FEDERAL REPUBLIC OF NIGERIA

Ministry of Petroleum Resources

National Petroleum Policy

Nigerian Government Policy and Actions

2017

www.petroleumresources.gov.ng

THE GOVERNMENT OF THE FEDERAL REPUBLIC OF NIGERIA

NATIONAL PETROLEUM POLICY

The purpose of this document is to define the policy of the Federal Government of Nigeria in respect of Nigeria's crude oil endowment, establish its medium to long-term targets for the development of its crude oil endowment and record strategies to be pursued to ensure the successful implementation of the Policy

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ABBREVIATIONS

AfDB	African Development Bank
AG	Associated Gas
AGFA	Associated Gas Framework Agreement
ANSI	American National Standards Institute
API	American Petroleum Institute
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
BoI	Bank of Industry (Nigeria)
BPE	Bureau for Public Entreprise
Btoe	Billion tons oil equivalent
CAC	Corporate Affairs Commission
CBN	Central Bank of Nigeria
CCGT	Combined Cycle Gas Turbine
CDM	Clean Development Mechanism
CITA	Corporate Income Tax
CNG	Compressed Natural Gas
CPF	Central Processing Facility
CP&S	Corporate Planning & Strategy (Division within NNPC)
CSLD	Company Secretarial & Legal Division (Division within NNPC)
CSR	Corporate Social Responsibility
DG	Distributed Generation
DISCO / Disco	Electricity distribution company in Nigeria
DPR	Department of Petroleum Resources
DSO / DGSO	Domestic Gas Supply Obligation
ECN	Energy Commission of Nigeria
EI	Energy Institute (UK)
EITI	Extractive Industries Transparency Initiative
ELPS	Escravos Lagos Pipeline System
EPP	Export Parity Price, a netback gas price from export price
ESIA	Environmental and Social Impact Assessment
EU	European Union
EUD	European Union Delegation
FGN	Federal Government of Nigeria
FID	Final Investment Decision
FMP	Federal Ministry of Power
(F)MPR	Federal Ministry of Petroleum Resources
FEED	Front End Engineering and Design
FRGA	Fiscal Rules of General Application
GACN	Gas Aggregation Company of Nigeria
Genco	Generation company
GGFR	Global Gas Flaring Reduction

GMP	Gas Master Plan
GSA	Gas Sales Agreement
GSAA	Gas Sales and Aggregation Agreement
GT	Gas Turbine
GTA	Gas Transport Agreement
GTLs	Gas to Liquids
GTS	Gas Transmission System
IDSL	Integrated Data Services Limited (Division within NNPC)
IEA	International Energy Agency, Paris
IFC	International Finance Corporation
IFI	International Financial Institution
IGEM	Institute of Gas Engineers and Managers (UK)
IMF	International Monetary Fund
IPP	Independent Power Producer
ISO	International Standards Organisation
	Independent System Operator
JV	Joint Venture
LLS	United States Louisiana Light Sweet Oil
LNG	Liquefied Natural Gas
LPG	Liquefied Petroleum Gas
LRMC	Long Run Marginal Cost
MOU	Memorandum of Understanding
MW / MWh	Mega Watts / Mega Watt hours
MYTO	Multi-Year Tariff Order
NAG	Non-Associated Gas
NAPIMS	National Petroleum Investment Management Services
NBET	Nigerian Bulk Electricity Trading Plc
NBP	National Balancing Point
NCD	Nigeria Content Division
NERC	Nigerian Electricity Regulatory Commission
NETCO	Nigeria Engineering & Technical Company (Division in NNPC)
NGC	Nigerian Gas Company Limited
NGCC	Nigerian Gas Cylinder Manufacturing Company
NGL	Natural Gas Liquid
NGMC	Nigeria Gas Management Company
NGO	Non-Government Organisation
NGV	Natural Gas Vehicles
NLNG	Nigeria Liquefied Natural Gas
NNPC	Nigerian National Petroleum Company
NOC	National Oil and Gas Company
NPC	Nigerian Planning Commission
NPDC	Nigerian Petroleum Development Company Limited
NPMC	Nigeria Petroleum Marketing Company (formerly PPMC)

OB3	Obiafu-Obrikom-Oben gas pipeline
OCGT	Open Cycle Gas Turbine
OGGS	Offshore Gas Gathering System
OK LNG	Olokola Liquefied Natural Gas Project
OPEC	Organisation of Petroleum Exporting Countries
PIB	Petroleum Industry Bill
PPA	Purchase Power Agreement
PPMC	Petroleum Products Marketing Company (now NPMC)
PPP	Public Private Partnership
PPPRA	Petroleum Products Pricing Regulatory Authority
PRG	Partial Risk Guarantee
PSC	Production Sharing Contract
PTDF	Petroleum Technology Development Fund
PTFP	Presidential Task Force on Power
RE	Renewable Energy
SCADA	Systematic Control And Data Acquisition
scf	standard cubic feet
SON	Standards Organisation of Nigeria
SPDC	Shell Petroleum Development Company
TCN	Transmission Company of Nigeria
TVET	Technical & Vocational and Educational & Training
UK	United Kingdom of Great Britain and Northern Ireland
US / USA	United States of America
WAGP	West African Gas Pipeline
WAGPA	West African Gas Pipeline Authority
WB	World Bank

Units

B / Bn	billion
bcf / bcf/d / bcf/a	billion cubic feet / billion cubic feet per day / bcf per year
bcm	billion cubic metres
bcma	billion cubic metres per year
bbl	barrel
GW	Giga Watts
kg	kilogram
m	million
M	thousand
MW / MW/h	Mega Watts / Mega Watts hours
MM	million
MMbtu	million British thermal units
MMscf	million standard cubic feet
MMscf/d	million standard cubic feet per day
Mscf	thousand standard cubic feet
mt	million metric tonnes
mtpa	million metric tonnes per year
scf	standard cubic feet
t	metric tonne

Currencies

N / NGN	Naira
£	Pounds Sterling
€	Euro
$ / US$ / USD	United States Dollar

NATIONAL PETROLEUM POLICY

1. EXECUTIVE SUMMARY

Statement of the Petroleum Policy

This policy document builds on the policy goals of the Federal Government for the gas sector as presented in the 7 Big Wins initiative (www.7Bigwins.com) developed by the Ministry of Petroleum Resources and the National Economic Recovery & Growth Plan (ERGP 2017 – 2020).

In this statement of the Policy, the Federal Government of Nigeria addresses petroleum issues, articulates a vision for the petroleum (specifically oil) sector and sets policy goals, strategies and an implementation plan for the introduction of an appropriate institutional, legal, regulatory and commercial framework to resolve the barriers currently affecting investment in the sector. It is intended that this policy will be reviewed and updated periodically to ensure consistency in Government policy objectives at all times.

Once issued and gazetted, any policy position set out herein will bind Government officials unless and until amended or replaced by a formal restatement of policy duly gazetted by the Government.

Background

Definition of Petroleum for the Policy: Petroleum is defined to cover all petroleum related products, including crude oil, natural gas, and various gas liquids and condensates. Although a petroleum policy, this policy document concentrates on oil and oil products, while gas is covered by the separate and complementary gas policy.

Oil Prices: Three clear messages for Nigeria from the ongoing slump in crude oil prices are that:

1. It has to be less reliant on crude oil income;
2. It needs to leverage on its huge gas resources to develop a gas based industrial economy; and
3. Within the oil sector, Nigeria has to move downstream into the value added sectors of refining and petrochemicals.

The Petroleum Policy has derived a most likely average real future oil price of **$45/bbl**.

Nigeria is also one of the highest cost of extraction oil provinces in the world, estimated at **$29/bbl**. Nigeria has to substantially reduce the costs of production if the country is to be competitive in the modern low oil price world, and if it is to have anything more than a bare minimum government take.

Nigeria's export revenues are over-reliant on crude oil. Due to the cyclicality of oil revenues, the country must minimise its exposure to commodity price risk and develop a petroleum industry where the value added in oil streams is realised, combined with a move towards a gas based industrial economy.

It should be noted that the policies outlined in this document are independent of oil price movements; in other words, they are necessary and will be implemented regardless of future oil prices.

Structure of the Nigerian Petroleum Industry: The Nigerian upstream sector is the single most important sector of the economy and accounts for 80% of the Federal Government's foreign exchange revenues. The Niger Delta Basin and Benin Basins are the most developed basins and are the source of most current production in Nigeria.

Refining: The midstream consists of three refineries, petroleum product storage depots, onshore oil and gas pipelines, and four terminals (all government owned by subsidiaries of NNPC). Despite being one of the leading crude oil producing nations in the world, Nigeria's refining capacity is one of the smallest. Capacity utilisation has fallen to just 14% in 2014, against a global average capacity utilisation of 90%.

> ***A strong commercially viable and significant refining sector is an essential part of the Nigerian Petroleum Policy.***

Environmental Impact of Petroleum on the Niger Delta: Negative impacts of the oil industry are a major concern in the Niger Delta. The causes of environmental damage include sabotage or theft, equipment failure or human error and failure of operators to operate according to required standards of good oilfield practice.

Need for a New Petroleum Policy: There are three main reasons why Nigeria needs a new Petroleum Policy:

1. The Previous Policy has not worked;
2. The World has Changed: Prices have collapsed and the world will be awash in oil for the next few years;
3. New Vision of Value Adding Activities: The future for oil producers lies in moving developing a value added refining and petrochemicals industry.

The vision of the Petroleum Oil Policy is to move Nigeria away beyond crude oil exports into:

1. Value added activities in oil, namely refining and petrochemical industries;
2. Expanding from oil into gas based industrialisation, based on the as - yet largely untapped large gas reserves in Nigeria.

Vision and Objectives

Vision: The long term vision of the Nigerian petroleum policy is:

> **"*To become a nation where hydrocarbons are used as a fuel for national economic growth and not simply as a source of income*"**

Mission: The mission of the Nigerian petroleum policy, to meet the long term vision, is:

"*To maximise the production and processing of hydrocarbons*"

The policies are to be anchored on the following **strategic policy objectives**:

1. Create a market driven oil and gas industry;
2. Maximise production and processing of hydrocarbons;
3. Move away from oil as a source of income to oil as a fuel for economic growth;
4. Cost efficient storage, transportation and distribution for petroleum products;
5. Minimise the environmental footprint of oil exploration and production;
6. Managing the balance between depleting oil resources vs renewable energy.

The main aspects of the petroleum policy are:

1. **Governance (Legal and Regulatory Framework):**
    a. Institutional Reforms:
        i. Policy: National Petroleum Policy Directorate;
        ii. Regulatory: Nigerian Petroleum Regulatory Commission;
        iii. Commercial: Nigerian National Oil Company;
        iv. Commercial: Nigeria Petroleum Asset Management Corporation;
    b. Regulatory Framework:
        i. A new single regulatory commission across the petroleum industry;
        ii. Transparency of operations within MPR;
        iii. Petroleum safety compliance;
        iv. Setting and maintaining technical standards;
        v. Full legal separation of the upstream from the midstream;
        vi. Full legal separation of infrastructure ownership and operations from trading;
    c. Commercial Framework:
        i. Rules for access to pipelines and networks;
        ii. Pricing principles and regulations;
        iii. Cost Benchmarking for Infrastructure Facilities;
        iv. Tariff regulation for infrastructure segments;
    d. Fiscal Framework:
        i. Clear, transparent, globally competitive;
        ii. Separate oil from gas;
    e. Sector Financing:
        i. All types of financing encouraged, government financing minimal;
        ii. MPR open to any alternative financing arrangements;
    f. PSC - Plus Cost Structures:
        i. Pricing principles and regulations;
        ii. Move to modified PSCs or iJVs, but with additional cost control provisions;
        iii. Target to exit all NNPC JVs cash calls by end of 2017;

2. **Industry Structure:**
    a. Clean Break from the Past: New policy will consist of:
        i. Clear separation of the roles of government and operators;
        ii. Transparency;
        iii. Cost efficiency ;
        iv. Reducing the regulatory burden through smart regulations;

v. Realising the additional value in oil as a motor for industrial development and not simply as an income earner in its own right;
vi. Partnership between the public and private sectors;

b. Establishment of a new National Oil Company of Nigeria (NOCN)
c. Restructuring of NNPC: Into autonomous business units;
d. Gain more of the value from downstream export markets;
e. Procurement for Projects: Fundamental overhaul to bring efficiency, transparency and cost control;
f. Asset Management: Work existing assets much harder, professional and modern asset management methods to be introduced, cost control methods need to improve substantially;

3. Upstream – Developing Resources:

a. Maximising Production of Hydrocarbons within Nigeria;
   i. Maximise production from existing production blocks:
      - Reduce Niger Delta insecurity;
      - Accountability of production;
b. Maximise additions to reserves and future production;
c. Diversify resource base, and identify low cost resources;
d. Allocation of Oil Licences and Leases:
   i. Under a transparent process;
   ii. Licence renewals based on licence holders meeting licence targets;
e. Minimise Environmental Footprint: "Name and Shame" + "Polluter Pays";
f. Balance Petroleum Resources with Renewable Energy;

4. Midstream Operations – Infrastructure (transportation and processing):

a. Develop Operating Oil Product Midstream Facilities:
   i. Transportation pipelines, Refining facilities, Storage facilities, Distribution pipelines;
   ii. Network Code for Access to Midstream Facilities;
   iii. Build a commercially viable Strategic Reserve of Petroleum Products;
   iv. Audit Existing Storage Capacity;
b. Refining: Strong refining sector a basic requirement of Petroleum Policy:
   i. NNPC Refineries become Autonomous Profit Centres;
   ii. Return Storage Depot Assets to the Refineries;
   iii. Tolling Structure and Merchant Status;
   iv. Non-Performing Refineries will be Divested;
   v. Strategic Partnerships and Concessions;
   vi. Private Refineries will be encouraged;
c. Jetties: Potential areas of risk, physical and commercial:
   i. Investigate the areas of risk;
   ii. Investigate opportunities to increase jetty capacity;
b. Proposed Commercial Framework for Midstream Oil:
   i. Separation of whole oil supply and operation of midstream facilities;
   ii. Regulated pricing for monopoly midstream facility operations;
   iii. Need to improve the whole supply chain is recognised.

5. Downstream – Infrastructure and Markets:

a. Commercialisation and Liberalisation of Downstream:
   i. Distribution, capacity and safe operations;

ii. Building up strategic reserves;
iii. Improved sector logistics;
iv. Private sector investment in sector infrastructure;
v. Permanently removing all petroleum product subsidies;
vi. Unbundling and fundamental restructuring of NPMC;

b. Petroleum Products Pricing Policy:
   i. Move towards unregulated pricing in the Nigerian products markets while regulating safety and quality of service;
   ii. Remove any remaining petroleum subsidies;
   iii. Transitional pricing regulation;
   iv. Price publication and monitoring;

6. Developing National Human Resources:

a. Problems of developing local content in a depressed economy;
b. Nigeria must be able to Export Skills;
c. Developing local content and implementing Local Content Act;
d. Install institutional capacity building;
e. Introduce a maintenance and safety culture;

7. Communications: Internal and external communications strategy:

8. Roadmap and Action Plan:

a. Action plan for short term (months);
b. Implementation Plan for medium term (1-2 years);
c. Implementation Plan for long term (over two years);
d. Critical milestones:
   i. Stakeholder consultations;
   ii. Approval of the petroleum policy;
   iii. Enactment of legislation;
   iv. Establishment of the new single petroleum regulator;
   v. NNPC restructuring;
   vi. Turnaround in the refining sector;
   vii. Substantial progress towards industry wide restructuring.

2. OVERVIEW

2.1. Statement of the Petroleum Policy

This policy document builds on the policy goals of the Federal Government for the gas sector as presented in the 7 Big Wins initiative (www.7Bigwins.com) developed by the Ministry of Petroleum Resources and the National Economic Recovery & Growth Plan (ERGP 2017 – 2020).

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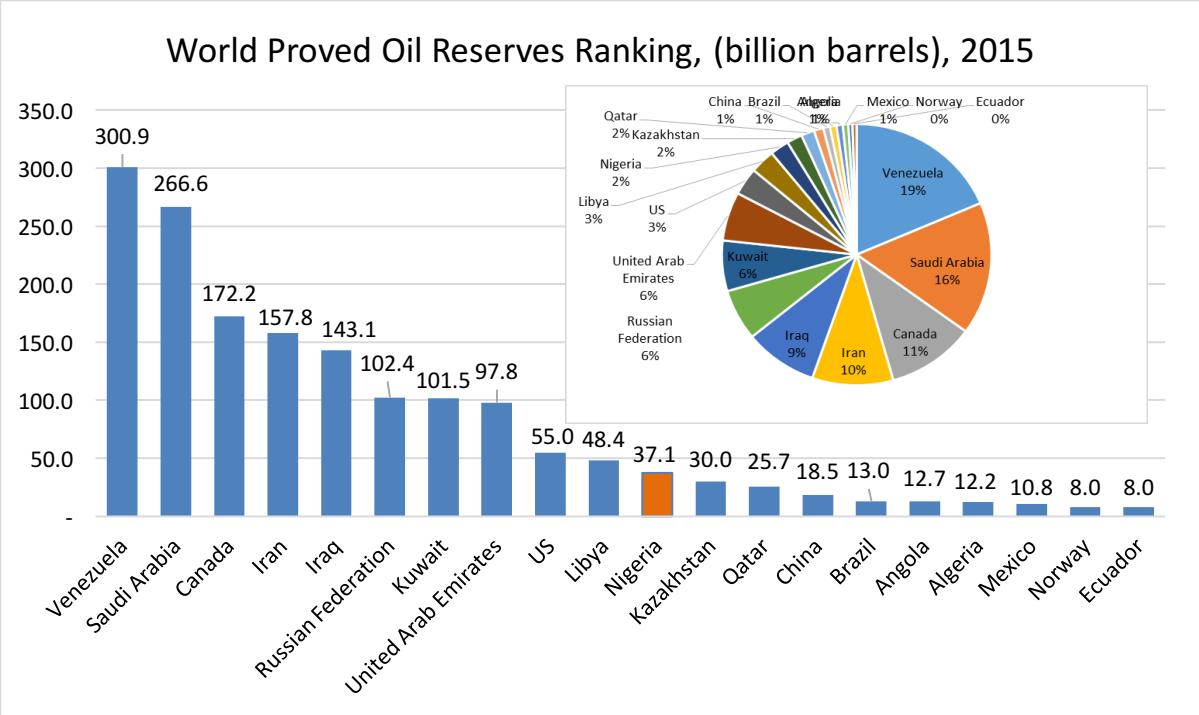
2.2. Overview

Nigeria is a major global oil producer and reserves holder. At the end of 2015, Nigeria had the 11th largest proved oil reserves in the world, holding 2% of total oil reserves.

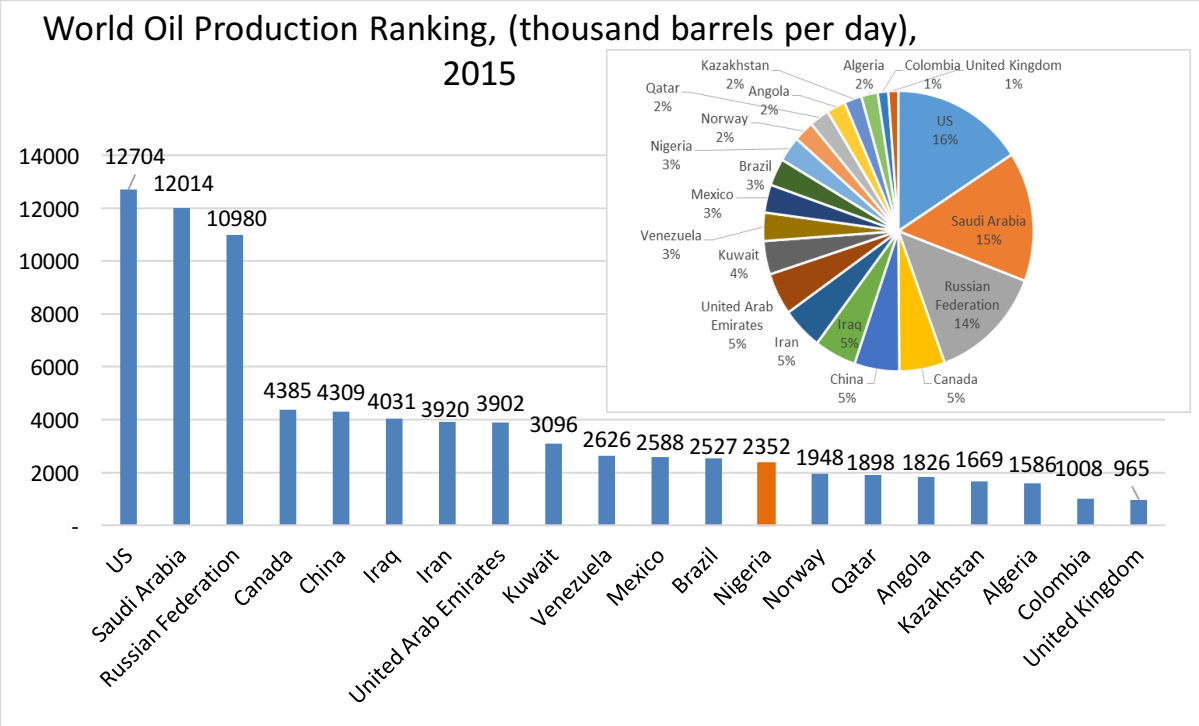
Figure 1: World Proved Oil Reserves Ranking (2015)



Source: BP Statistical Review of World Energy, 2016;
Analysis: MPR Petroleum Policy Team

In terms of oil production, Nigeria is the 13th largest oil producer, at approximately 2.2m barrels per day (bbls/d) and 3% of world production.

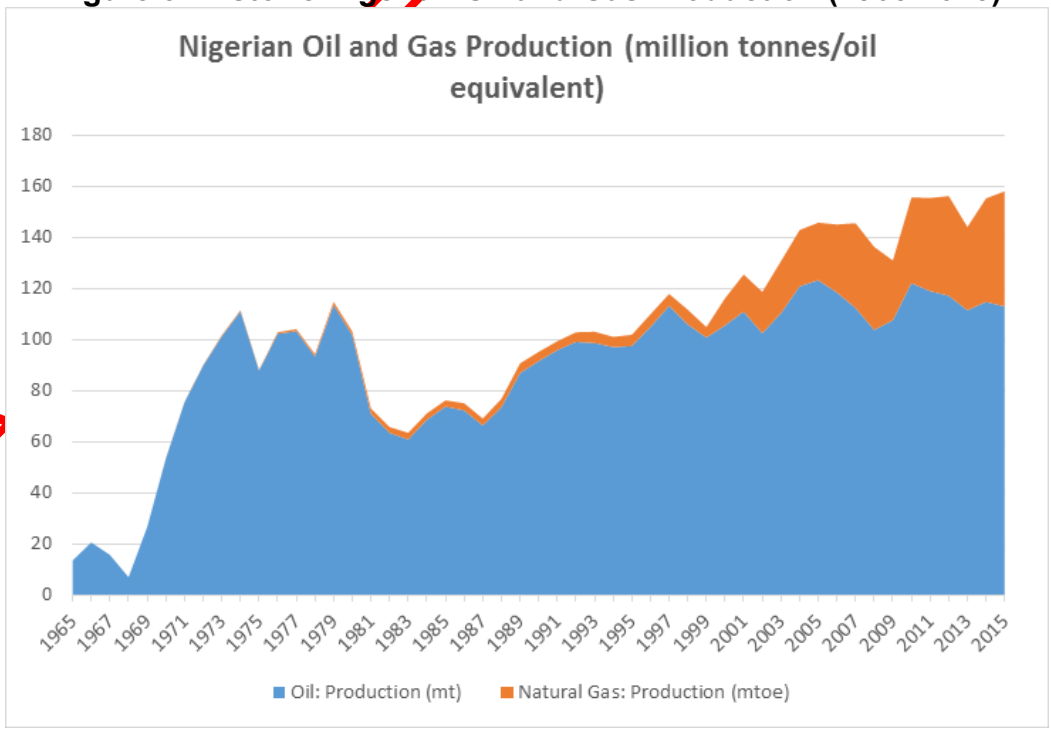
Figure 2: World Proved Oil Reserves Ranking (2015)



Source: BP Statistical Review of World Energy, 2016;
Analysis: MPR Petroleum Policy Team

As natural gas has been exploited, reserves production ratios have come down from the nearly 900 years of 1992 but in 2015 were still a very large 102 years (against a global average of around 40 years).

Figure 3: Historic Nigerian Oil and Gas Production (1965-2015)



Source: BP Statistical Review of World Energy June 2016
Analysis: Energy Markets Global, MPR Gas Policy Team 2016
Note: Gas production excludes gas flaring, reinjection, gas lift, fuel.

3. INTRODUCTION AND BACKGROUND

3.1. Definition of Petroleum for the Policy

Detailed definitions of petroleum and the parts of the value chain will be set out in legislation. Although the definitions set out in this policy are therefore indicative, the policy is clear that there will be a clear separation between upstream, midstream and downstream.

Petroleum is defined to cover all petroleum related products, including crude oil, petroleum products and other derivatives of crude oil, natural gas, and various gas liquids and condensates. Although a petroleum policy, this policy document concentrates on oil and oil products, while gas is covered by the separate and complementary gas policy.

The parts of the petroleum value chain, for the purposes of the Petroleum Policy, are defined as follows:

Upstream: Activities related to:

- Exploration for, development and production of crude oil and gas;
- Drilling and operation of oil and gas producing wells;
- Construction and operation of crude oil flowlines and gas gathering pipelines;
- Crude oil and gas separation and treatment facilities and operations;
- Transportation of personnel and equipment to and from upstream petroleum locations and facilities.

Midstream: Activities related to:

- Construction and operation of crude oil and gas transportation pipelines, in general after the flow station;
- Oil refineries and gas processing facilities;
- Oil and gas bulk storage facilities;
- Shipping of oil and gas, and related products;
- Other bulk transport methods, such as rail, barge and trucks for transporting oil and gas, and related products, on a wholesale basis;
- Wholesale marketing of petroleum products.

Downstream: Activities related to:

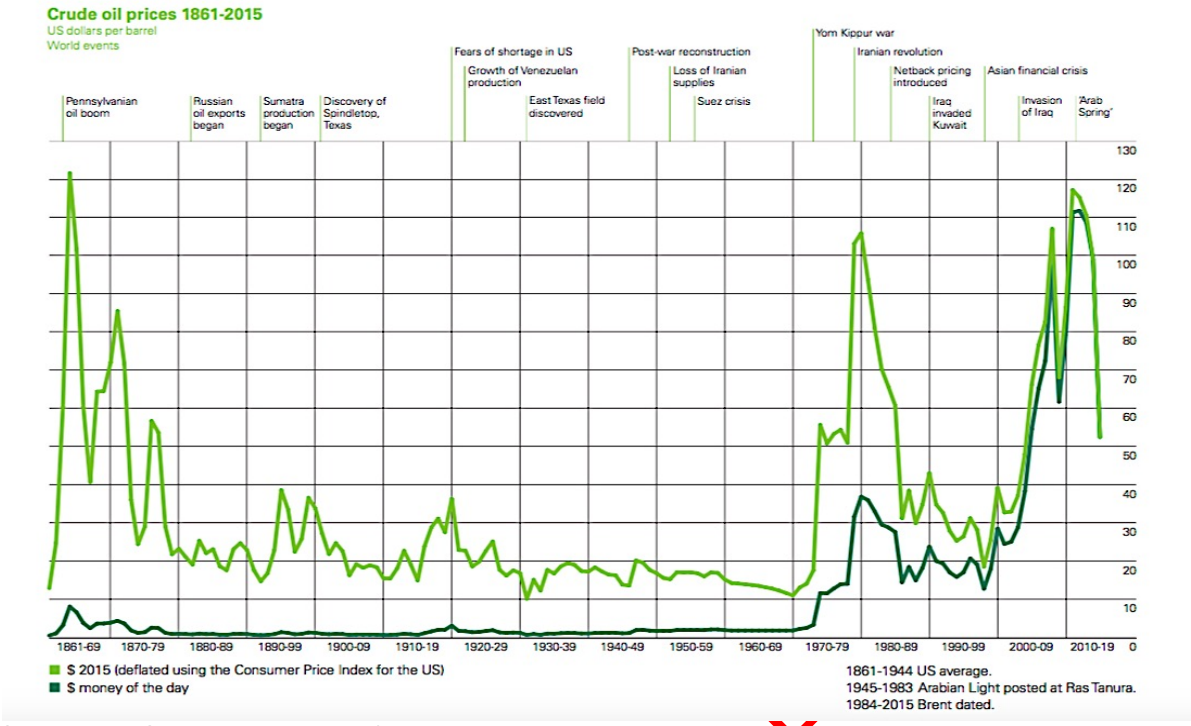
- Construction and operation of facilities for distributing petroleum products and gas to retail customers;
- Retail stations for petroleum products;
- City gate reception terminals for gas;
- Distribution of petroleum and/or gas products;
- Marketing, retailing and sale of petroleum products and/or gas.

