



A Guide to the Nigerian Power Sector



KPMG in Nigeria
September 2016

Note

This guide provides a general overview of the Nigerian Power Sector and sets out the legal and regulatory framework applicable to the sector. It is also designed to provide information on the regulatory agencies and key institutions in the sector, broad practical guidance on the relevant legislation, fiscal provisions and applicable tax incentives, and some current industry issues prevailing as at date of publication.

It is not intended, however, to provide answers to particular issues and should not be regarded as a substitute for professional advice.

Further professional advice on specific matters may be obtained from the KPMG contacts provided in this guide.

KPMG Nigeria

September 2016



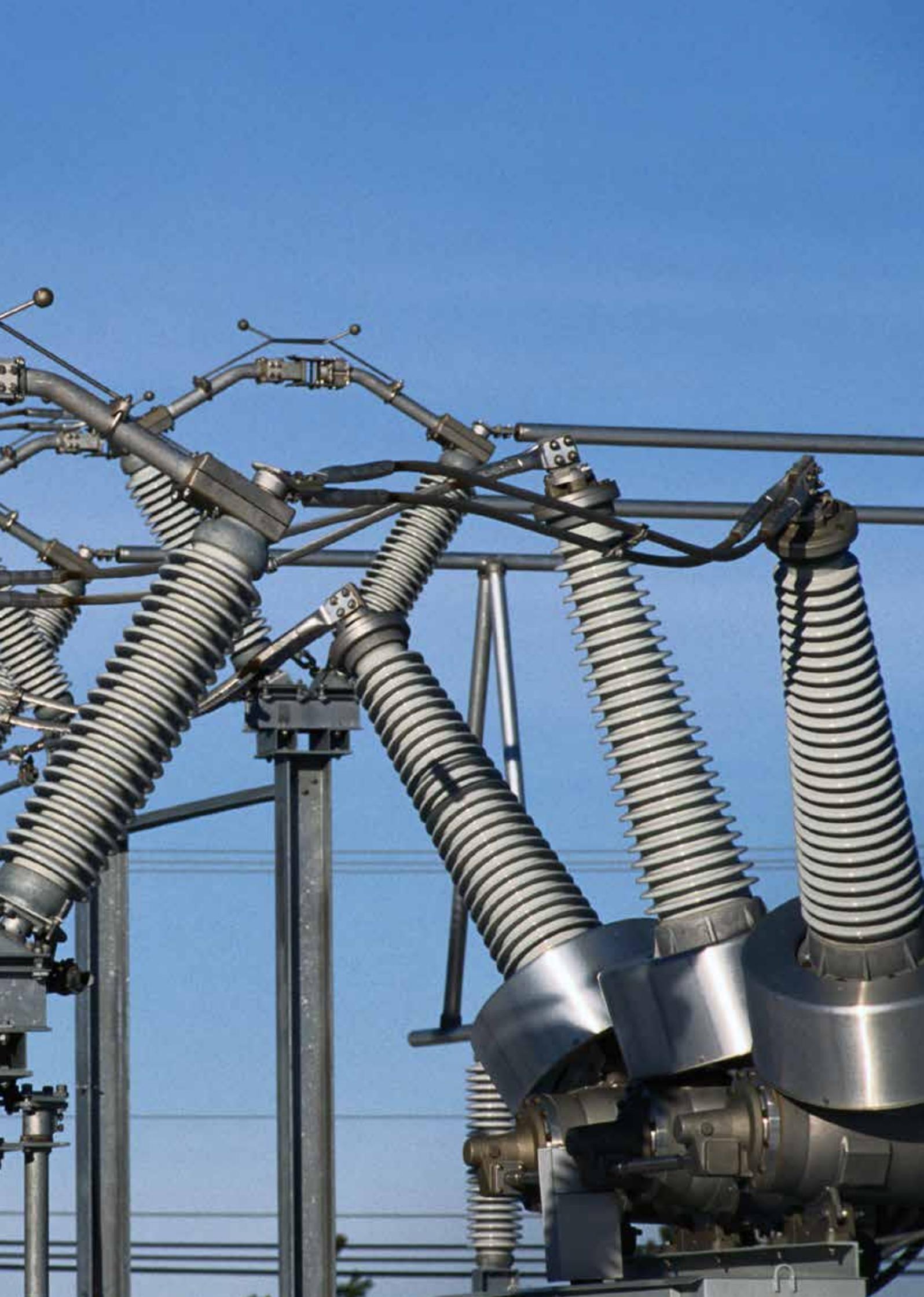




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Overview of Nigeria

1.1 Country Profile & Analysis

Nigeria is a coastal West African country, spread across 923,768 km square¹ and bordered by the Atlantic Ocean to the South, the Republic of Benin in the West, Republic of Niger in the North, Chad Republic in the North East and the Republic of Cameroon in the East. The country is made up of thirty-six states and a Federal Capital Territory, Abuja. The states are grouped into six geo-political zones namely; North East, North West, North Central, South East, South South, and South West.



A map of Nigeria showing the 36 states and the 6-geo political zones

1.1.1 Political Environment

Nigeria regained democratic rule from the military in 1999. Since then, the country has conducted several

elections with the first successful transfer of power from one civilian government to another in 2007.

Nigeria runs a multi-party system with the All Progressive Congress being the leading party having won the March 2015 Presidential elections. The emerging political dynamics in Nigeria has been driven largely by the outcome of the national and state-level elections

It is the objective of the new government to be pro-business, support investments, implement reforms in order to revamp and strengthen institutions and continue the privatization of key sub-sectors of the economy including financial services, oil and gas, power, manufacturing and telecommunications.

The announcement of the ministerial team in September and subsequent inauguration of the Federal Executive Council will be a key step in defining the economic policies that will drive the country. Drivers such reforms progress and industry consolidation are expected to open up additional opportunities in sectors such as Power, Oil & Gas, Fast Moving Consumer Goods (FMCG) and Agriculture.

1.1.2 Socio-Cultural Environment

Nigeria is a nation with a diverse collection of socio-cultural groups resulting in a dynamic mix of people and traditions in various parts of the country. The country is estimated to have 250 ethnic groups, the largest ones being the Hausa-Fulani, Yoruba, Igbo, Edo, Tiv, Nupe, Ibibio, Urhobo, and Efik.

It is estimated that about 500 indigenous languages are spoken throughout the country. The Hausa-Fulani inhabit the northern part of the country while the

¹ World Bank Country Profile 2015



Yoruba and the Igbo can be found in the South-Western and South-Eastern parts of the country respectively².

The key Socio-cultural indicators of Nigeria are discussed in the following subsections

1.1.3 Population and Demographics

The current total population of Nigeria is reported as 177.5 million², this is an increase of 24% over the 143 million population recorded in the previous census conducted in 2006. The sex ratio (male/female) of 1.04:1 indicates that there are 90.4 million males and 87 million females respectively.

A large part of the population is from Northern Nigeria which accounts for 53.6% of the population, while about 46.4% of the population are from the Southern part of the country. Nigeria's average population growth was estimated at 2.7% in 2015. This is driven by estimates of an average of 37.64 births per 1,000 people compared to 12.9 deaths per 1,000 people²

However, the state and pace of growth in social infrastructure (health, education, employment, etc.) has not been able to match the population size and growth, leaving the country under developed within the context of human development. Nigeria was ranked joint 152nd out of the 187 countries in the United Nations Development Programme's Human Development Index

The table below summarises Nigeria's key demographic indices:

Socio-Cultural Indices	
Population (in millions) 2014	177.5
Population Growth rate (%) 2015	2.7
Life Expectency (years)	52
Unemployment	24
Literacy rate	59.6
HIV/AIDS Prevalence (% , Ages 15 – 49 of total population)	3
Population below poverty line (%)	46.0
GNI Per Capita PPP (US\$)	5,710
Human Development Index (position out of 187) – 2014	152
Corruption Index (position out of 175) – 2014	136

Source: World Bank Nigeria Country Profile 2013; UNDP Human Development Report 2014; Business Monitor international; CIA World Fact Book; Transparency International

1.1.3.1 Age Distribution

Nigeria has a relatively young population. As at 2014, 43% was estimated to be less than 15 years of age with only 3% above the age of 65 years³.

The median age for the population is estimated at about 18.2 years. The following table presents the 2014 estimated age distribution of the population.

² The World Fact book; www.cia.gov

³ The CIA World Factbook

Table: Age Profile (percentage of population)

Age Distribution (%)	
0-14 years	43.01
15-24 years	19.38
25-54 years	30.56
55-64 years	3.94
63 years & above	3.11

Source: CIA World Factbook

1.1.3.2 Per Capita Income

After the recent GDP Rebasing, Nigeria is the largest economy in Africa, but it remains a relatively poor country on per capita basis, with a GDP per capita of US\$3,203.3⁴ in 2014. However, there is an increasing trend in the per capita income of Nigeria, following the emergence of a middle class with a steadily growing income base, thus resulting in a GDP per capita growth from \$2,514 in 2011 to \$3,203.3 in 2014.

1.1.3.3 Income Distribution

Since independence, government policy has been directed towards production and wealth creation rather than the equitable distribution of wealth. It is estimated that 60.8% of the population live on less than US\$1.25 a day⁴. Although wealth is highly concentrated in Nigeria, the government has not implemented any comprehensive income redistribution policy.

1.1.4 Economic Environment

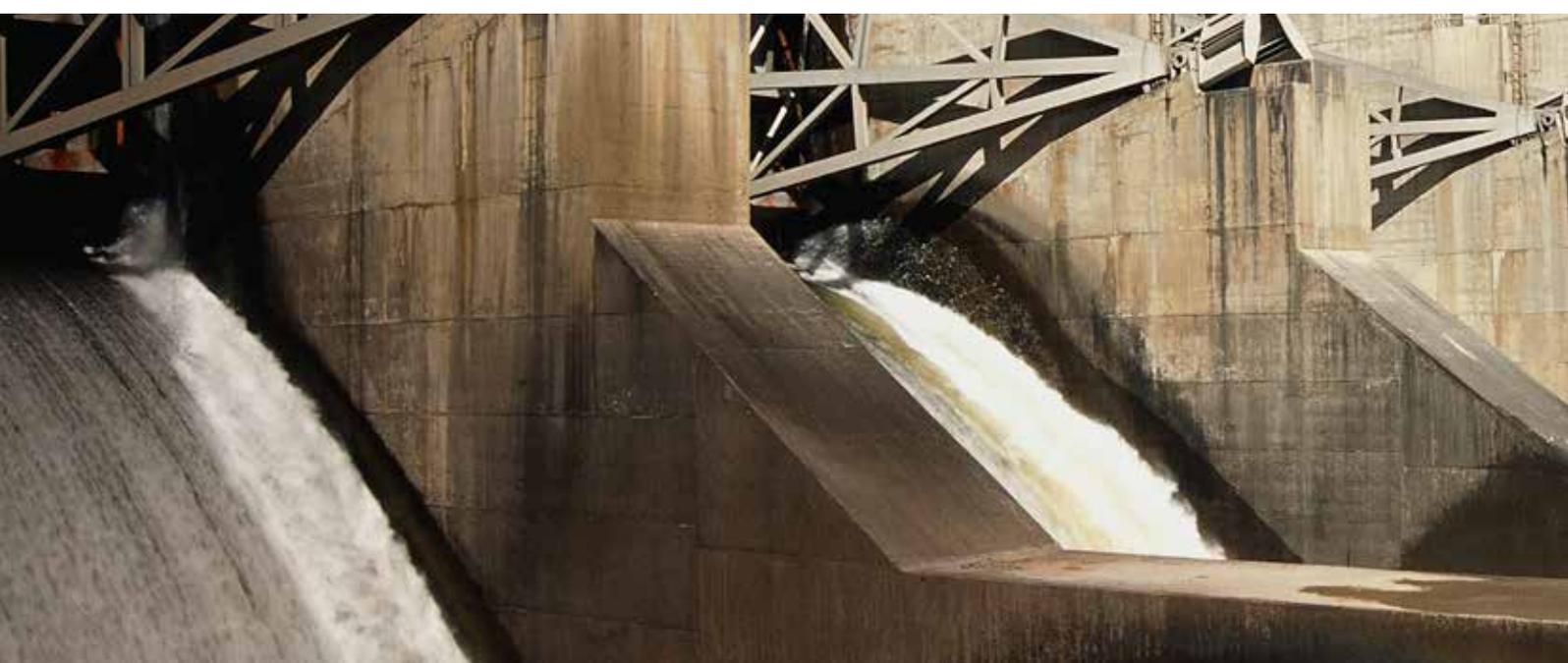
Nigeria is the largest oil producer and the most populous country in Sub-Saharan Africa. The result of the rebasing of its GDP in 2014 ranked it the largest economy in Sub-Saharan Africa and twenty-first (21st) globally. Nigeria is expected to emerge as one of the twenty (20) largest economies in the world by 2020.

