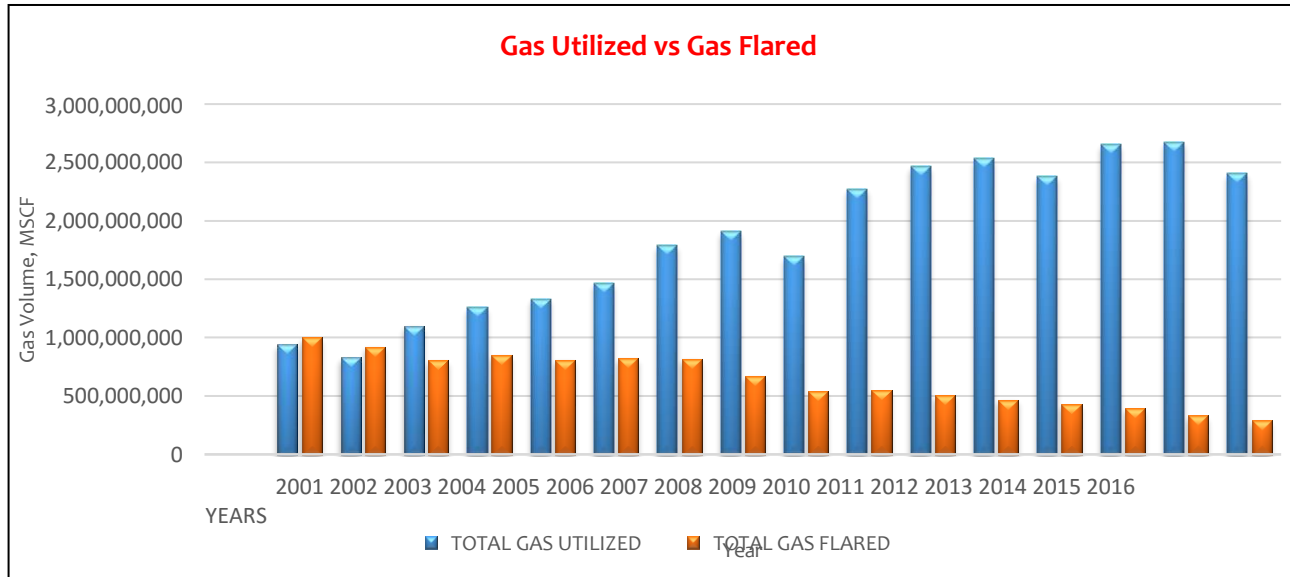


Figure 18: Gas Utilized Versus Gas Flared

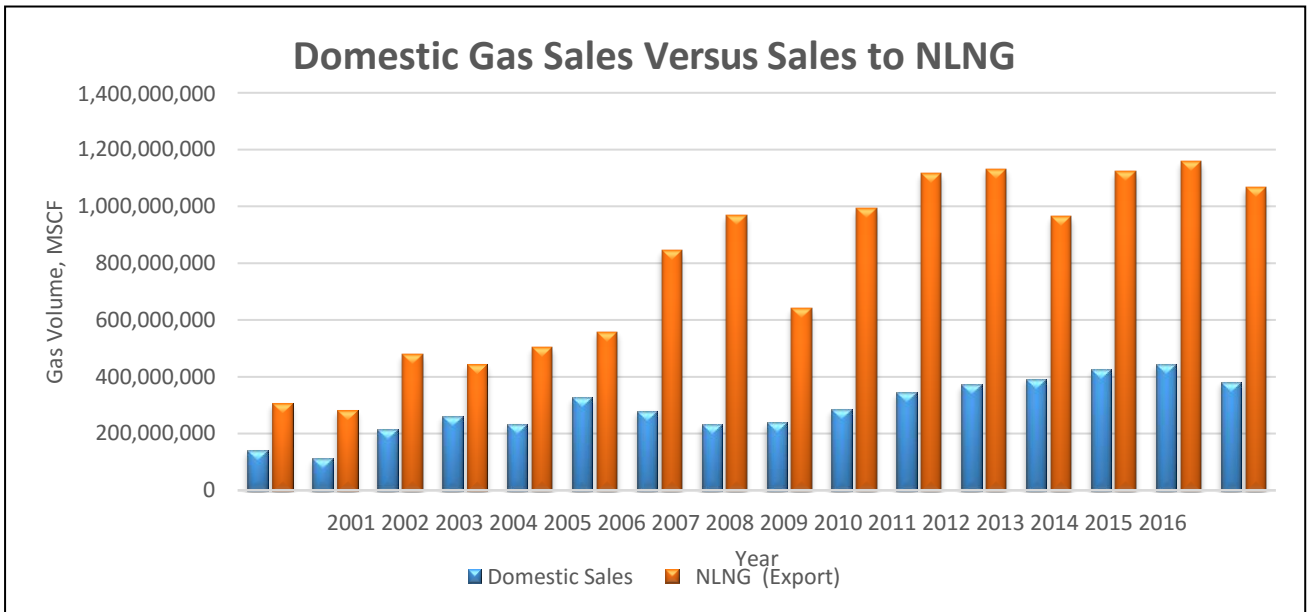


Figure 19: Domestic Gas Sales Versus Sales to NLNG (Export)

4.3.3 IN PURSUIT OF INCREASED DOMESTIC UTILIZATION OF LPG IN NIGERIA

No doubt, the last one decade had witnessed significant developments in the LPG Sector in Nigeria. Annual consumption nationwide had grown to 400,000 Metric tonnes (MT) in 2016 from around 70,000 MT in 2007, which represents almost 600% increase in consumption within the period under review at an average of 20% annual growth.

For nearly 15 years since the early-90s, LPG supply and consumption had been stuck at around 70,000 MT or less due to supply constraints and infrastructural bottlenecks. The NNPC refineries, which were hitherto planned as the main source of LPG in the country, became unable to supply the market due to low capacity utilisation arising from turnaround maintenance constraints. The NNPC Butanisation programme of the 80s that installed 8 LPG inland Depots (1000 MT capacity each) and 2 Coastal Depots (1000 MT in Calabar and 4,000 MT in Apapa, Lagos) could not drive distribution and consumption nationwide as envisaged due to paucity of supply from its refineries and inadequate distribution infrastructure.

There was absence of bulk storage facilities at the port areas to receive LPG imports. Also, there are inadequate/regional imbalance in LPG distribution infrastructure like bottling plants and resellers' outlets. In addition, there is insufficient LPG cylinders in circulation. There are only about one million cylinders in circulation in-country and most of these cylinders are worn-out and

unsuitable for use. Cylinder manufacturing plants closed down due to unfriendly business environment among other factors, and the cost of importation of LPG cylinders and other equipment are prohibitive due to high duty tariffs of about 35%. Other factors that contributed to low LPG consumption in Nigeria include the preference for biomass fuels (firewood- In 2015, Nigeria burned 96 million tonnes of firewood) and the heavily subsidised kerosene for domestic cooking (In 2016 about 1.5 billion litres of kerosene was used). Also, there is a negative sentiment against LPG usage in Nigeria, where most people believe the use of LPG is dangerous.

As a result of the above scenario, Nigeria has one of the lowest per-capita LPG consumption in Africa, despite producing over 2 million metric tonnes of LPG per annum today by the existing gas processing facilities. Nigeria's per capita consumption in 2016 is about 2 kg, while our next-door neighbour Ghana has 9.5Kg. South Africa is at around 7.5kg, Egypt has 56.45 Kg and Morocco has the highest per-capita consumption of 66.27. A further analysis show consumption in Ghana and South Africa is about the same level with Nigeria, however our high population makes our per-capita figures very low.

In 2008, the Federal Government and the Nigeria LNG Ltd (NLNG) intervened decisively on the supply side in order to encourage and deepen the LPG Market amongst other measures. The NLNG guaranteed a supply of 150, 000 MT, which was increased to 250,000 MT in 2012 and now stands at 350,000 MT from January 2017. This supply therapy triggered a significant increase in activities in the LPG sector. 2 Additional coastal storage depots with combined capacity of 12,500 MT were established in Apapa, Lagos, with an upgrade project of additional 8,000 MT for the two depots ongoing. More LPG depots are at various stages of construction and completion in Calabar, Port Harcourt and Lagos coastal areas. The NNPC/PPMC is also reactivating their inland LPG depot network to key into the expanding LPG market.

Subsequently, importation of LPG both from the sea ports and land borders (From the Refinery in Zinder, Niger Republic) complimented the NLNG supply. As of 2016, LPG imports accounted for over 40% of annual national consumption. Apart from the impressive growth in bulk storage facilities, there is also a more than doubling of operational LPG refilling plants from about 300 in 2009 to more than 600 in 2016 and still growing. On the average, over 60 approvals to construct new LPG filling plants are granted by DPR since 2012. This increase in the refilling plants will further make it easier to distribute the LPG product across the country.

However, there is a noticeable regional imbalance in the distribution of LPG facilities. More than 65% of all LPG facilities and consumption are in the southern part of the country, and mostly concentrated closer to the coastal areas. Ironically, the northern areas that have more challenges of desertification; less biomass resources, are among the least LPG consuming parts of the country, thereby accelerating the negative impact on the environment due to increasing firewood consumption for cooking.

The advantages of LPG consumption are numerous and well known. LPG is a cleaner fuel therefore environmentally friendly. It is an efficient fuel in comparison to other alternatives and it can create and sustain many jobs across the value chain- a whole new industry can emerge from an enhanced LPG consumption in Nigeria with a huge potential for growth. And the promotion of the use of LPG on a wider scale can save government the billions spent on subsidising kerosene, thereby making the funds available for other more critical sectors of the economy.

In recent years, the government has taken a number of measures in collaboration with various stakeholder in order to address the perennial challenges in deepening the LPG market. These steps taken include:

1. Local LPG Cylinder Manufacturing Initiative - led by The Nigerian Content Development & Monitoring Board (NCDMB)
2. Kerosene/ Firewood to LPG Switch in Nigeria Initiative – led by NNPC (PPMC)
3. Inter-Ministerial Committee on Kerosene to LPG Initiative – led by The National Planning Commission (NPC)
4. Deforestation initiative – led by The Ministry of Environment, and
5. LPG Market Development Initiative – led by The Ministry of Petroleum Resources (MPR)
6. Inter-ministerial committee on the Expansion of Domestic LPG in Nigeria (Chaired by the Vice President of Nigeria and supported by a Programme Management Office)

The Expansion of Domestic LPG in Nigeria Initiative was flagged off in November 2016 with a growth aspiration mandate to convert an initial 4million households to use LPG as cooking fuel within 2 years, 10 million households in over 5 Years and setting up the framework for conversion

of additional 21 million household & facilitation of other commercial & industrial uses of LPG by addressing the 4 As of market penetration- Affordability, Availability, Accessibility and Acceptability. This aggressive plan will see demand grow to 1.6 million MT in 5 years and 2.9 MT in 10 years, which will translate to a growth of 700% from the current consumption level. This initiative is the most high-level intervention in LPG sector. The initiative is poised to provide a level playing field for all market participants across the value chain, leverage on private sector drive to grow the sector and create an enabling environment through adequate policies, regulation and strategic intervention to guarantee supply and encourage demand.