3.2. International Background

3.2.1. Historic Prices

The figures below show oil and gas price movements over the last approximately 100 years and the last approximately ten years.

Figure 4: Global Oil Price Movements (1861-2015)



Source: BP Statistical Review of World Energy, 2016

The table below shows historical crude oil prices movements (1976-2015). They are shown for four major pricing setting points and types of crude. Of these West Texas Intermediate (WTI) and Brent Crude are the major global reference prices.

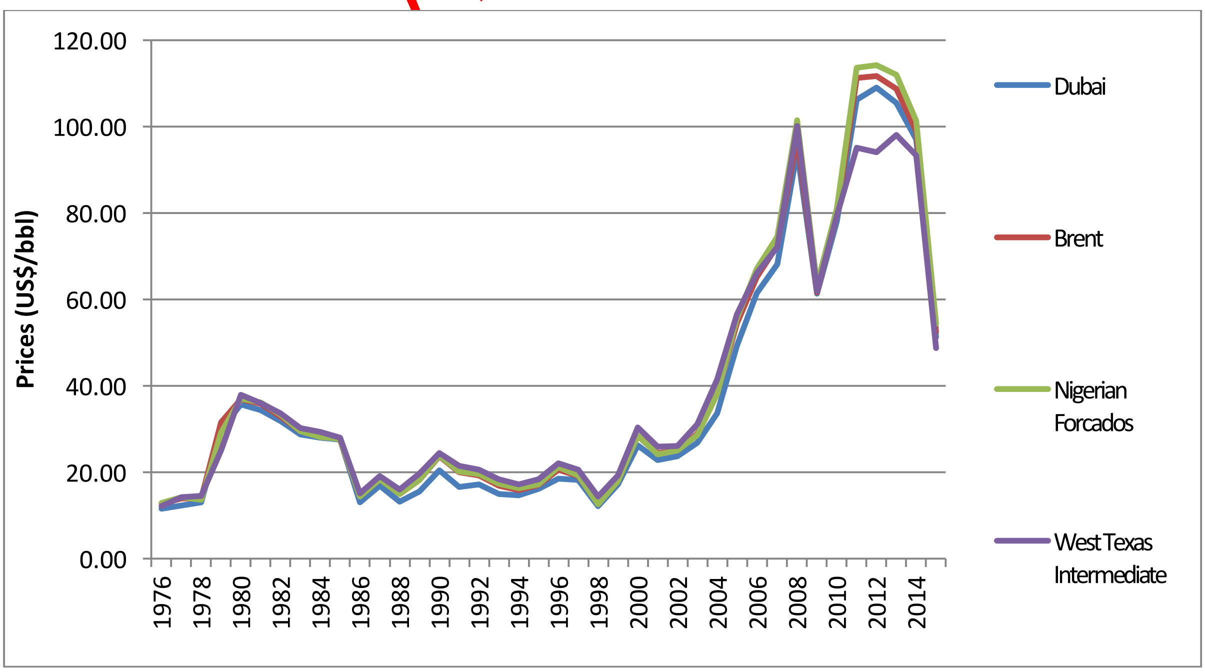
Table 1: Global Crude Oil Price Movements, Nominal (1976-2015)

	Dubai $/bbl *	Brent $/bbl †	Nigerian Forcados $/bbl	West Texas Intermediate $/bbl ‡
1976	11.63	12.80	12.87	12.23
1977	12.38	13.92	14.21	14.22
1978	13.03	14.02	13.65	14.55
1979	29.75	31.61	29.25	25.08
1980	35.69	36.83	36.98	37.96
1981	34.32	35.93	36.18	36.08
1982	31.80	32.97	33.29	33.65
1983	28.78	29.55	29.54	30.30
1984	28.06	28.78	28.14	29.39
1985	27.53	27.56	27.75	27.98
1986	13.10	14.43	14.46	15.10
1987	16.95	18.44	18.39	19.18
1988	13.27	14.92	15.00	15.97
1989	15.62	18.23	18.30	19.68
1990	20.45	23.73	23.85	24.50
1991	16.63	20.00	20.11	21.54
1992	17.17	19.32	19.61	20.57

1993	14.93	16.97	17.41	18.45
1994	14.74	15.82	16.25	17.21
1995	16.10	17.02	17.26	18.42
1996	18.52	20.67	21.16	22.16
1997	18.23	19.09	19.33	20.61
1998	12.21	12.72	12.62	14.39
1999	17.25	17.97	18.00	19.31
2000	26.20	28.50	28.42	30.37
2001	22.81	24.44	24.23	25.93
2002	23.74	25.02	25.04	26.16
2003	26.78	28.83	28.66	31.07
2004	33.64	38.27	38.13	41.49
2005	49.35	54.52	55.69	56.59
2006	61.50	65.14	67.07	66.02
2007	68.19	72.39	74.48	72.20
2008	94.34	97.26	101.43	100.06
2009	61.39	61.67	63.35	61.92
2010	78.06	79.50	81.05	79.45
2011	106.18	111.26	113.65	95.04
2012	109.08	111.67	114.21	94.13
2013	105.47	108.66	111.95	97.99
2014	97.07	98.95	101.35	93.28
2015	51.20	52.39	54.41	48.71

Source: BP Statistical Review of World Energy (2016)

Figure 5: Global Crude Oil Price Movements, Nominal (1976-2015)



Source: BP Statistical Review 2016; Analysis: MPR Oil Policy Team

The figure above shows that crude oil prices have been fluctuating since the 1970s. A major surge of high prices started around 2005, reaching a peak of the highest levels experienced during the period of 2008-2014. Since 2014 however, crude oil prices have been steadily falling with Dubai having a yearly average price of $52.20/bbl, Brent Crude at $52.39/bbl, Nigerian Forcados at $54.41 and WTI at $48.71 in 2015.

There are two key messages:

1. **Period of High Prices Now Over**

Oil and gas prices over the last 5-10 years have been the highest they have ever been since the modern petroleum industry first started in around the 1860s. Price levels have now fallen substantially from those levels and there is a possibility that they may not reach those levels again.

As oil supply reduces there may be a window of oil prices of around $85/bbl in the period 2020-2030. Prices are forecast to fall again after that window and then stay low. At the same time, while oil supply increases dramatically as US shale oil comes back onstream, demand growth will markedly soften, **except for the petrochemicals sector which is likely to be the main market for oil**. These oil price movements will affect gas prices as well.

2. **Recent Extreme Price Volatility**

There has also been extreme volatility of oil and gas prices since around 2005, at levels not seen since the 1860s. Prices went down dramatically as US shale production took off. Two clear messages for Nigeria are that:

1. It has to broaden the economy towards a gas based industrial economy; and
2. Within the oil sector, Nigeria has to move downstream into the value added sectors of refining and petrochemicals.

The International Energy Agency (IEA) in the preview of the Medium Term Oil Market Report 2016, crude oil prices for WTI and Brent were seen to continue to fall to a value below $30/bbl for the first time since 2003. It would be expected that such a rapid fall in crude prices would result in production cuts, as was the case in the previous four decades. Instead however, producers have continued to produce and sell crude oil allowing the market to set the price. The IEA further considered that unless the heavily oversupplied oil market can return to balance, oil prices cannot rise to the levels necessary to support investments in new production from higher cost resources.

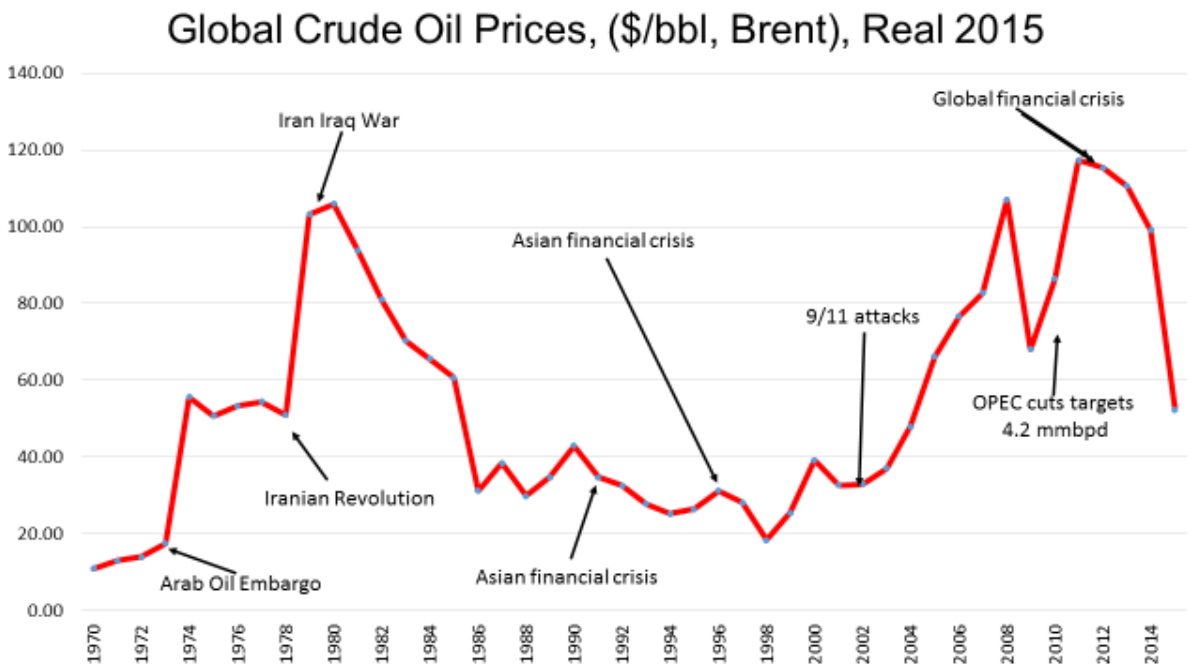
This phenomenon should give major short-term benefits to consumers and provide a boost to demand growth. However, contrary to expectations of the last four decades, economies globally have not responded to the low oil prices. For various reasons (declining demand from China, continuing Euro crises in southern Europe, Brexit etc.), global demand has remained muted and, according to some forecasts, the world may be entering another recession in 2017.

3.2.2. Forecast Prices

This section draws upon research and analysis which members of the Petroleum Policy Team in the MPR and NNPC carried out in 2016 on likely scenarios for crude prices in the future. The analysis is based upon the concept that historic experience of oil price movements over time can give a good indication of future oil price behaviour.

Historically, crude oil prices in the international market have reacted to a variety of geopolitical and economic events. The figure below highlights some recent key historic events that influence the prices of crude oil.

Figure 6: Global Crude Oil Price Movements, Real 2015 (1970-2015)



Source: BP Annual Statistical Review 2016;
Analysis: MPR Petroleum Policy Team 2016

In an attempt to carry out a relatively realistic forecast on the future prices of oil therefore, the following factors, among others, must be considered:

- Changes in the expectations of economic growth;
- Changes in global oil consumptions in relation to economic growth;
- Changes in non-OPEC production;
- Changes in non-OPEC supply expectations;
- Changes in Saudi Arabia crude production; and
- Growth in global inventory levels.

Taking these factors into consideration coupled with the historical trends of price fluctuations, the study was carried out into likely scenarios for crude prices in the future.

Looking at historical trends of crude oil prices, the moving average prices of crude for an interval of five years to 25 years were determined as tabulated below:

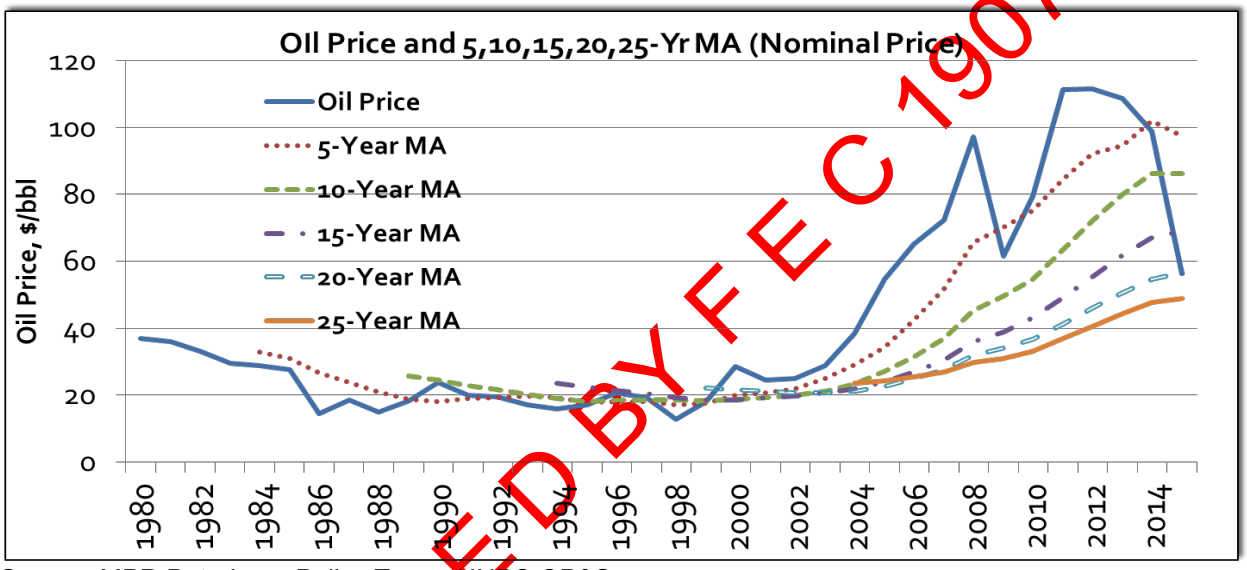
Table 2: Five Year Moving Crude Oil Prices

Years	Moving Price ($/bbl)
5	97.36
10	86.27
15	68.92
20	56.64
25	48.88

Source: MPR Petroleum Policy Team, NNPC CP&S

From the moving average prices, a plot of the moving average prices against the historical prices since 1980 was obtained as shown below.

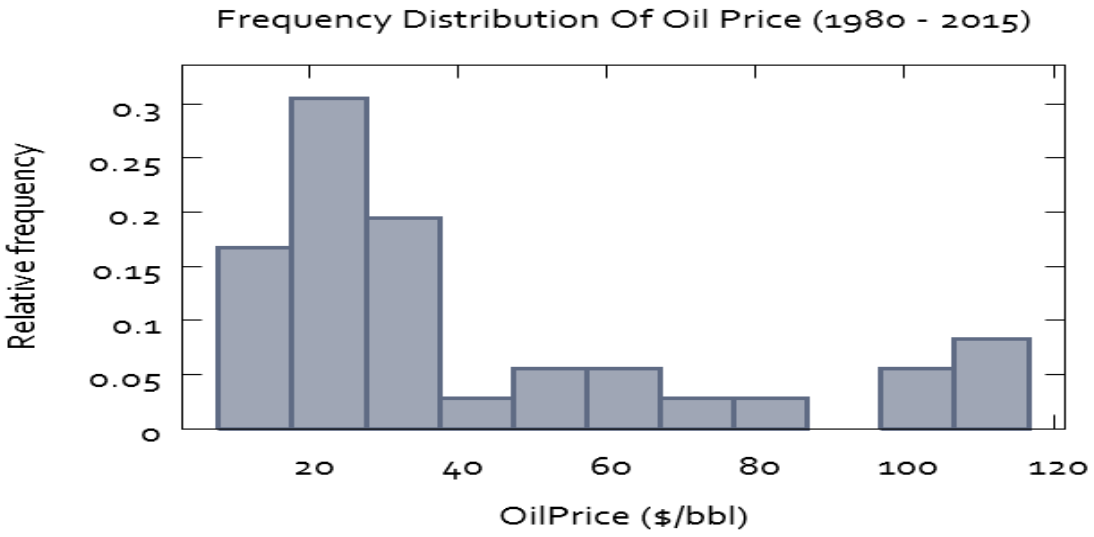
Figure 7: Oil Prices and 5, 10, 15, 20, 25 Year Moving Averages, Nominal



Source: MPR Petroleum Policy Team, NNPC CP&S

The next chart shows the distribution of each range of oil prices and the relative frequency of each range of oil prices.

Figure 8: Frequency Distribution of Oil Prices (1980-2015)



Source: MPR Petroleum Policy Team, NNPC CP&S

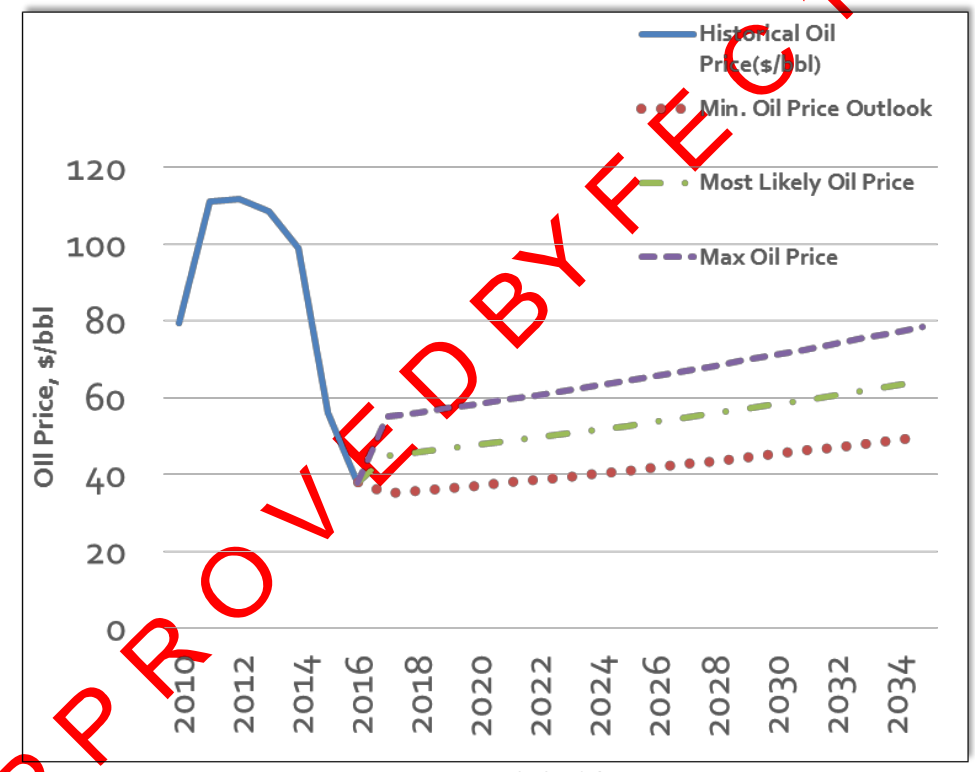
The above analysis shows that on most occasions, oil prices historically have been below $40/bbl, nominal. An analysis of the plot shows that oil prices exhibit log-normal distribution showing 67% of price frequencies being at most $37.45/bb (in other words since 1980 the oil price has been below $40/bbl for more than two thirds of the time).

- $41.76/bbl is the mean average price since 1980;
- $57.25/bbl is the upper quartile price.

Based on the earlier established trends and the frequency distribution of the prices of crude, a forecast to 2035 of real prices was developed with:

$35/bbl minimum;
$45/bbl most likely;
$55/bbl maximum price.

Figure 9: Oil Price Outlook to 2035



Source: MPR Petroleum Policy Team, NNPC CP&S
Note: Most likely price is $45/bbl real (2016) and in the chart is escalated each year from that in nominal terms

Based on the foregoing, the reality may be deduced that crude oil may never again reach the highs experienced in the period 2008-2014. This will become more so as renewable energy continues to gain market share rapidly.

In conclusion, the most realistic line of action for any nation with oil as the backbone of its economy is to diversify, because indices strongly point to the possibility that the era of oil booms may be over for good.

The MPR central case long term crude oil price forecast is $45/bbl (forty-five US Dollars) real.

3.2.3. Cost of Producing a Barrel of Oil

Some analysis has been carried out into the cost of producing a barrel of oil. The estimated cost for Nigeria of producing a barrel of oil (2016 costs) is:

Table 3: Estimated Cost of Producing a Barrel of Oil, Nigeria

Cost Item	Cost / bbl	% of Total
Gross taxes	$4.11	14.2%
Capital spending	$13.10	45.2%
Production costs	$8.81	30.4%
Admin / transport	$2.97	10.2%
Total	**$28.99**	**100%**

Source: Rystand Energy UCube

Nigeria is in fact among the most expensive oil provinces in the world. Costs per barrel of leading oil producers are:

Table 4: Estimated Cost of Producing a Barrel of Oil, Oil Producers

Oil Producer	Cost of Producing a Barrel ($/bbl)
Saudi Arabia	$8.98
Iran	$9.08
Iraq	$10.57
Russia	$19.21
Indonesia	$19.71
US Non-Shale	$20.99
Norway	$21.30
US Shale	$23.35
Canada	$26.64
Venezuela	$27.62
Nigeria	**$28.99**
Brazil	$34.99
UK	$44.33

Source: Rystad Energy UCube

3.2.4. International Refinery Business

Types of Refineries

There are different types of refinery, carrying out different sets of refining activity.

Topping: The topping refinery just separates the crude into its constituent petroleum products by distillation, known as *Atmospheric Distillation*. A topping refinery produces naphtha but *no gasoline*.

Hydro-skimming: The hydro-skimming refinery is equipped with Atmospheric Distillation, naphtha reforming and necessary treating processes. This type of refinery is more complex than a topping refinery and it produces *gasoline*.

Cracking: The cracking or hydro cracking refinery, in addition to the hydro-skimming refinery, is equipped with vacuum distillation and catalytic cracking. The cracking refinery adds one more level of complexity to the hydro-skimming refinery by reducing fuel oil by conversion to light distillates and middle distillates.

Coking: The coking refinery is equipped to process the vacuum residue into high value products using the Delayed Coking Process. The coking refinery adds further complexity to the cracking refinery by high conversion of fuel oil into distillates and petroleum coke.

Integrated: The integrated refinery is equipped to upgrade its *LPG or Naphtha* into basic *petrochemicals* by way of aromatics production of benzene, cyclo-hexene, meta xylene, ortho xylene, para xylene and toluene or naphtha cracking.

Make Up of Nigerian Crude Oil

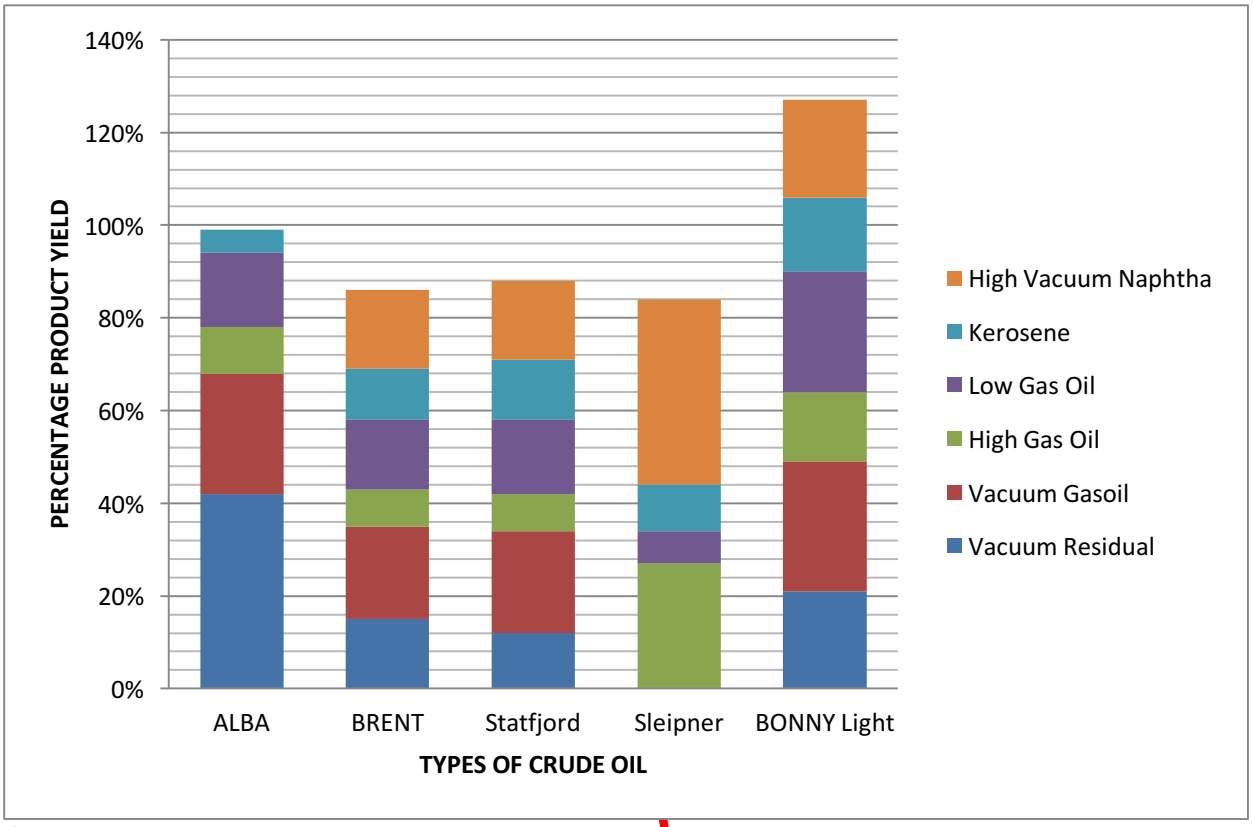
Nigeria produces a very light sweet variety of crude oil, not requiring a relatively complex refining process compared with other types of crude. The makeup of different types of crude oil is shown in the following table and figure.

Table 5: Classification of Different Crude Oils

Type of Crude	Vacuum Residual	Vacuum Gasoil	High Gas Oil	Low Gas Oil	Kerosene	High Vacuum Naphtha
ALBA	42%	26%	10%	16%	5%	0%
BRENT	15%	20%	8%	15%	11%	17%
Statfjord	12%	22%	8%	16%	13%	17%
Sleipner	0%	0%	27%	7%	10%	40%
BONNY Light	21%	28%	15%	26%	16%	21%

Source: MPR Petroleum Policy Team 2016

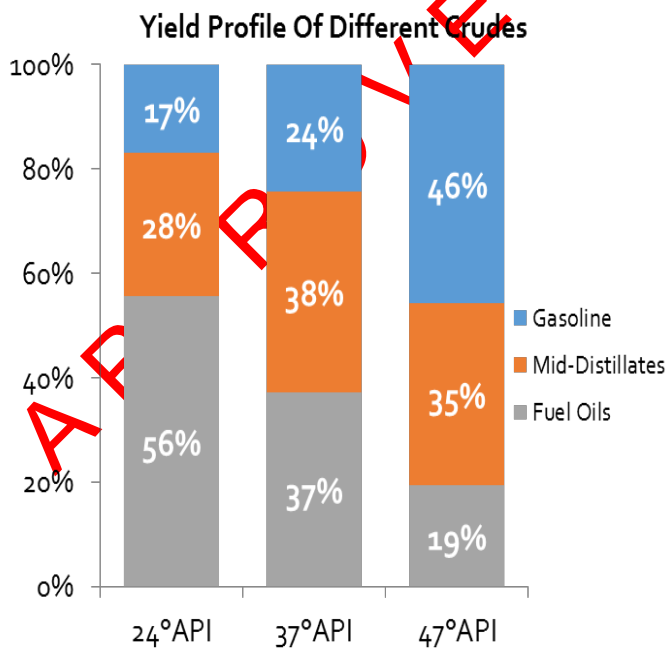
Figure 10: Comparison of Different Crude Oil Types with Bonny Light



Source: MPR Petroleum Policy Team

Global Refining Hubs

Figure 11: Yield Profile of Different Crudes



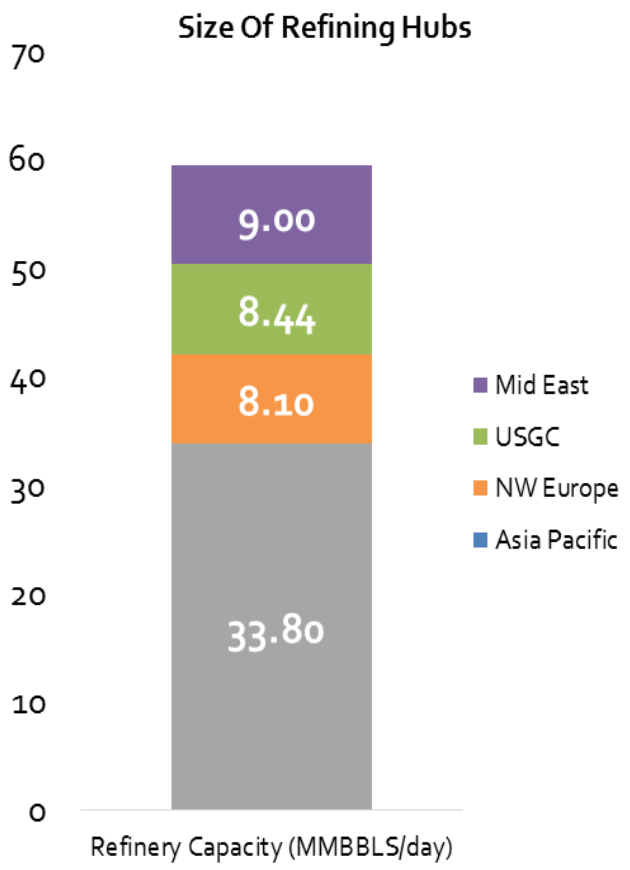
Refinery Yields are a function of the 1) Characteristics of crude feed; and 2) Refinery Complexity.