The continued implementation of key economic reforms will further position Nigeria as a key player in the global economy in general and Sub-Saharan Africa in particular and also contribute to the positive outlook of the country. One of such economic reforms is the strengthening of public expenditure management through the Medium Term Expenditure Framework (MTEF) and the Medium Term Sector Strategies (MTSS) to ensure sectoral spending programs reflect government development priorities and remain within projected resources

The low global crude oil prices will lead to a sharp decline in fiscal revenues. However, the overall impact on non-oil sector GDP will be relatively muted. The sector is, thus, expected to remain the main driver of growth over the medium term. Also, in light of the recent macroeconomic challenges, the government has adopted an adjustment strategy that hinges on tightening government spending and shoring up non-oil revenues to compensate for dwindling oil revenues.

Overall outlook for the Nigerian economy is positive with sustained strong economic growth expected to continue. With a foreign reserve of about \$30bn, a strong banking sector, massive human and natural

⁴ IMF-World Economic Outlook Report-2014



resources, Nigeria has become one of the most attractive investment destinations in the world. This favourable outlook is based on the following:

- I. Continued implementation of key economic reforms that will further position Nigeria as a key player in sub-Saharan Africa
- II. Sectors such as financial services, manufacturing, power, agriculture, oil and gas are expected to continue to attract significant foreign investment as investors seek better returns in emerging markets.
- III. Increased investments in infrastructure (particularly power and rail infrastructure) which is expected to support growth and boost productivity.

1.1.4.1 Gross Domestic Product (GDP) Growth

Nigeria has the largest economy in Africa with an estimated nominal GDP of \$574 billion, surpassing South Africa's \$350 billion. The rebasing of Nigeria's GDP from 1999 to 2010 resulted in a 89% increase in the estimated size of the economy. Nigeria has maintained its impressive growth over the past decade with an estimated 6.3%⁴ growth in real gross domestic product (GDP) in 2014, up from 5.4% in 2013. This growth was largely driven by prudent macro-economic management following the implementation of favourable fiscal and monetary policies amidst the declining oil prices at the time.

The slump in oil prices is expected to be another constraint on growth in 2015, although this will be mitigated by the fact that oil's contribution to exports and investment has been (for years before the

current slump in prices) running below projections due to issues such as policy uncertainty and instability in the main onshore producing areas.

The economic growth may be largely driven by the non-oil sector, particularly entertainment, telecommunications, construction, wholesale and retail trade, hotel and restaurant services, manufacturing and agriculture.

The summary of macro-economic indicators for Nigeria for 2011 to 2016 is presented below:

Economic Indicator	2012	2013	2014	2015	2016E	2017F
GDP (\$'Bn)	467.1	521.8	573.9	481.1	485.2	502.1
Real GDP Growth (%)	4.3	5.4	6.3	2.7	0.9	3.5
GDP Per Capita (\$)	2,835	3,082	3,300	2,643	2,595	2,615
Inflation (%)	12.2	8.5	8.1	9	10.4	12.4
Government Revenue (% of GDP)	14.3	11	10.5	7.5	7.6	9

Source: World Bank Country Profile, Business Monitor International, World Economic Outlook, IMF

1.1.4.2 Foreign Exchange Rate

The naira came under considerable pressure recently due to falling crude oil prices and speculative demand for the Dollar. The Naira was devalued by the apex bank from N155 to N197 after previously lowering its target band. This was arguably a necessary move as the naira was selling at about N230 per Dollar at the parallel market. It is

⁴ IMF-World Economic Outlook Report-2014



Nigeria's GDP of \$574 billion is the largest in Africa and 21st largest in the world

speculated that another devaluation may be looming.

In response to the Naira depreciation, the CBN introduced several measures to stabilise the naira. These include removal of 10-kobo margin limit imposed on intervention dollars to banks, banning of banks from selling dollars to Bureaux de change (BDCs), linking Bank Verification Numbers (BVN) to foreign exchange transactions, excluding the importers of some commodities including electronics, information technology, generators, telecommunication equipment etc. from accessing foreign exchanges from the CBN official auction window. The value of the Naira is expected to build up following the implementation of these measures. However, the major downside risks to the naira remain decline in crude oil prices and capital flow reversal.

1.1.4.3 Inflation

Headline inflation rate decreased significantly from a 5-year double digit regime to a single digit of 8.5% in 2013 and has since remained within the single digit bracket. This decrease was due majorly to the tight monetary policy measures employed by the Central Bank of Nigeria. The monetary policy rate, which is the key determinant of interest rates, was fixed at 12% throughout 2013 as had been the case since 2011. However, this was revised upwards to 13% in November, 2014. Price stability was also achieved on the back of favorable agricultural harvests and particularly the moderation of core and food inflation components.

The deflationary effects of lower global oil and food prices in 2015 are expected to be offset by the impact of significant currency devaluation, as well as some limited early efforts by the government to rein in the subsidy bill. Inflationary pressures may remain as oil and food prices are expected to pick up for much of the remainder of the forecast period.

Further devaluations of the Naira and efforts to increase electricity tariffs to cost-recovery levels to encourage investment are also factors that may create inflationary pressures. Overall, inflation is expected to jump to an average of 9.1 percent in 2015 with near double-digit levels expected in 2016 and then to moderate slightly before stabilizing at around 8% percent for much of the remainder of the forecast period.

1.1.4.4 Interest Rate

The Central Bank of Nigeria (CBN) recognized inflationary pressures and consistently acted prudently in policy tightening particularly in respect of the prevailing situation within the banking system and foreign exchange markets.

However, given the recent economic conditions of declining oil prices, declining foreign reserves, increased demand for foreign exchange, fiscal dominance and capital flow reversals, the Monetary Policy Committee (MPC) of the CBN had, in 2014, increased the Cash Reserve Ratio (CRR) on public sector from 50% to 75% and shortly after, increased CRR on private sector deposits from 12% to 15%.

Following the continued pressures in exchange rate and liquidity in the inter-bank market, the MPC in November 2014, increased the Benchmark monetary policy rate (MPR) by 100 basis points from 12% to 13% as well as the cash reserve ratio (CRR) on private sector by 500 basis points from 15% to 20% while it retained its liquidity ratio at 30%. By May 2015, the MPC took a decision to harmonize the CRR on public and private sector deposits at 31%.

However, with oil prices hitting a low of US\$42 per barrel in August 2015, it became increasingly difficult for the Governor to maintain the interest rate while justifying the defence of the Nigerian currency, particularly in the context of recent devaluations by oil-producing countries including Angola and Kazakhstan. The Monetary Policy Committee (MPC), at its meeting in September 2015, concluded to reduce the CRR from 31% to 25%, retain the MPR at 13% and retain the liquidity ratio at 30% amidst the prevailing economic scenario⁶.

1.1.4.5 Foreign Direct Investment

Successive governments in Nigeria, including the present administration, have recognised the significance of Foreign Direct Investment (FDI) to the growth and development of the Nigerian economy. They have therefore taken steps to create an environment that encourages increased FDI.

The government plans to liberalise the investment climate further through repealing of restrictive laws and general improvement of the business regulatory framework, improving security, signing investment-protection treaties, provision of additional fiscal

⁵ Nigerian Communication Commission; www.ncc.gov.ng

incentives, privatisation of utilities and fully equipping the export-processing zones.

1.1.5 Technological Environment

Telecommunications has been one of the fast growing sectors. The number of active mobile subscribers grew at a Compound Annual Growth Rate (CAGR) of 42% between 2002 and August 2015 from 2.2 million in 2002 to 151 million as at August 2015 representing a teledensity of 107.6. The demand for internet usage also rose rapidly in recent years, with the number of active internet subscriptions increasing from 30.9million in 2012 to 93.4million in July 2015, at a CAGR of 45% between this period. This represents by far the highest number of Internet users in Africa. However, the high number of internet subscribers is mostly via mobile devices. The Federal Government has committed to improving broadband access in Nigeria. Steps taken involve the launch of the NigcomSat-1R satellite to complement the fibre connectivity and provide more internet bandwidth abroad. It is expected that by 2017, Nigeria will achieve 30% broadband penetration and 70% mobile penetration⁶. The advent of the internet has revolutionized the way many things, including buying and selling, are done in the country. E-commerce is the use of the internet for marketing, identification, payment and delivery of goods and services. Through the e-commerce technology, the internet has revolutionized the mode of business transactions by providing consumers in the big cities with the ability to purchase goods and services from virtually anywhere and anytime, as long as there is internet access.

The federal government has developed a strategy aimed at increasing e-payments adoption in Nigeria. The emergence of the STP-based instant payments as well as the introduction of Nigerian Uniform Bank Account Numbers (NUBAN) reflects the current drive for increased efficiency in payments landscape in Nigeria. In addition, the CBN cash-less policy has also contributed to strengthening the payment systems. Daily electronic payment transactions through the Instant Payment (NIP) and Nigerian Electronic Fund Transfer (NEFT) of the Nigerian Interbank Settlement System (NIBSS) have increased significantly to about ₦40 billion daily.

Furthermore, the oil and gas sector has been very proactive in the adoption of technology to enhance the efficiency of their operations. Most oil and gas

companies have created virtual private networks linking their operations across various cities in the country. Other areas in which the proliferation of technology infrastructure has impacted is in the efficient deployment of multi-location systems to improve operational efficiency, accessibility of information and performance and accountability. These include Enterprise Resource Planning (ERP) systems, cloud computing, data analytics, mobile sales processing applications, mobile enterprise email applications - Blackberry etc. The country's telecom sector is undergoing speedy transformation on account of explosive growth and rapid infrastructure developments. Liberalization of the telecom sector along with increased competition among players have brought substantial benefits to the consumers in terms of lower subscription rates and enhanced choice. The sale of 2.3GHz spectrum licences in 2014 is expected to further expand broadband internet access in the country.

1.2 Doing Business in Nigeria

There are different investment vehicles that could be used for carrying on business in Nigeria. These include partnerships, unincorporated joint ventures, limited and unlimited liability companies. However, the authorized mode of investment by foreigners in Nigeria is through limited liability companies.

Under section 54 of the Companies and Allied Matters Act (CAMA), the law that regulates the formation and operation of companies in Nigeria, no foreign company may carry on business in Nigeria unless it incorporates a local subsidiary in the country. However, the Federal Executive Council is empowered by section 56 to grant exemption from this mandatory requirement to foreign companies in the following categories:

- Foreign companies invited by or with approval of the Federal Government to execute special projects
- Foreign companies which are in Nigeria for the execution of specific loan projects on behalf of donor countries or international organizations
- Foreign government-owned companies engaged solely in export promotion activities; and
- Engineering consultants and technical experts engaged in specialist projects under contracts with any of the Governments of the Federation

⁶ National Broadband Plan 2013-2018



or any of their agencies or under contracts with any person where such contracts have been approved by the Federal Government.

1.3 Requirements for Incorporation of a Company

The foreign company would have to conduct a name search at the Corporate Affairs Commission (CAC) to ensure that the preferred name has not been issued to an existing company, or is not a prohibited name. The following documents are required to incorporate a company in Nigeria:

- Memorandum of Association
- Articles of Association
- Statement of Share Capital
- Declaration of Compliance with CAMA
- Notice of situation of the Registered Office of the company; and
- Return of Allotment of Shares and
- Particulars of First Directors.

Stamp duty is payable at 0.75% on the authorized share capital of a company in addition to filing fees payable to the CAC. Where the company intends to apply and obtain expatriate quota (EQ) approval, it may need to ensure that it has a share capital of at least \$300,000 in order to substantiate its EQ application. Once the registration process is completed, the Registrar General of the CAC will issue a Certificate of Incorporation to a company certifying that the conditions for incorporation have been fulfilled. Thereafter, the company would be required to register with the Federal Inland Revenue Service (FIRS) for tax purposes, and other regulatory agencies.

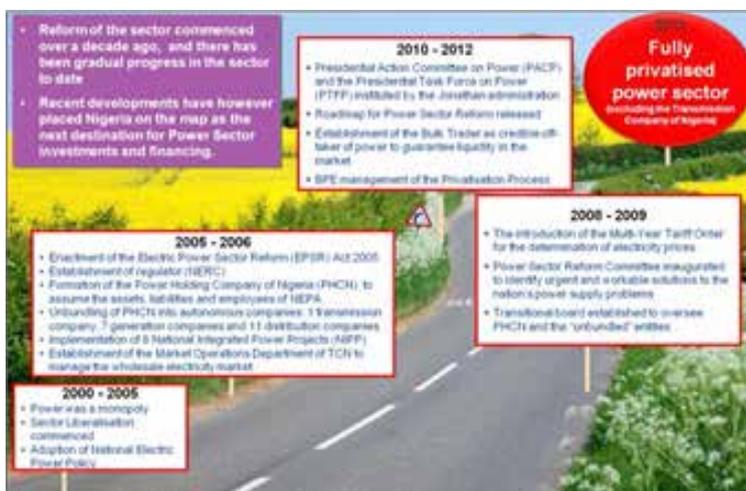
Overview of the Nigerian Power Sector

2.1 History

The first utility company, the Nigerian Electricity Supply Company, was established in 1929. However, electricity generation in Nigeria had started over 30 years before, in 1896.