The LPG landscape in Nigeria is changing for the better both as result of sustained government interest and private sector participation. And the future prospects appear promising. However, there are still very serious bottlenecks that need to be cleared to maintain the momentum of growth in the sector. The current economic recession and scarcity of forex is already hampering importation of LPG. The declining purchasing power of Nigerians as a result of the recession is impacting negatively on LPG demand as more people switch back to dirtier fuels like firewood and kerosene for cooking. The infrastructural bottlenecks at the ports where LPG-laden vessels spend between two weeks to one month waiting for berthing space at the only two port Jetties that can receive LPG is contributing to supply disruptions and spike in prices of the product (Only one LPG Depot at Apapa has a dedicated Jetty, the other 4 LPG Depots share one loading Jetty with other petroleum products like PMS, DPK, Diesel and aviation fuel).

There is a real possibility that LPG consumption growth may remain flat or increase marginally in the near to medium term, unless all the identified bottlenecks are addressed by keeping a clear and unwavering focus on the goals and aspirations of deepening and widening LPG consumption in Nigeria. However, there is an increasing optimism within LPG industry stakeholders that the renewed and reinvigorated government interest in promoting the use of LPG will provide the much impetus for realising the growth aspirations in the sector.

4.3.4 Gas Infrastructures

Table 48: Major Gas Facilities

S/N		FACILITY	FACILITY TYPE	LOCATION	DESIGN CAPACITY (MMSCF/D)	OPERATING CAPACITY (MMSCF/D)	FACILITY DESIGN LIFE	DATE OF COMMISSIONING	STATUS	LICENCE / PERMIT STATUS
1	SPDC			Afiesere	8	0	25yrs	1977	Non Operational	
2		Afiesere Gas Lift Compressor Station	Compressor Station	Afiesere	21	8	25yrs	NGC	On Standby	
3		Agbada AGG Plant	AGG Plant	Agbada	58	58	25yrs	2002	Operational	
4		Agbada 1 FS Booster Compressor Station	Compressor Station	Agbada	12	12	25yrs	2002	Operational	NO
5		Alakiri NAG Plant	NAG Plant	Alakiri	120	120	25yrs	1987	Operational	NO
6		Awoba AGG Plant	AGG Plant	Awoba	50	0	25yrs	2004	Down	
7		Batan FS Booster Compressor Station	Compressor Station	Batan	10	0	25yrs	2002	Down	
8		Belema FS Booster Compressor Station	Compressor Station	Belema	12	12	25yrs	2002	On Standby	
9		Belema AGG Plant	AGG Plant	Belema	55	55	25yrs	2002	On Standby	
10		Bonny NAG Plant	NAG Plant	Bonny	450	450	25yrs	2002	Operational	NO
11		Cawthorne Channel AGG Plant	AGG Plant	Cawthorne Channel	150	150	25yrs	2005	Operational	NO
12		EGWA 1 FS Booster Compressor Station	Compressor Station	EGWA	10	0	25yrs	2002	Down	
13		EGWA 2 FS Booster Compressor Station	Compressor Station	EGWA	10	0	25yrs	2002	Down	
14		Ekulama 1 FS Booster Compressor Station	Compressor Station	Ekulama	12	12	25yrs	2002	On Standby	
15		Ekulama 2 FS Booster Compressor Station	Compressor Station	Ekulama	12	12	25yrs	2002	On Standby	
16		Eriemu NGC Compressor Station	Compressor Station	Eriemu	10	0	25yrs	2002	Down	
17		Escravos Beach FS NGC Compressor Station	NGC Compressor Station	Escravos Beach	18	0	25yrs	NGC	Down	
18		Imo River 2 FS Booster Compressor Station	Compressor Station	Imo River	12	12	25yrs	2002	Operational	NO
19		Imo River 3 FS Booster Compressor Station	Compressor Station	Imo River	12	12	25yrs	2002	Operational	NO
20		Imo River AGG Plant	AGG Plant	Imo River 1	65	65	25yrs	2002	Operational	NO

S/N		FACILITY	FACILITY TYPE	LOCATION	DESIGN CAPACITY (MMSCF/D)	OPERATING CAPACITY (MMSCF/D)	FACILITY DESIGN LIFE	DATE OF COMMISSIONING	STATUS	LICENCE / PERMIT STATUS
21		Jones Creek NGC Compression Station	Compressor Station	Jones Creek	18	0	25yrs	NGC	Down	
22		Kokori NGC Compressor Station	Compressor Station	Kokori	8	0	25yrs	NGC	Down	
23		Krakama FS Booster Compressor Station	AGG Plant	Krakama	5	0	25yrs	Not Commissioned	On Standby	
24		Nembe Creek 1 FS Booster Compressor Station	Compressor Station	Nembe Creek	10	4	25yrs	2001	On Standby	
25		Nembe Creek 2 FS Booster Compressor Station	Compressor Station	Nembe Creek	10	4	25yrs	2001	On Standby	
26		Nembe Creek 3 FS Booster Compressor Station	Compressor Station	Nembe Creek	5	4	25yrs	2001	On Standby	
27		Nembe Creek 4 FS Booster Compressor Station	Compressor Station	Nembe Creek	5	4	25yrs	2001	On Standby	
28		Nkali FS Booster Compressor Station	Compressor Station	Nkali	12	12	25yrs	2003	Operational	NO
29		Oben NAG Plant	NAG Plant	Oben	240	240	25yrs	1982/Expanded 2015	Operational	SEPLAT
31		Oben NGC Compressor Station	Compressor Station	Oben	16	16	25yrs	NGC	On Standby	
32		Oben AG Compressor Station	Compressor Station	Oben	30	30	25yrs	2015	Operational	NO
33		Obigbo North AGG Plant	AGG Plant	Obigbo North	54	54	25yrs	1989	Operational	NO
34		Obigbo North NAG Plant	NAG Plant	Obigbo North	90	45	25yrs	1984	On Standby	
35		Odeama Creek FS Booster Compressor Station	Compressor Station	Odeama Creek	5	0	25yrs	Not Commissioned	Not Commissioned	
36		Odidi AGG Plant	AGG Plant	Odidi	80	0	25yrs	2001	Down	NPDC
37		Odidi NGC Compressor Station	Compressor Station	Odidi	18	0	25yrs	NGC	Down	
38		Oguta Gas Injection Plant	Gas Injection Plant	Oguta	40	13	25yrs	2004*1	Operational	
39		Okoloma NAG Plant	NAG Plant	Okoloma	240	240	25yrs	2008	Operational	NO
40		Olomoro-Oleh NGC Compressor Station	Compressor Station	Olomoro-Oleh	3.3	0	25yrs	NGC	Down	
41		Oweh NGC Compressor Station	Compressor Station	Oweh	5.5	0	25yrs	NGC	Down	
42		Santa Barbara FS Booster Compressor Station	Compressor Station	Santa Barbara	8	8	25yrs	2001	On Standby	
43		Sapele NAG Plant	NAG Plant	Sapele	120	120	25yrs	1978	Operational	SEPLAT

S/N		FACILITY	FACILITY TYPE	LOCATION	DESIGN CAPACITY (MMSCF/D)	OPERATING CAPACITY (MMSCF/D)	FACILITY DESIGN LIFE	DATE OF COMMISSIONING	STATUS	LICENCE / PERMIT STATUS
44		Sapele NGC Compressor Station	Compressor Station	Sapele	24	24	25yrs	2003	Standby	
45		Soku FS Booster Compressor Station	Compressor Station	Soku	5	5	25yrs	2002	On Standby	
46		Soku LNG Gas Supply Plant	AG/NAG Plant	Soku	1100	1100	25yrs	1999	Operational	NO
47		Ughelli East NAG Plant	NAG Plant	Ughelli East	150	90	25yrs	1966	Operational	NPDC
48		Utorogu NAG Plant	NAG Plant	Utorogu	270*2	300*2	25yrs	1988	Operational	NPDC
49		Utorogu NGC Compressor Station	Compressor Station	Utorogu	7	7	25yrs	2004	Operational	
50		Uzere West NGC Compressor Station	Compressor Station	Uzere West	10	0	25yrs	NGC	Down	
51	CNL	Agbami FPSO	FPSO	Agbami – Deep Offshore	415				Operational	NO
52		Escravos Gas Plant	Gas Plant	Escravos Island	680				Operational	YES
53		Meren Gas Gathering Compression Station	Compressor Station	Meren-Offshore	24				Not Operational	NO
54		Okan Gas Gathering Compression Station	Compressor Station	Okan-Offshore	140				Operational	YES
55		Meji Gas Gathering Compressor Station	Compressor Station	Meji-Offshore	70				Operational	YES
56		Abiteye Gas Compression Plant	Gas Compression Plant	Abiteye	29				Operational	YES
57		Olero Creek Compression Station	Compressor Station	Olero	52				Operational	YES
58		Dibi Compression Station	Compressor Station	Dibi	52				Operational	YES
59		Escravos Gas To Liquid Plant	GTL Plant	Escravos Island	328/340		25		Operational	YES
60	MPNU	Erha FPSO	FPSO	Erha-Deep Offshore	340	360		March – 2006	Operational	NO
61		OSO -RX (Offshore)		Offshore	600				Operational	NO
62		BRT LPG Fractionating Plant	Fractionation Plant	Bonny Island	85MBPD				Operational	NO
63		BRT LPG Fractionating Plant	Fractionation Plant	Bonny Island					Operational	NO
64		EAP - GX (Offshore)	Fractio-nation Plant	Offshore	950				Operational	NO
65	TEPNG & TUPNI	Obite AG Plant	AG Plant	Obite-Obaagi	334.1				Operational	NO
66		Amenam Kpono AG Plant – Offshore	AG Plant	Amenam/ Kpono	441.5				Operational	NO
67		Akpo FPSO	Gas Export/Injection	Akpo Offshore	215				Operational	
68	NAOC & NAE	Okpai Gas Plant		Kwale					Operational	NO