The Refinery value of crude is dependent on 1) The characteristics of the crude feed; 2) Refinery complexity; and 3) Value of refined products.

The different types of crude oil are shown in the following figure. Bonny Light has a very low sulphur content and an API in the mid 30s. The nearest other type of crude to Bonny Light is US Louisiana Light Sweet (US LLS).

Source: Kaase Gbakon, NNPC CP&S, SPE Dubai September 2016

Figure 12: Size of Refining Hubs, Global



A study within NNPC has considered the four main refining hubs or markets around the world: Asia Pacific, North West Europe, US Gulf Coast (USGC) and Middle East.

The study considered refinery complexity and capacity, product prices and regional marker crudes. The first two are discussed here.

The figure on the left shows the total refining capacity in each of the hubs and the total world refining capacity (59.34 mmbbl/day).

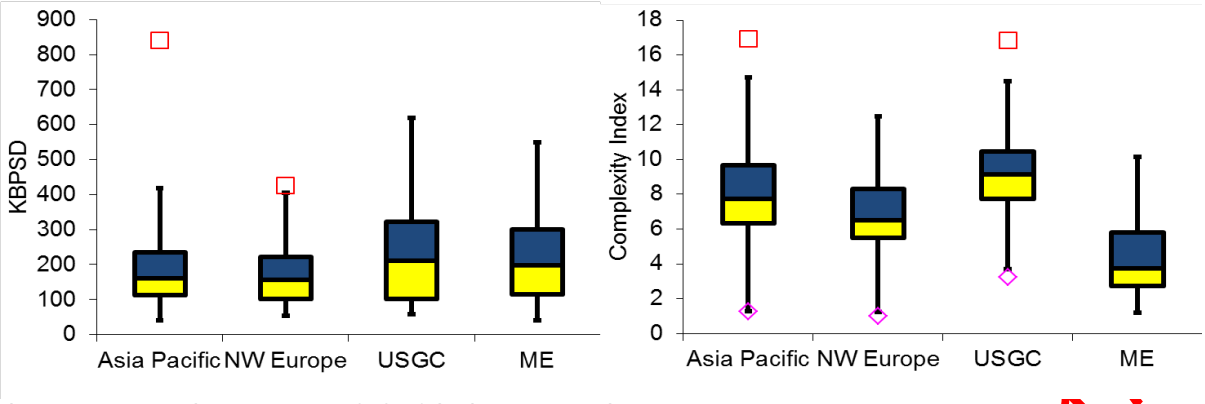
Because Nigeria's Bonny Light is a very light crude, most of the refineries around the world are able to refine Bonny Light. However, complex refineries tend to refine complex crudes and light less complex crudes are refined by less complex refineries.

Source: Kaase Gbakon, NNPC CP&S, SPE Dubai September 2016

The figure below shows the capacity (left hand chart) and complexity (right hand chart) of the refineries in the four hubs being considered. For each hub, the bottom line shows the lowest quartile of the range (capacity or complexity), the (yellow and blue) boxes show the second and third quartile, with the line across each box showing the mean capacity or complexity. The top line shows the highest quartile of the range and the little boxes above show outliers, Asia Pacific for example showing a very large outlier refinery.

The figure shows that NW Europe tends to have smaller refineries and less complex ones. This is probably a consequence of NW Europe having taken the conscious decision in recent decades to cease taking heavy dirty fuels and deliberately close down those facilities that used to take them. The Middle East has even less complex refineries (but larger ones).

Figure 13: Characteristics of Refining Hubs



Source: Kaase Gbakon, NNPC CP&S, SPE Dubai September 2016

Table 6: Characteristics of Refining Hubs

	Asia-Pacific	NW Europe	USGC	ME
No of Refineries in Sample	151	92	39	37
Refinery Attributes				
Capacity < 200kbpd	70%	62%	44%	54%
Median Capacity	160	156	210	197
Complexity Index > 8.00	53%	30%	60%	8%
Median Complexity	7.73	6.52	9.12	3.73

Source: Kaase Gbakon, NNPC CP&S, SPE Dubai September 2016

Refineries in NW Europe are probably the best placed to take Nigerian crude, because of their characteristics and because of their relative proximity to the Nigerian production.

Refineries for Nigerian Types of Light Crudes

Nigerian Type Crude is typified by an API of 33.42°-38.11° and sulphur content of 0.15%wtS – 0.33%wtS.

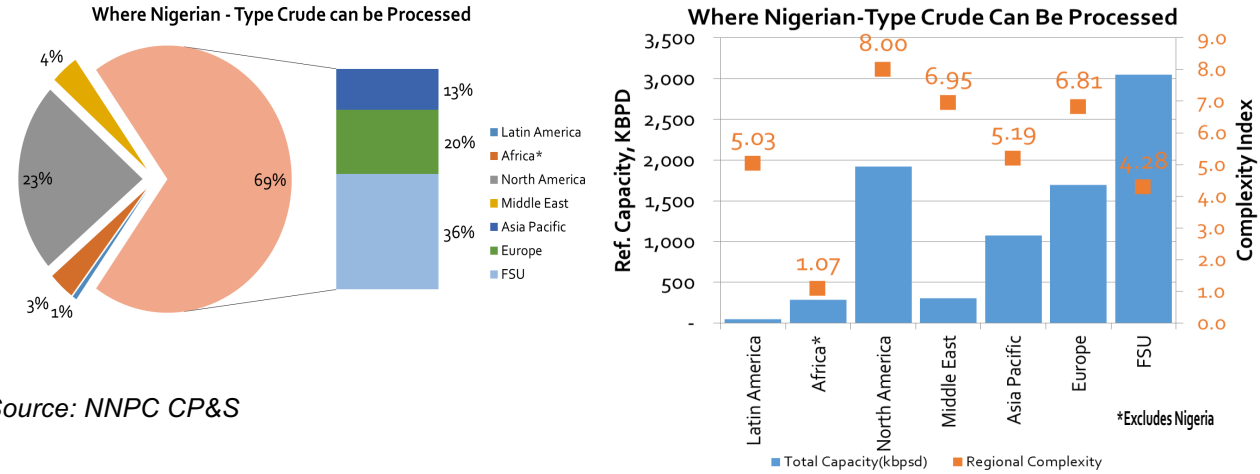
Table 7: Where Nigerian Type Crude Can Be Processed

Regions	Total Capacity (kbpsd)	Regional Complexity
Latin America	48.40	5.03
Africa*	285.00	1.07
North America	1,922.63	8.00
Middle East	302.00	6.95
Asia Pacific	1,074.87	5.19
Europe	1,696.20	6.81
FSU	3,050.63	4.28
TOTAL	**8,379.73**	

Source: NNPC CP&S

After the Former Soviet Union (FSU) / Eastern Europe, North America has the highest capacity to process Nigerian Type crude (around 2 mmbpd). In total there is a global capacity of **8.4 mmbpd** to process Nigerian type crude.

Figure 14: Capacity and Complexity of Refineries for Nigerian Type Crude



Source: NNPC CP&S

Bonny Light and US LLS

One of the consequences of the growth in US tight oil production has been the rapid growth in production of US Louisiana Light Sweet oils (LLS). These oils are of a very similar specification to Nigerian Bonny Light. Nigerian Bonny Light crude that traditionally was sent to the USA and refined in US refineries is being increasingly replaced by US LLS. US LLS production for 2016 has shot up from 5.7 to 9.1 mmbpd from 2011 to 2015. The consequences are:

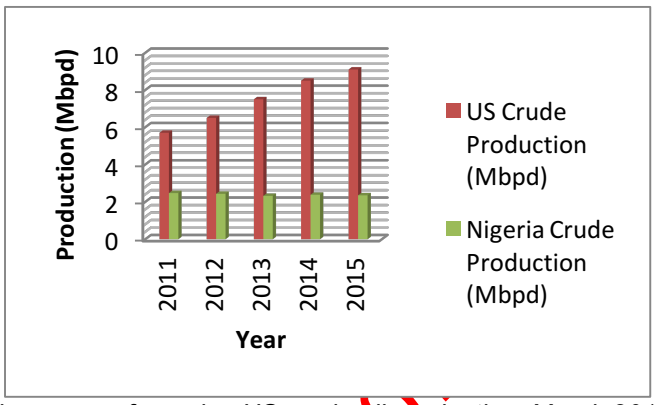
- Replacing imported light crude of similar quality to US light crude oils;
- Increasing overall refinery utilisation (they use more of everything including US light crude oils);
- Replacing light high sulphur and medium gravity imports with US LLS;
- Investing in refinery changes to use more US light crude oil.

Bonny Light crude from Nigeria therefore will find less and less usage in the USA.

Table 8: US and Nigerian Light Crude Production (mmbpd)

Year	US Crude Production (mmbpd)	Nigeria Crude Production (mmbpd)
2011	5.7	2.47
2012	6.5	2.43
2013	7.5	2.32
2014	8.5	2.38
2015	9.1	2.35

Figure 15: US and Nigerian Light Crude Production (mmbpd)



Source: Refining US Petroleum: A survey of US Refinery use of growing US crude oil production, March 2015

3.3. Structure of the Nigerian Petroleum Industry

3.3.1. Nigeria Upstream

As would be expected for one of the largest reserves holders and petroleum producers in the world, Nigeria has a large and active petroleum sector, with a large number of operators and oil services companies. The issue facing Nigeria is not one of bringing expertise into the country, but of how to make the best use of the expertise that is already here.

The Nigerian upstream sector is the single most important sector of the economy and accounts for 80% of the Federal Government's foreign exchange revenues[1].

The Niger Delta Basin and Benin Basins are the most developed basins and are the source of most current production in Nigeria. For many years, petroleum has been dominated by International Oil Companies (IOCs) operating Joint Venture (JV) agreements or PSCs with the government through NNPC. However, in recent years, Nigeria has been leveraging its experiences from Sole Risks (SR) and Marginal Fields Operations. There are now indigenous companies also operating JV agreements.

From the very beginning of oil exploration in Nigeria in 1937 until early 1993, virtually all exploration and production activities were restricted to land and swamps. Where prospecting ventured offshore, it was in areas not greater than 200m water depths. The Federal Government opened up a new frontier in oil and gas exploration, heralding the bright prospects of a promising future, by allocating some offshore blocks in water depths reaching 2500m. These deep-water depths and plans for

[1] Source: National Bureau of Statistics; 2016 National Budget

depths even greater than 2500m will undoubtedly impact positively the country's production and reserves. Although these deep-water operations are technically challenging and very capital intensive, experienced multinational companies have been awarded some deep offshore blocks and even ultra-deep concessions.

Contract types in the Upstream Sector

The main contract types in the Upstream Sector are:

Joint Venture Agreements (JVs): These are the standard basic agreements between NNPC and operators. Under this arrangement, both NNPC and operator contribute to the funding of operations in the proportion of their equity holdings and generally receive the produced crude oil in the same ratio.

Product Sharing Contracts (PSCs): Under the PSC arrangement, the concession is held by NNPC (acting for the government) who engages the operator as a contractor to undertake petroleum operations on its behalf. The operator bears the financial risks. If the operation is successful, the contractor is entitled to recover its costs upon commencement of commercial production. If not, the contractor bears all the loss.

Sole Risks (SR): Under this model, the Contractor undertakes exploration, development and production activities for, and on behalf of, NNPC or the concession holder, at its own risk. The concession ownership remains entirely with the NNPC/ holder, and the Contractor has no title to the oil produced. The Contractor is reimbursed cost incurred only from proceeds of oil sold and is paid periodical remuneration in accordance with the formulae stipulated in the contract. The Contractor has the first option to buy back the crude oil produced from the concession.

Marginal Fields: To further promote Nigerian participation in the sector, Marginal Fields are allocated in the Upstream Sector to Nigerian indigenes. A marginal field is any field that has produceable reserves booked of less than 10,000 bbls/d and has remained unproduced for over 10 years.

IOCs

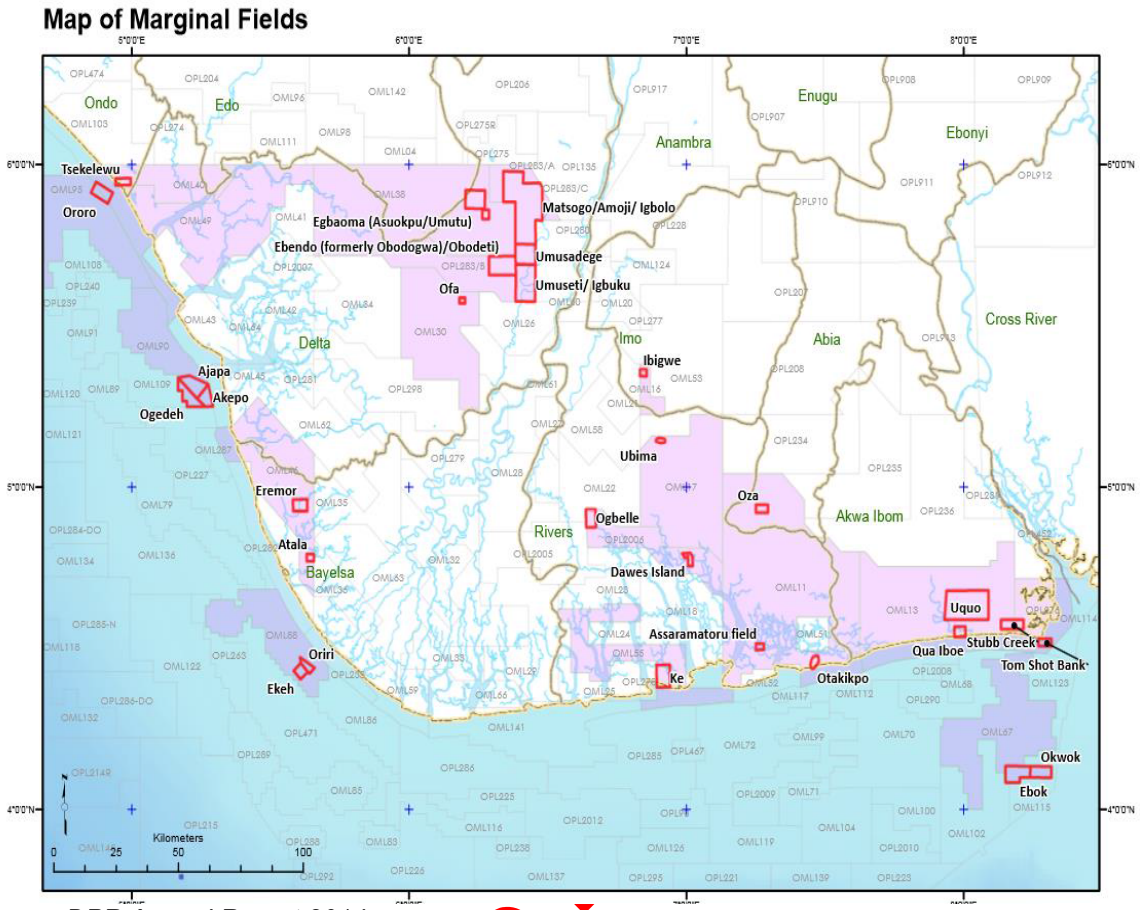
There are six main IOCs active in Nigeria:

1. Shell (SPDC);
2. ExxonMobil;
3. Chevron;
4. Total;
5. ENI;
6. Addax.

Indigenous Operators

There is a large number of indigenous operators in the Nigerian oil and gas sector. These players either operate marginal fields and sole risk concessions, whilst a few have recently acquired assets from some of the oil majors and now participate in joint venture with NNPC and NPDC.

Figure 16: Map of Marginal Field Operators



Source: DPR Annual Report 2014

In addition to the IOCs, indigenous operators and marginal field operators there is also a large number of oil services companies operating in Nigeria.

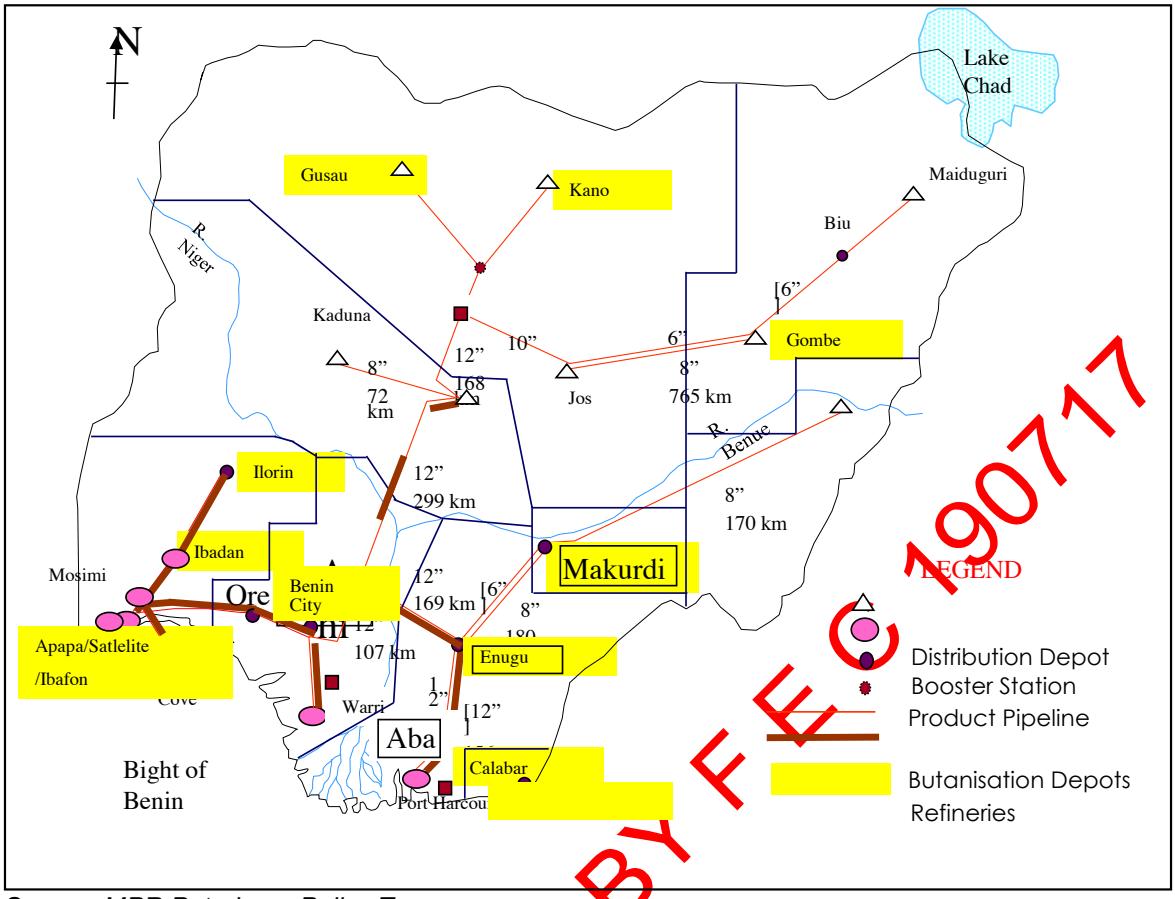
3.3.2. Nigeria Midstream Oil Network

The Nigerian midstream oil segment comprises refineries, product storage depots, terminals, crude oil transportation pipelines, petroleum product pipelines, pump stations and LPG depots.

Facilities within the midstream network in Nigeria consists of:

- Four refineries with a combined capacity of 445,000 bpd;
- 21 petroleum product storage depots;
- Over 5,120 km pipeline network;
- 24 pump stations;
- Nine LPG depots with a total combined capacity of 12,000 MT of LPG;
- Terminals at:
    - Atlas Cove;
    - NPMC Escravos;
    - Bonny Export;
    - MT Oloibiri / MT Tuma.

Figure 17: Nigeria's Midstream Oil Network



Source: MPR Petroleum Policy Team

The Nigerian midstream oil network was originally designed for equalisation of end – user prices throughout the country and was to be operated as a regulated network. However, in practice, it was run as a non-commercial unregulated monopoly embedded within the NNPC:

- The system consists of a crude oil transportation system from crude oil terminals to refineries (Port Harcourt, Warri, Kaduna);
- The refinery processing system was linked to the pipeline transmission network and to storage depots;
- Product imports augmented domestic refining through Atlas Cove terminal which was linked to the pipeline transmission and distribution system;

As with most networks, the tariffing mechanism for transportation was based on equi-distant average network pricing (the so-called postage stamp tariffing model). Even this model described above has not been effectively implemented, leaving a network whose maintenance costs are not fully recovered from the tariffs. As result, the network is in a state of disrepair and plagued by systemic inefficiencies and vandalism across critical areas.

3.3.3. Nigerian Refineries

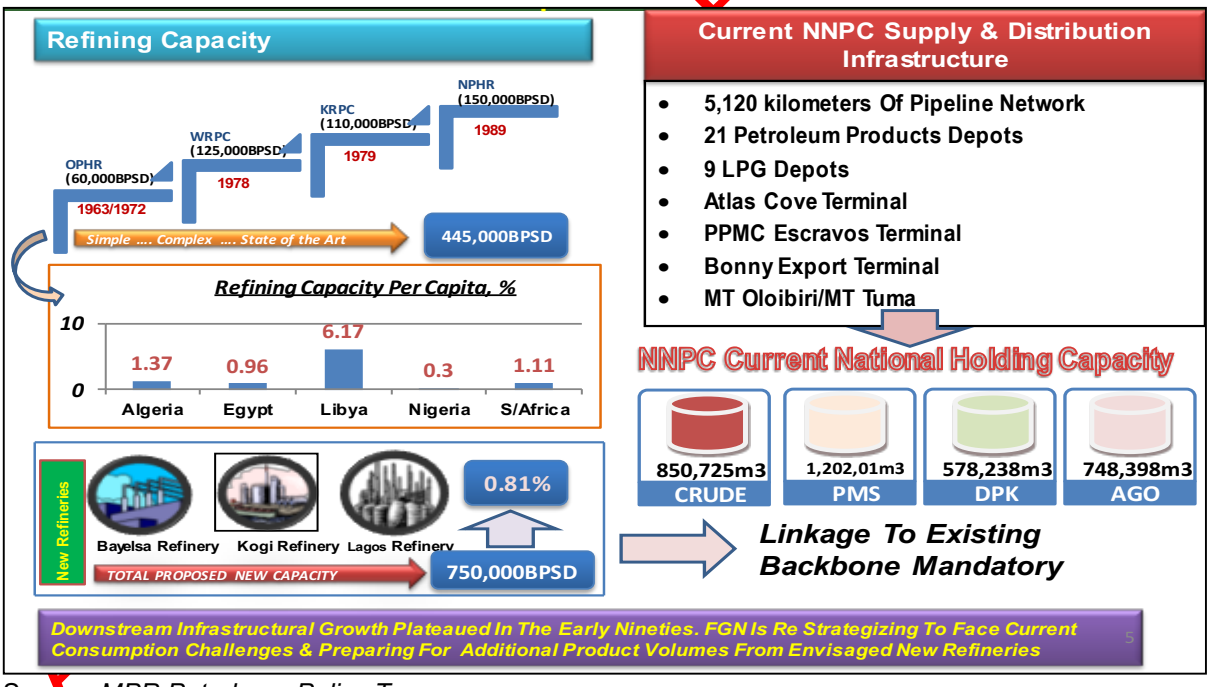
Nigerian refining capacity is:

- OPHR: 1963/1972: 60,000 bpsd;
- WRPC: 1978: 125,000 bpsd;
- KRPC: 1979: 110,000 bpsd;
- NPHR: 1989: 150,000 bpsd;
- Total today, nameplate capacity: 445,000 bpsd.

Despite being one of the leading crude oil producing nations in the world, Nigeria's refining capacity is one of the smallest. On a per capita basis, Nigerian refining capacity (theoretical maximum capacity which is far higher than actual current operational capacity) is one of the lowest, even among other African countries:

- Libya: 6.17 bpsd/capita;
- Algeria: 1.37 bpsd/capita;
- South Africa: 1.11 bpsd/capita;
- Egypt: 0.96 bpsd/capita;
- Nigeria: 0.3 bpsd/capita.

Figure 18: Nigeria's Refining Capacity



Source: MPR Petroleum Policy Team

There are three Government – owned refineries in Nigeria, one of which, Port Harcourt, has two installations. They are all government owned and part of NNPC. The existing refineries and their characteristics are:

Table 9: NNPC Refineries in Nigeria

S/No.	Refinery	Ownership	Configuration	Feedstock	Product
1	Port Harcourt,	FG (NNPC)	Hydro-skimming	Bonny Light	Fuels (PMS,AGO, DPK)

	Old PHRC, Rivers State				
2	New PHRC, Rivers State	FG (NNPC)	Conversion	Bonny Light	Fuels (PMS,AGO, DPK)
3	Warri, WRPC, Delta State	FG (NNPC)	Conversion	Escravos	a. Fuels (PMS,AGO, DPK) b. Petrochemical (Polypropylene & Carbon Black)
4	Kaduna, KRPC, Kaduna State	FG (NNPC)	Conversion	i. Escravos ii. Ughelli Blend iii. Basra	a. Fuels (PMS, AGO, DPK) b. Petrochemical c. Base Oil
5	NDPR, Rivers State	NDPR	Topping	i. Urals ii. Ogbelle	Diesel

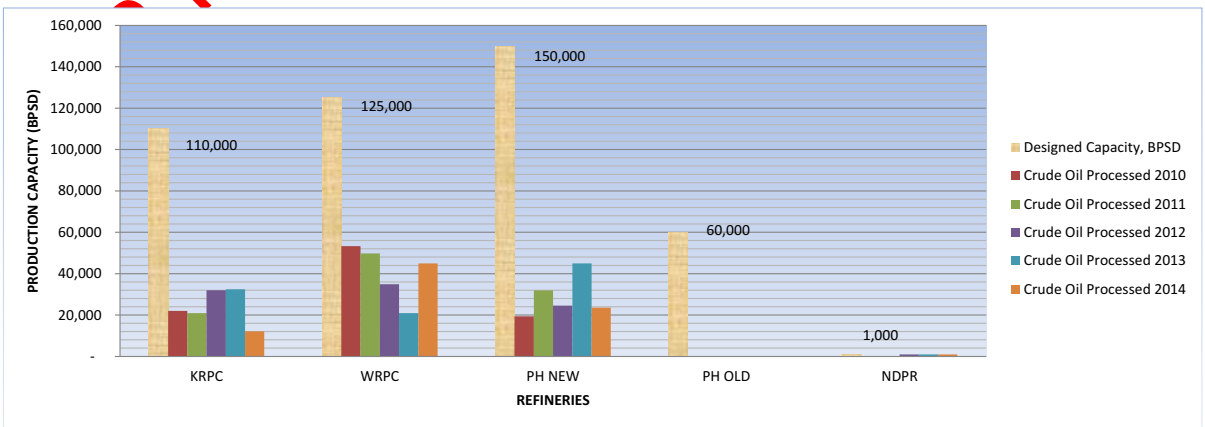
Source: DPR Annual Report 2014

Table 10: Refining Capacity and Utilisation in Nigeria

		KRPC	WRPC	PH NEW	PH OLD	NDPR	TOTAL
Design Capacity, BPSD		110,000	125,000	150,000	60,000	1,000	446,000
Crude Oil Processed, BPSD	2010	21,987	53,345	19,345	-	-	94,677
	2011	20,897	9,731	31,853	-	-	
	2012	31,982	34,869	24,531	-	1,000	92,382
	2013	32,452	20,925	44,937	-	1,000	99,315
	2014	12,160	44,937	23,537	-	1,000	81,635

Source: DPR Annual Report 2014

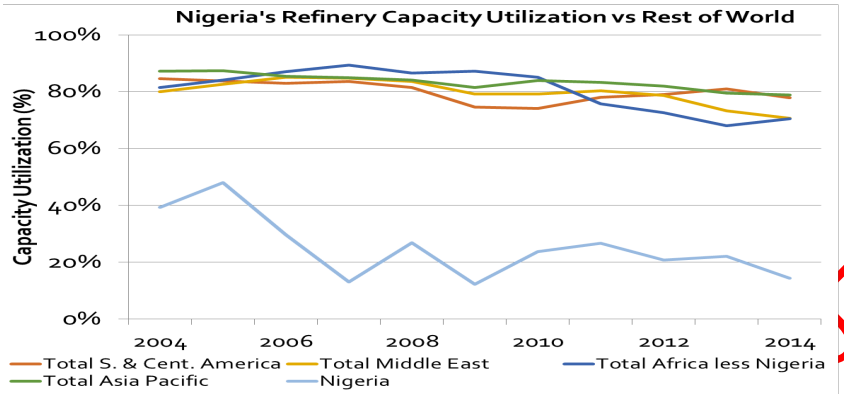
Figure 19: Capacity Utilisation in Nigerian Refineries



Source: MPR Petroleum Policy Team

The following figure shows how the capacity utilisation of Nigeria's refineries have underperformed by such a large extent. Globally, refining is a very low margin business and refineries have to be kept working very efficiently 24/7 in order to make any profit. The Nigerian refineries however are performing well below capacity.