Despite the various efforts of the State-owned utility, (which operated as a monopoly) to manage the sector and provide electricity, it became clear by the late 1990s that the Nigerian electricity system was failing to meet Nigeria's power needs. Hence, the National Electric Power Policy of 2001 kicked off the power sector reform in Nigeria, leading to several other reforms over the last decade.

Since the advent of the democratic regime in Nigeria, there have been significant strides in the reform of the sector. The Evolution of the Nigerian Power Sector is as depicted below:



The Nigerian Power Sector Privatisation is reputed to be one of the **boldest privatisation initiatives** in the global power sector over the last decade, with transaction cost of about \$3.0bn.

Over the past decade, the Federal Government has been able to complete the privatisation process. The Federal Government retains the ownership of the transmission assets (management under concession) with the generation and distribution sectors fully privatised. The subsequent segments shed more light on the various Power Sub-Sectors, detailing current capacity, trends and key sector statistics to aid the understanding of the sector as a whole.

2.2 Sub-sectors

The Nigerian Power Sector is made up of 3 major sub-sectors as depicted below:



2.2.1 Generation

There are currently 23 grid-connected generating plants in operation in the Nigerian Electricity Supply Industry (NESI) with a total installed capacity of 11,165.4 MW and available capacity of 7,139.6 MW. Most generation is thermal based, with an installed capacity of 9,044 MW (81% of the total) and an available capacity of 6,079.6 MW (83% of the total). Hydropower from three

major plants accounts for 1,938.4 MW of total installed capacity (and an available capacity of 1,060 MW).

I. Successor Generation Companies (Gencos):

There are 6 successor Gencos in Nigeria. Their names and installed capacities are:

S/N	Generation Company	Plant Type	Capacity (MW)
1	Afam Power Plc (I -V)	Thermal	987.2
2	Egbin Power Plc	Thermal	1,320
3	Kainji/Jebba Hydro Electric Plc	Hydro	1,330
4	Sapele Power Plc	Thermal	1,020
5	Shiroro Hydro Electric Plc	Hydro	600
6	Ughelli Power Plc	Thermal	942

Source: Nigerian Electricity Regulatory Commission

II. Independent Power Producers (IPPs): IPPs are power plants owned and managed by the private sector. Although there are Independent Power Producers (IPPs) existing in Nigeria prior to the privatisation process, the Nigerian Electricity Regulatory Commission (NERC) had issued about 70 licences between 2012 and 2013 to Independent Power Producers in order to improve the power situation in the country. The existing IPPs include Shell – Afam VI (642MW), Agip – Okpai (480MW) and AES Barges (270MW).

III. National Integrated Power Projects: The National Integrated Power Project ('NIPP') is an integral part of Federal Government's effort to combat power shortages in the country. It was conceived in 2004 as a fast-track public sector funded initiative to add significant new generation capacity to Nigeria's electricity supply industry along with electricity transmission and distribution and natural gas supply infrastructure required to deliver additional capacity to consumers throughout the country. There are 10 National Integrated Power Projects (NIPPs), with combined capacity of 5,455 MW. The NIPPs are detailed in the subsequent page:

S/N	Generation Company	Plant Type	Capacity (MW)
1	Alaoji	1,131	Phase I completed Phase II congoing
2	Benin	508	Completed
3	Calabar	634	Completed
4	Egbema	381	Completed
5	Gbarain	254	Ongoing
6	Geregu	506	Completed
7	Ogorode	508	Completed
8	Olorunsogo	754	Completed

9	Omoku	265	Ongoing
10	Omotosho	513	Completed

Source: Nigerian Electricity Regulatory Commission

The Federal Government has set aside N50 billion in escrow accounts in 3 Nigerian Banks to serve as a buffer for losses that the GENCOS may suffer in the course of power transmission. Draw-downs are only possible where the stipulated conditions are met. The Nigerian Bulk Electricity Trading Plc (NBET) will manage the accounts

2.2.2 Transmission

The Transmission Company of Nigeria (TCN) is a successor company of PHCN, following the unbundling of the sector, and is currently being managed by a Management Contractor, Manitoba Hydro International (Canada). Manitoba is responsible for revamping TCN to achieve technical and financial adequacy in addition to providing stable transmission of power without system failure. Currently, the transmission capacity of the Nigerian Electricity Transmission system is made up of about 5,523.8 km of 330 KV lines and 6,801.49 km of 132 KV lines.

The TCN is made up of two major departments: System Operator and Market Operator. The Market Operator (MO) is a department under TCN charged with the responsibility of administering the wholesale electricity market, promoting efficiency and where possible, competition. The system operator is focused on system planning, administration and grid discipline.

The responsibilities of the System Operator include:

- I. Implementing and enforcing Grid Code, and draft/implementation of operating procedures as may be required for the proper functioning of the System Operator Controlled Grid;
- II. System planning;
- III. Implementing and supervising open access to the System Operator Controlled Grid;
- IV. Providing demand forecasts;
- V. Planning operation and maintenance outages;
- VI. Undertaking dispatch and generation scheduling;
- VII. Scheduling energy allocated to each Load Participant in the event that available Generation is not sufficient to satisfy all Loads;



Fully privatised generation and distribution sub-sector with the transmission sub-sector privately managed

- VIII. Ensuring Reliability and availability of Ancillary Services;
 - IX. Undertaking real time operation and SCADA/EMS system;
 - X. Administering system constraints (congestion), emergencies and system partial or total recovery; and
 - XI. Coordinating regional Interconnectors.
- The responsibilities of the Market Operator include:
- i. Market Administration
 - a. Guarantee an efficient, transparent and non-discriminatory market administration service to all Participants;
 - b. Facilitate the development of a sustainable competitive Market; and
 - c. Adapt to regional Markets or regional electricity trading agreements
 - ii. Implementation of the Market Rules
 - a. Implementing the Market Rules, draft and implement any and all requisite Market Procedures;
 - b. Review the efficiency and adequacy of Market Rules and Market Procedures and propose such amendments as may be required to ensure their efficacy and adequacy;
 - c. Admit and register Participants;
 - d. Organise and maintain a Participants' Register;
 - e. Centralise the information required for market administration, organise and maintain the related data bases;
 - f. Verify that each Connection Point, where a Participant injects or extracts energy, has proper commercial metering related to physical exchange - injection and consumption of energy, provision of Ancillary Services and other necessary commercial transactions and;
 - g. Calculate and recover Ancillary Service and Must-Run Generation costs, when necessary;
 - h. Centralise and process commercial metering data;
 - i. Administer the Market settlement process and Market payment system;
 - j. Calculate and settle payments in respect of ancillary services and other costs of operating the system and administering the Market;

- k. Calculate and settle payments in respect of transmission charges
- l. During the transitional stage:
 - Receive contract information and maintain Contract Register;
 - Prepare the Generation Adequacy Report; and
 - Calculate Contracted Imbalance Quantities in aggregate, by contract and by Participant, using Metered Quantities adjusted as necessary for losses in each month;
- m. During the Medium Term Market:
 - Quantities, Uninstructed Imbalance Quantities and Instructed Imbalance Quantities in aggregate and by Participant, adjusted as necessary for losses in each and every Dispatch Period;
 - Determine the System Marginal Price for each and every Dispatch Period; and
 - Issue Invoices and arrange recovery and payment of charges for Imbalance Energy and Ancillary Service and the System Operation and Market Administration Charge from, and to, the Participants.
- n. Manage Market billing including issuance of invoices, settlement and payment system in accordance to these Rules;
- o. Recover the Transmission Usage Charge from the Participants and remit it to Transmission Service Provider (TSP) and other Transmitter(s), if any; and
- p. Supervise Participants compliance with, and enforce the Market Rules and Grid Code.

2.2.3 Distribution

There are 11 electricity distribution companies (discos) in Nigeria. The coverage areas of the 11 companies are indicated in the map below:



Key information about the 11 discos is presented in the table below:

S/N	Disco	% Load Allocation*
1	Abuja Distribution Company	11.5%
2	Benin Distribution Company	9%
3	Eko Distribution Company	11%
4	Enugu Distribution Company	19%
5	Ibadan Distribution Company	13%
6	Ikeja Distribution Company	15%
7	Jos Distribution Company	5.5%
8	Kaduna Distribution Company	8%
9	Kano Distribution Company	8%
10	Port Harcourt Distribution Company	6.5%
11	Yola Distribution Company	3.5%

Source: Multi Year Tariff Order (MYTO) 2.1

Tariff Class Descriptions: The customers across the various Discos are classified into 5 groups as indicated in the table below:

S/N	Plant Type	Capacity (MW)	
1.	Residential		A consumer who uses his premises exclusively as a residence - house, flat or multi-storeyed house where people reside.
	R1	Life-Line (50kWh)	
	R2	Single and 3-phase	
	R3	LV Maximum Demand	
2.	Commercial		A consumer who uses his premises for any purpose other than exclusively as a residence or as a factory for manufacturing goods.
	C1	Single and 3-phase	
	C2	LV Maximum Demand	
3.	Industrial		A consumer who uses his premises for manufacturing goods including welding and ironmongery.
	D1	Single and 3-phase	
	D2	LV Maximum Demand	
4.	Special		Customers such as agriculture (agro-allied enterprises involving processing are excluded), water boards, religious houses, Government and teaching hospitals, Government research institutes and educational establishments.
	A1	Single and 3-phase	
	A2	LV Maximum Demand	
5.	Street Lightning		
	S1	Single & 3-phase	

Source: Nigerian Electricity Regulatory Commission, Multi Year Tariff Order

2.3 Types of Licences

The players in the Nigerian electricity market are often referred to as market participants. In order to carry on business as a market participant, it is imperative that the entity obtain the appropriate licence from the Nigerian Electricity Regulatory Commission (NERC or the Commission). Appendix I contains information on the licence application requirements. A summary of the applicable licences along the electricity value chain is provided below:

2.3.1 Electricity Generation Licence

A generation licence authorises the licensee to construct, own, operate and maintain a generation station for purposes of generation and supply of electricity in accordance with the Electric Power Sector Reform Act, 2005. Subject to this Act, the

holder of a generation licence may sell power or ancillary services to any of the classes of persons specified in the licence. An electricity generation licence is needed for any power generation activity beyond 1MW.

2.3.2 Distribution Licence

A distribution licence authorises the licensee to construct, operate and maintain distribution systems and facilities, including, but not limited to, the following activities as may be specified in the licence:

- the connection of customers for the purpose of receiving electricity
- the installation, maintenance and reading of such other distribution service equipment.

A distribution licensee may also have the obligation to provide electricity to its distribution customers,



pursuant to the terms of a trading licence issued by the Commission to the distribution licensee.

2.3.3 Transmission Licence

A transmission licence authorises the licensee to carry on grid construction, operation, and maintenance of transmission system within Nigeria, or that connect Nigeria with a neighbouring jurisdiction, limited to the activities specified in the licence issued.

2.3.4 System Operator Licence

A system operation licence authorises the licensee to carry on system operation, including, but not limited to:

- generationscheduling, commitment and dispatch
- transmission scheduling and generation outage co-ordination;
- transmission congestion management;
- international transmission co-ordination;
- procurement and scheduling of ancillary services and system planning for long term capacity

- administration of the wholesale electricity market, including the activity of administration of settlement payments, in accordance with the market rules; and
- such other activities as may be required for reliable and efficient system operation.

2.3.5 Trading Licence

A trading licence authorizes the licensee to engage in the purchasing, selling, and trading of electricity. The Commission determines the terms and conditions of trading licences as may be appropriate in the circumstances. The Commission may also issue temporary bulk purchase and resale licence, giving the licensee, the ability to purchase electrical power and ancillary services from independent power producers and successor generation companies for the purpose of re-sale to one or more other licensees, or to an eligible customer. The NBET is a licensed trading entity in Nigeria.



Industry

Updates since privatisation

Prior to the physical hand over of the privatised assets, the Bureau of Public Enterprise executed Performance Agreements for the respective assets with the Owners. The related targets have been the basis for the monitoring and evaluation of the performance of the respective Gencos and Discos. Furthermore, these performance targets are aimed at ensuring that the overall objectives of privatisation are met.

This section sheds more light on the details of the Performance Agreement and the issues that were encountered subsequent to the takeover of the successor companies.