S/N		FACILITY	FACILITY TYPE	LOCATION	DESIGN CAPACITY (MMSCF/D)	OPERATING CAPACITY (MMSCF/D)	FACILITY DESIGN LIFE	DATE OF COMMISSIONING	STATUS	LICENCE / PERMIT STATUS
69		Irri Isoko Condensate Flow Station	Flow Station	Isoko					Operational	NO
70		ABO FPSO	FPSO	Offshore					Operational	NO
71		OB/OB AG Plant	AG Plant	Obaifo/Obrikom	654	654			Operational	NO
72		Kwale Gas Compression Station	Compressor Station		375	252			On Standby	
73	ADDAX	Izombe Gas Injection Plant	Injection Plant	Imo/Izombe	48 @ 3500 PSI	32 @ 3500 PSI			Operational	NO
74		Izombe Flare Down Gas Compression Plant	Compression Plant	Imo/Izombe	16.78 @ 3500 PSI	13.52 @ 3500 PSI			Operational	NO
75	NLNG	LNG Plant	NAG Plant	Bonny	680	596.12	20	EGP1/2 (1997) EGP3 (2010)	Operational	YES
76	POOCN	Ogharefe Gas Plant		Ogharefe					under Construction	
77	NPDC	Early Production Facility		Ogharefe					Under Construction	
78		Gas Handling Facility	AG Plant	Ogharefe					Under Construction	
79	Global Gas & Refining Limited	BOT FPSO	Gas Processing Plant	Bonny River					Down	
80	SEPLAT	Oben Gas Plant	NAG Plant	Oben	240	240	25yrs	1982	Operational	YES
81		Sapele Gas plant	NAG Plant	Sapele	120	120	25yrs	1978	Operational	YES
82		Jisike AG Plant	Compressor Station	Jisike-Offshore					Operational	-
83	ENERGIA/XENERGI	Nedo Gas Plant	AG Plant	Ebendo	25			2011	Operational	YES
84	NPDC	Odidi								NO
85		Ughelli East			2836.5					NO
86		Utorogu			6807.6					NO
87	PAN OCEAN	Ovade-Ogharefe GPP			130					NO
88	NAOC	Obiafu/Obrikom			654					NO
89		Kwale Gas Compression Station	Compression Station		375				On Standby	
90	PLATFORM	Egbaoma Gas Processing Plant	Gas Processing Plant	Egbaoma	30		25		Commissioned	NO
91		Egbaoma Wet Gas Met Syst	Metering System	Egbaoma	40					
92	FRONTIER	Uquo Gas Processing Facility	Gas Processing Facility		200	200				NO

4.3-5 Major Gas Projects

Table 49: Gas Processing Plant Projects

S/N	PROJECT TITLE	COMPANY NAME	PROJECT OBJECTIVE(S)	INSTALLED CAPACITY	LOCATION
1	Egbgema West NAG Project	NDPC	Construction of NAG processing facility to deliver NAG to Niger Delta Holding Company	50mmscfd	Egbema field, Rivers State
2	Egbgema West AG Solutions Project		Gather and compress 8mmscfd LP & HP gas from existing flow station, treat to sales gas spec and deliver to EIPP pipeline	8mmscfd	Egbema field, Rivers State
3	Gas Processing Plant Project	PNG Gas	Process associated gas from Asuokpo/Umutu/Egaboma flow station	30mmscfd	Umutu, Egbaoma Rivers State
4	Gas Processing & Gathering Plant Project	Giga Gas	Process and transport produced gas from the SPDC offshore gas gathering to the ELPS	140mmscfd	Forcados, Delta State
5	Liquefied Natural Gas Plant	Greenville	Two trains of liquefaction units, storage and distribution terminal	80mmscfd	Rivers State
6	Urea Fertilizer Plant	Dangote	Process 210mmscfd of natural gas to Urea fertilizer	2.5 MTPA Urea	Lekki Free Trade zone
7	Oben AG Compressor Project	SEPLAT	Gather and compress 30 MMSCFD gas from existing flow station, treat and deliver to the Oben Gas Plant for further processing	30mmscfd	Oben
8	Oben AG Compressor Expansion		Gather and compress additional 20 MMSCFD gas from existing flow station, treat and deliver to the Oben Gas Plant for further processing	20mmscfd	Oben
9	Oben Export Sale Gas Pipeline and Metering Ssystem Project		Procurement and Installation of 20" Export Sale Gas Pipeline and its Metering Assembly from Oben Gas Plant to NGC Pipeline	Additional Evacuation Capacity from Oben to ELPS	Oben
10	Urea Fertilizer Plant	Indorama	2300mtpd Ammonia plant; 4000 mtpd urea and granulation plant	1.4m mtpa Urea fertilizer	Eleme, PHC
11	Methanol Plant	Quantum	Methanol plant	3000 mtpd methanol	Ibena, AKS
12	Kwale Flare Down Project	NAOC	Flares-out initiative in Kwale Field	10 mmscfd	Kwale
13	Oshi Flare Down Project		Flares-out initiative in Oshi Field	10-15 mmscfd	Oshi
14	Northern Option Pipeline Project	TOTAL	24"X52Km pipeline takes gas from OUR pipeline tie-in at Rumuji to Imo River and then tie in to NGCnode for onward transmission to Alaoji Power Plant		Owaza & Rumuji
15	OML 58 Upgrade Project		Increase the capacity of Obite Gas Plant from 350 to 530mmscfd to supply the eastern gas market	180mmscfd (Additional capacity)	
16	Obite-Ubeta-Rumuji (OUR) Pipeline Project		Obite-Ubeta-Rumuji pipeline- 42"X45Km pipeline takes gas from Obite gas plant to Rumuji tie-in to the Northern Option Pipeline (NOPL)		
17	Forcados Yokri Integrated Project	SPDC	Complete 2006 abandoned works: AGG; CPF and hook up of 12 wells already drilled Complete New Scope: NAG well of 45 mmscfd and export (45mmscfd+30mmscfd AG) to DOMGAS; Replace Estuary Clusters/Bulklines Enable further development of 233MMboe viz Forcados West, Forcados Water Injection and Further Oil Dev. FYIP + FD projects to infill production 80 - 95 Mboe for the next 10 yrs	45mmscfd + 30mmscfd, 80 - 95mbpd, 233mmboe	Forkados Yokri
18	Adibawa AGS project		SPDC	Gas Flare Out	

S/N	PROJECT TITLE	COMPANY NAME	PROJECT OBJECTIVE(S)	INSTALLED CAPACITY	LOCATION
19	Afam F5Project	SPDC	Additional gas supply to Afam Power Plant	40mmscfd / 4mbod	Afam
20	Agbada NAG Project	SPDC	Additional gas supply to the Eastern DOMGAS network	80mmscfd	Agbada
21	Alakiri NAG Project	SPDC / EROTON	Drill 2 new wells, hookup and increase compression capacity for additional gas supply for export	120mmscfd	Alakiri
22	Southern Swamp Associated Gas Gathering Project	SPDC	Provide ca. 100MMscfd to DOMGAS market Eliminate routine flaring of AG thus protecting Oil Production Enable growth/Additional reserves	100mmscfd	Tunu
23	Gbaran Infill Project	SPDC	Develop 1.3Tscf of NAG and 13MMbbls of condensate from the Gbaran, Koroama and Epu fields to sustain production to the Gbaran CPF for sales to NLNG T1-6	Ullage filler for Gbaran CPF	Gbaran, Koroama, Epu
24	Kolo Creek to Soku (2B)	SPDC	Develop 1.5Tscf of NAG and 52mmstb of condensate from the Kolo Creek F1 and the F2 reservoir to sustain gas supplies to the Soku gas plant and meet SPDC JV gas supply commitments to NLNG Trains 1 to 6.	Ullage filler for Soku Gas Plant	Soku
25	Soku NAG Compression Project	SPDC	Produce 1Tscf of Gas and 13mmstb of condensate at the rate of 200mmscf/d, locked in Soku due to declining reser voir pressure.	200mmscfd (Compression capacity)	Soku
26	Asa North - Ohaji South (ANOS) Project	SPDC	SPDC is the operator of the unitized asset and the project relies on the completion of the OB3 pipeline.	250mmscfd	Ohaji
27	Gbaran 3A Enwhe	SPDC	Support SPDC's gas supply obligation of 2Bscfd to NLNG; and also grow oil production	Ullage filler for Gbaran CPF	Gbaran area
28	Gbaraan 3A Abasere	SPDC	Support SPDC's gas supply obligation of 2bscfd to NLNG; and also grow oil production.	Ullage filler for Gbaran CPF	Gbaran area
29	Otumara AGS Project	SPDC	Gather flared AG in Otumara & Saghara fields for supply into the DOMGAS system; eliminate flares & protect NFA oil production.	30mmscfd	Otumara
30	Escravos Gas Project Phase 3B Stage 2 - Meren GGCP, Pipelines & PPMods	Chevron Nig. Ltd	Support Chevron's gas supply obligation to the DomGas, WAGP and EGTLoF NLNG; and also grow oil production.	120mmscfd	Meren (Offshore)
31	Sonam Field Development Sonam NWP / Sonam Field Development Pipelines	Chevron Nig. Ltd	Support Chevron's gas supply obligation to the DomGas, WAGP and EGTLoF NLNG; and also grow oil production.	300mmscfd	Sonam (Offshore)
32	Makaraba Gas Project	Chevron Nig. Ltd	Support Chevron's gas supply obligation to the DomGas, WAGP and EGTLoF NLNG; and also grow oil production.	100mmscfd	Makaraba
33	Abiteye NAG Development Project	Chevron Nig. Ltd	Modifications to Abiteye flow station (Ugrdrade & debottlenecking of the gas conditioning systems).		Abiteye
34	Okan NAG Development Project - Stage 2	Chevron Nig. Ltd	Exploit identified NAG reserves in the Okan area and deliver the reservoir's well fluids (natural gas & condensate) to the existing Escravos Gas Plant	300mmscfd (Ullage filler for EGP)	EGP
		Greenville LNG	Liquefied Natural Gas - 2 trains of 0.25 MTPA LGN liquefaction units, storage and distribution terminal	80 (2 x 40) mmscfd	Rumuji, Emuoha, Rivers state