Figure 20: Nigeria's Refinery Capacity Utilisation vs Rest of World

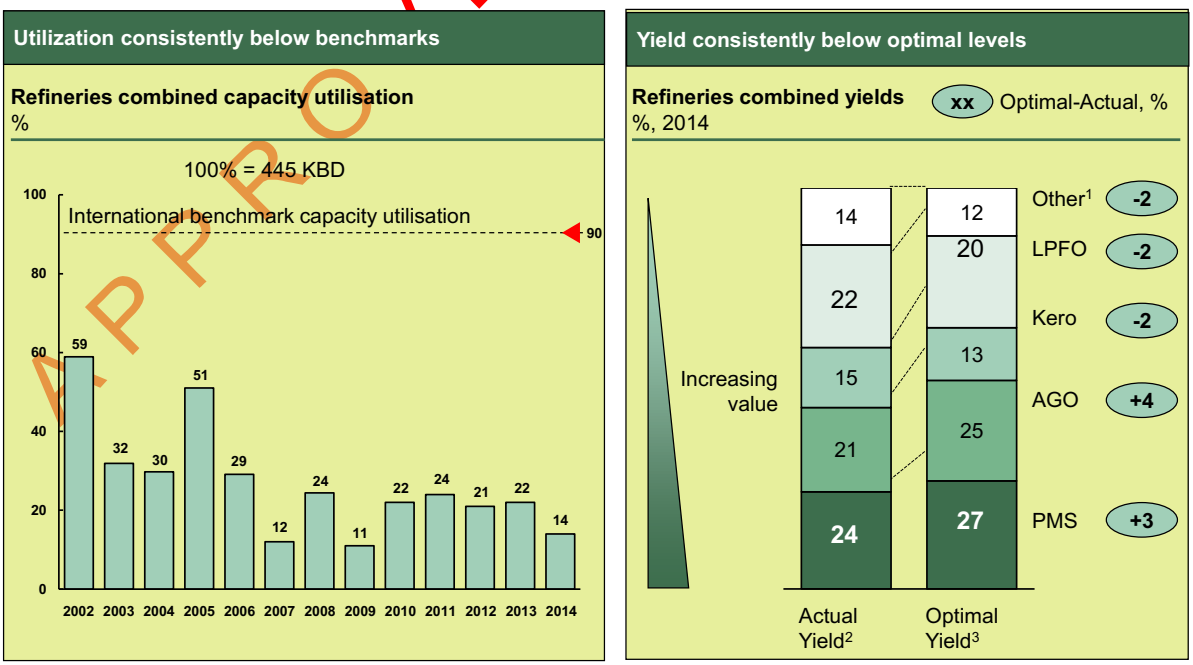


Source: MPR Petroleum Policy Team, NNPC CP&S

Across the three refineries, capacity utilisation has fallen from a high of just under 60% in 2002 to just 14% in 2014 (left hand chart below). To have any chance of succeeding commercially, Nigerian refineries need to operate on a globally acceptable cost structure and need to operate at 90% utilisation or more.

In addition, the yields from the Nigerian refineries are not optimum. The yield is the proportionate mix of each type of refined product a refinery can produce. The optimal yield for a refinery takes into account the characteristics of that refinery and the value of the value added products that can be produced. The Nigerian refineries are producing less of the value added products than is optimal.

Figure 21: Capacity Utilisation and Yields in Nigerian Refineries



1 Includes other products 2% (e.g. LPG), intermediates 2.5% (e.g. PMS intermediates), refining fuel & loses 12.5%
2 From CPD 2012 data for each refinery
3 Optimal yield result from LP model

Source: NNPC CP&S

It is important to describe these sub-optimal performances of the Nigerian refineries because (as is shown in the following sections of this Policy), a strong commercially viable and significant refining sector is an essential part of the Petroleum Policy.

3.3.4. Nigeria Downstream

The downstream sector of Nigeria involves the distribution and marketing of petroleum products such as fuels (PMS or petrol, AGO or diesel, Aviation fuel, DPK or kerosene) and lubricants products. Distribution and marketing is largely undertaken by Total Nigeria, a local affiliate of international oil company, and by four domestic companies:

1. Forte Oil (formerly BP);
2. Oando plc;
3. Conoil
4. NIPCO.

There are also some 750 other marketing independents who are licensed by DPR to market petroleum products. This means that the downstream is controlled by local companies.

NNPC is also engaged directly in the wholesale marketing of refined products through NPMC (formerly PPMC) and retail marketing through NNPC Retail ltd.

3.3.5. Environmental Impact of Petroleum on the Niger Delta

The Niger Delta is home to some 30 million people. It occupies a total area of about 75,000 km and makes up 7.5% of Nigeria's land mass. The Niger Delta region consist of nine oil-producing states (Abia, Akwa-Ibom, Bayelsa, Cross-River, Delta, Edo, Ondo, Imo and Rivers) and 185 local government areas. The region cuts across more than 800 oil producing communities with an extensive network of over 900 producing oil wells and several petroleum production-related facilities.

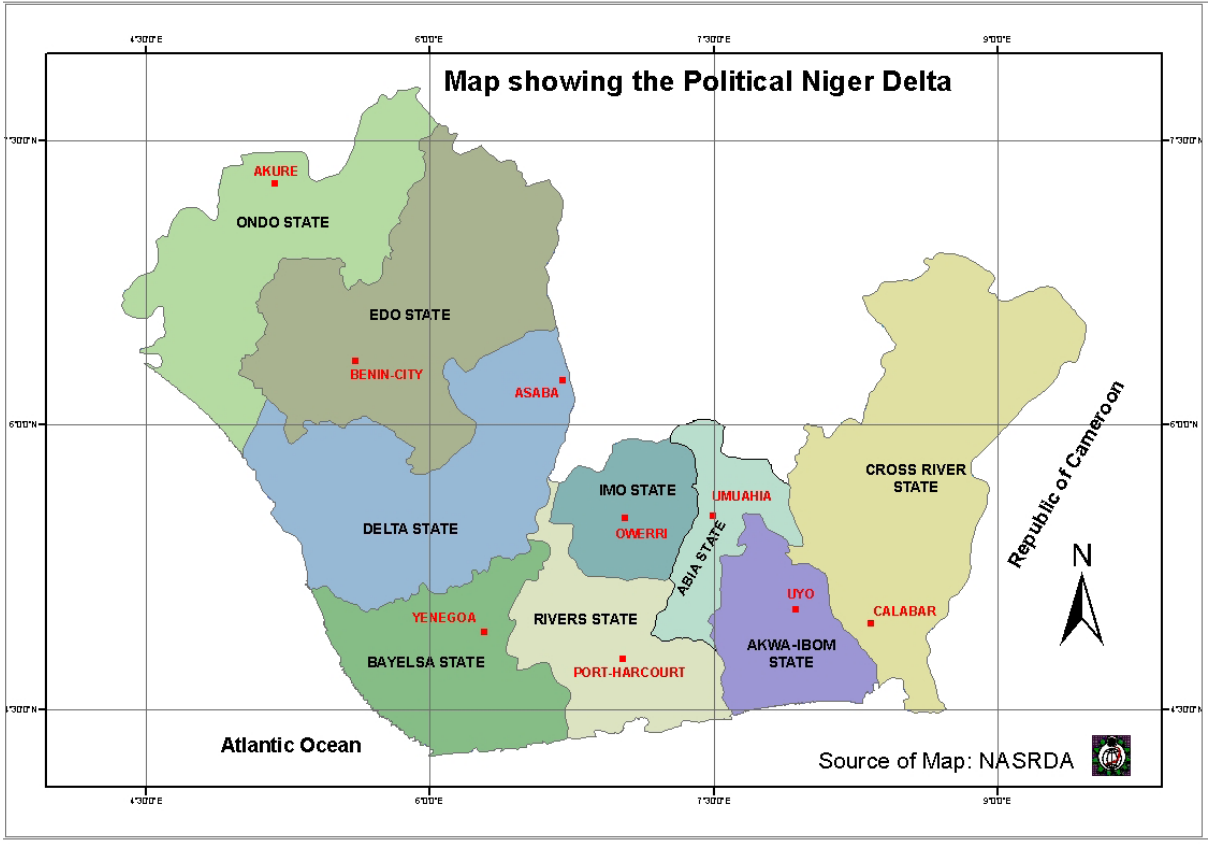
Negative impacts of the oil industry are a major concern in the Niger Delta threatening not only the health of local communities, but also the livelihood they depend on. These include the environmental, health-related and social effects of oil spills, gas flares and illegal refining; the employment opportunities offered or lost and the wider economic implications of the sector; the extent to which the oil industry has contributed to the conflict in oil-producing regions, and the extent and consequences of oil theft. Government is determined to address these impacts through regulatory measures, community engagement, and the enforcement of standards.

Key Messages

- Negative impacts of the oil industry are a major concern in the Niger Delta threatening not only the health of local communities, but also the livelihood they depend on;
- While oil companies are implementing certain measures to address these impacts, corporate social responsibility activities largely remain piecemeal and short-term, community engagement is inadequate and requirements for accountability and transparency are either insufficient or not enforced;

- The main challenges relate to lack of political will and capacity to implement and enforce national regulations, highlighting underlying governance challenges that need to be addressed;
- Current efforts to promote greater revenue transparency are important but need to go hand in hand with a push for better revenue management and a greater emphasis on preventing trade in oil sourced illegally or from conflict areas;
- There is a need for increased cooperation and coordination to mitigate the impacts of oil industry activity among all stakeholders. Government, oil companies, civil society and communities must positively engage and work more closely together.

Figure 22: Niger Delta Political Map



Source: NASRDA

Environmental and Social Impacts of Oil Companies on the Niger Delta

Much of the literature on the negative impact of the oil and gas industry in Africa is focused on the Niger Delta. Since Nigeria's return to democracy in 1999, the situation in the oil-producing region of the Niger Delta has rapidly evolved and altered, with social protest turning to violent protest, and militancy and criminality on the rise.

There are many layers of interest in the Niger Delta, making it difficult to find objective efforts to diagnose or treat problems. The damage from oil and gas operations is chronic and cumulative, and has acted in combination with other sources of environmental stress to result in a severely impaired coastal ecosystem, which has compromised the livelihood and health of the region's residents.

Environmental Issues Associated with Petroleum Exploration and Production

Some of the environmental problems associated with oil exploration and production activities include the following:

- Oil spills;
- Gas flaring and venting;
- Discharge of petroleum derived chemical waste;
- Contamination of controlled water sources;
- Contamination of soil and sediments;
- Destruction of marine environment and farmlands.

Oil Spills: Oil spills have a major impact on the ecosystem into which they are released and may constitute ecocide. An estimated 1.5 million tons of oil has been spilled in the Niger Delta ecosystem over the past 50 years. for perspective, this is 50 times the estimated volume of oil spilled during the Exxon Valdez oil spill in Alaska in 1989.

Impacts of Spills

- Oil spills pose major direct risks to the environment and human health while also undermining livelihood security in the long term;
- Pollution resulting from oil spill tends to be more difficult to manage in the Niger Delta environment than in others;
- The environmental impact of petroleum operations on the Niger Delta also have economic ramifications. Environmental degradation eliminates sources of income (e.g. fishing and farming) which displaces local population which in turn causes the collapse of local economics;

Extent of Oil Spills

Data on the quantity of oil spilled in the Niger Delta caused by equipment malfunction, sabotage and small-scale theft for local refining are highly contested. Of the IOCs operating in Nigeria, only Shell Petroleum Development Company of Nigeria (SPDC) publishes regular reports on the number of spills in its operations. Disagreements over the causes and extent of oil spills are in part due to the fact that companies may track and report pipeline losses but these figures do not necessarily correlate to the quantity of oil spilt due to the burgeoning industry in oil theft in Nigeria.

While major oil spills have been reported over the years, it is the minor oil spills that are collectively probably a greater danger to the environment and people of the delta.

Operators will be required to pay for damage to the environment and to communities from oil spills caused by negligent or poor oilfield practices.

3.4. Need for a New Petroleum Policy

There are three main reasons why Nigeria needs a new Petroleum Policy:

3.4.1. The Previous Policy was Not Designed for Development

The previous petroleum policy encourages **rent seeking through a crude oil export for cash business**. It is the only OPEC country without effective oil refining capacity. Investments in mid-stream infrastructure (storage, terminals, transportation and processing) have lagged behind upstream investments.

Even the upstream crude oil export business has suffered because of insecurity. Nigerian production has not risen in line with its potential or its peers in the Middle East or Africa.

3.4.2. Dominant State Ownership

The petroleum sector has been dominated by state ownership and dominant market power in the upstream and mid-stream. Consequently, the private sector has been constrained. There are fiscal disincentives to new participants; a lack of regulatory rigour and absence of governance in cost efficiency. As a result, state control and rent seeking by government has limited the growth of self-sustaining industries.

Despite having large energy resources, Nigeria has become energy insecure exhibiting multiple dependencies on: 1) crude oil exports; 2) product imports; and 3) hydrocarbon based electric power industry.

3.4.3. The World has Changed

The oil world has now changed fundamentally and the old policy is no longer relevant to Nigeria's future. **The oil price has crashed and is forecast by the Petroleum Policy Team to remain at a median $45/bbl real for the foreseeable future**.

Production around the world remains high, combined with large inventories in storage and even in tankers around the world. **The reality is that the world is awash in oil**.

3.4.4. New Vision of Value Adding Activities

There are forecasts that **the world is now starting to enter a post-oil period**. Oil demand growth is expected to be slower in the future than it has been in the past, and within the next twenty years, demand for oil may show absolute declines. **The future for oil producers lies in value added refining and petrochemicals**.

The intention of this Petroleum Policy is to move Nigeria away from crude oil exports into:

1. Value added activities in oil, namely refining and petrochemical industries;

2. Expanding from oil into gas based industrialisation, based on the as yet largely untapped large gas reserves in Nigeria.

4. VISION AND OBJECTIVES

4.1. Vision

The long - term vision of the Nigerian petroleum policy is:

> ***"To become a nation where hydrocarbons are used as a fuel for national economic growth and not simply as a source of income"***

This vision contains some important elements:

1. Moving the Nigerian economy away from the current situation where crude oil is exported and no further uses are made of the hydrocarbon opportunities;
2. Oil is not simply exported but is refined and further processed within Nigeria;
3. Nigeria becomes a regional and international centre for crude oil refining;
4. A vision of a diversified industrial nation where Nigeria has significant petro-chemical and other petroleum based industries;
5. Diversifying the petroleum resource base within Nigeria, to ensure security of supply;
6. Operate a petroleum industry with a clear division of roles between the private and public sectors:
    - Public sector policy making and regulation;
    - Private sector implementation, investment and operations;
7. Provide an enabling environment for increased Nigerian private sector participation in the petroleum sector;
8. Complementarity with the vision of the National Gas Policy of a diversified gas based industrial economy.

4.2. Mission

The Mission of the Nigerian Petroleum Policy, which will meet the long term Vision, is:

> **"To maximise production and processing of hydrocarbons"**

Within this Mission statement, there are various aspects:

1. Set a clear petroleum policy;
    a. Establish a clear legal and regulatory framework;
    b. Realign the public sector to provide policy, legal and regulatory support to the industry;
    c. Communication of the vision to government, local and international stakeholders;
    d. Providing an attractive environment for investment;

2. Maximise long term hydrocarbons production through:
    a. Establish an institutional regulatory and fiscal regime that encourages efficient development of resources;
    b. Ensure growth in reserves and effective production / reserves ratio;
    c. Diversify reserves and production to offshore and inland basins;
    d. Introduce international best practice in operations and in governance;
    e. Operate in an environmentally clean manner;
3. Maximise the processing of hydrocarbons through:
    a. Take measures that lead to a large and commercially viable petroleum refining industry;
    b. Broaden the economy and bring focus to gas;
    c. Move away from oil as a source of income to oil as a fuel for economic growth.

4.3. Strategic Policy Objectives

The Mission statement for the new oil policy is to maximise production and processing of hydrocarbons. The policies are to be anchored on the following strategic policy objectives:

1. Create a market-driven oil and gas industry:
    - Create an effective funding structure for the National Oil Company;
    - Ensure private investment across the upstream, midstream and downstream segments of the value chain;
    - Separate and clarify the roles of the state as policy maker, regulatory and investor;
2. Maximise production and processing of hydrocarbons;
3. Move away from oil as a source of income to oil as a fuel for economic growth;
4. Create value through processing of oil into significant end products for industries (diversification and backward integration strategies):
    - Achieving a competitive supply of petroleum products;
    - Making Nigeria a refining and petroleum based industrial hub;
    - Expanding and integrating product slates, in other words extracting the value from the additional chemical processes from an oil stream;
5. Following the Hydrocarbon molecule from extraction to destination markets;
    - Securing primary and secondary markets outside Nigeria through collaborative ventures with third parties;
6. Incentivise investments in a cost-efficient storage, transportation and distribution system for petroleum products in Nigeria:
    - Manage supply and distributions interruptions;

- Apply non-discriminatory regulatory oversight;
- Promote non-discriminatory open access into midstream infrastructure;
- Pursue diversified supply and distribution options;

7. Promote competition in the industry;
8. Minimise the environmental footprint of oil exploration in Nigeria through strict enforcement of environmental laws;
9. Manage the balance between depleting oil resources vs renewable energy.

The rest of this policy document now expands the objectives into policies for each part of the industry and value chain:

- Governance;
- Industry structure;
- Actions along the value chain:
  - Upstream;
  - Midstream;
  - Downstream;
- Developing national Human Resources;
- Communications;
- Roadmap and action plan for implementation.

5. GOVERNANCE

5.1. Legal and Regulatory Framework

5.1.1. Petroleum Industry Legislation

The existing petroleum industry legislation in Nigeria dates back to 1969. There are also several other disparate pieces of legislation on petroleum, some of which are no longer relevant or applicable to Nigeria's circumstances. Significantly, the Petroleum Act 1969 did not legislate sufficiently for gas as a hydrocarbon and industry in its own right, nor for a mid and downstream gas industry.

The government will promote new legislation to overhaul and modernise the Nigerian petroleum sector by addressing a broad range of issues including sector governance and institutional framework, fiscal regime, corporate structure of state – owned enterprises, transparency and accountability, environmental issues.

5.1.2. Main Provisions of Legislation

New legislation, the Petroleum Industry Reform Bill (PIRB) is proposed by the Government. The main provisions of the proposed Bill (PIRB) are:

- Institutional Reforms
    - Policy Institution: A **National Petroleum Policy Directorate** (a technical "Back Office" responsible for assisting the Minister in the formulation, monitoring and ensuring the implementation of petroleum policies);
    - Regulatory Institution: **Nigerian Petroleum Regulatory Commission** (a new single regulatory body governing all sectors and segments of the petroleum industry);
    - Commercial Institutions: **Nigerian National Oil Company** (an incorporated public entity which manages all petroleum assets of the FGN, with equity to be listed on local and international markets); and **Nigeria Petroleum Asset Management Corporation**;
- Clarity of objectives, roles and responsibilities of each institution;
- Separation of powers and autonomy of the institutions from the Minister;
- Accountability (audits, reporting standards);
- Transparency (codes of corporate governance);
- International Best Practices (recruitment, qualifications and expertise);
- Stakeholder engagement (consultative processes, newspaper/website publications requirements);
- A clear strategy for long term sustainable development (competition and market regulations, host communities).

5.2. Institutional Framework

The government is aware that while there are many benefits in consolidating into a single petroleum regulatory commission (and reducing the current number of disparate and sometime overlapping regulatory agencies), there are also some challenges. The main challenge is likely to be in building institutional capacity and a strong and effective corporate culture within the new institutions, to ensure effectiveness of the institutional framework and sustainability of the policy.

5.2.1. Existing Regulatory Agencies

Currently there is a number of agencies covering the petroleum industry in Nigeria. They are:

- **Ministry of Petroleum Resources:**
  This Ministry is responsible for oversight of the petroleum sector including all government agencies directly involved in petroleum sector management. The Ministry is headed by the Minister, who is charged with responsibility for petroleum matters. Policies for the orderly development and management of the sector are developed by the Ministry and issued by the Minister;

- **Department of Petroleum Resources (DPR):**
  The Department of Petroleum Resources (DPR) exercises the regulatory powers of the Minister of Petroleum Resources on his behalf:
  - Oil and gas licensing and monitoring;
  - Downstream petroleum products licensing and monitoring;

- **NNPC:**
  - This is the national oil company. It has extensive operations in several areas;

- **Nigeria Content Division (NCD):**
  - Implementation of Nigerian content policy;

- **Petroleum Products Pricing Regulatory Agency (PPPRA):**
  - Petroleum products price regulation;

- **Petroleum Technology Development Fund (PTDF):**
  - Petroleum industry manpower training;

- **Petroleum Equalisation Fund**
  - Agency responsible for the equalisation of pricing of petroleum products countrywide.

5.2.2. Effect of the Previous Institutional Framework

The institutional and regulatory framework is largely ineffective and inefficient, arising from:

- A number of single-issue agencies;

- Overlaps in regulation;
- Gaps in regulation;
- Mixture of policy, regulation and operations;
- Ineffective Regulation.

Although the agencies generally work well together, their roles sometimes overlap and there are significant information gaps within the Government as sometimes one institution is unaware of what the other is doing.

At the same time, policy making capacity has been weak, resulting in NNPC and its subsidiaries setting policy and regulation as well as conducting operations in the petroleum sector.

The result is an ineffective and inefficient institutional environment in the petroleum sector in Nigeria.

5.2.3. Reporting Practice

There has been incomplete reporting and a lack of transparency throughout the petroleum industry. There is a lack of contract transparency and incomplete reporting on most aspects of the petroleum industry. For instance, the MPR publishes little information on:

- The upstream licensing process;
- Fiscal and production arrangements;
- Contracts;
- Environmental impact assessments;
- Operational data;
- Revenues;
- Production volumes;
- Prices;
- The value of resource exports;
- Estimates of investments in exploration and development;
- Production costs;
- Costs of subsidies;
- Production stream values;
- Royalties;
- The government's share in PSCs;
- The government's share in production JVs.

The Petroleum Policy proposes transparency of declarations and operations. As such the MPR intends to reform its own reporting practices.

5.2.4. Single Independent Petroleum Regulatory Commission

The Federal Government is determined that there should be a new single regulator for the petroleum sector in Nigeria which will replace the existing regulatory agencies.

A new and single regulator will therefore be established, which will cover the whole petroleum sector, upstream, midstream and downstream. It will incorporate the activities of the existing petroleum regulatory authorities and also cover some new regulatory activities not currently covered. The following Divisions, Departments or functions are envisaged to form parts of the petroleum regulatory commission, among others:

1. Upstream oil and gas licensing;
2. Midstream licensing and economic regulation;
3. Downstream petroleum products licensing and regulation;
4. Downstream gas licensing and regulation;
5. Health and safety compliance;
6. Environmental compliance;
7. Consumer protection;
8. Compliance monitoring.

Details relating to the establishment, governance and operations of the regulatory commission will be set out in legislation.

5.2.5. Philosophy of the Regulatory Structure

There will be a strong single independent regulatory commission that will be responsible for the technical and economic regulation of the whole petroleum sector. The role includes minimising and where possible eliminating market distortions, licensing, monitoring, investigations, and mediation powers.

The licensing regime will cover every activity including, but not limited to, licences for exploration, production, constructing and operating petroleum refining plants, constructing and operating gas processing plants, liquefaction plants, constructing and operating gas storage facilities, oil or gas transportation pipelines, distribution networks, undertaking the supply of natural gas including gas trading.

All regulatory and pseudo-regulatory activities will be removed from corporate entities and taken over by the regulator. In addition, a network code will be introduced to provide conditions of non-discriminatory access for third parties to all infrastructure along the oil and gas supply chain.

Supply segment: The regulator's role is to calibrate the supply segment such that it becomes open to as many players as possible in order to foster competition for the market amongst licensed entities.

Midstream segment: The policy objective for the midstream is to attract as much investment as possible into petroleum refining, gas processing, transportation and storage in order to bridge Nigeria's hydrocarbons abundance with growing demand and to better position Nigeria in international markets.

The petroleum policy envisages that producers will increasingly focus on exploration and production activities and the entry of midstream investors that will specialise in refining, processing, transportation and storage of oil and gas.

Given the network-bound and monopoly features of the midstream, the regulatory objective should be utility regulation. The relevant regulatory tools in this regard are:

- Competition regulation;
- Open access rules for all onshore and offshore pipelines;
- Tariff regulation on a rate of return basis for gas processing, storage facilities, transportation pipelines and other essential midstream infrastructure.

5.2.6. Petroleum Institutional Framework

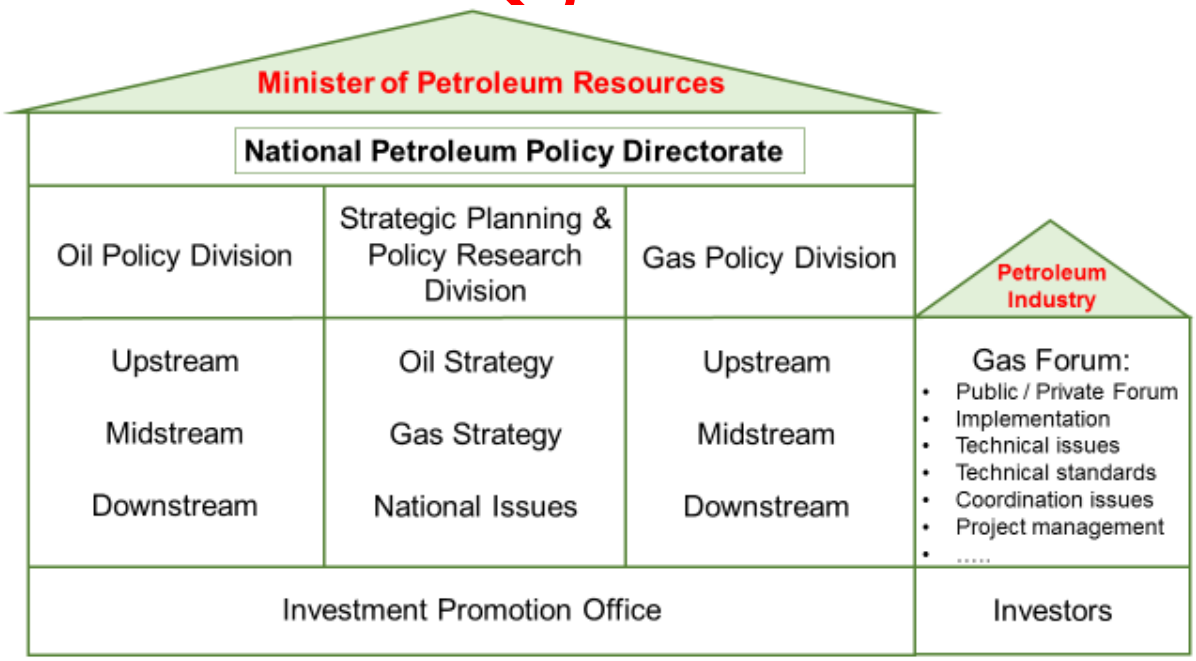
In order to reduce the inefficiencies in parastatals in the petroleum sector, under the petroleum policy, the single petroleum sector regulator authority will operate under the policy supervision of the Minister of Petroleum Resources, where the Minister will:

- Set the policy for the Petroleum Regulatory Commission;
- Ensure monitoring of the implementation of the policy;
- Ensure monitoring of the performance of the authority.