3.1 Performance Target for Privatised Entities

The Performance Targets, contained in various performance agreements executed by the core investors of the privatised assets and the Bureau of Public Enterprise, are categorised into four (4) major areas namely:

- Operations
- Financial
- People and
- Safety

These four (4) areas are detailed in the performance agreement under the following headings with slight variations from some specific targets depending on the entity (Genco or Disco).

The General Coverage Items are as follows:

- i. Compatibility with Regulatory Requirement
- ii. Initial Budget or Post Acquisition Plan
- iii. Capital Expenditure Plan
- iv. Conduct of Operations
- v. Financing of the Business.
- vi. Technical Service Agreement
- vii. Compliance Monitoring

- viii. Audits and Review
- ix. Period of Agreement
- x. Safety
- xi. People

Genco Specific Target Areas

- i. Minimum Performance Target – Available Capacity

Disco Specific Target Areas

- i. Minimum Performance Target – ATC&C Losses.
- ii. Customer Connections

3.2 Highlight of the sector issues after takeover

Since the handing over of the Assets on the 1st of November 2013, the focus of the core investors has been to achieve business stability. In the course of operating these entities, several issues have been encountered.

The following are the highlights of the sector issues the privatised entities are facing:

3.2.1 Liquidity:

The entire sector value chain was plagued with intense liquidity challenges at the point of take-over. Studies revealed that the actual ATC&C losses are in many cases higher than the basis of the business plan for the take-over of these assets. Furthermore, it was apparent that the tariff was not sufficient to generate revenues to cover the costs of the entire value chain. Thus, there was a huge deficit in the sector.

This liquidity challenge has posed a serious threat to the growth of the sector. Considering that most of the assets acquisition was funded through loans from financial institutions with over-bearing interest rates, the huge revenue gap encountered at privatisation stalled additional investments. For Gencos, non-recognition of full capacity by market operator in the interim period resulted in huge revenue loss. The constraint of gas supply further eroded revenue from energy charge since most Gencos barely operated beyond 40% of their available capacity due to gas constraint. The misalignment of receivable and payable days further aggravated the liquidity challenge of the sector and underscored the need for working capital loan for most Gencos. The burden of higher actual transmission loss levels than permitted by the regulator stifled estimated profit levels. The revenue requirement needed to drive Capex investment was grossly unavailable and in the early days of privatisation, it was clear that government intervention in the form of subsidy, bail-out or grant was required to stimulate the sector and encourage further investment.

3.2.2 Gas Infrastructure, Supply and Pricing:

With natural gas reserve of more than 5 trillion⁹ cubic meters, which makes it the country with the 9th largest gas reserves in the world and the largest in Africa, the gas challenge in Nigeria cannot be overemphasised. Gas supply remained the most critical challenge the sector faced at take-over. With an available capacity of 6,056MW¹⁰ at take-over, inadequate gas supply constrained generation to less than 4,000MW. The nature of the gas challenge is multi-faceted. The Nigerian National Petroleum Corporation estimates that about 12%⁷ of the gas produced in Nigeria do not end up in the market but are flared. This is because a lot of the major oil and gas producers have been reluctant to invest in gas production and processing facilities. One key reason is that the gas industry is highly regulated. Producers of gas, under the current regime, are given domestic supply quotas with a fixed price. Therefore, most producers have complained that, considering the prohibitive cost of investment required, they may not be able to recoup their investment unless the price

regulation is lifted and off takers of the gas made to pay commercial rates. In a quick move to address gas pricing issue, a revised gas-to-power price of \$3.3/MMBtu was proposed, but investors continue to push for pricing that is at par with international market to spur investment. As long as this issue remains unresolved, the major oil and gas companies may not change their policy and begin massive investment in gas production, processing and supply infrastructure for power generation. Also, the current Petroleum Industry Bill (PIB) before the National Assembly contains provisions that may be considered inimical to the growth of gas production. If the PIB is passed 'as is' the incentives that are currently available to companies which invest in gas production may no longer apply. This may further discourage the production of gas with its attendant impact on the power sector since the country relies heavily on gas-fired plant. There is also the issue of gas transportation constraint as a result of the vandalism of gas pipelines. It is therefore clear that a lot still needs to be done to address the issues of gas production, supply and transportation if the reform of the power sector is to succeed.

3.2.3 Skilled Manpower:

Another critical challenge encountered at take-over was the dearth of adequately skilled man-power in the sector. This hampered the immediate gains stakeholders expected to see. It was clear that the erstwhile Power Holding Company did not make sufficient investment in the training and capacity building of adequate manpower, a direct consequence being that investors took over an over-bloated workforce with little technical competence and professionalism. The establishment of the National Power Training Institute of Nigeria (NAPTIN) by the government to ensure the availability of manpower equipped with the requisite skills and practical know-how required for engagement in the different fields and professions of generation, transmission and distribution sectors was not sufficient to guarantee skilled manpower at take-over. As a quick fix, some of the investors embarked on training programmes, both locally and internationally, with the help of the technical partners to bridge identified skills gap. However, this increased the operating cost for the utilities considering gas challenge and higher loss levels already made huge profit realization a far cry from reality.

3.2.4 ATC&C Losses:

ATC&C loss sums up the challenges faced by the distribution segment of the power sector value chain at take-over. The success of the Discos bids

⁷ Organisation of Petroleum Exporting Countries

⁸ Nigerian National Petroleum Corporation Annual Statistical Bulletin (2014)

was based on agreed commitment from the bidders for a given loss reduction trajectory. However, the baseline ATC&C loss level assumed by the regulator to establish a loss reduction trajectory for the Discos was lower than actual at certain Discos. It was therefore evident that the setting of the loss level commitments, in many cases, was rather too ambitious, in addition to the non-cost reflective nature of Disco tariff. To meet the daunting loss level commitment, additional CAPEX investment was required for a sector with a huge revenue and funding gap.

3.2.5 Declaration of Force Majeure:

The operating environment for some investors subsequent to the take-over was a complete deviation from the assumptions in the business plan and post-acquisition plans. However, the activities of insurgents and the fight against insurgency in three of the states serviced by Yola Electricity Distribution Company (YEDC) hampered the smooth operations of the Disco and led to declaration of force majeure by YEDC on six occasions. Collection losses skyrocketed and critical distribution network and infrastructure were sabotaged. The inability of the Disco to fulfil its contractual obligation finally resulted in a take-over by the government in June, 2015⁹.

3.3 Ongoing Strategies to Address Sector Issues

In the face of tough operating environment, stakeholders (Investors, the Regulator, and the Government) have had to re-evaluate and re-strategise and develop various strategies and interventions to tackle the multi-faceted challenges encountered.

The following are some of the critical steps taken to address the various challenges:

3.3.1 Investors Strategies and Interventions

3.3.1.1 Commercialisation/ Leakage Plugging:

Lack of appreciation for commercial orientation and its linkage with profitability was the bane of the privatised power firms in Nigeria. Prior to privatisation, most power firms were run as cost centres with allocation from the Federal Government

for operations and maintenance. There was limited visibility on management of external stakeholders and contractors, absence of linkage between events in the firm with their impact on profitability, decision making was largely without deference to data, absence of coordination for target setting, limited investment planning & budgeting exercise.

To realise the gains of privatisation, the new investors introduced a commercial approach to business.



⁹ Yola Electricity Distribution Company

Management Information Systems (MIS)/ Business Planning functions have been created across various firms to monitor and report on business performance. Processes and procedures have been reviewed to enhance efficiency and effectiveness of business functions, key resources have been exposed to intensive capacity building interventions, and rigorous budgeting and planning process have been practised prior to approval and disbursement of funds. In

addition, many of these firms have adopted various initiatives targeted at plugging revenue loopholes.

3.3.1.2 Operational Efficiency:

At the point of take-over, it was evident that the existing level of efficiency across the power utilities would result in significant losses and poor returns on investors' funds. Part of this was addressed in the performance targets set for utilities. A key requirement for success of the privatisation bid was evidence of partnership with technical Operations and Maintenance (O&M) contractors and a commitment to improve efficiency levels to set targets. Most Gencos have hit the ground running on this directive with several initiatives such as plant overhauls, repairs, and availability of mandatory and non-mandatory spares. Discos investment in transformer and metering installations, improved turnaround time for repairs and maintenance, prompt response to customer complaint were some of the initiatives undertaken by Discos to improve the efficiency of their respective operations and network.

3.3.1.3 Customer Service Focus/ Engagement:

Power firms were faced with severe operational challenges at take-over. Power-theft, inadequate power supply, customer dissatisfaction, collection losses, limited gas supply, stranded capacity, inadequate revenue were some of the issues requiring immediate attention. It was incumbent on investors to adopt a strategic approach at targeting investments to address these shortfalls. The regulator was equally firm on its position for required investment levels aimed at stimulating growth in the sector. Immediate investments were largely focused on meters procurement to reduce power theft and collection losses, investment in distribution facilities (transformers and distribution lines) to increase distribution capacity, rehabilitation of stranded units to increase generation capacity, investment in gas meters for accuracy in gas consumption and investments in strengthening the transmission capacity.

3.3.1.4 Targeted Investment:

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3.3.2 Government Response

3.3.2.1 Pipeline Infrastructure Security:

Pipeline vandalism remains one of the most critical challenges facing the sector. In a country with inadequate pipeline infrastructure and about 81% of generation being gas-based, the far reaching effects of vandalism cannot be over emphasized. The activities of pipeline vandals had led to a colossal cost of over N174Bn in product losses and repairs of pipelines within the last 10 years. Successive governments have implemented various policies and tried various approaches to tackle this menace. The amnesty policy of government, engagement of local communities, and sensitization of the public through the media have failed to achieve a hundred percent result in the fight against vandalism. The government has however renewed efforts in the fight against vandalism adopting a collaborative approach between the military, the police force and local community to secure pipeline infrastructure in the country.

3.3.2.2 CBN-Nigeria Electricity Market Stabilisation Facility: (NEMSF)

Following privatisation, the sector was fraught with liquidity challenges arising from several factors including insufficient gas supply, legacy gas debt and higher baseline ATC&C loss level than what was assumed under the current MYTO 2. In a quick move to correct these market anomalies, CBN partnered with other players, Ministry of Petroleum Resources, Ministry of Power, Nigerian Electricity Regulatory Commission and Deposit Money Banks (DMBs) to put in place N213Bn NEMSF fund to address shortfalls in power sector revenues due to lower tariff. The facility was also to help settle basic gas debt that accrued during the Interim Rules Period (IRP) and in the process reset the economics of the power sector. The objective was to ensure the power sector delivers tangible improvements in power supply and position the market on a route to economic viability and sustainability. The facility would be repaid over a ten year period at an all-inclusive charge of 10% per

annum with a moratorium period of 12 months on the principal amount.

3.3.2.3 Strengthening of Transmission Network:

In the light of rising levels of generation in the country since privatisation, TCN has shown renewed commitment to ramp up the transmission facilities to evacuate more power from the grid as part of initiatives to ensure a rounded development of the sector and avoid transmission being the weakest link in the industry chain. TCN embarked on several projects to upgrade equipment and infrastructure as well as strengthen the transmission network. The installation and commissioning of the transmission substation in Calabar, power transformer Ibadan North and Suleja transmission substations are some of the projects targeted at strengthening the wheeling capacity of TCN. Efforts are also underway to build a robust supergrid network. Some of the efforts by TCN have yielded immediate results. In September 2015, the system attained a new peak energy of 104,794.26MWh wheeled across the TCN network¹².