4.3.6 Gas Pipelines

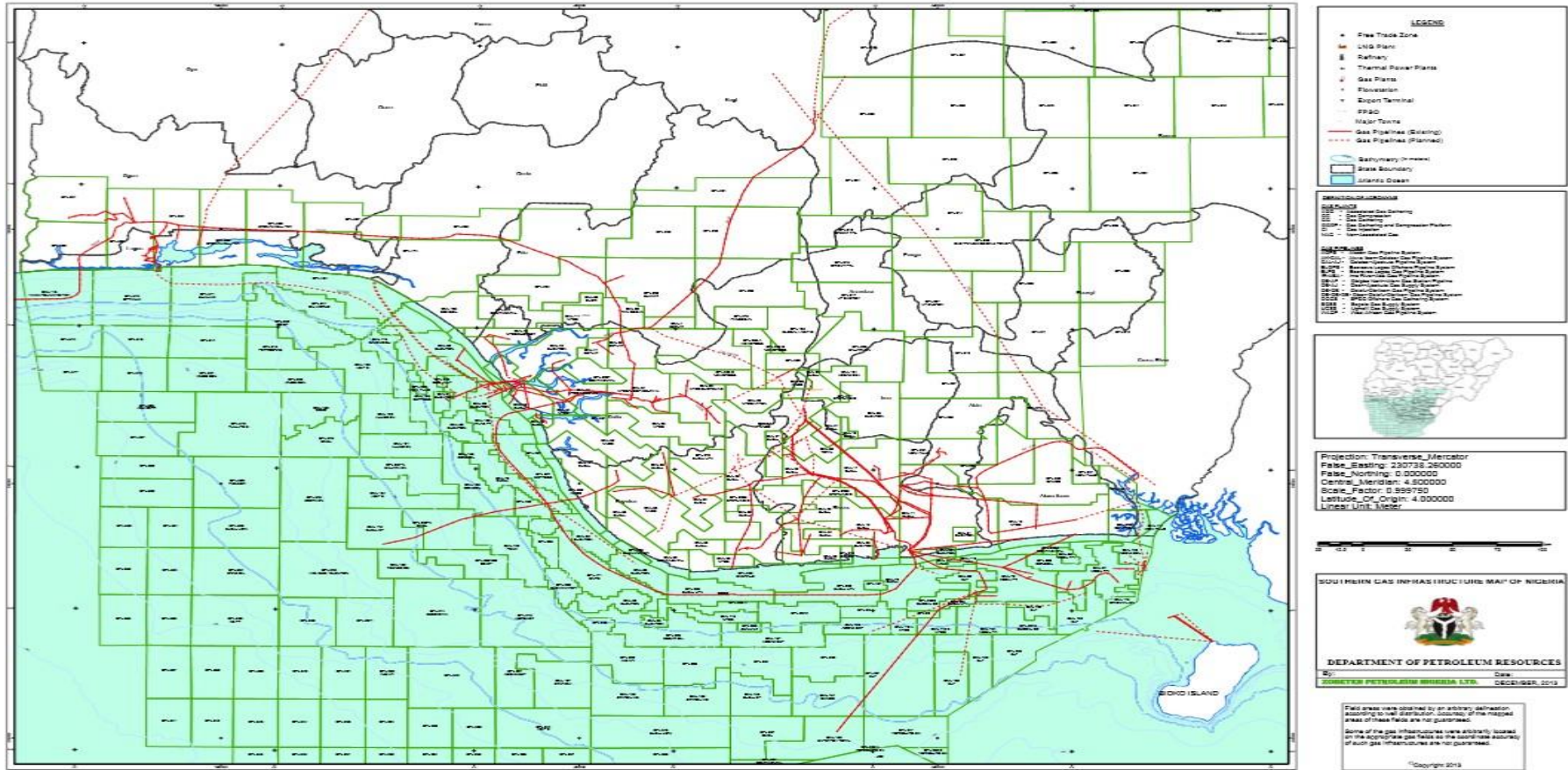


Figure 20: Gas Pipeline Map

4.3.6.1 The Nigerian Gas Transportation Network Code (NGTNC)

The Network Code is a set of rules and protocol for the transportation and transmission of natural gas within the pipeline distribution network. The code essentially governs the operations of the network players who are Suppliers, Operator(s), Transporter(s), Shippers and Agents. The network is a collection of pipeline systems. The operations here are in the instance of gas transportation & transmission.

The Nigerian Gas Transportation Network Code (NGTNC) is conceived as an intervention tool to specifically govern the Escravos-Lagos Pipeline System (ELPS) and other major trunk lines that may come on-stream. This is patterned after the United Kingdom's Uniform Code (UNC).

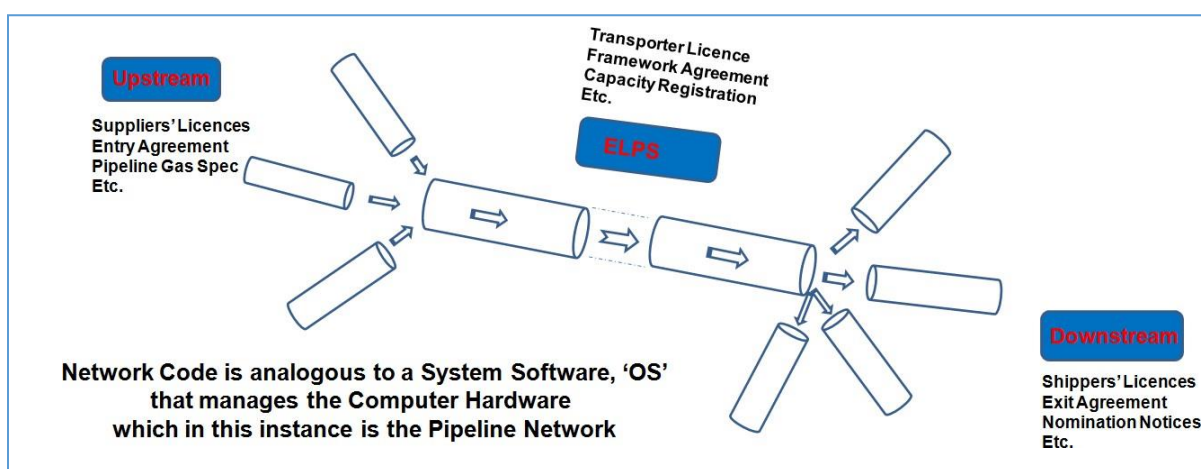


Figure 21: NGTNC Schematic

There are three tranches of rules and protocols as follows:

- Statutory Licences
- Ancillary Agreements
- Business Process Documents

Regulatory Framework

It is particularly important that the Network Code should also be complemented by progress with the broader regulatory framework, adopting the general requirements of transparency, consistency and predictability. In particular, the key principles for pipeline revenue and tariff determination are required, in order to underpin the continuous and sustainable investment in gas transportation infrastructure needed to support the gas supply and demand threshold envisaged in the Nigerian Gas Master Plan (NGMP), and to promote further expansion of the Nigerian gas industry.

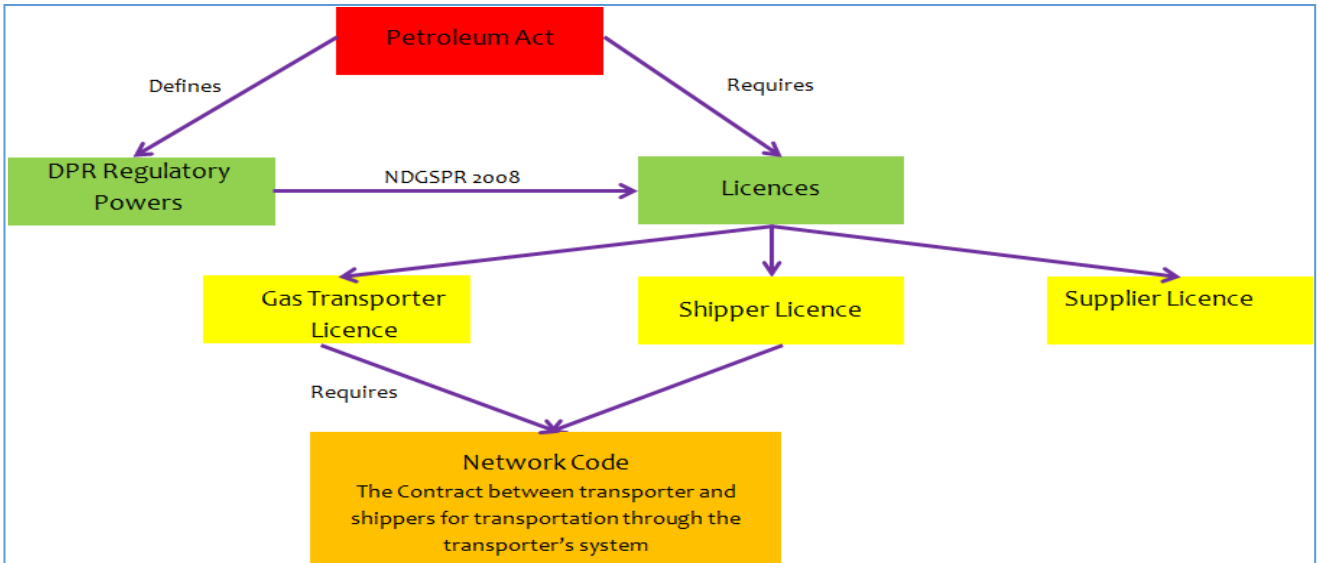


Figure 22: Regulatory Framework

The broad model anticipated for Nigeria is that gas transmission should be unbundled from gas supply, and offer non-discriminatory open access in order to allow competition for wholesale supplies. Meanwhile it is expected that gas distribution will remain an integrated activity operating under monopoly franchises of sufficient duration to encourage investment, subject to appropriate regulatory oversight.

Contractual framework

The Network Code is intended to provide a common “level playing field” for all users of the transportation system, whereby new shippers sign an accession agreement which commits them to the terms of the Network Code as may be amended from time to time.

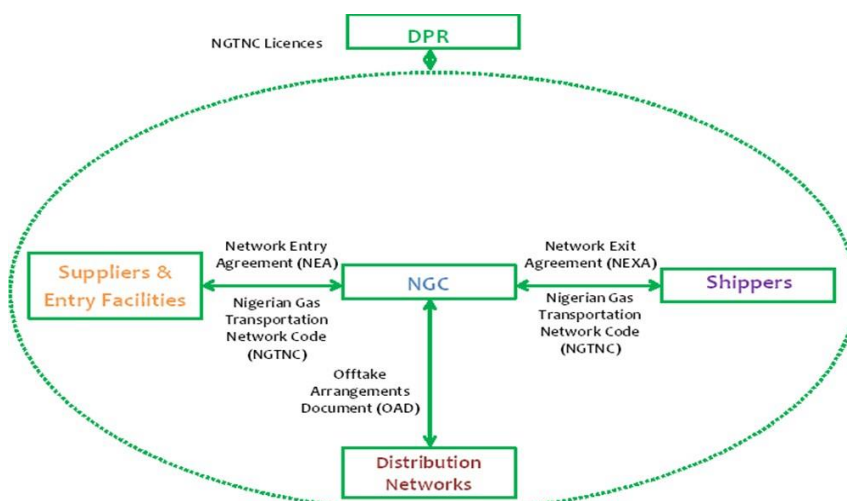


Figure 23: Contractual Framework

However, it is anticipated that there may be some pre-existing “legacy” transportation contracts that will be operated alongside the Network Code, and will need to be accommodated by appropriate Code provisions.