This does not mean that the regulatory commission will report to the Ministry on a day to day basis. The new single regulatory commission will be an operationally independent regulatory institution. The Minister's involvement will be hands off and just to ensure that the regulatory commission properly carries out its roles of implementing the policy.

5.2.7. National Petroleum Policy Directorate

Figure 23: National Petroleum Policy Directorate



Source: MPR Petroleum Policy Team 2016

To ensure a more effective policy making and sector supervisory role into the future, a National Petroleum Policy Directorate will be established within the Ministry of Petroleum Resources. This entity is designed to provide a permanent technical back-

up to the Minister in the execution of his responsibilities. In addition, new technical departments and specialist centres will also be set up within the MPR as depicted above.

5.2.8. Strategic Planning and Policy Research Centre

The new policy Divisions to be established within the MPR will include two new specialist centres:

- Strategic Planning and Policy Research Centre;
- The Investment Promotion Office.

The idea is that the Strategic Planning and Policy Research Centre will be a small research centre of individuals who will keep regular track of local and international developments and keep Ministry, regulatory and other government officials updated as necessary. The types of areas to be followed are:

- Strategic planning and natural resource management;
- Petroleum industry market developments;
- Oil and gas price movements and forecasts;
- Policy initiatives;
- Regulatory initiatives;
- Developments in international energy organisations;
- Key international contacts with whom leaders within the MPR need to keep in contact.

Dedicated Project Desks

To facilitate institutionalised implementation of the programmes and projects emanating from the policy, the Ministry shall appoint dedicated Project desks within the Policy Departments to serve as interface between project developers and Government Agencies.

The Project desks will not duplicate the activities of other Departments of Government or the regulatory commission. Instead, their role essentially will be to lobby and push projects or programmes provided for or relevant to the Policy through Government. Their job will be to engage and fully involve other parts of Government and the private sector to ensure that projects or programmes are implemented.

5.2.9. Investment Promotion Office

When the Government prepares or develops a project for investment, it should also be prepared to market that opportunity as well. The primary responsibility and capability for marketing a project will lie with those who developed it.

Nevertheless, in an era where petroleum investment is harder to find, focus needs to be brought to investment promotion and a professional approach is needed.

The Investment Promotion Office will provide:

- Technical support in promoting a project;

- A centre of expertise on upstream and downstream petroleum opportunities within Nigeria which will work with the Nigeria Investment Promotion Council (NIPC);
- A database of projects and investment opportunities;
- An informative website;
- Support with promotions and roadshows;
- Dedicated personnel to help potential investors, so that investors have a single point of contact who will remain with them and guide them through the government process.

It will be useful and helpful to investors to have a single point of first contact where they can find out about Nigeria and about the investment opportunities in the petroleum sector. Any potential investor should be given as much information as possible, in as investor friendly a manner as possible, about all the opportunities. While it is not possible to give confidential information about competitors or other companies, the Ministry should be able to produce authoritative estimates of reserves, of markets, of opportunities for investment, of legal and fiscal conditions, and any other information that can be provided.

The Investment Promotion Office should have a website with as much information as possible on it, and also produce brochures and other informational material. In addition, rather than just waiting for potential investors to approach it, the Investment Promotion Office could also actively promote the opportunities in Nigeria and prospective projects to potential developers through promotions, presentations, road shows and direct negotiations with potential developers.

5.2.10. Petroleum Safety Compliance

The current system in Nigeria regarding maintenance, health and safety in the Nigerian petroleum sector is not acceptable. Major safety incidents go without proper investigation and without sufficient responsibilities being apportioned.

There are two important roles for safety management in Nigeria (and as indeed anywhere): prevention and investigation. Prevention is of course the best approach. Setting good standards and ensuring they are followed help prevent incidents. Incidents and accidents may however still occur (although increasingly rarely as the safety regime becomes embedded) and it is the role of investigation to find out what happened and to learn the lessons for the future. Rigorous investigation is important because:

- Lessons should be learned, changes made and similar incidents avoided in the future;
- If individuals are culpable, the guilty are brought to criminal justice, setting a deterrent to people who consider acting in a similar fashion in the future.

The safety record in Nigeria is unlikely to significantly improve without establishing and empowering the regulator to carry out forensic investigations and to lay criminal prosecutions on company directors in cases of proven gross negligence.

A strong robust safety regulator will be established, with powers of inspection and investigation, and working with law enforcement agencies as necessary for entry into premises without owner's permission, removal of evidence, questioning under caution and detention, in accordance with the law.

The policy is for safety regulations to include robust penalties for breaches of regulations and safety standards. There also need to be criminal prosecutions for instances of gross negligence which lead to a serious breach of health and safety or serious incidents that lead to loss of life. They should carry a potential jail sentence for Directors of offending companies.

A key safety regulatory function therefore is the monitoring and inspections regime.

- **Inspections:** Preventative monitoring and inspections to ensure licensees are acting within regulation (before-the-incident prevention, ex-ante);
- **Investigations:** Major incident investigations, where forensic investigations of incidents take place (after-the-incident investigations, ex-post), gathering evidence so that:
    - Lessons can be learned for the future; and
    - Criminal prosecutions can be made, if necessary in instances of gross negligence.

The petroleum safety division of the regulator for Nigeria will be dedicated to the petroleum sector (including oil and gas production, oil refining, gas processing, transportation, petroleum products, CNG, biofuels and LPG). However, it is recognised that such an organisation needs to be properly financed and it needs to have specialist staff with the skills and the tools to carry out their work effectively.

5.2.11. Technical Standards

Around the world, technical standards are usually developed by the industry in consultation. Standards are produced by technical standards committees of the Industry association which are made up of representatives of the industry.

Nigeria will adopt appropriate international standards selected, whichever is more stringent, from ISO, ASME, EI, API, ASTM, ANSI, for example. Pipeline design standards can be from, for example: ISO, ASME, EI, API, IGEM.

The new petroleum regulatory commission will be responsible for technical standards in Nigeria.

The Standards Division of the Petroleum Regulatory Commission will be responsible for developing and maintaining technical standards, working with industry. The MPR is responsible for ensuring that the policy regarding technical standards is implemented.

5.2.12. Metering and Measurement

The state of metering and measurement of hydrocarbons is not satisfactory. As part of arrangements for a transparently run industry, the policy is that shortcomings in metering, measurement and fiscalisation of hydrocarbons throughout the value chain will be addressed.

5.2.13. Cost Monitoring and Control

The costs of running the petroleum industry in Nigeria have risen dramatically and to an unacceptable level. Nigeria has become one of the highest cost provinces in the world. In a low oil price world which now prevails, this cannot continue as it severely affects government revenues. The cost-price ratio should not exceed 30%, which is around the maximum that the fiscal system can bear.

The advent of new technologies provides an opportunity to significantly reduce petroleum costs, in Nigeria as well as in other petroleum provinces around the world.

Cost monitoring and cost control are crucial to the profitability of projects in the value chain and to overall sector economics.

The intention of the policy is to avoid duplication of and unnecessary costs, and to avoid redundant and underutilised assets. It is the policy of the Government that robust cost estimation and cost control must be adopted as a standard operating practice in the sector.

Measures to reduce costs in the Nigerian petroleum industry should include (among other measures):

- Cost optimisation;
- Cost management;
- Better asset management;
- Consolidation of contracts where necessary;
- Performance-based incentives;
- Incentives to reward lower cost producers;
- Penalties for higher cost producers;
- A general move away from higher cost oil;
- Driving down cost to achieve higher revenue;
- Sharing of services and facilities;
- Contract thresholds for projects;
- Cost estimates prepared for any project must be benchmarked across the industry and with peer projects globally;
- An evaluation of the technical and economic feasibility of any engineering project must be undertaken before proceeding with such project;
- Approved cost data for all projects should be recorded in the National Cost Database developed under the leadership of the Commission;
- Effective cost monitoring and control of JVs and PSCs (as discussed in 5.5.2 PSC Plus Cost Structures below).

The petroleum regulator in implementing the intention of the policy will approve a duplication of infrastructure assets only if an economic case can be put forward.

The government is also very aware of the measures it needs to take to help to produce a lower cost environment, including among others:

- Resolving the Niger Delta militancy issues;
- Reducing the general costs of doing business in Nigeria;
- Optimising contracting cycles.

5.2.14. Consumer Protection

The single regulatory body shall have oversight over consumer protection and shall consider in its regulations, orders and mandates, measures that ensure consumer protection consistent with the Consumer Protection Act.

Despite the best regulatory framework, consumers will have problems and complaints in their relations with their suppliers. There could be (for example) safety concerns, disputes over quantities of petroleum product or LPG sold, prices, quality of the product, concerns over customer service, and so on.

Tasks that the consumer affairs department could carry out include but not limited to:

- Monitoring the treatment of consumers;
- Receiving and logging consumer complaints;
- Resolving consumer complaints;
- Tracking, compiling and publishing data on complaints;
- Taking action on specific widely occurring consumer issues;
- Consumer consultation on important new developments or regulations;
- Consumer awareness campaigns.

5.2.15. Donor Agencies

The government will work with the donor community to identify where donor agency support can best support the implementation of the gas policy and the necessary capacity building.

5.2.16. Civil Society and Consumer Groups

The government will liaise with representatives of civil society and consumer associations so as to ensure that all stakeholders to the petroleum industry are involved in industry and market development.

5.3. Commercial Framework

5.3.1. Introduction

The commercial framework consists of two key issues:

- Rules for access to pipelines and networks;
- Pricing principles and regulations.

5.3.2. Access to Offshore and Onshore Networks

An important principle of the petroleum policy is that there will be a full legal separation of petroleum infrastructure ownership and operations, and trading, such that separate companies will carry out the different activities.

Oil and/or gas transportation companies will not be allowed to engage directly in the purchase and/or sale of petroleum crude, petroleum products or gas, and vice versa for trading companies, except through separate corporate vehicles.

For purposes of clarity, asset owners in one segment of the value chain may own and operate assets in different segments of the value chain if they wish, albeit under different legal entities. For example, a holding company may have different companies operating in the upstream, midstream and downstream.

In the new era with a new market structure, a suitable and effective network code will be introduced, to govern open access to infrastructure facilities.

The petroleum industry and government will consider the type of network code that is required, but there will be open access to all pipelines and other essential midstream infrastructure, whether located offshore or onshore.

5.3.3. Cost Benchmarking for Infrastructure Facilities

Cost benchmarking is crucial to sector economics and regulatory decision-making.

Regulated tariffs will be introduced for those monopoly infrastructure areas of the petroleum industry, in a manner that will provide investors the opportunity to recover all the eligible costs plus an adequate and reasonable return on investment.

A cost-of-service approach will be adopted using average, standard or benchmark costs.

5.4. Fiscal Framework

5.4.1. Government Fiscal Philosophy

A new fiscal policy and framework is proposed for the Nigerian petroleum sector. This is embedded in a separate National Petroleum Fiscal Policy document issued by the Government.

The philosophy for the fiscal framework of the petroleum policy is to set fiscal rules that are clear, transparent, globally competitive and designed to incentivise all participants. The role of the government is seen as not to create economic distortions that confer an advantage on or favour any particular party.

The purpose of the fiscal framework is to separate oil from gas. Hence, gas projects will be developed based on their economics and not dependent on or consolidated against oil taxation.

5.4.2. Current Fiscal Structure

Currently, under the Associated Gas Framework Agreement (AGFA) (codified in section 11 and 12 of the Petroleum Profits Tax Act), AG and NAG costs can be recovered from oil income.

This has led to a number of distortions:

1. It discriminates against non-oil tax capacity investors (that is, it discriminates against companies who do not have oil operations, and therefore are unable to expense their gas costs against oil operations in the manner that upstream investors in gas projects can);
2. It incentivises oil companies to build gas infrastructure (in some cases unnecessarily oversized gas infrastructure) for fiscal reasons (to include in their cost oil base and offset against their profit oil, which ultimately is paid for by the Nigerian government);
3. It has meant that the only gas infrastructure not built for fiscal purposes has been built by the Nigerian government, via NGC;
4. When the oil price is low (as is the situation now), tax capacity (the ability to collect tax on profit oil) declines.

5.4.3. Fiscal Rules of General Application

Fiscal Rules of General Application (FRGA) is the framework through which the interests of the state and that of the investor are codified. Seven main thematic areas that need to be addressed in the fiscal system for Nigeria are:

1. Governance – the key governing institutions of the oil and gas industry and their role as prescribed by the separation principle, i.e. of policy, regulation and commercial operations;
2. Funding of the institutions and funding of government participation in commercial operations;
3. Fiscal incentives for investments – the balance of risk and reward in a fiscal designed framework;
4. Enabling petroleum exploitation in Nigeria through policy regulatory and fiscal interventions;
5. The role of the regulator – the principles, powers and economics of regulation;
6. The role of the state in natural resource management – the shareholder responsibilities versus the requirement to meet social needs;
7. Mitigating social consequences of natural resource exploitation – best practice community participation.

An optimum fiscal regime is often a composite of trade-offs across different objectives:

- Early Revenues vs Investment Efficiency;
- Progressivity
- Competitiveness;
- Early fiscal revenues vs tax incentives that drive a critical mass of investments.

Progressive and transparent fiscal regimes are generally considered to be more stable and credible and, depending on the fiscal design, they do not compromise on efficiency. FRGA are based on clarity and transparency which require that:

- Rules are established by law and contracts are published;
- Laws are consistent with the nation's jurisprudence;
- Laws and contracts minimise discretion;
- Government revenue streams should occur during all production periods but also should increase with a larger share of revenues as profitability increases;
- Progressive fiscal systems that arise from FRGAs should be based on:
    - Royalty (Early Revenues);
    - Regular Corporate Income Tax (CITA);
    - Tax on Rent (Hydrocarbon Tax).

Stable and credible fiscal terms must also demonstrate robustness in the face of volatilities of cost and price. Robustness means that the fiscal system for gas is not subsidised by oil and vice-versa. This can best be achieved through the right pricing of gas and lower royalties and resource tax. Additionally, FRGAs must deter transfer pricing (cost benchmarking) and review international treaties.

5.4.4. Principles of the Fiscal Framework

The fiscal framework of the petroleum policy for Nigeria is based around four key principles:

1. Pricing should not be fixed by the state but there should be an interaction of the market to determine the right price (which is not necessarily a low price);
2. Fiscal policies must enhance investment, be cost efficient and sustainable in the long run;
3. Non-consolidation / Non-recovery of gas costs from oil income. The fiscal framework intends to remove the distortions in AGFA from the effective cross-subsidy of oil to the gas sector. The policy will therefore ensure that gas project costs are attributed to gas projects, and not allowed to cross-subsidise oil projects;
4. Fiscal policy incentives to attract investment into the midstream.

5.5. Sector Financing

Petroleum projects need to be financed. The policy is to encourage all types of project financing but the Nigerian government direct project-financing role in future will be minimal.

5.5.1. Main Financing Sources for Projects

Funding of projects will come from one or more of several finance sources:

- **Government Budget:** Government is not expecting to be a major direct investor in projects in the future, except for those projects where the early risks can only be undertaken by Government;
- **Owners' Equity Financing:** This can include private sector companies or government owned corporations;
- **Commercial Loans:** From international or Nigerian commercial banks;
- **International Financial Institutions Financing:** International Financial Institutions (IFIs), such as the World Bank (WB), International Finance Corporation (IFC) or African Development Bank (AfDB) for example, sometimes finance projects. Their advantage is that they can act as consolidator for commercial banks, reduce borrowing costs and can lend important credibility to a project.

5.5.2. PSC Plus Cost Structures

Nigeria is one of the few countries, if not the only one, in the world which still retains Joint Ventures (JVs) as a petroleum development contractual arrangement. Most developing countries around the world have moved to Production Sharing Contracts (PSCs). While Nigeria has adopted PSCs for most new petroleum exploration and production (E&P) contracts, JVs remain the norm for most contracts. This leads to two questions:

1. Why has Nigeria been so slow to move away from JVs and towards PSCs?
2. Does the JV structure uniquely work for Nigeria, or is PSC a better model?

There are probably many reasons why Nigeria has stuck to JVs. This is because:

1. A JV barrel produced has a higher government take than a PSC barrel. Therefore, conversion of a JV to a PSC might result in reduction of government take rather than increased government take if not properly negotiated.

2. Nigeria's problem with financing the JVs is a funding problem which can be addressed by having an appropriate capital structure for the National Oil Company in order to have project financing plus other forms of debt financing.

3. Using PSC as a financing mechanism results in a higher cost of financing than using bank debt since in PSCs compensation for the financing is in barrels of oil and not cash; and when prices are low as they are currently, large quantum of barrel will be needed for financing production.

4. The funding parties in a PSC also use bank debt and therefore will demand a return in excess of that bank debt in a PSC (usually in excess of 15% versus bank debts that are often in single digits).

5. PSC contractors by virtue of the fiscal provisions of the law (PPT Section 10) in addition to project returns also receive interest deductibility (financial

returns) against tax liability which further enhances their Return on Equity (RoE).

Therefore, any consideration for conversion of JVs to PSCs must take into account these factors and there must be provisions for recognising historical equity investments by government and managing government take such that there are no losses to the sovereign.

JVs have many problems, but the problems often associated with JVs are not insurmountable. The most important of which include:

- **Cash calls:** The problem for the NOC (NNPC) to fund the constant call for cash payments (the cash calls); this issue will be addressed with the proper capitalisation of the National Oil Company with a structure that allows for project and balance sheet financing.
- **Cost monitoring:** The difficulty of monitoring and checking the costs that the operator (the IOC or international partner) presents; this issue is not unique to only the JVs but it is even more prevalent in the PSCs. The solution may be incorporating the JVs and using fiscal tools to incentivise cost reduction. It must also be said that contracting cycles, government mandates and bureaucracy are also important factors in cost escalation in the Nigerian petroleum industry.
- **Fund raising:** An unincorporated JV does not have a legal presence (it is not incorporated) and so it cannot raise funds from the financial markets to finance activities, thus leading to the partners having to fund all operations and the cash call situation. One option is to incorporate the JVs along the NLNG model.

Some countries may have realised the shortcomings with PSCs and may be starting to shift away from them, towards other arrangements such as service contracts.

Under the new Petroleum Policy, government's interest in the upstream will consist of IJVs, PSCs currently under the 20-yr production phases and PSCs at exploration phases. It is the intention of the Petroleum Policy to evaluate existing PSCs at the end of their exploration and production phases in order to determine the appropriate financing structure and risk reward matrix needed for any proposed renewals.

Under the new Petroleum Policy, government may consider conversion of some JVs to Production Sharing Contract. However, such potential conversions need to meet the requirement that the historical equity capital contributions to the resource must be recognized and the risk reward profile must be significantly beneficial to the state.

Under the Petroleum Policy, all cash call arrangements under the NNPC JVs will be exited, with a target of exiting all of them by the end of 2017.

5.5.3. Exit from Cash Call Arrangements

The Petroleum Policy intends to exit all cash call arrangements.

Under the Petroleum Policy, all cash call arrangements under the NNPC JVs will be exited, with a target of exiting all of them by the end of 2017. The target is to move them to a PSC+ or iJV arrangement as described above.

5.6. Sovereign Wealth Fund

Under the Petroleum Policy the Government will agree a cap on the proportion of petroleum revenues that can be spent on current expenditure. From the remainder the Government will put aside an agreed percentage of petroleum revenue, to be dedicated for capital items and for future generations.

The Government will explore mechanisms by which petroleum revenue can be managed for the benefit of future generations. The intention is for Nigeria to commit to two principles:

1. To put a cap on the proportion of petroleum revenue that can be spent on current national expenditure;
2. To put an agreed proportion of petroleum revenue into a sovereign wealth fund, to be used for:
    a. Underpinning major infrastructure projects within Nigeria;
    b. Put aside or invested for the benefit of future generations.

5.7. Niger Delta

The Government recognises that the Niger Delta region has suffered from the petroleum developments and that the region must share in the benefits from the hydrocarbons exploitation.

The Government will develop a Niger Delta wide model with the intention of involving Niger Delta communities directly in infrastructure, social and petroleum developments in their local community area.

Concepts can include, among others:

- To identify small and marginal fields which it may be possible to develop in partnership with local communities;
- To explore mechanisms whereby local communities can be integrated into project developments;
- To explore models for community based trust funds;
- Engaging local communities in projects in their local area;
- Small equity holdings for communities in oil operations in their areas.

6. INDUSTRY STRUCTURE

6.1. A Clean Break from the Past

The Petroleum Policy intends for there to be a clean break from the past. There needs to be a realisation that the previous ways of conducting petroleum business in Nigeria is not sustainable and cannot continue. The new policy will consist of:

- Clear separation of the roles of government and operators;
- Transparency;
- Cost efficiency;
- Reducing the regulatory burden through smart regulation and enhancing safe operations;
- Realising the additional value in oil as a motor for industrial development and not simply as an income earner in its own right.

6.2. Market Players

6.2.1. Roles of Government and Operators

Solutions to the development of the petroleum sector in Nigeria (as in any market around the world) are in three areas:

- **Areas where Government can have a direct affect:** Government sets the law and the regulatory framework, which directly sets the tone for the whole market, and only government can do this.

- **Areas where Government sets the environment:** Government can support the development of the market, such as pushing the implementation of the Gas policy, and by attracting investors to the country. Government can set policy frameworks, regulatory instruments and provide market support especially in the areas of reducing the cost environment for the petroleum business using market-based tools and fiscal rules of general application.

- **Areas where the market acts directly and there is no role for Government:** Government can set the scene for enhancing **economic efficiency**, **economic freedoms** and **economic growth**, but ultimately the private sector builds the market.

The petroleum policy sees an industry with partnership between the public and private sectors, albeit with a clear separation of roles between the government sector and the private sector.

The respective roles of the parties envisaged by the Petroleum Policy are:

- Government:
  - Policy setting and implementation;
  - Legislation;
  - Fiscal rules of general application

- Smart regulation that incentivises supply and non-discriminatory treatment of all participants in a manner that eliminates arbitrage;
- Putting in place mechanisms to encourage the development of markets;
- Encouraging payment discipline;
- Encouraging the development of fair and competitive petroleum markets.

- Corporate sector:
  - Engaging in commercially viable, profitable and sustainable operations;
  - Creating markets;
  - Conducting safe, healthy and environmentally friendly operations;
  - Serving their shareholders, as well as consumers, government and other stakeholders.

The corporate sector will contain state-owned corporations, IOCs, independents, and international and Nigerian private sector companies. This policy recognises that state-owned corporations and private sector companies will have the same responsibilities and opportunities as each other, and will be treated equally.

6.2.2. Corporatisation

Corporatisation of a state-owned enterprise is the process of making it into a corporation driven by commercial and profit making imperatives. Corporatisation has important advantages:

- A separation of roles between:
  - Policy (Ministry);
  - Regulation (independent regulatory commission); and
  - Operations (Corporation).
- The Corporation has its own assets;
- It can directly enter into contracts and agreements with other organisations;
- It has independent finance raising powers and the ability to raise finance on capital markets;
- Limited liability means that the government (in theory at least) is not exposed to an unlimited exposure to any financial consequences of actions by the Corporation, in the home country or abroad;
- Shares can be traded on stock markets and other non-state organisations may take a shareholding. A Corporation therefore can have less than 100% government ownership if wished, so long as the government shareholder retains effective control and ownership;
- Employees, while still state employees, are not directly civil servants, so more flexible commercial staffing arrangements can be put in place (although not as flexible as a fully private company);
- Daily operations are conducted under commercial rather than civil service procedures;
- Day to day independence of action but strategy and operating guidelines are still set by government;

- A Corporation deals with private sector companies on an equivalent basis;

Corporations operate under a two or sometimes a three tier Board structure. Standard international practice is at least a two tier Board:

- Supervisory Board: Strategy and corporate governance;
- Management Committee: Operations.

Benefits of corporatisation are set out in the following table.

Table 11: Benefits of Corporatisation

Benefits	Comments
Creates a legal entity	A legal entity has significant advantages: • Corporation will have its own assets • Can sign contracts and agreements with other organisations • Will have finance raising powers and the ability to raise finance on capital markets
Corporation will have its own assets	The asset base will belong to the corporation and not a government department, which gives the corporation a financial value
Legally empowered to enter into contracts	A legal entity status provides the identity for commercial contracts to be formed with domestic and international organisations, incorporated Joint Ventures, Memoranda of Understanding and other types of commercial relationship.
Enables access to capital markets	• The presence of a balance sheet with a value will give the corporation the ability to offer assets as collateral for loans • The Board of the corporation will be able to sign contracts directly with financial institutions
Allows for commercialisation of operations	• Management is empowered to manage • Will be able to put modern commercial management practices into operation • Will enable investment in people and other resources • Enables modern technology to be introduced • Will enable higher levels of pay for workers and pay related to performance • Ensures customer focus
Empowers management	• Management is given the authority and responsibility to fulfil their functions effectively and efficiently, for better business results

	• Management are empowered to take decisions for the benefit of consumers without having to refer to Ministry
Will be able to put modern commercial management practices into operation	An efficient platform is provided which can build accountability and improve business processes, including governance, financial management, marketing, customer service operations and to introduce technology to aid efficiency, information and build the gas industry
Is a platform for investment in people and other resources.	• A commercial entity requires new skills and continuous development of skills • This encourages training and development which leads to new employment opportunities
Enables modern technology to be introduced	The ability to enter contracts will enable the corporation to enter contracts for introducing new technology and skills, opportunities that are not open to a Government Directorate
Will enable higher levels of pay for workers and pay related to performance	• The Corporation will be able to set its own pay levels • As a consequence, and as a result of the more efficient and modern management practices, it will be possible to pay higher levels than before • Management will also have the opportunity to relate pay to performance (if they wish)
Ensures customer focus	• The focus of attention of a Corporation shifts from meeting short-term government needs to meeting customer needs and to growing the market • Government objectives are still fully met but the focus now shifts from the “internal” government customer to the external market customer

Enables Ministry to concentrate on core role of setting policy	• The government can set policy and monitor corporate performance better
	• The corporation can cease to be a burden or worry for the government
	• The corporation can focus on operational performance:
	  ○ Service delivery – Delivering good quality to consumers consistently;
	  ○ Managing service to consumers and communities;
	  ○ Growing the business;

Enables Ministry to concentrate on policy	• The separation of policy setting functions of the Ministry (Government) from the operations of

	delivering service are vital to improving transparency and performance • Without having to worry about operational management, government can focus more effectively on its core role of devising policies for developing the energy sector
The corporation can cease to be a burden on government	• Actual or potential loss-making enterprises can change from being a resource and financial drain on government to a revenue-raising entities • Instead they become net tax payers and financial contributors to the government
The corporation can focus on operational performance	• Service delivery, delivering consistent good quality to consumers • Managing service to consumers and communities • Growing the gas industry
A platform for long term growth and PPP	Corporatisation will permit the introduction of private investment when required, and provide the basis for the expansion of the petroleum sector to private participation
Provides a framework for effective corporate governance	• Enables a separation of powers between policy, strategy and operations • Will be able to put corporate governance measures in place and operate them
Enables a separation of powers between policy, strategy and operations	The separation of roles between policy (government), strategy and corporate governance (Board) and operations (Corporation management) will allow corporate governance and effective monitoring to be put in place
Will be able to put corporate governance measures in place and operate them	• The Board will be able to concentrate on its key role of putting corporate governance measures in place • These can include transparency, reporting requirements to government, social protection measures, protection of consumers as well as proper financial controls • Government can concentrate on its role of monitoring performance including effectiveness of the corporate governance • Non-executive directors and government monitoring agencies can operate more effectively, with specific mandates, accountabilities and functions • Independent audit reviews inform all parties and overall government agencies

	• Because government does not directly operate the corporation, government is much more ready to critically monitor the activities, which will improve the quality of corporation performance
Social protection measures can be included	• As part of the Board corporate governance functions, social protection measures can be included • Government can insist on these through its policy setting role
Improved management of social and community services	• Social protection and consumer protection measures can also be included within the corporate charter or by-laws of the corporation • A charter can be developed to establish service levels and price controls, of which the non-commercial impact can be clearly measured and disclosed • Consumers and vulnerable groups are protected and public accountability is high • Accountability for commercial performance remains intact The charter can form the basis of a contract with government in relation to specific standards of service and price mechanisms attached thereto
Reform now will be easier than reform later	• Making changes now will be less disruptive than later when the enterprise is in a worse financial situation • Change is needed and the sooner change mechanisms are identified the easier they will be to implement • This will be easier and less disruptive than change later when the enterprise has further declined and market opportunities have slipped away

Two Tier Board Structure

International standard is for major companies or corporations to have a two tier Board structure:

1. Strategy Making and Supervising Board

Called the Board of Directors or Supervisory Board.