3.3.3 Regulatory Strategies

3.3.3.1 Declaration of Transitional Electricity Market (TEM)

The TEM, which is expected to introduce competition into the market, was initially envisaged to commence upon the handover of the PHCN in November 2013 but some of the conditions precedent to the declaration of TEM were still in the process of implementation. The lack of a cost reflective tariff and the much needed reset of the Discos baseline losses needed to be resolved before the declaration of TEM. It wasn't until February 2015 that TEM was announced. This market stage is the intermediate step to move the electricity market from an integrated whole utility to a full competitive market structure with more differentiated Market Participants, and is characterised by contract based arrangements for electricity trading. Some of the conditions precedent which were satisfied before the declaration of TEM include:

- Passage of the Electric Power Sector Reform Act
- Formalisation and effectiveness of trading arrangements (contracts) between participating companies
- Development, implementation and testing by the SO and MO of the systems and procedures to implement the Grid Code and Market Rules respectively
- Effectiveness of a cost reflective tariff

With the declaration of TEM, it is expected that:

- All electricity trading arrangements will be consummated through PPAs, Vesting Contracts and GSAs which were executed during the privatization process
- Market Operator shall develop a Market Procedure for
- the management of inadequate supply and shortage conditions during the Transitional Stage. The System Operator, on the other hand, will allocate generation
- shortages proportionally among loads and will be tested and improved during the Transitional Stages, and shall become part of the Grid Code at the start of the Medium Term Market
- NERC's Codes and Rules would not only be effective but be operational amongst Market Participants and Service Providers. The Codes and Rules include: the Grid Code, Metering Code, Distribution Code, Health and Safety Code and Market Rules
- Multi Buyer Model proposed in the Roadmap to the Power Sector Reforms will take effect and Bilateral Agreements between successor Gencos, IPPs and Discos will become operational

3.3.3.2 Cap on estimated billing:

Prior to privatisation, the Nigerian power sector was characterised by huge metering gap with less than 50% of electricity consumers having active billing meters. A direct implication of this is increased commercial and collection losses for Discos, a huge revenue gap in the sector and sometimes outrageous billing for customers when Discos fail to adhere to methodology initiated by NERC for estimated billing. NERC, in furtherance of its mandate to ensure an efficient and fair electricity market that ensures an adequate, reliable and affordable supply of electricity consumers, had initiated several programmes and schemes to stimulate metering of unmetered customers. The Credited Advance Payment for Metering Implementation (CAPMI), whereby willing customers can advance money for purchase and installation of meters which should mandatorily be installed within 45 days by the Discos, was one of such. This initiative was taken in recognition of the fact that the Discos are heavily burdened with lots of challenges and may not have enough funds to deploy meters at once to all customers. However, a lot of Discos were non-compliant with CAPMI. In another move to de-incentivize estimated billing, the regulator set in motion consultations and actions that could eventually lead to its capping of the revenues that Discos can generate from their customers through the estimated billing method. The cap at a level will protect unmetered customers and provide sufficient incentives for the Discos to quickly meter such customers. The NERC has also directed Discos to exempt customers

from the estimated billing system if they are not metered within 60 days of payment.

3.3.3.3 Removal of Collection Loss:

The Nigerian Electricity Regulatory Commission (NERC) has been more active in engaging with Discos, Gencos and consumers since privatisation. Several consultations have been held with different consumer classes and a fall out of such consultations resulted in the proposal to remove collection loss to protect consumers from the huge burden of skyrocketing increase in tariff. Collection loss which is the amount billed but not collected, will not be automatically passed on to consumers of electricity following the removal of collection loss while calculating tariff. Consequently, regulatory approval would be required for such loss to be passed to consumers.

3.3.3.4 Restriction on Importation of Meters:

The Nigerian electricity market regulator had always emphasized its strong commitment to promote local content, ensure that the growth in electricity sector contributes to the improvement in job creation and household income as well as growth in the economy. In a move to give bite to the local



content obligation in metering of customers, the regulator imposed restrictions on certification of meter importers and mandated Discos to patronise local meter manufacturers. Importation of meters would only be permitted if local manufacturers could not meet demand. Many importers reacted to this move and requested for a lift on the ban and the issuance of interim licences to establish meter manufacturing plants in Nigeria

3.4 General Sector Updates since privatisation

Some of the key updates in the sector from privatisation till date are presented below:

3.4.1 Promotion of Bilateral Trading:

With the declaration of TEM and gradual migration towards market maturity, the regulator has maintained a strong position to encourage increased competition among market players. At this stage of the market, the concept of bilateral trading is nascent, but the regulator is resolute in its bid to permit Gencos and Discos to directly contract with one another for power purchase without recourse to the national grid. Embedded generation regulation also enables short term provision of electricity with an objective to make power available in a reliable and quickest possible approach. The regulator in collaboration with key stakeholders has initiated the process of creating a framework for industrial embedded generation.

3.4.2 Planned Unbundling of TCN:

The limited capacity of Nigeria's transmission infrastructure has remained a major challenge in the sector and the need to ensure an effective and efficient transmission sector is critical to realization of the objectives of the EPSR Act. In keeping with the goals of the power sector reforms, NERC commenced consultations with relevant stakeholders with a view to determining the operational structure of TCN to make it more efficient. It is essential that the final unbundling into separate units be carefully worked out in line with models obtainable in similar and different electricity markets in other jurisdictions. In this initiative, the various models available in unbundling TCN into two separate entities (System Operator and Transmission System Provider), are those of an independent system operator, which is like a Non-Governmental Organisation jointly owned by Gencos and Discos; another option is the initiation of a regional

system operator while TSP will remain in the hands of the government.

3.4.3 Federal Government Guarantee for Azura-Edo IPP:

Attracting more private sector investments, and establishing supporting institutions that are critical to the reforms is key to realizing the gains of privatisation. The need to drive accelerated investment in the power sector through IPPs was further underscored by the signing of \$237Mn guarantee between Federal Government (through the Min. of Finance and NBET) and the World Bank in August 2015 to bring additional 450MW to the national grid by 2018 through the Azura-Edo IPP. Other gains from the Azura-Edo IPP project is the setting of the contractual framework for the development of other large-scale IPPs. This is equally expected to drive other projects with the World Bank Partial Guarantee Scheme.

3.4.4 Licence Review:

Over 124 generation licences that ought to have brought about an additional 30,000MW to the national grid had been issued by the regulator between 2006 and now. However, the envisaged additions to the grid from these projects are yet to be realised. In a move to sanitize these developments, the regulator commenced an audit/ review process for issued licences. Following this exercise, licensees were requested to provide justification for non-cancellation of their licences. Licensees were placed in the following five categories after the review:

- Category 1 with about 63 firms that are currently in operation and have no issues with the regulator
- Category 2 with about 3 firms that have ceased operations
- Category 3 with about 13 firms that are not in operations but have substantially satisfied their milestones
- Category 4 with about 5 firms which are not in operations but have not substantially satisfied their milestones
- Category 5 with about 19 firms not in operation and have not been submitting quarterly reports to the Commission

Periodic review of these licences is important for accountability, record, and monitoring purposes within the sector to check against the gaming of the provisions of the various Orders and Rules by the operators.



Legal and Regulatory Framework

4.1 Regulatory Agencies

4.1.1 The Federal Ministry of Power

This is the Government administrative arm that deals with policy formulation and provides general direction to other agencies involved in the power sector.

The key function of the Ministry is to develop and facilitate the implementation of policies for the provision of adequate and reliable power supply in the country. In carrying out its functions, it is guided by the provisions of the National Electric Power Policy, 2001, the Electric Power Sector Reforms (EPSR) Act, 2005, the Roadmap for Power Sector Reform, 2010 as well as the Transformation Agenda on Power of the Federal Government.

The Minister for Power is the political head of the Ministry while the Permanent Secretary is the administrative head.

4.1.2 Nigerian Electricity Regulatory Commission

The Nigerian Electricity Regulatory Commission (NERC) was established by the EPSR Act, 2005. It is an independent regulatory agency mandated to regulate and monitor the Nigerian power sector.

The functions of the NERC include, but not limited to, the following:

- i. Promote competition and private sector participation, when and where feasible.
- ii. Establish or approve appropriate operating codes and safety, security, reliability and quality standards.

- iii. License and regulate persons engaged in the generation, transmission, system operation, distribution and trading of electricity.
- iv. Approve amendments to the market rules and monitor the operation of the electricity market.

The NERC is led by seven commissioners representing the 6 geo-political zones in the country in addition to one commissioner designated as Chairman and Chief Executive Officer.

4.1.3 Energy Commission of Nigeria

The Energy Commission of Nigeria (ECN) was established in 1988 with the statutory mandate for strategic planning and coordination of national policies in the field of energy. It was established in line with the declaration of the Heads of The Economic Community of West African States in 1982 for the establishment of an Agency in each member state charged with the responsibility of coordinating and supervising all energy functions and activities. The functions of the ECN include, but are not limited to, the following:

- i. Serve as a centre for gathering and dissemination of information relating to national policy in the field of energy.
- ii. Inquire into and advise the Government of the Federation or the State on adequate funding of the energy sector including research and development, production and distribution.
- iii. Monitor the performance of the Energy sector in the execution of government policies on energy.

The Electric Power Sector Reforms Act of 2005 provides the general legislative background on which the power sector reforms are built.

- iv. Serve as a centre for providing solutions to inter-related technical problems that may arise in the implementation of any policy relating to the field of energy.

The ECN is headed by a Director General, who also serves as its Chief Executive.

4.1.4 Rural Electrification Agency

The Rural Electrification Agency (REA) is a Federal Government Parastatal under the Federal Ministry of Power. It was established by the EPSR Act with the statutory functions of promoting, supporting and providing electricity access to rural and semi-urban areas of the country.

The Agency also administers the Rural Electrification Fund (REF). The purpose of the REF is to promote, support and provide rural electrification programmes through public and private sector participation in order to achieve more equitable regional access to electricity, and promote expansion of the grid and development of off-grid electrification.

Eligible customers and licensees are required to contribute to the Fund at rates to be determined by the NERC.

4.1.5 Presidential Task Force on Power

The Presidential Task Force on Power (PTFP) was established in 2010 to drive the implementation of the reform of Nigeria's power sector.

The role of the PTFP is to co-ordinate the activities of the various agencies charged with ensuring the removal of legal and regulatory obstacles to private sector investment in the power industry. It also has the mandate to monitor the planning and execution of various short-term projects in generation, transmission, distribution and fuel-to-power that are critical to meeting the stated service delivery targets of the power sector roadmap.

The PTFP is administered by a Board of Directors headed by a Chairman.



4.2 Key Institutions

The key institutions include:

4.2.1 Niger Delta Power Holding Company Limited

The Niger Delta Power Holding Company Limited (NDPHC) is a special purpose vehicle jointly owned by the three tiers of government (Federal, State and Local). It is charged with the responsibility for the implementation of the National Integrated Power Project (NIPP). The Government conceived the NIPP in 2004 as a fast-track government-funded initiative to stabilize Nigeria's electricity supply system while the private-sector led structure envisaged in the EPSR Act develops.

Wholly-owned subsidiaries of NDPHC own each of the ten (10) power generation stations that have been developed under the NIPP.

The Managing Director is the Chief Executive officer of the NDPHC.

4.2.2 Nigerian Bulk Electricity Trading Plc

The Nigerian Bulk Electricity Trading Plc (NBET) is a government-owned public liability company. The Bureau of Public Enterprises and Ministry of Finance Incorporated are its two shareholders with shareholding of 80% and 20%, respectively.

The NBET, established in line with the provisions of the EPSR Act, is an electricity trading licensee that engages in the purchase of electrical power and ancillary services (from independent power producers and the successor generation companies) and subsequent resale to distribution companies and eligible consumers. It is not envisaged to be the sole authorized or designated electricity buyer, as other entities, such as distribution companies that have attained commercial viability, will also be able to procure power directly from the generation companies.

The role of the NBET is, however, a key success factor during the transitional stage of the Nigerian power sector reforms. Its role in the reform process is to use its legal backing to drive private sector investment in generation activities by executing bankable Power Purchase Agreements (PPAs) with them. These PPAs

may subsequently be novated to the distribution companies when it becomes economically viable for all parties.

The NBET is run by a Managing Director assisted by a nine-man Board of Directors.

4.2.3 Operator of the Nigerian Electricity Market

The Operator of the Nigerian Electricity Market (ONEM) is licensed to function as the Market Operator of the wholesale electricity market of the Nigerian electricity supply industry. It is responsible for the operation of the electricity market and settlement arrangements.

A key function of the ONEM is the administration of the metering system among generation, transmission and distribution companies.

4.2.4 Nigeria System Operator

The Nigeria System Operator (NSO) is licensed to provide system operation services to the Nigerian electricity supply industry.

The NSO is primarily responsible for the planning, dispatch and operation of the transmission system. It is also responsible for the security and reliability of the electricity network grid.

4.2.5 Gas Aggregation Company Nigeria Limited

The Gas Aggregation Company Nigeria Limited (GACN) was incorporated in 2010 for the purpose of stimulating growth of natural gas utilization in the Nigerian domestic market.

GACN was formed in line with statutory requirement of the Nigerian Domestic Gas Supply & Pricing Regulations, 2008 and is the vehicle for the implementation of the Nigerian Gas Master Plan (NGMP) commercial framework. The NGMP requires the establishment of a Strategic Aggregator for the domestic gas market, whose responsibilities will include, among others:

- Processing requests from gas buyers
- Managing allocation of gas to buyers
- Facilitating Gas Sale and Aggregation Agreement (GSAA) negotiations
- Managing escrow accounts on behalf of gas sellers

- Managing dispute resolution process for stakeholders.

4.2.6 National Power Training Institute of Nigeria

The National Power Training Institute of Nigeria (NAPTIN) was established in 2009 to serve as a focal point for human resource development and workforce capacity building, and act as a research centre on matters relating to power in Nigeria.

A key objective of the Institute is to design, develop and deliver a wide variety of training courses that will enhance the skills and capacity of both technical and non-technical power utility personnel.