It is anticipated that there will be a transparent and efficient process for developing the Network Code via a set of Modification Rules – this would avoid the need for all parties to agree to amendments, but should be subject to due process including adequate industry consultation, equitable governance and regulatory oversight.

The Code would also be complemented by various ancillary agreements generally made between the network operator and the operators of other connected facilities at entry and exit points to the transmission network. These will address issues such as measurement, gas quality and pressure, and other interface requirements at the boundary points.

Main features of the Code

The Network Code establishes the rules by which the shipper may introduce gas to, and offtake gas from, the transportation system, and the manner in which the network operator will manage the system, including how:

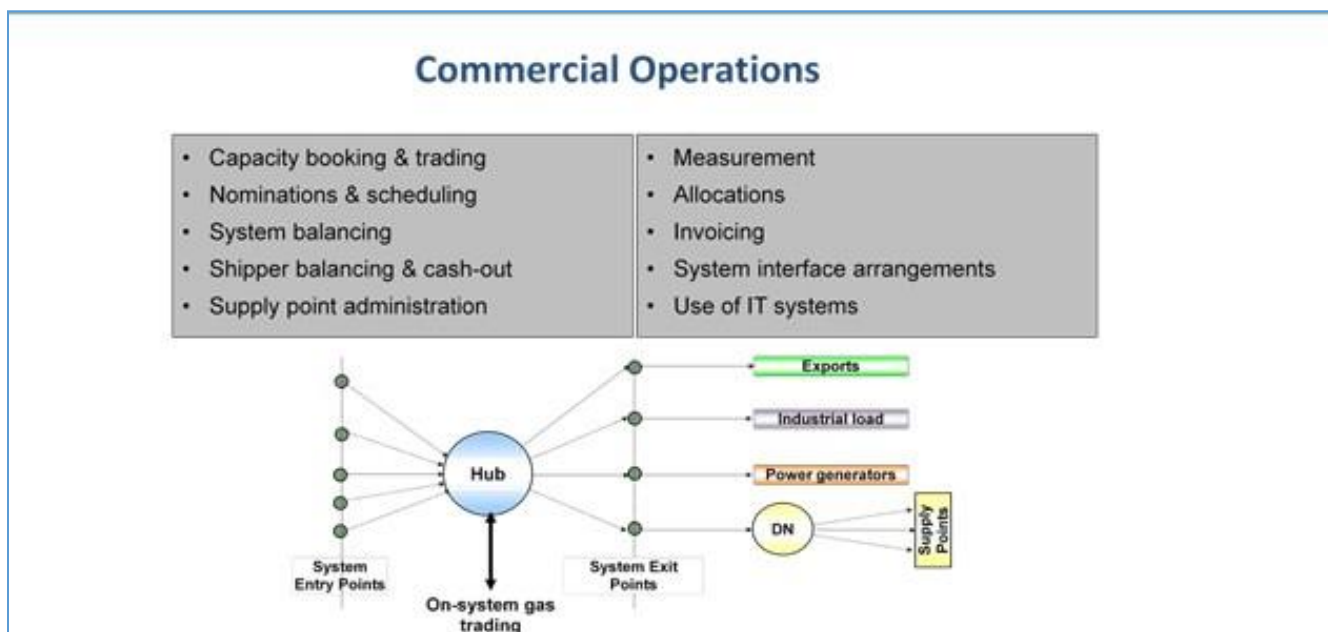


Figure 24: Commercial Operations

- shippers book capacity for the right to access the system;

- information is exchanged between shippers and network operator as regards intended flows of gas;
- the operator monitors and manages the aggregate balance of shipper supplies and demands;
- shippers are individually incentivised to maintain their own balance of gas inputs and offtakes;
- shipper “ownership” of customer supply points is kept up to date;
- gas flows in and out of the system are measured and allocated between shippers;
- invoices are prepared requiring shippers to pay for capacity, gas throughput and any balancing charges; and
- liabilities are established in the event of performance failure by the operator or shippers

One of the key features of the proposed Network Code is the adoption of an entry/exit capacity structure, by which shippers may book separately their requirement to introduce gas into (entry) or offtake gas from (exit) the system.

Users of The Code:

- Network Regulator (DPR) – Licences and regulates the NGTNC
- Suppliers (Gas Producers) – Enter into gas supply contracts with shippers
- Transporter/Operator (NGPTC) – Owns and maintains the trunk line and transports gas for a fee
- Shippers (Customer/End-User) – Buys gas from Suppliers and engages the Transporter to deliver the purchased gas to its destination
- Agents – carries out or ring-fences process and operational activities along the value chain for the Suppliers, Transporter, and Shipper

Where We Were:

- Alleged Non-Transparency
- Monopolistic Supply (Commodity & Capacity)
- Selective Target Market
- Pipeline Infrastructure Inadequacy

- Limited Access

At The Moment:

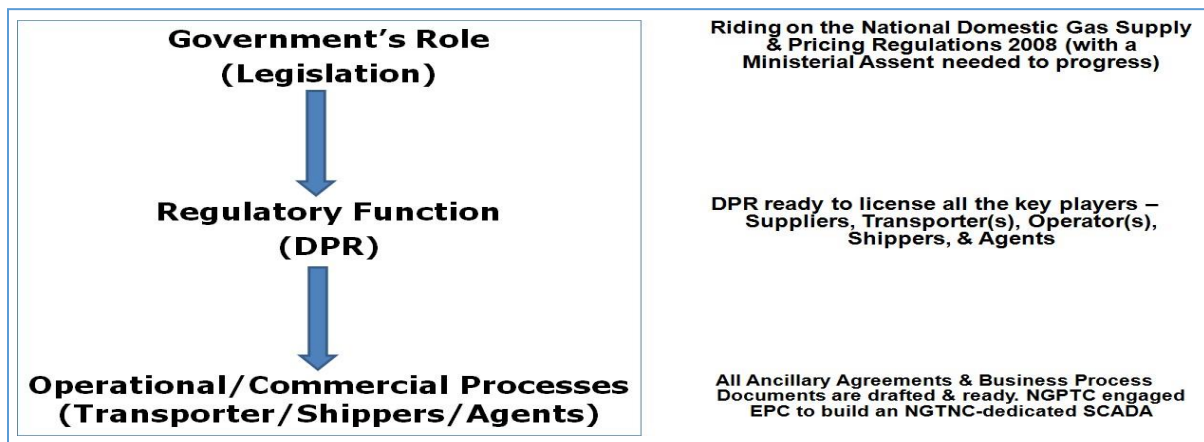


Figure 25: Where We Are

Where We Aspire To Be

- Virtual Hub (Spot Market)
- Open Access
- Unbundled System
- Free Market (Matured Market, WBWS)
- Professionalism in Gas Trading

Conclusion

NGTNC as a big impact player;

- Would ensure transparency in the gas industry
- Would guarantee fair and non-discriminatory access to the gas transportation network
- Would attract foreign investors
- Is key to the growth and development of the Nigerian gas industry
- Is A Gas Market Liberalization Enabler

4.4 HEALTH, SAFETY AND ENVIRONMENT

4.4.1 Accident Report

Table 50: 2016 Accident Report – Industry-wide

INCIDENT DATE	INCIDENTS	WORK RELATED	NON WORK RELATED	FATAL INCIDENTS	NON FATAL INCIDENTS	WORK RELATED FATAL INCIDENTS	NON WORK RELATED FATAL INCIDENTS	FATALITY
January	7	3	4	2	5	0	2	3
February	4	2	2	1	3	0	1	1
March	9	6	3	7	2	4	3	12
April	6	3	3	4	2	2	2	11
May	5	3	2	1	4	1	0	2
June	2	0	2	2	0	0	2	3
July	4	3	1	0	4	0	0	0
August	5	1	4	2	3	0	2	2
September	2	1	1	1	1	1	0	3
October	2	1	1	0	2	0	0	0
November	2	1	1	0	2	0	0	0
December	2	0	2	1	1	0	1	1
Total	50	24	26	21	29	8	13	38

Table 51: 2016 Accident Report – Upstream

INCIDENT DATE	INCIDENTS	WORK RELATED	NON WORK RELATED	FATAL INCIDENTS	NON FATAL INCIDENTS	WORK RELATED FATAL INCIDENTS	NON WORK RELATED FATAL INCIDENTS	FATALITY
January	4	0	4	2	2	0	2	3
February	3	1	2	1	2	0	1	1
March	3	0	3	3	0	0	3	6
April	3	1	2	3	0	1	2	5
May	2	0	2	0	2	0	0	0
June	2	0	2	2	0	0	2	3
July	4	3	1	0	4	0	0	0
August	4	1	3	2	2	0	2	2
September	2	1	1	1	1	1	0	3
October	2	1	1	0	2	0	0	0
November	2	1	1	0	2	0	0	0
December	2	0	2	1	1	0	1	1
Total	33	9	24	15	18	2	13	24

Table 52: 2016 Accident Report – Downstream

INCIDENT DATE	INCIDENTS	WORK RELATED	NON WORK RELATED	FATAL INCIDENTS	NON FATAL INCIDENTS	WORK RELATED FATAL INCIDENTS	NON WORK RELATED FATAL INCIDENTS	FATALITY
January	3	3	0	0	3	0	0	0
February	1	1	0	0	1	0	0	0
March	6	6	0	4	2	4	0	6
April	3	2	1	1	2	1	0	6
May	3	3	0	1	2	1	0	2
June	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0
August	1	0	1	0	1	0	0	0
September	0	0	0	0	0	0	0	0

INCIDENT DATE	INCIDENTS	WORK RELATED	NON WORK RELATED	FATAL INCIDENTS	NON FATAL INCIDENTS	WORK RELATED FATAL INCIDENTS	NON WORK RELATED FATAL INCIDENTS	FATALITY
October	0	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0	0
Total	17	15	2	6	11	6	0	14

**Work related incidents in this context, refer to incidents that occur in the course of direct work; slips, trips and falls that occur whilst working are common examples.

**Non work related incidents include road traffic accidents (conveying workers) and natural causes.

¹ Petroleum tanker road accidents are not included in the reports.