Functions:

- Strategy and policy;

- Corporate governance: Financial audits, monitoring performance, corporate codes of behaviour;
- Responsibility for running the company in a crisis;
- Represent key stakeholder groups, such as owner, government, employees.
- Committees: An important part of the corporate governance role of the Supervising Board is that Board Members are members of various governance Board Committees.

2. Executive Operations Team

Called the Executive Board, Board of Directors, Executive Team, Group Management or Management Board.

Functions:

- Executing and implementing the strategy set out by the Strategy Making and Supervising Board;
- Operations and day to day management;
- Membership: This is an operational Board and the membership are drawn from the Heads of the main business divisions, a mixture of operational divisions and key corporate functions (such as Finance, Legal Affairs, Strategy, Human Resources).

6.2.3. Restructuring of NNPC

Nigerian National Petroleum Corporation (NNPC) is the agency of the government responsible for representing the commercial interests of the government in petroleum exploitation and distribution. It is involved in oil and gas production on a joint-venture (JV) basis with international oil companies (IOCs) and with international and national independent operators, which act either as the operator of joint venture concessions held under Oil Mining Leases or as contractors under Production Sharing Contracts (PSCs).

The previous policy regarding NNPC meant that it acted as representative of the state, setting policy and regulation, and also represented government interest in the JVs. The previous policy regarding NNPC will change under the new Petroleum Policy.

Under the Petroleum Policy, a new national oil company will be established as a corporatised entity, in accordance with standard international practice for Corporations, including operating under commercial law and a two tier Board structure. It will relinquish all its policy making and regulatory activities, and will be treated on an equal basis with private sector operators.

The new national oil company will be structured into operationally independent self-accounting profit centre subsidiaries so that the value of separate activities can be realised and operational efficiencies can be introduced.

The NNPC restructuring will mean that:

1. Policy making will become the sole preserve of the MPR;
2. All regulatory activities will become the sole preserve of the new single petroleum regulatory commission, under the oversight of the MPR;
3. NNPC will cease to exist as a statutory corporation and as a legal entity and will be succeeded by National Oil Company of Nigeria (NOCN);
4. NOCN will be incorporated as a limited liability company;
5. NOCN will be responsible for managing the national interests in the JVs, PSCs and in other upstream, midstream and downstream projects where the Government is involved as an investor, NOCN will be governed according to the Governance rules of the Nigerian Stock Exchange prior to the listing of its shares, and by the rules of any bourse where its shares are eventually listed;
6. It will also contain some semi-autonomous units, such as some Corporate Services such as Audit, Corporate Planning & Strategy (CP&S), Company Secretarial & Legal Division (CSLD), Common Services and a trading company;
7. Each of the subsidiaries will be holding companies in their own right, although there will be strict limits and control over the number and scope of their further sub-subsidiaries. The NOCN subsidiaries will be registered under commercial law with Corporate Affairs Commission (CAC);
8. Profits from the subsidiaries will be returned to the holding company (NOCN) through dividends. The NOCN will then make pay dividends to the FGN;
9. Poorly performing units of the NOCN will be divested, sold or closed down;
10. International investors will be sought for autonomous units of the NOCN where it is considered appropriate.

The new policy also seeks to capitalize the new National Oil Company with a capital structure that will enable asset based financing through debt or equity arising from its retained earnings. By capitalisation of the National Oil Company we mean the vesting of assets in the new entity such that when netted against its liabilities significant equity capital is retained in the firm.

Vesting of assets may be done through different asset classes:

- ***Fixed Assets: The National Oil Company assumes the assets of the Government within the iJVs, refineries (including storage depots within the refineries);***
- ***Liquid Assets: One-time Seed Capital/ Funding, capital allowance and profit retention in iJVs and existing PSC production where the National Oil Company is the concessionaire.***

This policy is aimed at achieving an optimum capital structure which is one that combines tax efficiency and financial flexibility while minimising financial and business risks.

Proposed Governance Structure

- Government to ensure an effective legal and regulatory framework for NOCN through:
    - Clear separation between the ownership function and other government functions
    - Any obligations outside the norm should be legislated or by regulation
- The government should ensure that the governance of NOCN is carried out in a transparent and accountable manner, with necessary degree of professionalism, independent judgment by the board and effectiveness.
- The government should recognize the rights of **all shareholders** and ensure equitable treatment and equal access to corporate information
- NOCN are to observe high standards of transparency, internal and independent external audits similar to those of internationally quoted companies
- The Board should have **necessary authority, competencies and objectivity** to carry out its function of strategic guidance and monitoring of management. Board should be composed of those who **can exercise independent judgment and be fully accountable**.
- The state should not be involved in **day to day management** of NOCN and allow them **full operational autonomy** to achieve their defined objectives

The accountability structure would be as follows:

- Appointment of GMD management of NOCN would be on a **tenure basis for an initial term of four years and renewable subject to the achievement of KPIs in** a clear mandate to be specified by the Board.
- Accountability structure to conform to the **five principles of good governance,** underpinned by the following values:

    1. Responsible;
    2. Enabling;
    3. Transparent;
    4. Accountable;
    5. Sustainable;

- Under the proposed PIRB framework, the following functions are allocated to different actors:

    - **Policy:** MPR;
    - **Regulation / Monitoring:** Independent Regulator;
    - **NOC:** Commercial Operations.

Implementation / Operational Management – **NOCN**:

- NOCN executes its mission of optimising the development of resources on a commercial basis;
- NOCN board elaborates strategy for implementation of Oil & Gas policy (use of operational expertise to translate government objectives into detailed industry strategy);
- NOCN ensures integrity (operations & HSE), effectiveness, and efficiency of operations;
- New law setting up these functions would define:
    - A clear charter, including a requirement for commercially sound decision making and sufficient execution authority for NOCN;
    - Limit Ministry's authority over NOCN and independence of regulator over commercial operator;
    - Protects NOCN's funding and revenues from government intrusions;
    - Group control of individual corporate divisions of NOCN;
- The recommended governance structure for the NOCN consists of a supervisory board appointed by the President, a two-term tenure of four years each for the Chief Executive; a Management Board headed by the Chief Executive & Group Executive Directors appointed by the Board;
- By registering the NOCN as a Companies & Allied Matters Act (CAMA) entity, the rules prescribed by CAMA would apply and the fiduciary responsibilities of Board members are clear;
- The Government would also require that Board members exercise independent judgment in the exercise of their functions which include reviewing and guiding corporate strategy; major plans of action; risk policy; annual budgets and business plans; setting performance objectives; monitoring implementation and corporate performance; overseeing major capital expenditures, acquisitions and divestitures;
- The NOCN must have independent and sustainable sources of funding and must not be subjected to the annual appropriation cycle of Government. The project development cycle is much different from an annual appropriation cycle;
- The NOCN will develop a dividend payment and earnings retention policy in order to ensure predictability of its returns to the Government (Ministry of Finance/Treasury) beyond payments of royalties and taxes which are statutory.

6.2.4. The NNPC / NOCN Subsidiaries

The autonomous profit centre subsidiaries to be created out of NNPC will be:

1. **Upstream Division:**
    - Nigerian Petroleum Investment Management Services Limited (NAPIMS) / Asset management company;
    - NPDC;
    - IDSL;
    - NETCO;

2. **Downstream Division:**
    - Retail company;
    - Storage company;
    - Pipeline company;

3. **Midstream Division:**
    - Nigeria Gas Processing & Transportation Company (NGPTC);
    - Nigeria Gas Marketing Company (NGMC) – marketing company;
    - Port Harcourt Refinery Company (PHRC);
    - Warri Refinery Company (WRPC);
    - Kaduna Refinery Company (KRPC);

4. **NNPC Ventures Division:**
    - HMO;
    - Insurance;
    - Other services;
    - NNPC Pensions.

6.2.5. Nigerian Petroleum Development Company Limited (NPDC)

Nigerian Petroleum Development Company Limited (NPDC) is a fully-owned subsidiary of NNPC. NPDC is engaged in oil and gas exploration and production activities in the hydrocarbon-rich regions of coastal Nigeria (the Niger Delta), both onshore and offshore, and more recently around Equatorial Guinea. NPDC operates JVs with international and national operators.

NPDC has significant production capacity, so it is not acceptable to Government that a company with such a strong asset base should not be profitable. NPDC will need:

- An audit of its losses;
- To be run like a commercial E&P company;
- Improvements in skills at all levels, in particular management skills;

If there are not significant changes in its operations such that it becomes profitable within a reasonable period, NPDC will be divested or closed down.

6.2.6. Nigerian Petroleum Investment Management Services (NAPIMS)

NNPC's representatives in the Operating Committees of the various joint ventures are seconded from Nigerian Petroleum Investment Management Services Limited (NAPIMS) which is a subsidiary company of NNPC. NAPIMS was established to manage NNPC's interests in the various oil concessions. In addition, all project proposals, joint venture budgets and key operating decisions in oil and gas projects are subject to NAPIMS approval.

NAPIMS cost of managing government's interest is significantly higher than it ought to be. An expenditure of over $200 million per year is unjustifiable in the current oil price environment. These costs when applied across the JVs and PSCs makes some of the government equity interests in the joint venture unprofitable.

- NAPIMS has ten divisions but only three are operational (JVs, PSCs, Gas);
- There are no written rules, procedures or policies to guide its activities;
- Institutional capacity (management and staff capability) is weak;
- There is no compliance unit, which there should be as a given;
- Costs per barrel within operations under its supervision are unacceptably high;
- There is poor data management, information asymmetry both internally and with NNPC Corporate and the organisational structure is fractured.

The Petroleum Policy considers that NAPIMS is incapable of reforming itself because of the internal organisation. Effective NAPIMS reform can only come from fundamental restructuring with commercial discipline, and reform must come from outside NAPIMS.

NAPIMS will be substantially restructured and may ultimately become independent and with full autonomy from the NOCN. The restructuring and reform process, to be led jointly by the Ministry of Petroleum Resources and the Ministry of Finance will include:

- A global level management consultancy to be hired to help with restructuring;
- A value-for-money audit;
- Enable faster contracting cycles (3-6 months);
- Priority focus on low cost oil operations ($9-10/bbl);
- Emphasis on sustainable brownfield projects;
- Standard commercial management practices to be introduced, including KPIs;
- Asset wide budget monitoring introduced as a standard KPI objective;
- Marine asset sharing in all its blocks introduced as compulsory measure;
- Cost benchmarking data and system to be developed;
- NAPIMS will be limited to a pure asset management function whilst cost regulation will reside with the sector regulator;
- Data has to be shared amongst the key agencies, including: NAPIMS, MPR, MoF, NOCN, the Petroleum Regulator, NCDMB.

6.2.7. Private Sector Companies

Nigeria is blessed with an abundant and active private sector in the petroleum industry. These include:

- International Oil and Gas Companies (IOCs);
- International Independents;
- National Independents;
- Oil and gas service companies;
- Independent Power Plant companies (IPPs);
- Project Developers.

The private sector is vital to the development of the Nigerian petroleum industry. Government agencies, government corporations, international companies and national companies need to and will work together to meet the common vision of a dynamic, successful and profitable Nigerian petroleum industry.

6.3. Market Structure

6.3.1. Creating a Market Driven Oil and Gas Industry

Under the Petroleum Policy, Nigeria will have a market driven oil and gas industry, structured to meet the vision of a nation where hydrocarbons are used as a fuel for economic growth and not simply as a source of income.

This means:

- Restructuring the government sector to one where efficiencies are introduced and there is a level playing field between the private and public sectors (discussed in the section above):
    - NNPC and its subsidiaries;
    - Clearly separating the roles of policy (Ministry), regulation (independent regulator) and operations (NNPC and successors);
- Ensuring private investment across upstream, midstream and downstream segments of the value chain;
- Moving Away from Oil as a Source of Income to Oil as a Fuel for Economic Growth;
- Improving the whole enabling supply chain;
- Move the Nigerian economy from a crude oil based exporter to a gas based industrial economy.
- Enabling Nigeria to become a manufacturing and industrial nation;
- Enabling effective refining and processing within Nigeria (whether public or private owned and/or operated), this is discussed further below in section 0 Midstream Operations, Refining.

6.3.2. Ensuring Private Investment across the Value Chain

As discussed above, private sector operators in the upstream, midstream and downstream will operate on an equal basis with government owned operators. Preference will not be given to government owned companies but to the most competent operators. Government owned companies will be restructured but if they then fail to succeed in a competitive market place, they will be divested or closed and the private sector will be encouraged to take that place in the market.

A market-based economy with equal opportunity of access, combined with a fiscal regime of general application to all players, will help to move Nigeria's economy forward and attract private sector investment into the upstream, midstream and downstream sectors.

The policy realises that different types of company are best suited for different parts of the value chain. IOCs are very suitable for major upstream projects, independents for smaller or marginal field E&P operations, pipeline and storage companies for onshore midstream activities, and utility companies and project developers for downstream facility provision.

Different types of private sector players, including both indigenous and foreign owned companies, will be encouraged to invest across the value chain in the Nigerian petroleum industry.

6.3.3. Move from Oil as Source of Income to Fuel for Economic Growth

The Petroleum Policy intends to move the Nigerian economy away from simply exporting crude oil to IOCs for immediate cash benefits. Crude oil will not simply be exported but a significant and growing proportion of government equity crude oil will be sent to local refineries (whether private or public). Under the implementation of the petroleum policy, oil will be refined within Nigeria and further used to create significant end products to create value for the nation.

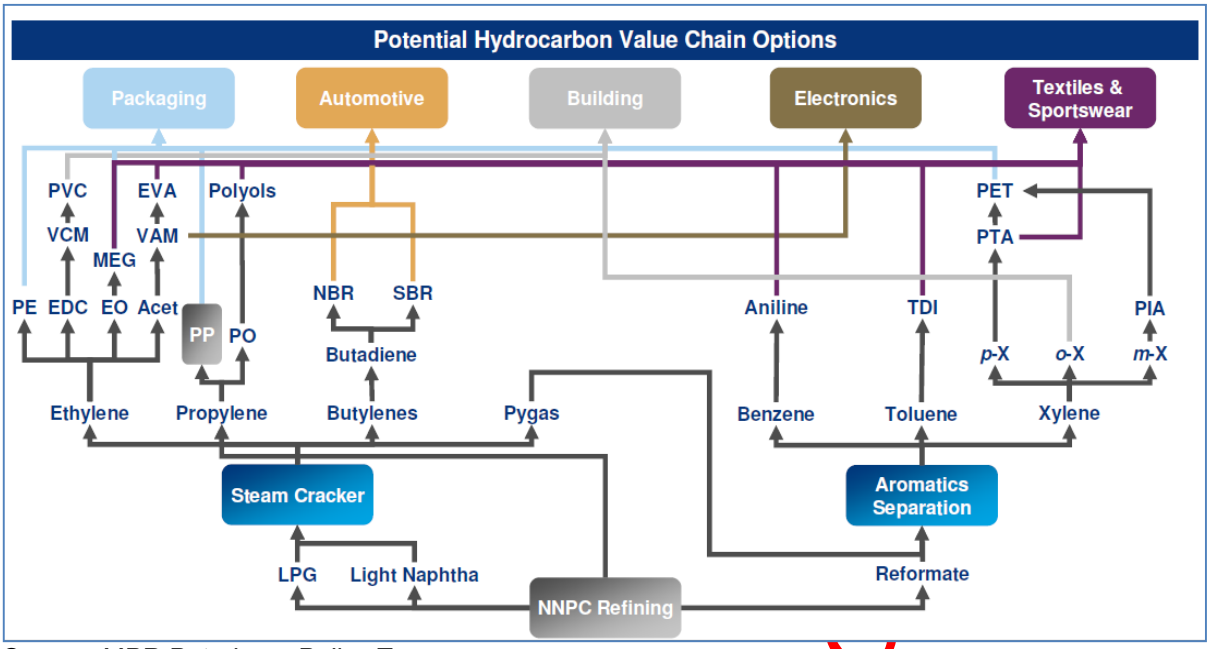
> ***The Petroleum Policy intends to move the Nigerian economy away from using crude oil sales as a source of income to one with oil based petrochemical chemical industries and gas based industrialisation.***

The intention is to:

- Achieve a competitive supply of petroleum products;
- Make Nigeria a refining hub;
- Introduce petrochemical industries to realise the full value from oil refining.

The figure below shows the large number of petrochemical products that can be extracted from a barrel of oil after refining. As the global market for oil (crude or refined) becomes increasingly tight over the forthcoming years and decades, it is essential that Nigeria moves towards the industrialisation and industrial processes needed to realise the additional value inherent in oil.

Figure 24: Options for Petrochemicals from the Hydrocarbon Value Chain



Source: MPR Petroleum Policy Team

Fundamental to the implementation of this policy is to attract investment into downstream sectors of the Nigerian petroleum economy. There are many aspects to this, including:

- Creating the appropriate industry structure, legal, institutional, regulatory and fiscal environment;
- Creating a business friendly environment;
- An effective enabling supply chain environment.

6.3.4. Need to Improve the Whole Supply Chain

The Nigerian government is aware that there are currently challenges across the whole supply chain. To improve key infrastructure is only part of addressing the problems that exist. Not everything can be achieved all at once but the government is aware of the need to:

- Improve physical infrastructure, including pipeline infrastructure, roads, telecommunications and others;
- Improve the business environment;
- Reduce bureaucratic inefficiencies to the barest minimum.

6.3.5. Enabling Nigeria to become a Manufacturing Nation

In addition to the supply chain impediments there are many problems that constrain Nigeria's ability to become an industrial and manufacturing nation. To nurture and grow the tiny manufacturing base that Nigeria has presents some significant challenges.

Manufacture versus imports: One solution might seem to be the manufacture and assembly of products in Nigeria rather than importing. The National Petroleum Fiscal Policy and the National Gas Policy, complementary policies to this Petroleum Policy, address these impediments.

Despite the challenges, it is nevertheless key to the future economy of Nigeria that it makes this shift towards the creation of a manufacturing base. The most important driver that government can provide to support this industrialisation is to remove the impediments to a market driven oil and gas economy, most of which created by government, including restrictions on access, government monopolies and protection of vested interests.

6.3.6. Move from Crude Oil Export to Oil and Gas-Based Industrial Economy

A key part of the petroleum and gas policies is to move Nigeria from a crude oil export based economy to an oil and gas - based industrial economy. The petroleum policy intends to realise the additional value in oil by encouraging the development of petroleum based industries. At the same time, Nigeria will move towards an economy based on gas-based industrialisation.

Nigeria's long-term future lies in building up an oil and gas based industrial economy. At the same time, the full value of oil will be realised for the benefit of the nation, rather than simply exporting crude oil for cash income.

The Government's vision as articulated in the National Gas Policy is based around moving the Nigerian economy from a crude oil export to an oil and gas-based industrial economy. This will require:

- Building up domestic gas markets for industry and for power generation;
- Developing gas markets for Nigerian gas elsewhere in Africa and other regions;
- Exporting gas through LNG and export pipelines;
- Realising more of the value by becoming involved in the direct marketing of gas in international markets.

Details around these imperatives are discussed in detail in the **National Gas Policy** and the **National Fiscal Policy**, which are complementary policies to the **National Petroleum Policy**.

6.3.7. Following the Hydrocarbon from Extraction to Destination

The petroleum policy intends to gain more of the value from downstream export markets.

The Nigerian government therefore intends to take two measures to support this:

1. **Retaining Ownership of Crude Oil**

The intention is for Nigeria to retain ownership of its national petroleum entitlement (Government share of crude oil and gas production) up to refining.

2. Improve International Product Marketing

As Nigerian government marketing agents become more experienced in refined product marketing, it is expected that the government entity will be able to retain ownership further downstream, gaining access to marketers and distribution channels within international downstream markets.

6.4. Procurement for Projects

The petroleum procurement process in Nigeria needs to be fundamentally overhauled. The Petroleum Policy promotes measures to bring efficiency, transparency and cost control into procurement and contractual processes.

The procurement process in the government sector in petroleum is not effective or efficient. Inefficient or even improper procurement is a major problem for Nigeria and an area which substantially has contributed to the current economic situation. Contracts have either been delayed or not implemented for no apparent reason, or cancelled for no apparent reason, awarded to unqualified bidders or to bidders who did not make the best quality or best price bid, or awarded at substantially (orders of magnitude) higher cost than international standard costs would indicate. Under the Petroleum Policy, improvements will be made in:

- Efficiency: Of time, cost and financing;
- Contracting process: Introduce transparency in:
    - The contracting process;
    - The time line;
- Cost management of contracts:
    - Introduction of cost benchmarks and guidelines, based on international standard or benchmark costs, adjusted for local conditions;
    - Introduction of transparency in all public tenders and all large private tenders in the petroleum sector (up-, mid- and downstream).

6.5. Asset Management

The existing assets have to be optimally exploited and realise better value for the nation. They need to produce maximum oil volumes at the lowest cost. Every cost needs to be challenged to achieve the goal of least - cost oil.

Professional and modern asset management methods will be introduced to make sure that the assets are optimally exploited to their maximum capacity. Cost Efficiency is of the utmost priority in order to improve the competitiveness of Nigeria as an investment destination. International best practice asset management models will be introduced into Nigeria. These models will allow:

- Data and asset sharing;
- A national asset inventory / register;
- A cost efficiency model;
- Equipment inventorisation and tagging.

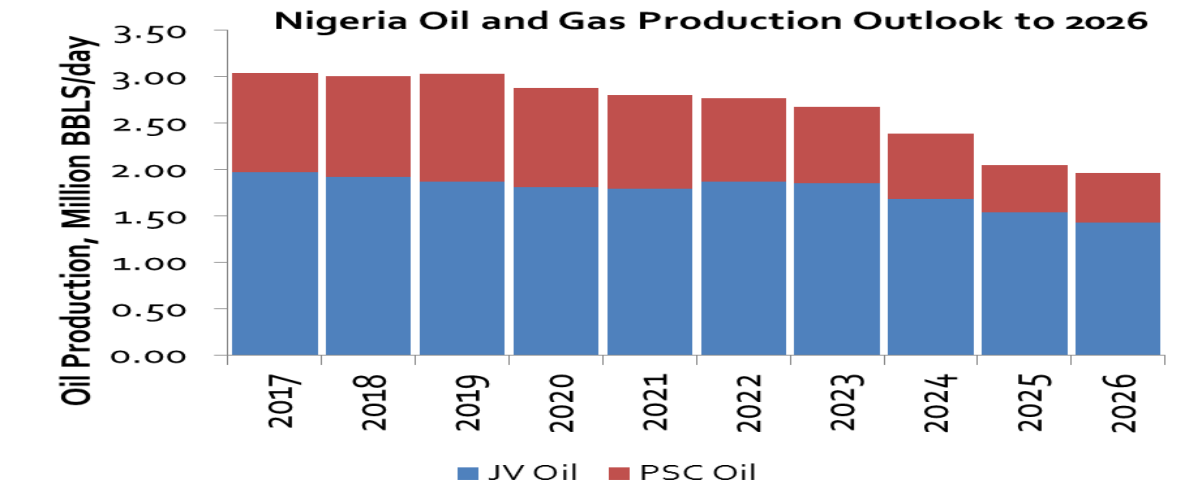
7. UPSTREAM – DEVELOPING RESOURCES

7.1. Maximising Production of Hydrocarbons within Nigeria

7.1.1. Maximise Existing Production

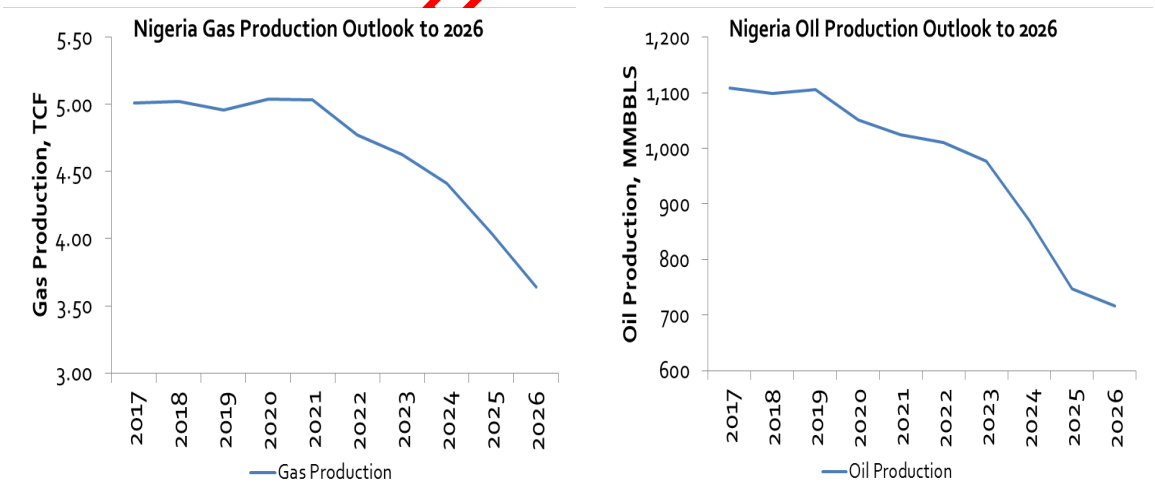
The short and medium term objective for the upstream is to maximise production.

Figure 25: Nigerian JV and PSC Oil Production Outlook to 2026



Source: NNPC; Government Strategic Plan
Notes:
Oil Production expected to start from 3 mmbbls/day in 2017 and decline by 2 mmbbls/day by 2026;
Bulk of Production is expected from JV arrangements, around 67% over the 10-year period.

Figure 26: Nigerian Gas and Liquids Production Outlook to 2026



Source: NNPC; Government Strategic Plan

Total production is expected to be:

- Gas: around 46 tcf;
- Oil: around 10 billion bbls.

Unless there are additions to reserves and those reserves are brought into production, Nigeria can expect to see absolute declines in production from around 2020. The Petroleum Policy will therefore:

- Maximise existing production (from existing production blocks):
  - Ensure clear vision of how to fund projects;
  - Maximise retention of production (accountability, security);
- Maximise additions to reserves and future production;
- Diversify resource base.

In order to maximise existing production from existing production blocks, hindrances to maximising production will be investigated and actions taken.

A clear vision and strategy from the government investor for how to fund projects is one critical part of ensuring continuing and growing production. Under section 5.5 Sector Financing above, alternative financing arrangements are discussed.

Niger Delta Insecurity

There are two aspects to maximising retention of existing production. The first is to take steps to reduce the disruptions to production from the Niger Delta insecurity. The government is taking measures to restore long term stability to the region.

In the meantime, operators are expected to ensure that they take sufficient measures to protect their assets and make them secure. Operators are familiar with the security environment in the Niger Delta and, without prejudice to the role of government, with respect to security, operators are expected to take the necessary measures to secure their facilities.

Accountability for Production

The second aspect is to increase accountability for production. Through the new enhanced regulatory measures under this Petroleum Policy, the government will take steps to ensure full accountability for and transparency of production figures from operators. This will be made through improved regulatory monitoring plus transparency and other improvements as may be necessary.

7.1.2. Maximise Additions to Reserves

Future production of hydrocarbons depends on making additions to reserves. The gas policy shows how the government is determined to move Nigeria to a gas based industrial economy, with the expectation for the upstream sector that there will be dedicated exploration for gas, rather than finding associated gas during a search for oil reserves.

Both for gas and for oil reserves, the government will identify and then put in place measures to enhance the attractiveness of Nigeria as a suitable investment destination for exploration only, production only or E&P companies.

The benefits of Nigeria as a place to add reserves will include:

- High quality of Nigerian Bonny Light crude oil;
- Low cost of extraction compared with other environments;

- An established petroleum environment, with a large number of operators and service companies, both indigenous and foreign owned;
- An improved and improving fiscal regime, particularly for gas developers.

7.2. Diversifying Petroleum Resources

7.2.1. Niger Delta

There are security of supply risks with the current situation, emanating from the Niger Delta militancy, and consequent disruptive effects on gas production, the environment and wider economy.

> ***Nigeria needs to diversify its petroleum supply sources from a national and energy security perspective. In order to improve security of supply, the petroleum policy intends to encourage an environment that ensures deliberate exploration and production in other regions of Nigeria, outside the Niger Delta provided it is commercially viable.***

This means carrying out exploration activities with the intention of finding additional petroleum resources beyond the currently known occurrences, in other geologically prospective terrains, especially the offshore and inland basins.

> ***Consideration will be given to the promotion of upstream development activity in inland and offshore basins, including the review of the commercial terms upon which titles in inland basis are held***.