4.2.7 Nigeria Electricity Liability Management Company Limited

The Nigeria Electricity Liability Management Company Limited (NELMCO) was established in 2006 as a company limited by guarantee, to assume and manage the non-core assets, all liabilities and other obligations that would not be taken over by the successor companies. This is to ensure that the successor companies are not encumbered by these liabilities at take-off.

The NELMCO is mandated to:

- assume and administer the stranded liabilities of PHCN pursuant to the provisions of EPSR Act,
- assume and manage pension liabilities of employees of PHCN,
- hold the non-core assets of PHCN, sell or dispose or deal in any manner for the purpose of financing the repayment of the pension liabilities of employees of PHCN,
- take over the settlement of stranded PHCN's Power Purchase Agreement obligations and other legacy debts as may be determined by the National Council On Privatization within the Nigeria Electricity Supply Industry, and
- manage and supervise the management of contractual arrangements arising from the assumption of stranded liabilities of PHCN.

4.3 Industry Guidelines

There are several guidelines in the industry to regulate operations. Each of these guidelines is a set of rules for the separate entities in the industry and for the value chain as a whole. Below is a laundry list of the guidelines of the industry.

4.3.1 Market Rules and Procedures

The market rules provide guidelines for the pre-transition, transition, medium and long term stages of the Nigerian Electricity Market. The objectives of the Market Rules are as follows:

- assume and administer the stranded liabilities of PHCN pursuant to the provisions of EPSR Act,
- To establish and govern an efficient, competitive, transparent and reliable market for the sale and purchase of wholesale electricity and Ancillary Services in Nigeria
- To ensure that the Grid Code and the Market Rules work together to secure efficient co-ordination and adequate participation.

According to the Market Rules, the competitive market for electricity is expected to evolve through the stages described below:

4.3.1.1 The Pre-Transition Stage

The key activities/ characteristics for the pre- transition stage of the Nigerian Electricity Market are as follows:

- Physical Unbundling of PHCN
- Privatisation of PHCN
- Establishment of performance incentives for distribution and generation activities
- Test run of the Grid Code
- Commence application of Draft Market Rules
- Develop Market Procedures

4.3.1.2 Transitional Stage

The key activities/ characteristics for the transition stage of the Nigerian Electricity Market are as follows:

- Electricity trading arrangements consummated through contracts.
- No centrally administered balancing mechanism for the Market.

- iDevelopment of a Market Procedure for the management of inadequate supply and shortage conditions.
- Constitution of the initial Market Surveillance Panel by NERC.

4.3.1.3 Medium Term Stage

The key activities/ characteristics for the medium term stage of the Nigerian Electricity Market are as follows:

- Balancing Market will be a spot market (daily trading at prevailing market price)
- Distributor may enter into bilateral contracts for purchase and or sale of energy
- Open entry to the market and, subject to technical and environmental obligations

4.3.1.4 Interim Market Rules

It was originally envisaged that the Transitional Electricity Market would be declared before or at the time of the completion of the privatisation of the PHCN successor companies. However, several factors within the market made it clear that the transactional completion of most of the privatisations will take place ahead of the implementation of the Transitional Stage of the Electricity Market. This had necessitated the introduction of the Interim Market Rules to govern the commercial arrangements during the period between the Handover Date and the implementation of the Transitional Market.

Some salient points in the Interim Market Rules are as follows:

- During this period, the successor companies and other generators will continue with the existing (pre-TEM) trading arrangements.
- The power generation output will not be covered by the Power Purchase Agreements (PPAs) contracts put in place for the successor company privatisations, and the distribution companies shall continue to be billed by the Market Operator for electricity from these sources
- The generating companies shall bill the Market Operator for available capacity and generated energy according to MYTO-2 and existing contracts.
- The MO will determine the allowable amount of funding required for the discos, Gencos and service providers during the interim period based on MYTO-2 provisions adjusted as follows:

- **Genco**
 - Energy charge (100%)
 - Capacity charge (45%)
 - In the case of Gencos that have effective PPAs during the Interim Period, NBET shall make up for any revenue delta (changes).
- **Discos**
 - Fixed and variable costs (20%)
 - Admin cost (100%)
 - Return on capital (50%)
 - Depreciation (10%)
 - TSP – 70% of its market revenue
 - NERC – 70% of its market revenue
 - MO – 60% of its market revenue
 - SO – 60% of its market revenue
 - NBET – 20% of its market revenue
- Certainty and stability
- Efficient use of the network
- Allocation of risk
- Simplicity and cost-effectiveness
- Incentive for improving performance
- Transparency/fairness
- Flexibility/robustness
- Social and political objectives

4.3.2.1 Generation Tariff Methodology

NERC has determined that the price of electricity to be paid to generators will be at the level required by an efficient new entrant to cover its life cycle costs (including its short run fuel and operating costs and its long run return on capital invested). The Long Run Marginal Cost (LRMC) Method is in use here.

LRMC involves calculating the full life cycle cost of the lowest efficient-cost new entrant generator, taking into account current costs of plant and equipment, return on capital, operation and maintenance, fuel costs, etc.

LRMC is applied in two ways:

- Benchmark costing: Creates a proxy for the market price which an efficient generator is expected to operate below.
- Individual long run marginal cost for each generator: This sets prices for each generator according to its plant and site specific costs

The classic LMRC applies to the successor Gencos. However, individual (site-specific) LMRC model requires a tariff beyond the MYTO benchmark to

4.3.2 Multi Year Tariff Order (MYTO)

The Multi Year Tariff Order (MYTO) is the tariff vehicle designed for the Nigeria Electricity Market to provide a unified way to determine efficient total industry revenue requirement, and provide a 15year view ahead for tariff in the sector. MYTO is used to set wholesale and retail prices in the Nigerian Electricity Market, and is based on the following principles and assumptions, namely:

- Cost recovery/financial viability
- Signals for investment



apply to the NERC for approval. The IPP will open its procurement process, accounts and financial model to scrutiny by the NERC, which will then apply prudence and relevance tests to determine whether such plant and site-specific costs should be allowed in the tariff

4.3.2.2 Retail Tariff

Retail tariffs reflect the costs of the entire value chain for the Nigerian Electricity Market, beginning with natural gas (fuel for generation plant), on to wholesale generation, through to transmission, distribution, metering and billing and finally to the consumer. The components of cost that are taken into account in constructing the domestic retail tariff through these steps in the value chain are:

- Electricity supplied through Wholesale Contracts and PPAs for the supply of wholesale electricity injected into the transmission network.
- Transmission Use of System (TUOS) charge to TCN for each MWh delivered to the distributor/retailer's bulk supply point(s).
- Electricity distribution through the local distribution network owned and operated by the distributor/retailer.
- Marketing, metering, billing and revenue collection (retailing).
- Institutional charges
- FGN tariffs subsidy targeted at vulnerable tariff classes (R1 and R2).
- Details of the classes of tariff and price set by MYTO are obtainable in the MYTO document for the entire value chain.

4.3.2.3 MYTO 2.1

MYTO makes provision for a bi-annual minor review and a 5-year major review of the assumptions to the MYTO model and for update of the total cost of electricity. The variables to be considered for review are

- Rate of inflation: Based on information obtained from NBS, inflation was reviewed to 7.9% from 13% benchmarked in MYTO 2
- Foreign exchange rates: Based on data from CBN and the allowable premium, exchange rate was reviewed to N166.15:\$1 from the N178 projected in MYTO 2
- Cost of fuel (gas price): Gas price was reviewed to \$2.5/MMBtu and transport cost of \$0.30/MMBtu from the regulated \$1.8/MMBtu assumed in MYTO 2
- Actual available generation capacity: Based on information obtained from the SO, average generation for a six-month period ending November 2014, generation was reviewed to 3675MW from 5611MW projected in MYTO 2.

In the MYTO 2.1 order, a review of the ATC&C Losses was also considered following the verification of actual loss level for each Disco. The updated financial model for MYTO 2.1 also treats Genco costs separately, taking into cognizance the peculiarity of each plant environment.

As at September 2015, the Regulator had called for a stakeholder engagement for the review of the MYTO based on the realities. The result of this were reviews of some macroeconomic assumptions involved in tariff computation. Minor adjustments to the wholesale generation tariffs and the retail tariffs were also made and should be communicated by NERC before the end of 2015.

4.3.3 Grid Code

The Grid Code contains the day-to-day operating procedures and principles governing the development, maintenance and operation of an effective, well-coordinated and economic Transmission System for the electricity sector in Nigeria.

The code is designed to:

- Facilitate an efficient production and supply of electricity for all users of the Transmission System and TCN itself, without any act of discrimination between Users or class of Users.
- Facilitate competition in the generation and supply of electricity in the country.

The code seeks to instil grid discipline amongst users of the Transmission System over the following dimensions:



The code seeks to instil grid discipline amongst users of the Transmission System over the following dimensions:

- Planning
- Connection conditions
- Operation code (Power system control, Frequency control and operating reserves, voltage control, black start, emergency operation and restoration, operational planning, information exchange, scheduling and dispatch, outage co-ordination, reliability measures, etc.)

4.3.3.1 Transmission System Performance

The grid code specifies the following parameters for transmission system performance characteristics:

1. Nominal Frequency of 50Hz
2. Operating band deviations of $\pm 0.5\%$ from 50Hz but deviation under System Stress of $\pm 2.5\%$ from 50Hz
3. Bus bar voltages shall be within the Voltage Control ranges specified in Table below:

Voltage Level	Minimum Voltage kV (pu)	Maximum Voltage kV (pu)
330 kV	313.5 (0.95)	346.5 (1.05)
132 kV	118.8 (0.9)	145.0 (1.098)
33 kV	31 (0.94)	34.98 (1.06)
16 kV	15.2 (0.95)	16.8 (1.05)
11 kV	10.45 (0.95)	11.55 (1.05)

4. Under System Stress or following system faults, voltages can be expected to deviate outside the above limits by a further $\pm 5\%$ (excluding transient and sub-transient disturbances)
5. Unless otherwise agreed by the TSP, the Basic Insulation Value (BIV) for User Apparatus shall be as follows

Voltage Level	BIV
330 kV	1300 kV
132 kV	650 kV

- In general, the maximum total levels of harmonic distortion on the System under Normal Operation conditions, planned outages and fault outage conditions (unless during System Stress) shall not exceed the following values:

- 330 kV a Total harmonic Distortion of 1.5% with no individual harmonic greater than 1%
- 132 kV a Total Harmonic Distortion of 2% with no individual harmonic greater of 1.5%.

4.3.3.2 Connection Criteria

The grid code specifies the following technical criteria for plant and apparatus at the connection point to the grid:

1. Plant and Apparatus shall be designed, manufactured and tested in accordance with the IEC or equivalent approved standard, and quality assurance requirement of ISO 9001 or equivalent
2. Generating Units shall have, at least, following performance requirements:
 - Each Generating Unit must be capable of supplying rated power output (MW) at any point between the limits of 0.85 power factor lagging and 0.95 power factor leading, at the Generating Unit terminals at rated voltage level in the Transmission Network.
 - Each Generating Unit must be capable of continuously supplying its registered output within the Power System frequency range
 - The Active Power output under steady state conditions of any Generating Unit directly connected to the Transmission Network should not be affected by voltage changes in the normal operating range. The Reactive Power output of a Generating Unit having a synchronous alternator must, under steady state conditions, be fully available within the voltage range $\pm 10\%$ normal voltage at the connection point
 - A Generating Unit having a synchronous alternator must be capable of start-up, synchronize and pick up load: From cold, within 10 hours; From warm, within 6 hours; From hot, within 3 hours.
 - A steam-turbine or gas-turbine Generating Unit which has been synchronized must be capable of ramping up pursuant to a Dispatch instruction at a rate of at least 3% of Generator Capacity Registered (GCR) per minute. A steam-turbine or gas-turbine Generating Unit must be capable of de-loading at a rate of at least 3% of GCR per minute.