Table 53: Accident Report – Industry-wide

INCIDENT DATE	INCIDENTS	WORK RELATED	NON WORK RELATED	FATAL INCIDENTS	NON FATAL INCIDENTS	WORK RELATED FATAL INCIDENTS	NON WORK RELATED FATAL INCIDENTS	FATALITY
2010	50	24	26	21	29	6	15	25
2011	53	29	24	19	34	6	13	19
2012	49	27	22	27	22	12	15	35
2013	57	29	28	18	39	7	11	30
2014	40	15	25	15	25	1	14	22
2015	49	24	25	32	17	14	18	86
2016	50	24	26	21	29	8	13	38

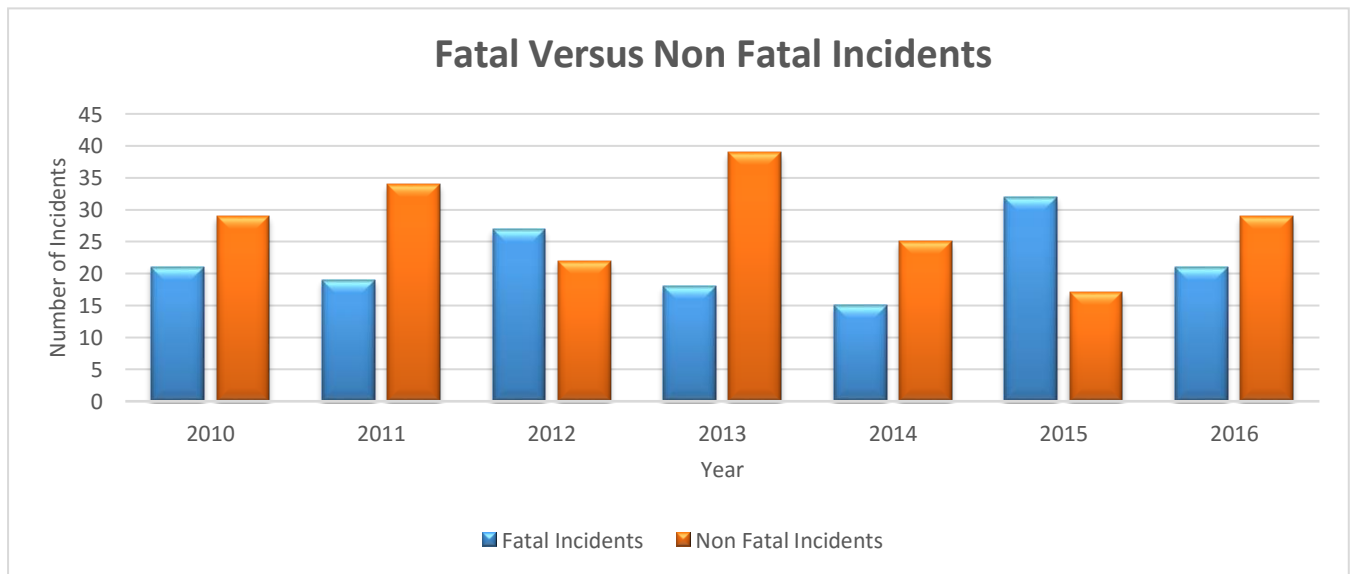


Figure 26: Fatal Versus Non Fatal Incidents

Table 54: Accident Report – Upstream

INCIDENT DATE	INCIDENTS	WORK RELATED	NON-WORK RELATED	FATAL INCIDENTS	NON-FATAL INCIDENTS	WORK RELATED FATAL INCIDENTS	NON-WORK RELATED FATAL INCIDENTS	FATALITY
2010	41	18	23	17	24	3	14	18
2011	44	21	23	17	27	5	12	17
2012	48	26	22	26	22	11	15	34
2013	45	17	28	16	29	5	11	28
2014	32	8	24	13	19	0	13	14
2015	35	11	24	23	12	6	17	50
2016	33	9	24	15	18	2	13	24

Table 55: Accident Report – Downstream

INCIDENT DATE	INCIDENTS	WORK RELATED	NON WORK RELATED	FATAL INCIDENTS	NON-FATAL INCIDENTS	WORK RELATED FATAL INCIDENTS	NON-WORK RELATED FATAL INCIDENTS	FATALITY
2010	9	6	3	4	5	3	1	7
2011	9	8	1	2	7	1	1	2
2012	1	1	0	1	0	1	0	1
2013	12	12	0	2	10	2	0	2
2014	8	7	1	2	6	1	1	8
2015	14	13	1	9	5	8	1	36
2016	17	15	2	6	11	6	0	14

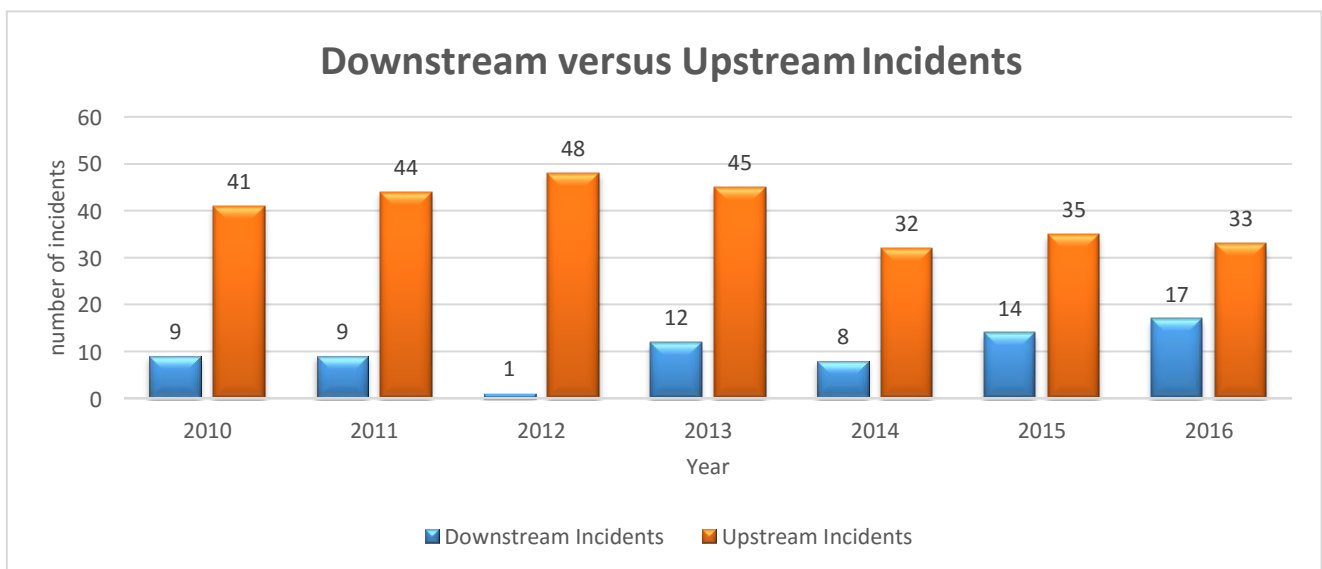


Figure 27: Downstream Versus Upstream Incidents

4.4.2 Spill Incidence Report

Table 56: 2016 Spill Incidence Report

Month	Spill Incidents										Total number of Spills	Volume spilled(BBLs)
	Natural Accident ¹	Corrosion ²	Equipment Failure ³	Sabotage ⁴	Human Error ⁵	YTBD ⁶	Mystery ⁶	Erosion / Wave / Sand	Operational / Maintenance	Sunken Barge		
January		1	2	15	1	16	2	1	1	1	40	25.60937
February		2	4	5		6	1	2	0		20	0.15252
March		1	3	11		5	4	4	4		26	5.31251
April		2	7	7				0	1		31	27.58
May		1	5	13		10	3	0	1		33	674.2961
June		0	2	16		6	2	0	0		26	61.73231
July	2	2	4	19		10		0	4		41	46.947
August		1	5	24		14	4	0	0		48	106.4848
September		1	3	23		16	5	1	0		50	53.03967
October			3	19		8	11		4		45	87.5607
November		5	5	31	1	5	2	0	0		49	271.4222
December		2	3	11		4	5	0	0		25	258.8453
Total	2	18	46	194	1	100	39	8	15	1	434	1618.9825

¹Spills caused by natural disasters/events such as flooding, extreme weather conditions etc.

²Spills caused by corrosion of pipelines, vessels, tanks and other crude oil handling installations.

³Spills caused by preventable failure of oil and gas installations/equipment

⁴Spills caused by third party intervention. This also includes cases of vandalism and crude oil theft that may not have resulted to hydrocarbon release to the environment.

⁵Spills caused by operational errors involving a human interface.

⁶This means “Yet-to-be-determined”. The cause(s) of the spill(s) were not reported in the submitted oil spill reporting forms. Usually indicative that the Form B was not submitted, or the Joint Investigation Visit (JIV) was either not carried out or was inconclusive. Often, the quantity spilled for this category of spills may also not have been reported.

⁷Spills identified or reported by operators who assert that the spill did not originate from their facilities. The origin of the spill is thus said to be inconclusive. Usually the operator is expected to take reasonable steps to respond to the spill in addition to the reporting of same.