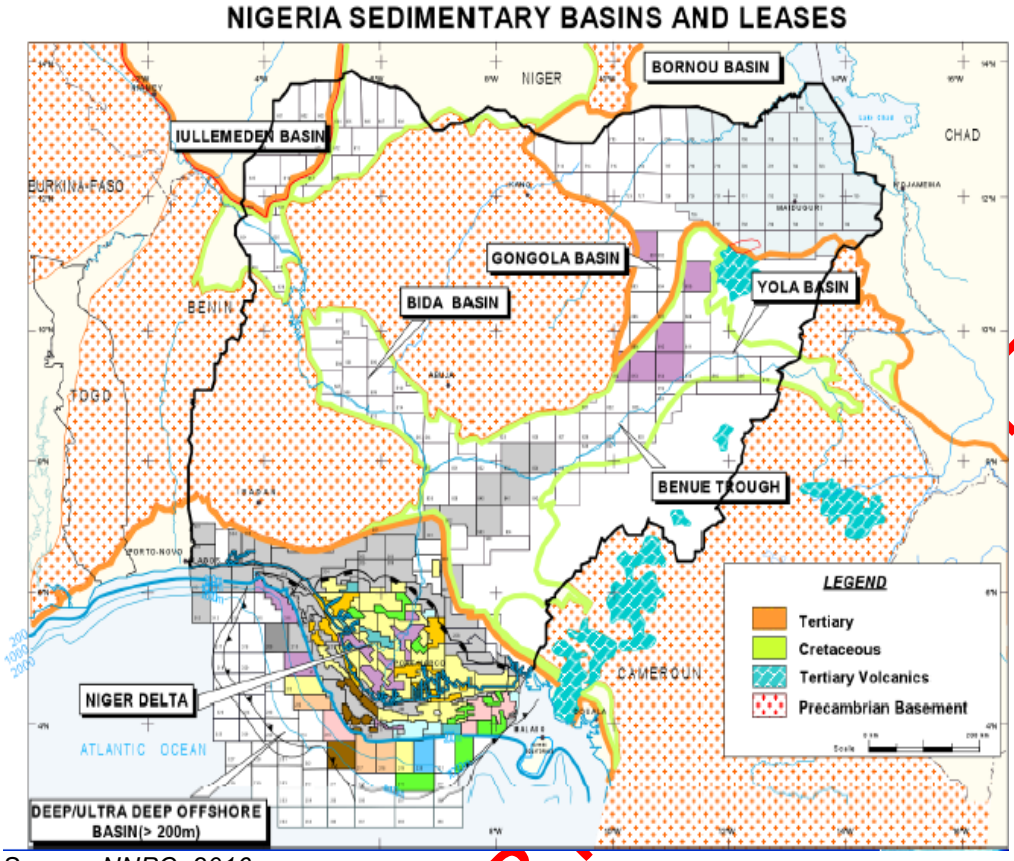
7.2.2. Benue Trough and Sedimentary Basins of Nigeria

Figure 27: Benue Trough

The global arc of oil and gas reserves, of which Nigeria lies at the centre, does not just cover the Niger Delta in Nigeria. The Benue Trough extends right through Nigeria, from offshore Gulf of Guinea through the Niger Delta and then on through the country to Chad.

As well as the offshore and Niger Delta, many other sedimentary basins have been identified (but not yet developed) in Nigeria, including the Anambra Basin, Kerri Basin, Yola Basin, Gongola Basin, Bida Basin, Lullemeden Basin (with Niger) and the Chad Basin (with Chad). A key one is the Anambra Basin.

Figure 28: Petroleum Basins in Nigeria



Source: NNPC, 2016

7.3. Field Developments

7.3.1. JVs and PSCs

The policy regarding JVs and PSCs is discussed above under section 5.5.2 PSC Plus Cost Structures above. In summary the Petroleum Policy will:

- Exit all cash calls completely by the end of 2017;
- Move to an enhanced PSC set of arrangements for project financing (PSC+), or incorporated JVs.

The existing JVs are to become independent and self-funding. The most effective way to allow this is for them to become incorporated Joint Ventures (iJVs). The existing JVs are to be closely monitored for:

- Effectiveness and performance;
- Compliance to agreements;

7.3.2. Allocation of Oil Licences and Leases

Oil and gas licences and leases will no longer be awarded under opaque procedures with allocations of blocks or production. Under the Petroleum Policy all petroleum blocks, licences, leases, licence renewals and licence extensions will be awarded following

a transparent competitive process. The process will also allow local community participation through local community vehicles.

Similarly, licence renewals or extensions will now be based on licence holders making progress in meeting their exploration or production targets. Licence holders who do not meet licence conditions, including oil production, gas flare down, gas supply obligations, will risk losing the licence.

It is the policy to ensure that in a timely and competitive access to petroleum assets, to ensure optimum exploration, development and commercialisation of its oil and gas endowment.

7.3.3. Marginal Field Awards

The Government remains determined to develop the Nigerian domestic petroleum industry and in developing indigenous players. The Government will therefore continue with the policy of marginal field awards to indigenous players.

7.4. Minimise the Environmental Footprint

The damage to the Niger Delta from petroleum operations has been described further above and is immense.

The environmental damage to the Niger Delta is a major contributing factor to the current Niger Delta militancy and is in itself evidence of a failure of regulation and governance. Under the Petroleum Policy, measures will be taken to minimise environmental damage and the environmental footprint. The government will operate under the principles of "name and shame" (pollution and polluters will be published in international media) and "polluter pays" (polluters pay the full costs of mitigation). The government will consider moving to a system of independent assessment of the environmental and human costs of an oil spill.

Oil spills come from operational reasons and from disruption from militancy. The government will take measures to ensure that polluters pay the full costs of mitigating any damage to the environment or communities. These will include measures to:

- Ensure gas flare reduction in accordance with the gas policy and the gas flare-out programme;
- Monitor oil spills;
- Enforce Nigerian regulations and international best practice (before the incident preventative measures);
- Ensure that "the polluter pays", that operators who cause damage to the environment and/or communities, will have to pay the full cost of mitigating the damage;

- Ensure international publication of oil spills and the polluters (a "name and shame" policy).

The environmental and community damage has been allowed to go unnoticed for too long. The Petroleum Policy will now operate under two principles regarding the physical and human environment in the Niger Delta.

Name and shame: Publishing details of pollution and the polluters in international media. The Petroleum Policy believes that there is only so much that the Nigerian government is capable of doing to save the Niger Delta, but with the active involvement of international environmental NGOs, much more could be achieved.

Polluter pays: Polluters will pay the full costs of setting right any environmental damage from now on. Very often, when there is a spill, the company agrees a nominal financial settlement with a local Chief. Such arrangements do not reflect the true costs of the damage and such arrangements rarely lead to satisfaction for the affected community. Such arrangements and lack of real mitigation of the damage simply lead to more resentment and ultimately more militancy. This cycle of increasing environmental damage and increasing consequent impoverishment and militancy has to be broken. The government will therefore consider moving to a system of independent assessment of the damage caused by an oil spill, and may introduce an outright ban on the types of private arrangement that have been prevalent up to now.

7.4.1. Balancing Utilisation of Petroleum Resources within the Context of Renewable Energy

The current policy is to maximise oil production and, over time, to develop the ability of Nigeria to add value to oil by engaging in refining, and in petrochemical and other oil based industries. The long term future for Nigeria is seen to be in gas, with a gas based industrial economy, supported by an oil based petrochemical industry.

Gas development is currently focused towards gas for power as the single largest consumer segment for Nigerian gas.

The government is aware though that renewable energy is increasingly gaining ground, worldwide and in Nigeria. As renewable energy costs continue to come down, over the long and even medium term, renewable energy is expected to, and should be encouraged to, become a significant part of a diversified energy mix.

Therefore, over the medium to long term, gas will be diverted from its reliance on the power sector and will be increasingly used for gas based industrial purposes in Nigeria. Similarly, over the medium to long term, oil exports will become proportionately less and less important for the Nigerian economy, as oil refining and oil based industrialisation becomes an integral part of the new industrial economy of Nigeria.

8. MIDSTREAM OPERATIONS - INFRASTRUCTURE

8.1. Definition of Midstream Operations

Midstream operations in the Petroleum Policy include:

- Construction and operation of crude oil and gas transportation pipelines, in general after the flowstation;
- Oil refineries and gas processing facilities;
- Oil and gas bulk storage facilities;
- Shipping of oil and gas, and related products;
- Other bulk transport methods, such as rail, barge and trucks for transporting oil and gas, and related products, on a wholesale basis;
- Wholesale marketing of petroleum products.

Specifically, for the purposes of the Nigerian Petroleum Policy, midstream operations include all transportation pipelines (except only for those within a block and therefore under the ownership and operations of a single operator or consortium).

8.2. Nigeria's Midstream Oil Network

8.2.1. Security and Pipeline Vandalism

Pipeline vandalism and security issues are a major issue for the midstream sector in Nigeria, and this has been discussed further above in this Petroleum Policy document.

It has been already stated above, in section 7.1.1, under Niger Delta Insecurity, that the government is taking steps to restore stability to the Niger Delta region, but that in the meantime operators are expected to take sufficient measures to protect their assets and make them secure.

8.2.2. Develop Operating Oil Product Midstream Facilities

Although there is, in theory, an existing set of midstream assets for the transportation of Nigerian crude to inland refineries and the transportation of refined oil products, in reality they are barely operational. There has been little to no maintenance for many years and based on their state, they now have a low or close to zero value.

Midstream facilities need to be created that are operationally effective and cost efficient. Under the market based structure of the Petroleum Policy, investors are invited to construct midstream and downstream infrastructure facilities, including:

- Transportation pipelines;
- Refining facilities;
- Storage facilities;
- Distribution pipelines.

In accordance with the market based nature of the Petroleum Policy, the midstream sector will be open to private sector developers to invest in, such that upstream players

can conveniently focus on finding, developing and producing hydrocarbons while the midstream can process, transport, store and market hydrocarbons.

8.2.3. Network Code for Access to Midstream Facilities

Access to all midstream facilities will be on an open access basis and a network code to manage access will be developed by the industry with oversight by the petroleum regulatory commission.

8.3. Storage

8.3.1. Build a Strategic Reserve of Petroleum Products

The vast majority of refined products are currently imported. The import terminals are potential high risk areas. If there is any sort of disruption to the import terminals at Apapa (Lagos) or Calabar, the country is effectively cut off from refined products which are critical to the nation.

There have been times, even within the recent past, when for one reason or another, refined products, particularly jet fuel and PMS, have not been delivered in sufficient quantities to the Nigerian domestic market, which have led to considerable shortages and disruption to the national economy. The government is determined not to be exposed to this sort of risk in the future.

The Petroleum Policy has determined that Nigeria needs onshore strategic reserves of refined petroleum products.

This is to provide security of supply against the risk of any significant disruptions in:

- Supply from existing sources, or withholding of supply for any reason;
- Transportation routes, such as import jetties at Apapa or Calabar.

It is true that there is a major oil refinery in Niger, near the Nigerian border, which is able to supply at least part of Nigeria's strategic petroleum product needs. This single refinery is however not on its own sufficient to meet all of Nigeria's needs in the event of one of the crises outlined above. That refinery is also outside the borders of Nigeria and the Nigerian government has no control over it, meaning that a single refinery does not provide sufficient security of supply at a national strategic level.

For these reasons therefore, the government intends to develop a strategic storage of refined products.

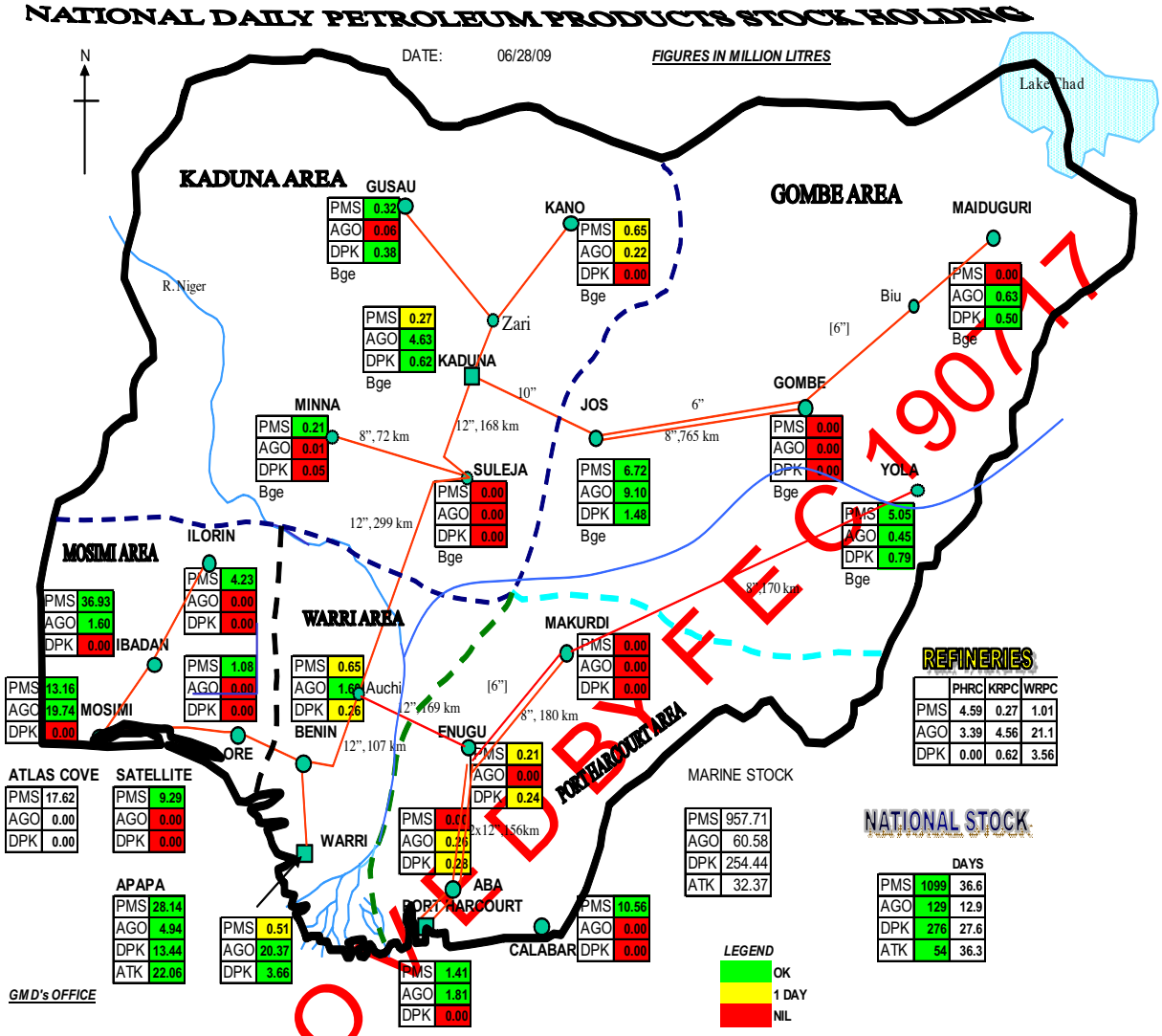
8.3.2. Need to Audit Existing Storage Capacity

In order to achieve this, the first step is to assess the design capacity and the current operating capacity of existing product storage within Nigeria. An audit of all petroleum product storage within Nigeria will be undertaken, to ascertain:

- Design capacity;
- Current state of assets;
- Current operating capacity;

- Current entry and withdrawal speeds;
- Amount of investment needed to bring the capacity up to a sufficient level.

Figure 29: National Daily Petroleum Products Stock (Example), June 2009



Source: NNPC

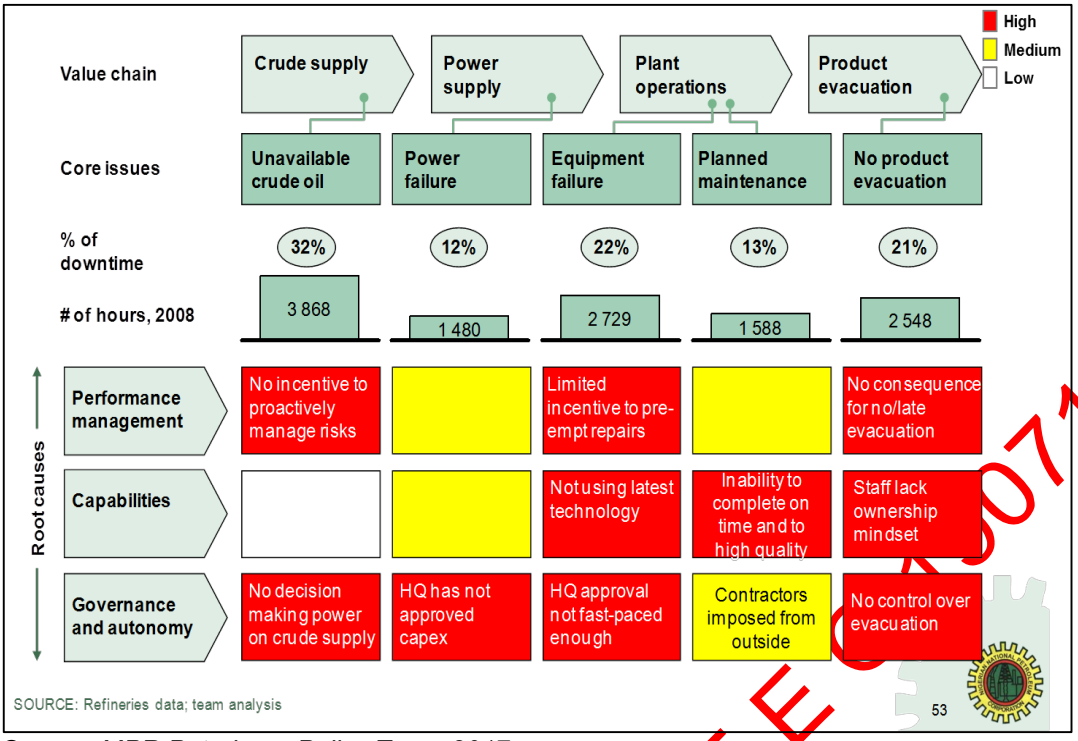
8.4. Refining

8.4.1. Current Situation: Refinery Underperformance

The root causes of current refinery underperformance include:

- Crude Supply;
- Power Supply;
- Plant Operations;
- Product Evacuation;
- Performance Management;
- Human Resource Capability;
- Governance and Autonomy.

Figure 30: Underperformance in Nigerian Refineries



Source: MPR Petroleum Policy Team 2017

8.4.2. Vision of a Strong Refining Sector: Transition to a Desired State

A strong refining sector is a basic requirement for the achievement of the vision of converting Nigeria's economy from a crude oil export to an oil products and derivatives value added economy. Without strong, high volume and commercially viable refineries within Nigeria, the whole vision will not be achievable.

In the new refining model, refineries are expected to sell products directly to multiple off takers. The regulatory stance is to ensure operators of wholesale infrastructure and/or refineries do not exercise undue market dominance. To ensure a level playing field, similar restrictions will apply to any other dominant private sector participant in the market.

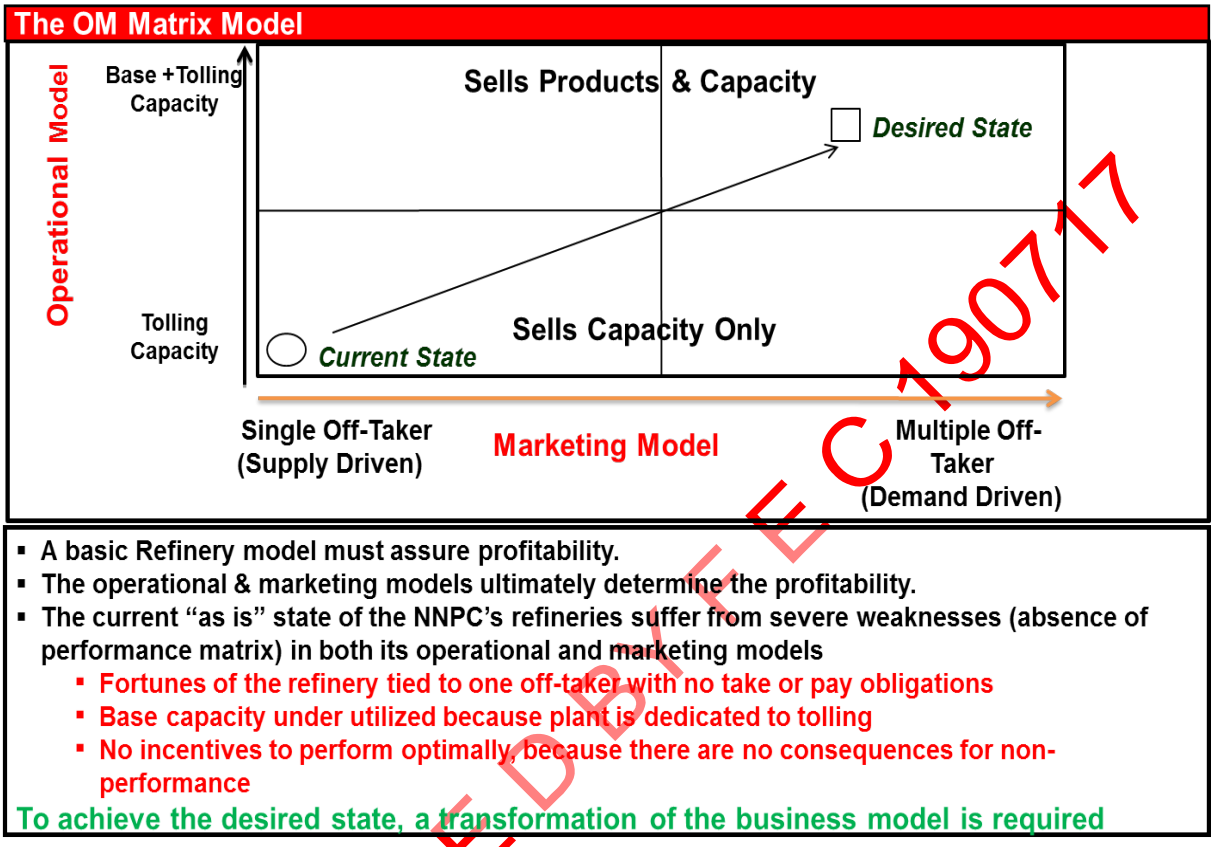
Therefore, refineries with ownership of their storage and loading arms are expected to sell directly to multiple off-takers and not only to NPMC.

Nigeria's refineries have been underperforming for many years. The refining sector has to undergo fundamental reform therefore so that refining can play its important and necessary part in economic development. Reasons for the underperformance over the years of the NNPC refineries (Port Harcourt, Warri and Kaduna) include the absence of (among other factors):

- Investment from NNPC;
- Regular or turnaround maintenance;
- Consistent power supply;
- Modern management practices;
- Commercial viability, producing losses rather value additions for NNPC;

- Payments, from consumers (PPMC) to refineries and refineries to NNPC;
- Crude oil supply, from vandalism and operational shutdowns of pipelines;
- Crude oil supply, from conscious NNPC decisions not to supply crude;
- Ease to export refined product from the refineries, with depots under PPMC;

Figure 31: Structural Model for Nigerian Refineries



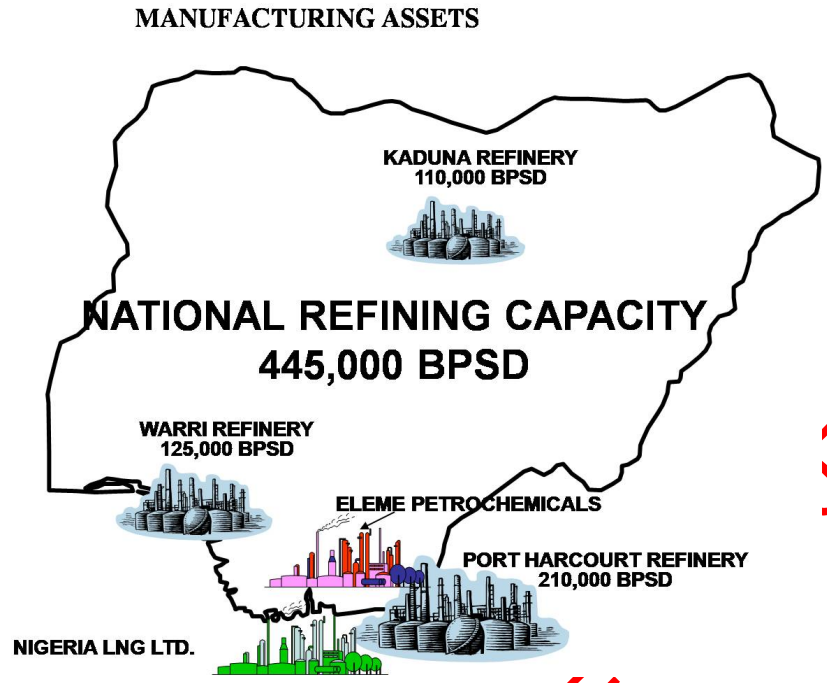
Source: MPR Petroleum Policy Team 2016

An evolutionary process could take the form of operating maintenance service agreements with third parties, product sharing agreements (with trading outfits willing to invest a capital for refinery upgrade, co-location, etc.) and sale of equity.

Nevertheless, under the Petroleum Policy, a strong refining sector is sine qua non for the future of Nigeria, and steps will be taken to ensure successful, commercially viable high volume, high utilisation refineries in Nigeria.

This policy seeks to develop a strong refining sub – sector with significant private sector participation. Impediments to private sector participation in the sub- sector will be addressed to ensure a robust and competitive local refining industry that ensures local product availability, product export and, feedstock availability to related industries.

Figure 32: Nigeria's Midstream Refineries and Manufacturing Assets



Source: MPR Petroleum Policy Team 2017

Steps that the government will take to encourage the development of a viable refining sector in Nigeria include:

8.4.3. NNPC Refineries become Autonomous Profit Centres

Under the restructuring of NNPC (as already described further above), the NNPC refineries will be set up as autonomous, independent, profit centres with responsibility for their own commercial operations.

8.4.4. Return Storage Depot Assets to the Refineries

The storage depots were originally part of the refineries but had been subsequently transferred from the refineries to PPMC (now NPMC). This arrangement is not considered to have been successful. NPMC has failed to manage the depots effectively and the refineries have been denied an important part of their assets. The storage depots will therefore be returned to the refineries. In addition, the perimeter fence around the refineries will be set sufficiently far from the operations including depots to ensure that proper security can be maintained. Everything inside the perimeter fence will belong to the refinery solely and will be on each refinery's asset register.

8.4.5. Tolling Structure and Merchant Status

As part of their new independence, each of the refineries will be given commercial autonomy. This means that they will be free to take crude oil from wherever and whoever they can. They are not constrained to take NOCN deliveries only.

Each refinery may, on the other hand, decide to conclude a close relationship with a single crude oil producer (other from NOCN) who may like their crude refined, perhaps

to take those refined products into the Nigerian market. It should be commercially interesting for an IOC who has downstream operations in Nigeria, to have their own crude refined and sold in Nigeria, rather than exporting crude across the Atlantic and the refined product to be shipped back.

8.4.6. Non-Performing Government – owned Refineries will be Divested

The aim is to make the NNPC refineries successful, high volume, commercially viable enterprises. They will be encouraged to become so and will be supported as much as it is within the government's ability to do so. Each refinery will be given a transition period in which to set themselves up on their own feet.

Ultimately though, if a refinery fails to make the transition and to become commercially viable, the Petroleum Policy is for the government to divest (sell off), grant a concession or if necessary, close down any non-performing government – owned refinery. In either instance, the site may be handed over to a suitably qualified private sector developer to build a new refinery facility on the same site.

Of the three NNPC refineries (Port Harcourt, Warri and Kaduna), Port Harcourt is expected to be the best placed to succeed. It has installed its own independent gas fired power supply, it has undertaken its own turnaround maintenance, it is close to jetties and the pipeline length from crude oil suppliers is short (less of a pipeline security risk), it is operationally ready to produce refined products to international standards, although the cost structure is still not right. Of the three Kaduna is perhaps the least ready currently because of its distance from crude oil supplies and reliance on a poorly maintained crude oil pipeline.

8.4.7. Strategic Partnerships and Concessions

Different approaches for bringing international private sector finance, technical and commercial expertise into the NNPC refineries will be considered. These can include strategic partnerships (working closely with a suitable international partner over many years in return for a strategic shareholding), concessions or other ways of introducing long term international private sector involvement.

An idea for consideration is the co-location of new refineries, developed by strategic partners, within the precincts of the existing refineries (an asset sharing venture).