4.3.4 Metering Code

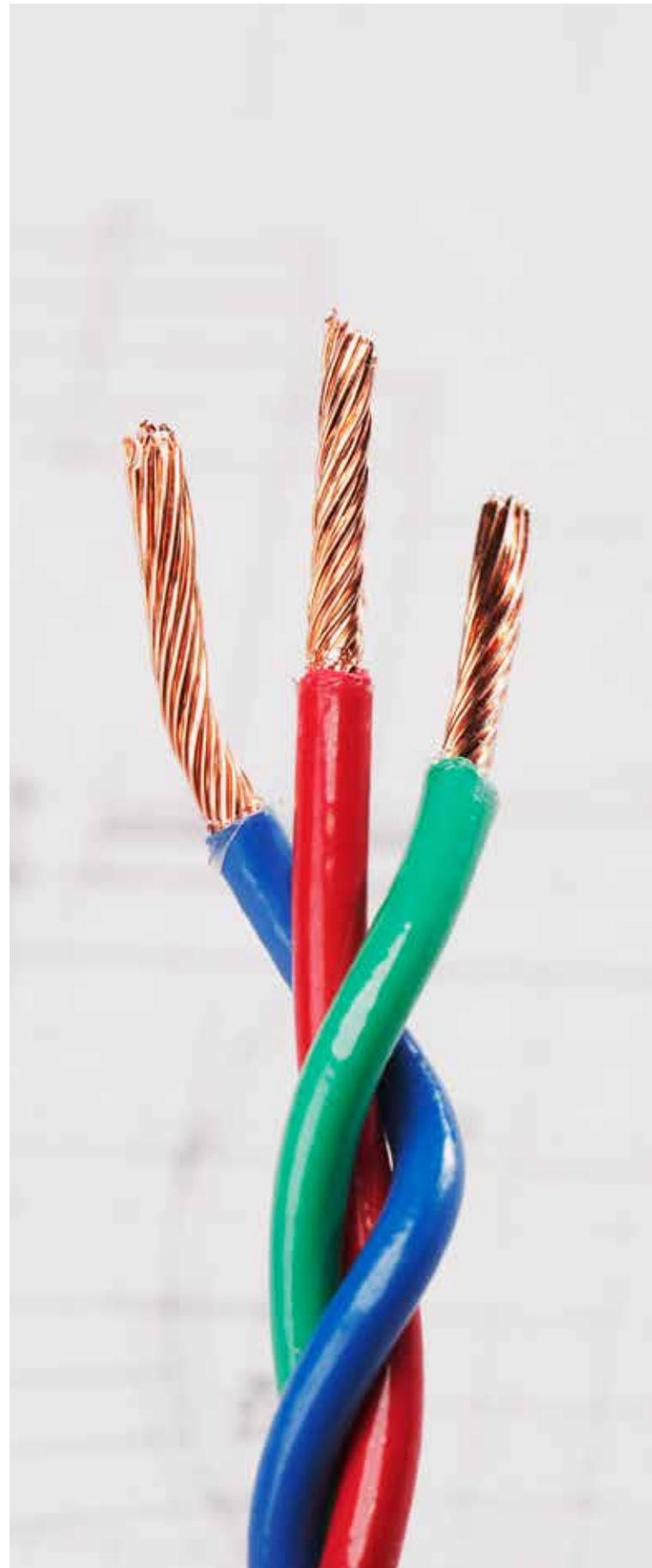
To ensure financial viability of the electricity industry after the unbundling, modern accurate meters systems with reliable communication facilities shall be deployed across the industry production and supply chain to measure and record energy production and utilization.

Unless something different is agreed among users, and authorised by the Market Operator, Ownership of Metering Systems shall conform to the following rules:

- a Generation Stations directly connected to the Transmission Network
 - Distributors Connected to the Transmission Network
 - Main Metering System shall be owned by the TSP
 - Check Metering, if Redundant Metering shall be owned by the TSP
- b Distributors Connected to the Transmission Network
 - Main Metering System shall be owned by the TSP
 - Check Metering, if Redundant Metering shall be owned by the TSP
 - Check Metering, for the purpose of verification, shall be owned by the relevant Disco
- c Eligible Customers Connected to the Transmission Network
 - Main Metering System shall be owned by the Eligible Customer:
 - Check Metering shall be owned by the TSP
- d International Interconnections
 - Main Metering System shall be owned by TCN, unless something different has been agreed in relevant Interconnection Agreement
 - Ownership of Check Metering Systems shall be governed by the relevant Interconnection Agreement.
- e Interfaces among different Discos
 - Main and Check Metering System shall be owned by the relevant Discos.

The relevant owner shall be responsible for installing and maintaining his own metering equipment at the Connection Point, unless the user agrees with the Market Operator otherwise. For installations, site inspections, technical audits and maintenance the Owner may utilize the services of any Metering Services Provider accredited by NERC. Regardless of ownership, the Market Operator shall be responsible for approving the initial design, and for the testing, commissioning and sealing of any Commercial Metering System in Nigeria. The User, who owns the substation where the metering equipment is located, shall provide the Market Operator with:

- (a) 24 hour unrestricted access to the facilities where the Metering System is located



- (b) adequate space for installing communications devices; and
- (c) reliable power supplies

Any remote communications to the metering equipment, Meters, Data Registers, and connection equipment will be the responsibility of the Market Operator. The Market Operator may agree, either with the System Operator or the TSP, as it considers suitable, on the operation and maintenance of the communication equipment, as well as the services associated with the remote reading.

4.4 Legislative and Fiscal Provisions

The key legislation and taxes applicable to companies operating in this sector are summarized below:

4.4.1 Electric Power Sector Reform Act

The Electric Power Sector Reform Act, 2005 can aptly be described as the foundation of the restructured power sector in Nigeria. The Act, which evolved from the National Electric Power Policy adopted in 2001, established the basis under which private companies can now participate in the generation, transmission and distribution of electricity. The Act amongst others::

- Provides for the creation of a holding company for the assets and liabilities of the then National Electricity Power Authority (NEPA).
- Provides for the unbundling of the Power Holding Company of Nigeria (PHCN) through the formation of several companies to take over the assets, liabilities, functions and staff of the PHCN.
- Establishes the Nigeria Electricity Regulatory Commission.
- Provides for the development of a competitive electricity market.
- Provides the basis for determination of tariffs, customer rights and obligations and other related matters.

4.4.2 Nigerian Investment Promotion Commission Act

The Nigerian Investment Promotion Commission (NIPC) Act, 1995, established the NIPC as an investment promotion agency of the Federal Government. The agency is responsible for monitoring and registering

foreign investments in Nigeria. Therefore, all companies with foreign shareholding must register with the agency. It is also responsible for liaison between investors and ministries, government departments, institutional lenders and other related institutions.

The Act also removed the ceiling on foreign investment in Nigerian companies. The only restrictions relate to enterprises on the "negative list," which are reserved exclusively for the Government.

The negative list includes enterprises engaged in:

- the production of arms and ammunition;
- narcotics and psychotropic substances; and
- military, para-military, police, customs, immigration and prison service uniforms and accoutrements.

¹² Assessable profit is determined after adjusting for non-tax deductible expenses and non-taxable income but before taking into consideration any loss brought forward or capital allowances.

Newly incorporated companies with foreign shareholders are expected to pay a registration fee of **₦15,000** to the NIPC.

4.4.3 Companies Income Tax Act

The Companies Income Tax (CIT) Act, 2004, as amended, is the enabling legislation under which companies are assessed to tax in Nigeria (excluding companies engaged in petroleum operations).

The CIT Act provides that the profit of a company is liable to CIT at the rate of 30%. The tax is applicable on the total profits of the company, after adjusting for non-tax-deductible items, unutilized losses from prior years and capital allowances (tax depreciation), if any. The CIT is payable to the Federal Inland Revenue Service (FIRS).

The CIT Act also stipulates that:

- where in any year of assessment, the ascertainment of total assessable profits from all sources of a company results in a loss, or
- where a company's ascertained total profits results in no tax payable, or
- where the tax payable is less than the minimum tax,

There shall be levied and paid by the company the minimum tax as prescribed under the CIT Act.

The exceptions to this rule are:

1. Where a company is in its first four years of commencement of business
2. Where a company is engaged in agricultural trade or business



3. Where 25% or more of the company's equity capital is imported and evidenced by a Certificate of Capital Importation (COCI).

Notwithstanding the above, in the past, non-resident companies were allowed to prepare their tax returns on deemed profit basis, which assumes that only 20% of the turnover from their Nigerian operations is profit. The 30% tax rate is applied to the 20%; thus giving an effective tax rate of 6%. However, with effect from the end of the 2014 financial year, this practice has now been phased out with all companies required to prepare audited accounts and file tax returns on actual profit basis.

Companies prepare and file their CIT returns on self-assessment basis within 6 months from the end of their financial year. For newly incorporated companies, the CIT returns are due for filing within 6 months from the end of the financial year or 18 months from incorporation whichever comes first.

4.4.4 Tertiary Education Trust Fund Act

The Tertiary Education Trust Fund Act, 2009 which repealed the Education Tax Act, 2007 requires every company incorporated in Nigeria to pay a Tertiary Education Tax (TET) at 2% of its assessable profit¹².

TET is also computed and filed on self-assessment basis and is due not later than 6 months from the end of the Company's financial year. The TET is payable to the FIRS.

4.4.5 Value Added Tax Act

The Value Added Tax (VAT) Act, 2004 as amended, regulates the operation of VAT in Nigeria. VAT

is charged at a flat rate of 5%, and is payable on supply of all goods and services, except those specifically exempted from VAT.

A taxable person who supplies VATable goods or services is required to include the VAT on its invoice, and collect the tax thereof (Output VAT). Similarly, a taxable person is required to pay to the supplier, the tax on VATable goods and services purchased or supplied to him (input VAT). The net VAT payable to the FIRS is the excess of output VAT over (allowable) input VAT. Input VAT would only qualify as allowable if it relates to VAT paid for goods purchased or imported for resale or goods which form stock in trade used in the manufacturing of new products. VAT on services, overhead and administration should be expensed while that incurred on fixed assets will be capitalized along with the cost of the asset.

Where a taxable person does not have any input VAT which qualifies as allowable, its entire output VAT would be payable to the FIRS not later than 21 days in the month following that in which the VATable transaction took place.

4.4.6 Withholding Tax

WHT is a form of advance payment of income tax. The basis for deduction and remittance of WHT is contained in the provisions of the CIT Act, Personal Income Tax Act, Petroleum Profits Tax Act and the WHT Regulations.

Dividends, interest, rent, royalty and other qualifying payments to shareholders, vendors and lenders are liable to WHT deduction at the appropriate rate. The rates vary between 5% and 10%, depending on the nature of the transaction and whether the beneficiary of the payment is a natural person, partnership or a limited liability company.



on the nature of the transaction and whether the beneficiary of the payment is a natural person, partnership or a limited liability company.

WHT deducted at source from non-resident companies in respect of interest, rent, dividend and royalty constitutes the final tax liability due from the companies. A lower rate of 7.5% would apply to beneficiaries who are resident in a country that has double tax treaty (DTT) with Nigeria.

Nigeria currently has DTTs with United Kingdom, Netherlands, Belgium, Pakistan, Romania, Philippines, Czech Republic, Canada, South Africa, China and France. The DTTs with South Korea, Spain, Sweden, Mauritius and Russia are yet to be completely ratified.

Every company is expected to prepare and file a return showing details of relevant qualifying transaction which it undertook in the relevant month, as well as the amount deducted for each transaction amongst others. The WHT returns are submitted to the relevant tax authority within 21 days in the month following that in which the transaction took place.

4.4.7 Personal Income Tax Act

The legal basis for the imposition of personal income tax (PIT) is the Personal Income Tax Act (PITA), 2004 as amended by the Personal Income Tax (Amendment) Act (PITAM), 2011.

The PIT is operated through the Pay-As-You-Earn (PAYE) tax system which is a system whereby employers of labour are deemed to be agents of the relevant tax authority for the purpose of deducting and remitting taxes due from the salaries of their employees.

PIT is applicable on the gross income of a taxable person after adjusting for non-taxable income and statutory tax relief/allowance. The taxable income is then assessed to tax using the graduated rates below:

Taxable income (NGN)	Rate of tax (%)
First 300,000	7
Next 300,000	11
Next 500,000	15
Next 500,000	19
Next 1,600,000	21
Above 3,200,000	24

PIT, which is payable to the States Board of Internal Revenue where the employee is resident, is due within 10 days in the month following that in which the payment was made to the employee.

4.4.8 Capital Gains Tax Act

The Capital Gains Tax (CGT) Act, 2004 as amended regulates payment of CGT in Nigeria. The rate of tax is currently 10% and is levied on capital gains accruing on disposal of chargeable assets, irrespective of whether the asset is situated in Nigeria or not. Capital gains accruing outside Nigeria to a non-resident company or individual are subject to CGT only on the amount received or brought into Nigeria.

4.4.9 Industrial Development (Income Tax Relief) Act

The Industrial Development (Income Tax Relief) Act (IDA), 2004 was enacted to promote and incentivize industries or products (pioneer industries and products) considered pivotal to the development of the country and its economy.

The IDA provides for such industries and products to be granted pioneer status which would exempt them from payment of income tax for a period of up to five (5) years.

The Nigerian Investment Promotion Commission (NIPC) is the government agency responsible for the administration of the IDA.

4.4.10 Customs, Excise Tariff, etc. (Consolidation) Act

The Customs, Excise Tariff, etc. (Consolidation) Act, 1995 (CETA) provides for the imposition of ad valorem customs and excise duties payable on goods imported and manufactured in Nigeria based on a harmonized system of custom tariff. The CETA incorporates a Tariff Schedule which specifies the applicable rates of import duties and levies payable on importation of goods into Nigeria. Duty rates ranging between 5 and 20 percent are typically applicable to machinery, equipment or spare parts imported for use in the value chain of the power sector.