Table 57: Spill Incidence Summary

YEARS	NUMBER OF SPILLS	QUANTITY SPILLED (BARRELS)
2010	537	17,658.10
2011	673	66,906.84
2012	844	17,526.37
2013	522	4,066.20
2014	1087	10,302.16
2015	753	32,756.87
2016	434	1,658.98

Table 58: Produced Water Volumes Generated

COMPANY	FACILITY	WATER DEPTH	DISTANCE FROM SHORE	VOLUME/day (bbl)
ADDAX	Knock Adoon	140ft	37.04 km	35000
ORIENTAL	FSO Virini	140ft	40km	30000
CHEVRON	Funiwa PP	35.1ft	8.54km	14535
CHEVRON	Delta PP	15ft	4.6km	10000
CHEVRON	Parabe PP	48.2ft	12.75km	20600
CHEVRON	Okan PP	30ft	10km	58000
CHEVRON	Meren1	42.65ft	15km	26000
TEPNG	Amenam/Kpono	134.5ft	34km	19869
POOC	98 & 275	Land	Land	8500
MONI PULO	Agbani Barge	6ft	4.4km	10000
SPDC	Sea Eagle FPSO	87ft	15km	70000
SPDC	SPDC	12.5ft	5km	110517
SPDC	3rd Party	12.5ft	5km	87320
SPDC	SPDC	11.5ft	7.5km	70686
SPDC	3rd Party	11.5ft	7.5km	14966
NAOC	Brass O.T	Swamp	Swamp	110000
MOBIL	QIT	40ft	8.5km	150410
CON OIL	Antie Julie	75ft	4.3km	22000
MOBIL PROD.	OSO	51ft	15.5km	3292
AMNI INT.	Armada Perkasa FPSO	131ft	15km	15000
MIDWESTERN	UMUSADEGE	Land	Land	4399
NETWORK	Qua Iboe	Land	Land	58.66
FRONTIER	UQOU	Land	Land	0
ATLAS	EJULEBE	Land	Land	18500
ENERGIA	EBENDO	Land	Land	65

Table 59: 2016 Drilling Waste Volumes

Months	Sum of WBMC (MT)	Sum of OBMC (MT)	Sum of SPENT WBM (MT)	Sum of Spent OBM (MT)
Jan	7,087.69	7,035	27,542	7,945
Feb	1,818	3,134	50,300	30,800
Mar	603.8	1,029	826.4	1,624
Apr	2,450	-	3,636	-
May	634	342	3,957	975
Jun	1,154	1,385	1,878	4,938
Jul	6,800	1,297	22,684	3,864
Aug	52,325	7,622.03	220	800

Months	Sum of WBMC (MT)	Sum of OBMC (MT)	Sum of SPENT WBM (MT)	Sum of Spent OBM (MT)
Sep	744	469	900	658
Oct	5,003	-	317	-
Nov	1,146	-	2,288	-
Dec	2,290	2,549.6	1,565	7,400
Grand Total	82,055.5	24,862.6	116,113	59,004

Table 60: 2016 Accredited Waste Managers

COMPANY NAME	TYPE OF FACILITY	LOCATION AREA	OPERATIONAL STATUS
Specialty Drilling Fluids Ltd	TDU: 1 unit WBM: 1 unit	Rivers State	Operational
Nubian Nigeria Ltd	TDU: 1 LTDU (Rotomil Low Temperature)	Rivers State	Operational
Delta Waste Management Company Limited (DEL)	TDU: 3 LTDU, 1 Medium INCINERATOR: 1 High Temp Hazardous Waste Incinerator	Rivers State	Operational
ITS Drilling Services	INCINERATOR: 2 Trash Incinerators CA1000 & RD700 (Models)	Rivers State	Operational
Paschal Technical Services Ltd	INCINERATOR: 1 Macroburn V500C Incinerator	Rivers State	Operational
Golden Years Ltd	INCINERATOR: 2 Incinerators	Rivers State	Operational
Allman Global	INCINERATOR: 1 Incinerator - Non-operational WBM: Mobile Water based Treatment Plant	Rivers State	Operational
The Initiates	TDU: 1 Indirect Fire Soil Remediation Unit	Rivers State	Operational
Nautilus Engineering and Construction Company (NECC)	TDU: 1 Mobile TDU	Rivers State	Operational
Seric Impianti	TDU: 1 Unit	Rivers State	Operational
Boskel Engineering Services	INCINERATOR: 1 High Temp. Rotary Kiln incinerator, 1 High Temp. Liquid incinerator. TDU: 1 unit	Rivers State	Operational
Halden Nigeria Limited	INCINERATOR: 1 unit Dual Chamber Incinerator	Rivers State	Operational
Frigate Investment Ltd	TDU : 1 unit LTDU WBM: 1 unit	Rivers State	Operational
FIBOW	INCINERATOR: 1-unit High Temp Horizontal flow Multi-Chambered Incinerator	Rivers State	Operational
EPCC Ltd	INCINERATOR: 1 unit Sludge Incinerator	Rivers State	Operational
SPDC	INCINERATOR: 1 Medical Incinerator • Recycling Waste Depot • Sewage Treatment Plant • Eneka Dump Site	Rivers State	Operational
Titan Project Nigeria Ltd	TDU: 1 unit	Rivers State	Operational
MPNU	INCINERATOR (3): • 1 Gencorp Beverly Type Waste Incinerator (for general waste) • 1 Howden Pyrolytic Gasification System (medical incinerator) • 1 Municipal Waste (Trash) incinerator	Rivers State	Operational
Comprehensive Remediation Technologies (CRT)	TDU: 1 unit INCINERATOR: 1 unit	Rivers State	Operational
Mosab Marine and Engineering Services Limited	TDU: 1unit Vulcan TDU	Rivers State	Operational
Amotoi Global Services Limited	INCINERATOR: 1 unit	Rivers State	Operational
Franco Intl Energy Services	TDU: 1 unit	Bayelsa State	Operational
Prime Sources Ltd	INCINERATOR: 1 unit	Rivers State	Operational

COMPANY NAME	TYPE OF FACILITY	LOCATION AREA	OPERATIONAL STATUS
Petro-Scan Ltd	TDU: 1 unit	Rivers State	Operational
Fidella Oil and Gas Services Ltd	TDU: 1 unit Vulcan TDU	Rivers State	Operational
Olutee Engineering Services	INCINERATOR (3): Type Waste Incinerator (for general waste) • 1 Howden Pyrolytic Gasification System (medical incinerator) • 1 Municipal Waste (Trash) incinerator	Delta State	Operational
Mawe Services Limited	TDU: 1 unit	Delta State	Operational
Titan Projects Nigeria Limited	TDU: 1 unit	Delta State	Operational
Ebenco Global Resources Limited	Incinerator	Delta State	Operational
Vmart Company Limited	Incinerator	Delta State	Operational
Silver Star Environmental Nigeria Limited	TDU: 4 units	Delta State	Operational
ITS Drilling Services Nigeria Limited	TDU: 1 UNIT	Abia State	Operational

Table 61: Summary Of Waste Management Facilities

S/N	TYPE OF FACILITY	OPERATIONAL PERMIT
1	TDU	19
2	INCINERATOR	13
3	TANK CLEANING	6
4	WBM HANDLING	8
5	SLOP/PRODUCED WATER	0
6	SLOP OIL	1
7	SLUDGE SEPARATION/RECOVERY	0
8	INTEGRATED WASTE MGT FACILITY	1
9	HAZARDOUS WASTE TRANSPORTATION	1
10	LUBE/TYRE RECYCLING	0
11	WASTE WATER TREATMENT	1
12	SECONDARY WASTE/SOLIDIFICATION	3
TOTAL		53

Table 62: 2016 Oil Spill Contingency Plan Activation

S/N	LOCATION	Nos of Companies for OSCPF/Fl	Actual Nos of Companies audited
1	Lagos (Depots)	68	47
2	Niger (Depot)	1	1
3	Enugu (Depot)	1	1
4	Zamfara (Depot)	1	1
5	Kaduna (Depot/Refinery)	1	1
6	Port Harcourt (Refinery, Plants, Installations)	20	14
7	Warri (Refinery, Plants, Installations)	20	14
8	Deep Offshore	7	7
9	Owerri	3	2
10	Abia (Depot)	1	1
11	Ilorin	1	0
TOTAL		124	89

Table 63: Number Of Petitions Received In 2016

CATEGORY	CSR	POLLUTION	COMPENSATION	OTHERS (DISPUTES, CONTRACTUAL ISSUES, RECOGNITION AS HOST COMMUNITY)
COUNT	9	13	7	8

Table 64: Request For Approvals – Chemicals

No. of Applications Received	Approved	Disapproved	Pending
29	25 (Biocides- 7; Scale Inhibitors- 5; H2S Scavenger- 5; Bioremediation Products- 2; Flocculant- 1; Scale Dissolver- 1; Drilling fluid- 3; Cleaning Agent- 1; Antifoam- 1; Surfactant- 1; Corrosion Inhibitor- 3)	4	0

Table 65: Summary of Accredited Laboratories

Laboratory Service	Number			Total
	Lagos Zone	Port Harcourt Zone	Warri Zone	
Environmental Quality Monitoring	13	22	12	47
Bio-Monitoring	11	10	2	23
Petroleum Product monitoring	13	7	5	25
Geological	6	10	0	16
Material Safety Investigation	1	5	0	6
Total	44	54	19	117

Table 66: 2016 Approved Production Chemicals Inventory

S/N	PRODUCTION CHEMICALS	NUMBERS
1	BIOCIDE	55
2	CORROSION INHIBITORS	65
3	OXYGEN SCAVENGER	21
4	EMULSION BREAKERS	47
5	BIOREMEDIATION	13
6	ANTIFOAM	26
7	SCALE INHIBITOR	39
8	OTHERS	28
	Total	294

Table 67: Summary of Drilling Chemicals

S/N	DRILLING FLUID TYPE	NUMBERS
1	WATER BASE MUD	43
2	SYNTHETIC BASE MUD	33
3	BASE FLUID	15
4	OIL BASE MUD	9
5	ADDITIVES	10
6	OTHERS	55
	TOTAL	158

Table 68: Applications For Environmental Restoration Services

SERVICE	APPROVAL STATUS	APPROVAL TYPE		TOTAL
		NEW	RENEWAL	
SOIL REMEDIATION	APPROVED	3	1	4
	UNDER PROCESSING	12	2	14
	DISAPPROVED	11	1	12
OIL SPILL CONTAINMENT / CLEANUP	APPROVED	65	23	88
	UNDER PROCESSING	4	0	4
	DISAPPROVED	13	1	14
PIT BACKFILLING / LAND RECLAMATION	APPROVED	0	1	1
	UNDER PROCESSING	1	0	1
	DISAPPROVED	0	1	1
TOTAL		109	30	139

Table 69: Environmental Studies[#]

Month	ESR		TOR/SOW		PAIR		EIA		EER/EES		EMP		BIO MON		PIA		PDSS		TOTAL
	A ¹	UR ²	A	UR	A	UR	A	UR	A	UR	A	UR	A	UR	A	UR	A	UR	
January			2	2	2	2	2	6	2	4		1							23
February			3	2		1	1	3	3					1			1		15
March			4	4			3	2			2								15
April		1	8	2	1	2	3	1		1			1				1		21
May			2	1	1					2		1				1			8
June			3	6		1		1	2	1									14
July			1	1	1		3	2											8
August		1		4				2		5								2	14
September			8	2				1		4									15
October			5		2				1	7									15
November			1																1
December			2																2
TOTAL		2	39	24	7	6	12	18	8	24		4	1	1		1	2	2	151

¹A = Approved

²UR = Update required

[#]At the end of 2016, 250 Consultants turned in applications to render Environmental Services as Environmental Studies consultant; 197 were accredited / approved (116 renewals and 81 new entrants); 43 were disapproved.