8.4.8. Private Refineries will be Encouraged

The government will also encourage the construction of private sector refineries. Under the market-based nature of the Petroleum Policy, NNPC refineries will have to compete in an open market along with any other entrant, competing with international refineries for light crude and with any new private refineries in Nigeria which the government will encourage to develop.

8.5. Jetties

As already described, the refined product import terminals are considered potential areas of risk for the nation. Two main areas of risk have been identified:

1. Physical disruption at either Apapa or Calabar, blocking entry of product;
2. Commercial arrangements at the terminal management, leading to less than optimal flows of product and/or pricing.

An investigation will be carried out into these two areas of risk, to identify the level of risk and recommended mitigations. The fact that such a critical part of the national infrastructure is vested in the hands of a small number of players at just two terminals raises concerns about possible monopoly or oligopoly behaviour. This concern justifies the need for economic regulation of jetties in a deregulated environment.

The government will also investigate the opportunities for increases in jetty capacity and the construction of new jetties, so as to diversify and hence reduce the risk.

8.6. Proposed Commercial Framework for Midstream Oil

The lack of a commercial framework for midstream oil assets has bedevilled the sector and has rendered investment not possible.

What passed as the previous tariff template has various dysfunctionalities:

- It is unclear and non-transparent, accounting only for transportation by trucks and not by other means, such as rail, inland waterways, pipelines etc., so it is not comprehensive;
- The tariff does not account for on-going and future capital investment required to keep the network functional;
- The tariff system does not provide for losses related to sabotage and insecurity, thus making investors wary of any involvement in midstream infrastructure;
- Years of the subsidy regime in Nigeria for petroleum products has contributed to limited private sector involvement and consequently government has come to assume all the business risks associated with private sector participation of the limited few private sector participants.

The commercial philosophy for the midstream for petroleum is the same as that for the midstream gas sector. The commercial philosophy is based on:

- Separation of the activities of whole oil supply and operation of midstream facilities (gathering pipelines, onshore crude pipelines, product pipelines and storage);
- Regulated pricing for monopoly midstream facility operations based on a methodology of international standard or benchmark costs.

A midstream tariff methodology has been developed under the Petroleum Policy and will be implemented.

9. DOWNSTREAM – INFRASTRUCTURE AND MARKETS

9.1. Industrialising the Full Value Chain

The vision of the Petroleum Policy discussed above (section 4.1 Vision), is of creating additional value for Nigeria through refining of oil and then further processing into significant end products for industry, such as complex petrochemicals and plastics.

9.2. Commercialisation and Liberalisation of Downstream

The Petroleum Policy is pursuing a policy of a market driven oil and gas industry, driven by commercial arrangements and an equal playing field between private sector and public sector operators.

This will lead to a much more commercially operated and a liberalised downstream petroleum products sector in Nigeria.

Bold reforms are necessary to allow private sector entry into the downstream sector. Key reforms will be introduced covering:

- Downstream capacity enhancements and safe operations;
- Building up strategic product reserves;
- Improved sector logistics;
- Private sector investment in sector infrastructure;
- Permanently removing all petroleum product subsidies;
- Unbundling and fundamental restructuring of NPMC.

9.3. Review of Role of NPMC

Nigeria Petroleum Marketing Company (NPMC, formerly Petroleum Products Marketing Company or PPMC), is the division of NNPC which acts as its wholesale marketing arm within Nigeria. It owns and operates the 21 storage depots, including those depots formerly attached to the refineries, plus the nine LPG storage depots. NPMC receives petroleum products from the NNPC refineries and provides storage for importers. NPMC sells petroleum products to marketers in bulk.

The refineries have trouble in collecting all payments from NPMC for product deliveries, and in turn have problems in paying their NNPC JV crude oil suppliers.

The effectiveness of NPMC in carrying out its role of marketing petroleum products and effectively developing a modern and commercial petroleum products business in Nigeria will be reviewed such that it does not abuse its dominant market power.

> ***The effectiveness of NPMC in growing a commercial and well run petroleum products marketing and retail sector in Nigeria will be reviewed.***

9.4. Petroleum Products Pricing Policy

9.4.1. Regulated and Unregulated Markets

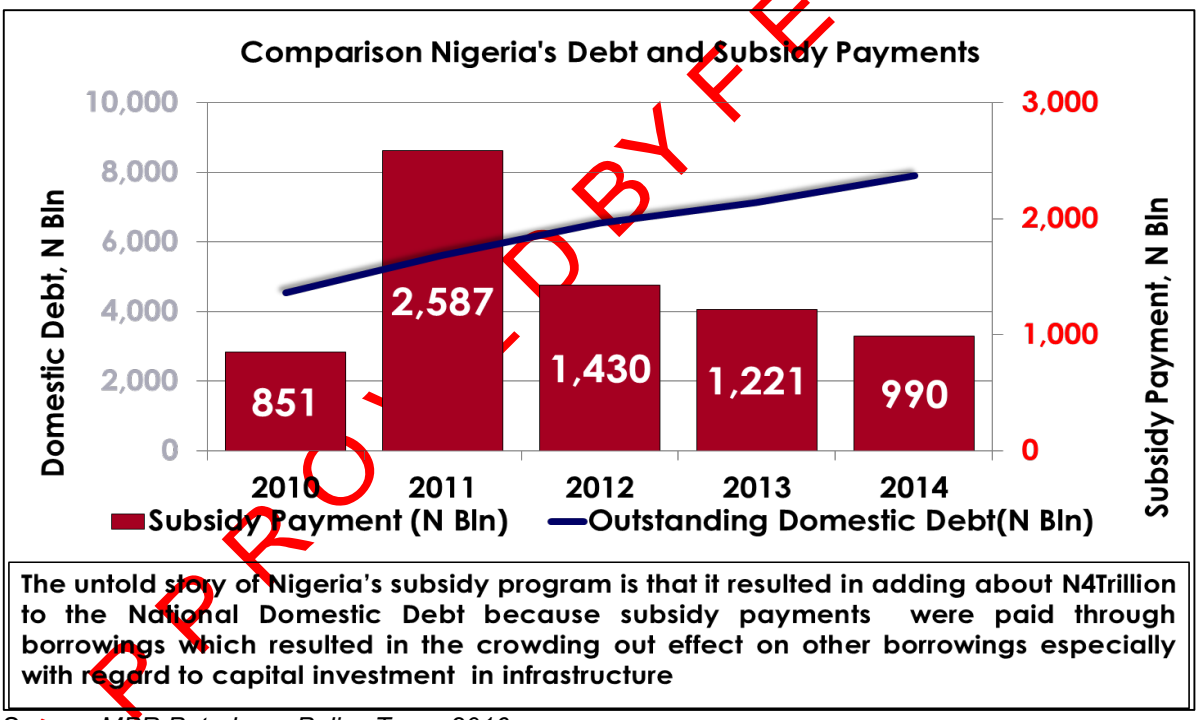
The philosophy is to move towards unregulated markets in Nigeria as much as possible. Regulation will be required nevertheless for:

- Some limited pricing regulation (as discussed below);
- Health and safety;
- Product standards;
- Consumer protection.

9.4.2. Removal of Subsidies

Petroleum product subsidies caused considerable social and economic harm to Nigeria, the economy and the people. Subsidies led to product shortages, black markets, withdrawing of product from the market, abuse by political interests and strong operators, opaque practices and a drain on the national budget.

Figure 33: Comparison of Nigerian National Debt and Subsidy Payments



Source: MPR Petroleum Policy Team 2016

Subsidies have now been removed from nearly all petroleum products. Any remaining petroleum subsidies will be removed.

It is the policy of the government that petroleum product subsidies caused immense social and economic harm to the nation and the people. The government does not intend to reintroduce any subsidies. Any support to the poor will be made directly rather than through distortions to economic pricing. A transitional arrangement to a fully price – deregulated product market will be developed and implemented.

9.4.3. Open Market Pricing and Publication of Prices

The Petroleum Policy objective is that petroleum product pricing will be market-led and not regulated.

End user prices should be unregulated and regulation should only be used for those monopoly parts of the infrastructure (such as pipelines). There are two important provisions to this general regulation philosophy, which leads to some limited retail price regulation.

Non-Discriminatory Regulatory Stance: Consistent with the new policy, prices remain unregulated except in tariffing of the monopoly parts of infrastructure. Non-discriminatory regulatory stance is to focus on incentivising supply which in turn will result in competitive pricing.

Price Publication and Monitoring: While prices are intended to be unregulated, computation of open market pricing should be made available to the general public. End user prices will be required to be published and prices will be monitored to avoid information asymmetry and arbitrage.

10. DEVELOPING NATIONAL HUMAN RESOURCES

10.1. Current Nigerian Background

10.1.1. Some Unique Features Affecting Nigerian Local Content

The need to develop Nigerian human resources and methods for doing so, are described in the following sections. Much of that discussion applies to any national local content development plan. Nigeria though has some unique features in the petroleum sector which have to be taken into account and considered when developing a local content strategy for the nation.

10.1.2. Local Content in a Depressed Economy

Nigeria is now in the depths of a major recession, and early recovery might be a challenge.

It is more difficult to develop Nigerian local content in a low oil price environment where contractors are cutting jobs. Developing human resources in an environment of cutting human resources is not easy.

Another issue which is more fundamental, and which has more impact in this current era of cost cutting, there is evidence that Nigerian contractors make projects more expensive. Were it not for legislation, project developers would rather import foreign workers and contractors, at a lower net cost to their operations.

A policy approach is to encourage indigenous participation at competitive prices consistent with the law.

10.1.3. Nigeria must be able to Export Skills

A further objective for the development of Nigerian skills is that Nigerian should be at a level that they are in demand around the world.

In many cases of course they already are. Nigerians are to be found in leading positions throughout the world, including in leading position in oil and gas companies worldwide. The issue is that the most successful almost entirely spent most of their training years outside Nigeria, they did not acquire most of their expertise within Nigeria. The human resources part of the Petroleum Policy intends to improve this.

10.2. Developing Local Content

Building Nigerian human resources, so that Nigerians can take a full role in managing our own resources, is a key objective of the Nigerian petroleum policy.

There are a number of aspects to this:

1. Enforcement of the Local Content Act while enhancing cost efficiency;
2. Building competence across the petroleum industry;

3. Institutional capacity building, especially in areas of smart regulation, economics of regulation and strategic policy development;
4. Instilling a national maintenance and safety culture.

10.3. Implementing Local Content Policy

10.3.1. Summary of Provisions of the Local Content Act

The Nigerian Oil and Gas Industry Content Development Act 2010 (Local Content Act, LCA) was enacted to ensure better development of Nigerian skills and content. The main concern was how to increase the participation of Nigerians in the petroleum industry, which has been characterised by large numbers of experts brought into the country, at executive and even technical levels. The main provisions of the Act are:

1. First consideration given to Nigerian companies in bids;
2. Nigerian Content Development and Monitoring Board (NCDMB) is established;
3. NCDMB sets up a Nigerian Content Consultative Forum (NCCF);
4. Operators must prepare Nigerian Content Plans with regular compliance reports;
5. Detailed minimum Nigerian content provisions are laid out;
6. NCDMB operates an online system for registration, verification of contractors, database of national skills development and a Joint Qualification System.

The Local Content Act is an important step forward in genuinely improving Nigerian content in the gas industry. NCDMB has been set up to manage this and can match its database of Nigerian content with operators' plans for skills needs and training.

10.3.2. Route to Implementation

Sometimes JV partners state that they cannot comply with some provisions of the Local Content Act because the skills they seek are simply not available within the country. The most effective way to deal with this and to ensure compliance with the Act is to take steps to make those skills indeed available within the country.

The Human Resources part of the petroleum policy therefore revolves around developing local content in petroleum sector and making that available within Nigeria. The petroleum policy will focus on developing competent workers, possibly through apprenticeships.

10.4. Building Industry Competency

10.4.1. Competent Worker

There are two main ways in which skill can be acquired:

1. **Formal training:** whether long term or short term, normally classroom based teaching;

2. **Supervised experience:** this is practical experience in the workplace where training can be put into practice, and which is certified by a competent supervisor.

A **competent worker** is one who is:

1. Fully and **formally trained**; and

2. **Qualified** following examination with certification from a reputable accredited training institute; and

3. **Experienced** with certified numbers (hours) of supervised experience in each of the different areas of his trade or profession; and

4. **Regularly updated** with new developments and techniques in his trade or profession and where necessary with refresher courses (this is Continuous Professional Development, CPD);

Competency training has become an important part of professional training in many countries, and is central to much of training thinking and provision. A competency framework is a system of supervised and monitored relevant practical on the job training and also mentoring.

Nigeria needs a competency framework for the gas industry in Nigeria, operated nationally and in collaboration with international or national bodies who are expert in competency frameworks and their accreditation for the gas industry.

The traditional way of developing competency is through apprenticeships.

10.4.2. Skills Development

There are four main areas for skills development:

1. **Leadership:** this covers the strategic management and leadership skills required for senior management and executive positions;

2. **Management:** this is general management training for middle and senior management and covers the whole range of skills needed to be an effective manager;

3. **Engineering:** this is graduate level engineering, for University graduates, whether from Nigerian or international Universities;

4. **Technical:** this is technician level competency, suitable for those with practical skills, for school leavers or those with some college education. Technical skills include for example wiring or installations, pipe fitting or welding;

10.4.3. International Education

Obtaining good quality qualifications are the first part of the competency framework. The PTDF funds a number of schemes to provide Nigerians with good quality qualifications, including sending Nigerian graduates for University graduate and post-graduate training abroad. Under the gas policy this will continue.

10.4.4. National Education

Nigerian Universities and Colleges need to be encouraged to develop their abilities to produce good quality graduates. No matter how good a Nigerian University may become, employers are likely to prefer qualifications from good quality international Universities (especially UK or USA, but also other parts of Western Europe, Australia or New Zealand).

Nevertheless, Nigerian Universities need to improve such that they can be competitive with the best international Universities for producing Nigerian graduates. One way this could be done (for example) is for a Nigerian University to run programmes in collaboration with an international University, even for the international University to award their own degrees with the education delivered through the partner University in Nigeria. This is a model which is being increasingly used in other parts of the world, and will be considered by the Government.

10.4.5. Technical & Vocational and Educational & Training TVET

Technical & Vocational and Educational & Training (TVET) is training and education for post 16 school leavers. It is for those not going on to University who are seeking a technical education. This includes **apprenticeships**.

While Nigeria has had a good record for TVET historically, with technical skills accredited by the City & Guilds of the UK. Since approximately the 1980s though, technical training has lapsed significantly. There is now a large gap in the level of technical skills provision in the country, such that IOCs complain that they cannot even find petroleum welders (for example) and have to bring them in on ex-patriate packages from abroad (the costs of which are charged to the JV).

The Petroleum Policy recognises the need for technical training, and one of the objectives of the Petroleum Policy is to improve the level of technical training within Nigeria.

10.4.6. Supervised Experience

As already mentioned, qualified graduates or technically skilled personnel is not enough. They also need to gain supervised practical experience before they can be called competent. International accreditation bodies have approached the development of competences in several main ways:

1. International accreditation institutes (such as for example, City and Guilds or the Gas Industry Apprenticeship Framework, both in the UK) accredit training organisations who provide an approved course;

2. Alternatively, international accreditation institutes (the Institute of Engineering and Technology for example) do not accredit training, and instead they accredit organisations (companies) to provide a competency based approach to enable engineers to attain supervised practical experience that enables them to attain a Chartered Engineer status;

3. In some cases, an international accreditation institute could approve existing courses.

In order for competency development to work, there needs to be a large and dedicated group of experienced supervisors who can supervise and accredit the practical work experience of the students. These are people who are recognised internationally as competent who are working in the industry. Nigeria will need to ensure that there are sufficient numbers of competent workers in the industry who can act as supervisors for trainees or apprentices. In other words, a "*train the trainers*" programme will need to be set up to develop accredited work experience.

It is feasible and essential to set up a competency development framework for the Nigerian petroleum industry. It is recognised though that currently there are not enough already accredited experts to support a competency framework.

10.4.7. Industry Expected to Develop Competency Schemes

While the Nigerian government will do what it can to build the competency building approach in Nigeria, the petroleum industry is expected to and will be encouraged to develop petroleum industry appropriate competency schemes. This may be together with public sector agencies.

The government will look to the private sector petroleum industry to develop competent worker schemes.

This may (will probably) take the form of apprenticeships. The project-based training of the Nigeria Content Development & Monitoring Board (NCDMB) also provides a good model that could be expanded across the industry. Because of their international experience and expertise in this, the international oil and gas companies are expected to be proactive in developing industry wide schemes.

The government needs to make it clear to the industry what is expected from the industry participants, particularly the international companies. The industry for their part are expected to put in place schemes to ensure that competent workers are produced and made available to work on projects in Nigeria.

Initially competent worker schemes will be voluntary and not mandated by government. If, however, insufficient progress is being seen to be achieved, the government will introduce mandatory measures to ensure the petroleum industry installs competency or apprenticeship schemes.

10.5. Introducing a Maintenance and a Safety Culture

Among the most important milestones for the sustainable development of the petroleum sector is to install the highest international best practice standards of maintenance, health and safety. Recent progress in the privatised power industry show the improvements that can be made in a short time when new management techniques are introduced.

> ***The petroleum policy will insist on the best international maintenance and safety practices being introduced and applied throughout the industry.***
>
> ***The petroleum policy intends to bring about legislation that will make Directors liable to criminal prosecution if they or their company employees knowingly allowed severe safety lapses that lead to serious damage, injury or death to premises, people or the environment***.

10.6. Institutional Capacity Building

10.6.1. Policy Team

Whilst clear legislation is required to move the industry forward, it is recognised that legislation alone will not work. A competent policy and regulatory team, knowledgeable across engineering, finance, law, and related disciplines etc. is also essential for the implementation of the policy and the law.

> ***As well as building expertise in the national petroleum industry, expertise also needs to be built in the public sector, in regulatory agencies and in the Ministry of Petroleum Resources. The government is aware of the need to build institutional and human capacity and intends to work with industry, educational partners and international development partners to achieve this objective.***

10.6.2. Proposed Strategies and Action Plan for the MPR

As the Ministry responsible for the management of Nigeria's petroleum resources, the MPR has a huge role to play within Nigeria's economy. A core part of its mandate includes the ability to undertake research and surveillance of energy markets, the policies of major industrialised and developing economies, and to forecast scenarios possibilities for the consideration of the government.

There is an urgent need to rebuild the functional and institutional capacity of the MPR in order that it may achieve its duties. Technical capabilities need to be significantly upgraded such that the MPR becomes professionalised as a technical Ministry with a bench of specialists as its core staff. The vision ultimately is for the MPR to emerge as a centre of excellence with demonstrable skill sets to develop policy on matters within its remit.

The support of development partners can be called on to assist in the capacity building programme for the Ministry.

11. COMMUNICATIONS

11.1. Introduction

Communications are important parts of any policy. There are two fundamental purposes for communication of the petroleum policy to all stakeholders in Nigeria and abroad:

1. Explaining the policy;
2. Changing attitudes.

The Nigerian people, industry, international investors, even members of the government itself, have become to a certain extent sceptical or cynical about reforms in the energy sector. On numerous occasions there have been pronouncements from various parts of government announcing an end to power shortages or fuel crises, but with no apparent change.

There also exists a gulf and lack of understanding between investors and government of their respective expectations and obligations.

> ***A communications strategy will be developed as part of the Nigerian petroleum policy to explain to all stakeholders the purpose of the petroleum policy, and the thinking and analysis behind it.***

Audiences need to understand that the petroleum policy is not a promise of when the lights will stay on. Instead it is to show that the Nigerian government is clear on what it wants to achieve, the reasons why and the steps to achieve the policy objectives. The petroleum policy will be communicated as a process to arrive at a long-term vision for the nation.

The communications strategy will consist of two parts:

- Internal communications – audiences within government;
- External communications – other stakeholders involved with the gas industry.

11.2. Internal Communications

11.2.1. Ministry

Policies succeed or fail through the efforts of the civil servants and it is important that they are keen and active participants in the policy.

The first task therefore is to explain the policy and its implication to stakeholders within the Ministry of Petroleum Resources. As the government body directly responsible for implementing the gas policy, staff within the Ministry need to be:

- Aware of the direction of the policy and the key parts of the contents;
- Aware of what is required of them individually;
- Persuaded of the benefits and enthused so that they work on its implementation.

11.2.2. Other Government

The same applies to other parts of government, including parastatal organisations such as:

- NNPC and subsidiaries;
- Existing regulatory bodies such as PPPRA, DPR etc.;
- Other Ministries, Departments and agencies of Government such as the Ministries of Finance, Environment, Power, Budget and Planning, Niger Delta etc.

11.3. External Communications

11.3.1. Communication to Stakeholders

External communications will be needed to the other stakeholders in the Nigerian petroleum industry, covering:

- The general public, the Nigerian people;
- International investors;
- Domestic investors;
- Civil society;
- Donor community;
- Other stakeholders.

External communications to the general public and other stakeholders will take the form largely of media presentations and interviews, seminars, workshops, newsfeeds, websites, mass media and the like.

11.3.2. Industry Involvement and Consultations

The petroleum industry in Nigeria has been involved in the development of the petroleum policy, through their participation in industry for and seminars, such as the Nigerian Chapter of the Society of Petroleum Engineers, the OPTS and the Petroleum Club.

This petroleum policy therefore, while driven by and led by the government, is a joint production from the government and the petroleum industry community in Nigeria, with domestic and international industry involvement.

12. ROADMAP AND ACTION PLAN

12.1. Summary of Philosophy and Key Actions

The philosophy of the action plan for the Petroleum Policy is for the government to put the legislative and commercial framework in place and then let the market develop by itself.

The government will set targets for market development, monitor progress and take appropriate actions to ensure market development takes place. However, achieving the national objectives for petroleum sector development in Nigeria is ultimately down to the private sector to deliver.

A roadmap and action plan for delivering the petroleum policy is set out with different scales for the types of activity:

- Short term: Months, up to one year;
- Medium term: One to two years;
- Long term: Over two years.

The roadmap presented below sets out how the petroleum policy will be implemented, according to the timescales and considering the activities and the parties involved.

12.2. Critical Policy Milestones

There are some critical milestones within the petroleum policy that must be achieved for the policy to be effective:

- Stakeholder consultations;
- Approval of the petroleum policy;
- Enactment of legislation;
- Establishment of the new single petroleum regulator;
- NNPC restructuring;
- Turnaround in the refining sector;
- Substantial progress towards industry wide restructuring.

12.3. Short-Term Activities (Months)

Timescale: Months (up to one year)
Scope: Institutional

The short-term activities are those that can commence very soon and can reasonably be expected to be completed within a matter of months and within a year.

Those short-term activities which the Ministry of Petroleum Resources can start immediately are those within its direct control, namely institutional activities within the Ministry of Petroleum Resources and NNPC.

Table 12: Roadmap, Short Term (Months), Institutional

Implementation Strategy	Activities	Parties Involved
Upstream		
Petroleum policy approval	• Ministry consultation • Wider government, industry and other stakeholder consultation • Cabinet and Presidential approval • Gazetting the agreed and approved policy	• MPR
Communications strategy	• Internal communications • External communications	• MPR
Legislation	• Conclude ongoing preparation of the executive bills on Petroleum Industry Reforms (Petroleum Industry Reform Bill and the Petroleum (Fiscal Reform) Bill) • Establish single regulatory commission	• MPR • Petroleum regulator
PSC Negotiations	• Ensure NNPC continue to negotiate with contractors on PSC issues • Production Sharing Agreement and JOA renegotiations	• MPR • NNPC
Funding	• Exit JV cash calls • Resolution of Joint Venture funding issues • Develop 2017 funding requirements for operations aimed at increasing increase production (to ~500,000 bpd by 2020) • New policy direction for upstream JV funding • Negotiations of new funding options	• MPR • NNPC

Fiscal policy	• Fiscal principles / framework • Fiscal rules • Policy re petroleum products & LPG	• MPR
Cost control	• Inter-agency committee for cost sharing model for upstream	• MPR
Studies	• Onshore production growth strategy • Review of production mix for government revenue maximisation • Develop a detailed deep-water development strategy for Nigeria • Develop and implement plan to sustain product availability across Nigeria • Develop policy for downstream data aggregation	• MPR • NNPC
Institutional restructuring	• Restructuring within MPR • Begin NNPC restructuring • Institutional capacity building and training in MPR and sector regulator	• MPR • NNPC

12.4. Medium Term Activities (One to Two Years)

Timescale: One to two years
Scope: Regulatory and Institutional

Medium term activities are those which are largely (but not completely) within the control of the Ministry but which will take a little longer to complete.

These are mainly those activities in the legislative and regulatory areas, which set the framework for the industry and market to grow.

Table 13: Roadmap, Medium Term (One to Two Years), Regulatory

Implementation Strategy	Activities	Parties Involved
Petroleum policy approval	• Policy framework for domestic crude utilisation and optimisation	• MPR
Legislation	• Sustain dialogue with all stakeholders in finalising the Petroleum Industry Reform Bill and the Petroleum (Fiscal Reform) Bill • Work closely with National Assembly leadership for quick passage • Articulate the transitional arrangements needed to ensure smooth take off of the bill	• MPR • Senate & House of Representatives
Regulation	• Draft new regulations consistent with the PIRB • Complete establishment of petroleum regulator • Develop petroleum regulations • Develop technical codes and standards • Cost benchmarking for facilities • Tariff modelling • Pricing regulations • Market and price monitoring system • Standardisation of offshore / deep-water operations framework • Develop framework for concessions of midstream assets with new relations to curb monopolies and abuse of market power	• MPR • Petroleum regulator • Industry technical committees
Upstream	• Launch new licensing round and timely lease renewal	• MPR

Midstream – Refineries	• Complete all projects and rehabilitation works in the refineries • Refineries: Collocate/relocate Brownfield Refineries within existing refineries with increase in capacity by 250,000 bpd in addition to 445,000 bpd • Refineries: Complete tendering process for collocated refineries in WRPC and PHRC and seek for selective bidding for KRPC Co-Location • Refineries: Complete rehabilitation of the existing refineries to raise present capacity to at least 90% capacity utilisation • Refineries: Resuscitation and implementation of the Green Field Refineries initiatives through PPP arrangements	• MPR • Refinery companies
Downstream	• Eliminate fraudulent activities associated with products supply and distribution	• MPR • NPMC • Regulatory body
Fiscal	• Review of fiscal terms – PSCs • Enforcing fiscal rules of general application – anti-monopoly policies, competitive bidding and deregulation and liberalisation • Develop incentives for utilisation of entire oil value chain	• MPR • NNPC • PSC holders
Cost control	• Implementation of industry wide cost sharing models	• MPR • NNPC • Industry
Infrastructure	• Address security challenges to oil production and critical infrastructure	• MPR • Industry
Local Content	• Nigerian content development – highly skilled labour, contracts and in country capability development	• MPR • NCDMB
Institutional restructuring	• Develop organisational structure and staffing plans for new and old institutions • Continue restructuring within MPR • Continue NNPC restructuring • Institutional capacity building in MPR and sector regulator	• MPR • NNPC • Petroleum regulator

12.5. Long Term Activities (Over Two Years)

Timescale: Over two years
Scope: Industry

After two years, the legislative, regulatory, institutional and commercial framework will be in place. The industry will then need to step up and implement the policy in terms of infrastructure projects and growing the Nigerian domestic and export market.

Table 14: Roadmap, Long Term (Over Two Years), Industry

Strategic Role	Activities	Parties Involved
Communications strategy	• Identifying potential strategic partners	• MPR
Upstream	• Acreage management – lease renewal • Environmental protection and clean up impacted areas • Frontier exploration – private sector driven and incentives • Design long-term surveillance and repair program to ensure subsea piping integrity is maintained • Growth of new production sources: independent, marginal fields • Build up on NPDC current base of 9 operated assets (5 owned, 4 JVs) and interests in 9 Deepwater blocks	• MPR • NNPC • Industry • Investors
Midstream	• Pipelines & Storage Facilities: enable rehabilitation, upgrade, maintenance and security of NNPC jetties, storage facilities, LPG plants and pipeline infrastructure • Develop infrastructure to support deregulation of the Downstream Sector	• MPR • NNPC • Industry • Investors
Downstream	• Sustain and increase Petroleum Products Supply • Maintain and manage refinery assets to produce highest value petroleum products • Stop 60% of refined products importation by Dec 2018 • Start exporting petroleum products by 2019 • Develop alternative source(s) of supply of crude to refineries	• MPR • Petroleum regulator • Gas Industry and investors

Funding	• To secure independent funding sources for government equity interests	• MPR
Fiscal	• Incentivise diversification from oil to gas and from crude to processed products	
Institutional	• Institutional capacity building and training	• MPR • Petroleum regulator • NNPC