Table 70: Approved Safety And Medical Emergency Training Centres

S/No	Company	Facility Location Address	Approved Courses
1	Tolmann Allied Services Company Limited	Plot 7b Trans Amadi Industrial Layout, Mothercat Junction (Opp. Anadrill), Port Harcourt	Basic Firefighting; Breathing Apparatus Course; Basic First Aid; Helicopter Landing Officer; Advanced First Aid; Helideck Team Member; Basic Offshore Safety Induction and Emergency Training; Emergency Response Course; Helicopter Underwater Escape Training; Confined Space Entry; Further Offshore Emergency Training; Swing Rope Transfer
2	Charkins Maritime Safety Training Center	KM 4, East West Road, Ozuoba, Port Harcourt	Basic Firefighting; Further Offshore Emergency Training; Advanced Firefighting; Travel Safely by Boat; Basic First Aid; Helicopter Landing Officer; Advanced First Aid; Helideck Team Member; Basic Offshore Safety Induction and Emergency Training; Well Control & Intervention; Helicopter Underwater Escape Training; Rigging & Slings
3	Opeans Nigeria Limited	32 Jenny & Jessy Road, Off Peter Odili Road, Port Harcourt, Rivers State	Tropical Helicopter Underwater Escape Training; Breathing Apparatus Course; Tropical Basic Offshore Safety Induction and Emergency Training; Confined Space Entry; Basic Firefighting; Swing Rope/Basket Transfer; Basic First Aid; Advanced First Aid; Lifeguard/Offshore Rescue and Survival Techniques
		34 Opete Road, Off Okokutu Junction, Warri, Delta State	Helicopter Underwater Escape Training

4	Safety Center International Ltd	Opposite Port Harcourt Int'l Airport Hotel, Port Harcourt, Rivers State	Basic Firefighting; Basic First Aid; Advanced Firefighting; Breathing Apparatus Course; Confined Space Entry; Health & Safety in Welding
5	JC International Limited	Plot 5 JC Street, Off Peter Odili Road, Port Harcourt, Rivers State	Rope Access; Lifting Operations Course; Drilling & Well Intervention; Confined Space Entry
6	Falck Prime Atlantic Training Centre	KM 60, Off Old Lagos-Ibadan Road, Ipara, Ogun State	Basic Firefighting; Travel Safely by Boat; Advanced Firefighting; Travel Safely by Boat Further Training; Basic First Aid; Helicopter Landing Officer; Advanced First Aid Helideck Assistant/Team Member; Helicopter Underwater Escape Training; Emergency Response Courses; Basic Offshore Safety Induction and Emergency Training; Rigging & Slings; Further Offshore Emergency Training; Working at Heights; Confined Space Course (Entry/Exit & Search/Rescue); Breathing Apparatus Course
7	Blisston Nigeria Limited	Block B, Plot 7, Eleko Beach Road, Lekki, Lagos State	Basic Firefighting; Tropical Further Offshore Emergency Training; Advanced Firefighting; Helicopter Landing Officer; Helicopter Underwater Escape; Training Emergency Response Courses; Tropical Basic Offshore Safety Induction and Emergency Training; Swing Rope Transfer
8	Lym Consults	Km 10 Sapele-Warri Express Road, Otomewo Community, Near Warri, Delta State	Basic Offshore Safety Induction and Emergency Training; Basic Firefighting; Basic First Aid; Helicopter Underwater Escape Training (HUET); Survival at Sea (SAS)
9	Emergency Response Services Ltd	Off 394, Ikwere Road, Rumuokwuta, Port Harcourt, Rivers State	Basic Life Support (BLS), Advanced Cardiovascular Life Support (ACLS), Pediatric Advanced Life Support (PALS), Basic Emergency Response Training (Medical), Rig Medic

* Please note that the list may be withdrawn, modified or updated without notice.

Table 71: Offshore Safety Permit (OSP) Summary

PERSONNEL REGISTERED	PERSONNEL CAPTURED	PERMITS ISSUED
34,816	27,766	27,598

4.5 REVENUE PERFORMANCE

Table 72: Revenue Performance Summary

YEARS	OIL ROYALTY	GAS ROYALTY	GAS FLARED PENALTY	CONCESSION RENTALS	MISCELLANEOUS OIL REVENUE	TOTAL REVENUE
	₦	₦	₦	₦	₦	₦
2010	694,352,412,710.14	0.00	2,388,572,351.20	728,308,923.82	951,380,744.23	698,420,674,729.39
2011	1,066,836,980,909.87	14,613,812,392.68	3,482,627,975.15	388,502,293.27	2,077,222,926.87	1,087,399,146,497.84
2012	1,052,043,067,383.93	22,242,285,752.85	3,849,873,091.61	444,535,531.69	1,370,171,171.68	1,079,949,932,931.76
2013	960,540,365,106.84	23,235,123,088.28	3,120,786,665.13	178,630,934.47	3,981,983,109.64	991,056,888,904.36
2014	986,343,364,217.80	21,110,923,948.24	2,930,215,304.51	413,496,723.26	5,983,027,290.84	1,016,781,027,484.650
2015	545,061,446,369.23	22,292,228,906.41	2,590,365,296.82	201,275,922.56	17,489,298,348.58	587,634,614,843.60
2016	437,356,879,889.83	16,298,590,492.52	2,333,879,050.11	342,495,121.25	6,408,509,381.58	462,740,353,935.29
Total	5,742,534,516,587.64	119,792,964,580.98	20,696,319,734.53	2,697,245,450.32	38,261,592,973.42	5,923,982,639,326.89

4.5.1 The Role of Value Monitoring & Benchmarking (VMB) of Oil & Gas Projects and Operations in Nigeria

The collapse of oil prices and growing uncertainties of oil and gas business have necessitated the need for standardization of regulatory processes as a panacea for value optimization and improved performance of the Nigeria's oil and gas industry. The reform of oil and gas industry regulatory processes critically underscore the sustainability of maximum revenue realization for government and profitability for the investors.

The Value Monitoring and Benchmarking (VMB) of Oil and Gas Projects and Operations in Nigeria is an initiative by the Department of Petroleum Resources (DPR) that is aimed at strategically aligning technical and economic equations that govern industry businesses and activities in line with extant laws. The framework establishes mechanism to standardize processes and measures by which industry value performances are underscored as well as monitor and benchmark technical cost elements. It introduces unique cost coding indicators for empirical analysis of oil and gas projects and operations, launch an industry that exude operational excellence and performance efficiencies with higher degree of costs predictability.

Significantly, VMB has gained industrywide acceptance at its current level of implementation and has been described as emergence of a new era of a transparent, verifiable performance metrics. The contributions of this innovation engender structural basis for performance measurement indicators and benchmarks, and offers technical and economic data solutions for investors and other stakeholders including policy experts, and international institutions.

Norway earned global reputations in Petroleum Resources Management from their regulatory standards in operational and cost monitoring strategies adopted by the regulator, Norwegian Petroleum Department (NPD). The NPD collects and analyses data from the operating companies on the shelf and compares this with its own data and forecasts. The companies also report their field data and forecasts for production, costs, emissions and discharges to the environment.

Similarly, Nigeria petroleum laws mandate that DPR monitor technical and economic aspects of Conservation and project appraisal in line with section 9 of the Petroleum Act 1969 as amended, sections 56 and 57 of the Petroleum (Drilling and Production) Regulations 1969 as amended, and General E of the Manual of Procedure Guide for Petroleum Inspectorate, where the roles of value monitoring and benchmarking was established.

VMB architecture provides for elaborate viewpoints of cost analyses outcomes and value performance efficiencies across the petroleum industry. Fundamental cost drivers, diverse contract forms, terrains and fiscal terms definitions are tracked, captured and subjected to various critical evaluations. The results are underscored based on the basic industry Key Performance Indicators(KPIs)

The basic KPIs identified as measure of industry value performance and the degree of efficiency include: Unit Technical Cost (UTC), Unit Exploration Cost (UEC), Unit Development Cost (UDC), Unit Operating Cost (UOC), Long-Run Marginal Cost (LRMC), Short-Run Marginal Cost (SRMC), Reserves Replacement Ratio (RRR) index, Reserves Production Ratio (RPR) Ratio, Fiscal Terms Impact (FTI), Cost of Regulation index, CAPEX Risk Diversification (CRD) index, Investment Capital index, Ultimate Recovery index and Reserves and Production index.

5 Glossary of Terms

AG - Associated Gas

AGO - Automated Gas Oil

AR2 - African Regional Line

ATC-Approval to Construct

BPSD – Barrel per Stream Day

CB - Carbon Black

DGSO - Domestic Gas Supply Obligation

DPK - Dual Purpose Kerosene

DPR - Department of Petroleum Resources

EGP – Escravos Gas Plant

EOR - Enhanced Oil Recovery

FCT - Federal Capital Territory

FPSO - Floating Production Storage and Offloading

IDSL –Integrated Data Services Limited

IO – Indigenous Operator

IOC- International Oil Company

JV - Joint Venture

KM - Kilometer

KRPC - Kaduna Refinery & Petrochemical Company

LAB - Linear Alkyl Benzene

LLDPE - Linear Low Density Polyethylene

MF - Marginal Field

MMbbls - Million barrels

MMSCFD - Million Standard Cubic Feet per Day

MT – Metric Tonnes

NAG – Non-Associated Gas

NAOC - Nigerian Agip Oil Company

NAPIMS - National Petroleum Investment Management Services

NDPR - Niger Delta Petroleum Resources

NDRC - Niger Delta Regional Data Compilation
NGC – Nigerian Gas Company
NGL - Natural Gas Liquid
NNPC - Nigerian National Petroleum Corporation
NPDC - Nigerian Petroleum Development Company
OBLG - Obligation
OML - Oil Mining Lease
OPEC – Organization of the Petroleum Exporting Countries
OPL - Oil Prospecting License
PE - Polyethylene
PERF - performance
PHRC - Port Harcourt Refining Company
PMS - Petroleum Motor Spirit
PP - Polypropylene
PPHP - Polypropylene Homo-Polymer
PPMC - Petroleum Product Marketing Company, a subsidiary of NNPC
PPT - Petroleum Profit Tax
PRF - Propylene-Rich Feed
PSC - Production Sharing Contract
SC - Service Contract
SPDC - Shell Petroleum Development Company
SQ KM - Square Kilometer
SR - Sole Risk
TA – Technology Adaptation
TCF – Trillion Cubic Feet
TQ – Technology Qualification
WRPC - Warri Refining & Petrochemical Company

The data and information published in this report are subject to ongoing review by DPR based on continuous reconciliation with various stakeholders. Therefore, reliance on data contained herein should be based on final confirmation by DPR.