4.4.11 Sundry Regulations made by the Nigeria Electricity Regulatory Commission

The EPSRA conferred on the NERC, the powers to make Regulations necessary to give effect to the provisions of the Act. Some key regulations that have been made are:

- **Regulations for the Investment in Electricity Networks 2015.**

These Regulations provide for the procedure for investing in electricity networks in Nigeria. The objectives of these Regulations are mainly to create strong incentives to encourage the TCN and the DISCOs to make appropriate and sustainable investments in capacity expansion.

- **Nigerian Electricity Supply and Installation Standards Regulations 2015**

The Regulations are a compendia of standards for the design, construction and commissioning of electrical infrastructure in the Nigerian

Electricity Supply Industry. The Regulations were issued by the NERC to replace the Electricity Supply (S. I. 5) Regulations and the Electrical Installation Regulations (S.I.6) of 1996 issued under the repealed Electricity Act.

- **Regulations on National Content Development for the Power Sector 2014**

The objective of the Regulation is to promote the deliberate utilization of Nigerian human and material resources, goods, works and services in the industry as well as building capabilities in Nigeria to support increased investment in the industry.

- **NERC Regulations for the Procurement of Generation Capacity 2014**

These Regulations provide for the processes to be used by a Buyer in procuring additional electricity generation capacity.

- **NERC (Embedded Generation) Regulations 2012**

These Regulations provide a legal and regulatory framework for the issuance of licences to qualified operators to engage in Embedded Generation of electricity in Nigeria; and to ensure compliance with set standards.

- **NERC (Independent Electricity Distribution Networks) Regulation 2012**

These Regulations provide a legal and regulatory framework for the issuance of licences to qualified operators to engage in electricity distribution, independent of the already existing PHCN Successor distribution companies, and to ensure compliance with set standards.

4.5 Applicable Incentives

The key incentives available to companies engaged in activities in the power sector are summarized below

4.5.1 Under the Companies Income Tax Act

The CITA provides tax incentives for companies engaged in gas utilization. Companies investing in power plant which utilizes gas would benefit from the incentives, which include either:

- i. A three (3) year income tax holiday, with possible renewal for additional two (2) years.
- ii. Accelerated capital allowances after the tax-free period in the form of annual allowance
- iii. 90 percent with 10 percent retention for investment in plant and machinery.
- iv. An additional investment allowance (uplift on the cost of the asset) of 15 per cent which does not reduce the value of the asset.
- v. Tax-free dividends during the tax free period where the investment for the business was made in foreign currency.

Or

- i. An additional investment allowance of 35% (uplift on the cost of the asset) which shall not reduce the value of the asset.

It will therefore be necessary to perform an economic simulation to determine which of the two options will be beneficial to such a company. The interest payable on any loan obtained for a gas project with the prior approval of the Minister of Finance is tax deductible.

4.5.2 Under the Industrial Development (Income Tax Relief) Act

The following incentives are available to companies which qualify and are granted pioneer status

- i. A tax holiday period of three years commencing on the production day with a possible extension up to a maximum of an additional two years.
- ii. Dividends paid out of pioneer profits shall be tax-exempt when distributed to the Company's shareholders.
- iii. Capital expenditure on qualifying assets incurred during the tax relief period is treated as having been incurred on the first day following the tax relief period.
- iv. The loss incurred during the tax relief period is also deemed to be incurred on the first day following the expiration of the tax relief period and can be carried forward to offset profits after the tax –exempt period.

Given the importance of power and the efforts being put in place by Government to enhance power generation, the Minister for Commerce and Industry (now Trade and Investment) on behalf of the President, issued the Industrial Development (Additional List of Pioneer Industries) Notice No. S. I. 11, 2008. This notice included the Utility Services

industry as a pioneer industry and specifies "independent power generation utilizing gas, coal and renewable energy sources" as a pioneer "product."

While the above does not expressly extend the pioneer status cover to companies engaged in the transmission and distribution of power, there is considerable willingness on the part of Government to extend the incentives to these companies upon application.

4.5.3 Under the Value Added Tax Act

Parts I and II of the First Schedule to the Act contain the lists of goods and services that are exempt from the application of VAT. "Plant, machinery and equipment purchased for utilisation of gas in downstream petroleum operations" is listed as being VAT-exempt.

The VAT Act does not clearly describe the activities that qualify as gas utilisation in downstream petroleum operations. A definition, however, can be imported from the CIT Act, which defines "Gas Utilization" as "the marketing and distribution of natural gas for commercial purpose and includes power plant, liquefied natural gas, gas to liquid plant, gas transmission and distribution pipelines"

Consequently, it can be argued that power plant imported into the country should not be subjected to VAT at the port of entry.

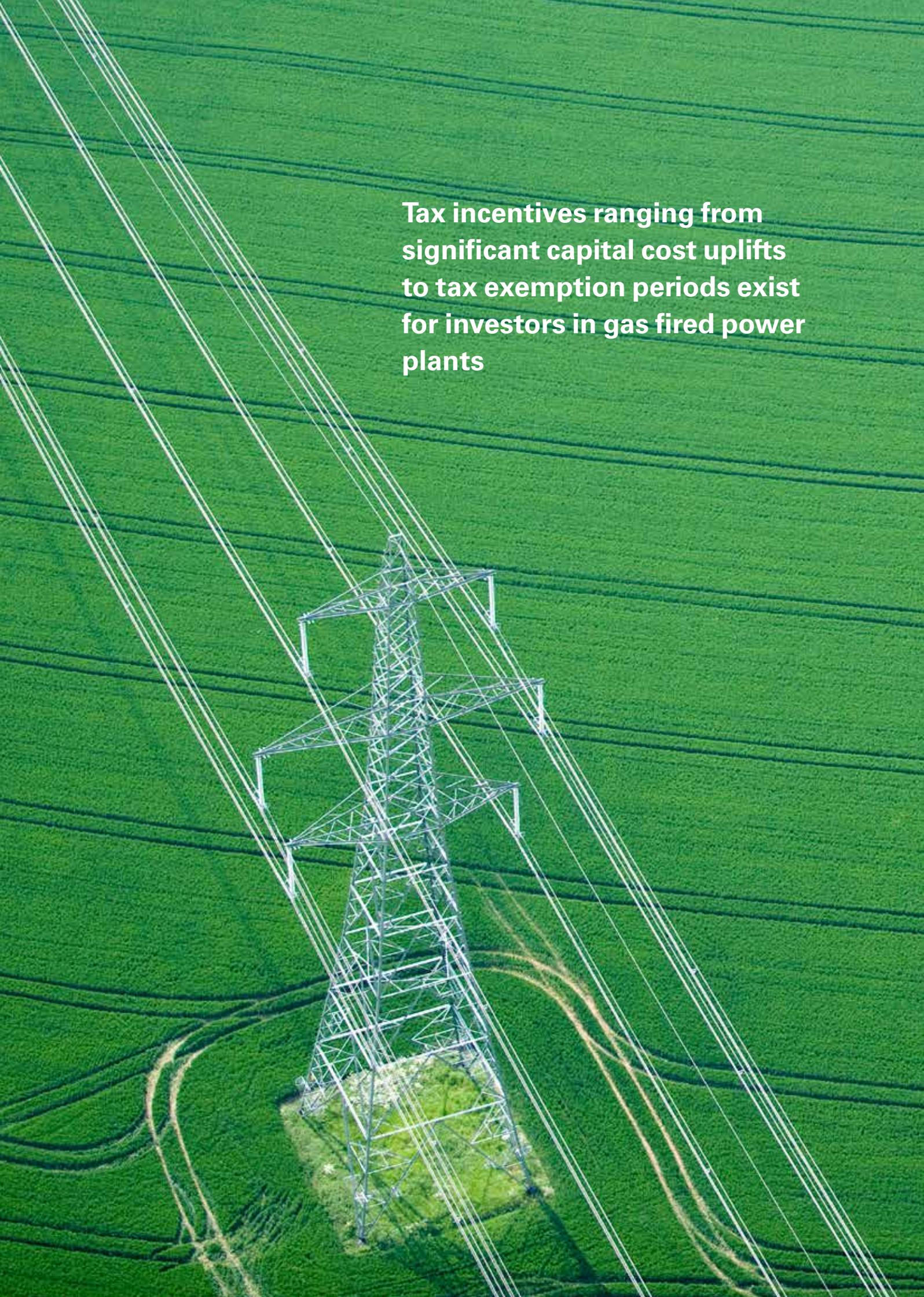
4.5.4 Under the Customs, Excise Tariff, etc. (Consolidation) Act

The CETA exempts from custom duties, any machinery, equipment or spare part imported into Nigeria by an industrial establishment engaged in the exploration, processing or power generation through the utilization of Nigerian gas, for its operation

To demonstrate that the development of the power sector is a major priority for the government, the Federal Government of Nigeria 2012 Budget proposals included additional incentives for the power sector⁹ as follows:

- i. Zero duty on the importation of equipment and machinery
- ii. Grant of further concessions or waivers on sectoral basis (including the power sector), focusing on expanding domestic production for local consumption, boosting exports, development of value chains and boosting employment.

¹⁰ The additional incentives proposed in the 2012 Budget are yet to be published in the Government's official Gazette

An aerial photograph of a high-voltage power line tower situated in a vast, green agricultural field. The tower is a complex lattice structure of metal, with multiple cross-arms supporting several high-voltage power lines that stretch across the landscape. The field is divided into neat, rectangular plots, and the overall scene is dominated by vibrant green hues. The text is overlaid in the upper right quadrant of the image.

Tax incentives ranging from significant capital cost uplifts to tax exemption periods exist for investors in gas fired power plants

Other Industry Issues



5.1 Transmission and Distribution Infrastructure

The transmission system is potentially the weakest link in the entire chain of the Nigeria electricity network. Inadequate transmission infrastructure has been consistently highlighted as being responsible for stranded capacity that is characteristic of the electricity grid. Consequently, significant investment is required to improve the transmission system if it is to keep pace with the expected growth in the generation capacity and consumers' expectations of improved power supply.

The appointment of a management and technical contractor for the Transmission Company of Nigeria (TCN) seems to be a step in the right direction but it is very important that they are given the required support by Government to rapidly improve its infrastructure.

There is also the need for considerable expansion of the distribution network to accommodate the demand for power from consumers. The current ATC&C losses are well above acceptable limits and adequate investment must be made to improve the level of efficiencies in the distribution system. Furthermore, issues such as supply of meters to consumers to enable proper metering and billing system would need to be addressed in order to prevent revenue leakages for the Discos.

5.2 Refinancing of Accumulated Interest Cost

The acquisition of the assets of the PHCN successor companies was largely aided by finance obtained from both local and foreign financial institutions. The repeated alteration of the bid timetable for the takeover of the successor companies evidently

extended the takeover date (which the investors might not have contemplated while establishing revenue generation projections and negotiating the terms of these loans).

Furthermore, the basis of the projections of cash flow has since changed owing to the introduction of the Interim Rules, the realities in the sector leading to delayed payments from consumers and the non-activation of the partial risk guarantees (for the Gencos)

The foregoing has therefore created huge interest accumulation and there is therefore the need for the investors to renegotiate the terms of their current financing arrangements with a view to ensuring that it aligns with current realities. This would also help to manage the overall debt exposure as well as actual cash flows..

5.3 IPP Framework and Licensing Issues

Recently, some State Governments have obtained electricity generation licences and have constructed Independent Power Plants (IPP). Although the licence obtained was for the purpose of generating power for the sole use of the Government and its agencies, in some instances, the excess power generated is being supplied directly to end consumers within the vicinity of the IPP project. This may therefore create issues for the Discos operating in those areas.

It is therefore important for the NERC, the relevant States Government and the Discos to discuss and agree modalities for addressing this issue. Otherwise, this may impact the ability of the Disco to obtain full value for its investments in those areas. A way of



resolving the issue may be for the excess capacity to be transferred to the National grid and sold to the Discos, which may then sell it on to the end consumers.

5.4 Value Added Tax Issues

5.4.1 Does Input VAT on Gas Qualify as Allowable?

The VAT Act provides that a taxable person is required to pay to the supplier, the tax on VATable goods and services purchased or supplied to him (input VAT). Therefore, suppliers of natural gas would be required to charge VAT on sales to the GENCOs utilizing gas to fire their power plants. The GENCOs, on the other hand, are required to charge (output) VAT on the supply of electricity to their customers (i.e. the NBET, DISCOs or eligible direct users). However, based on the implementation of the communique signed by NERC, the FIRS and the NESI participants, the Genco's cannot charge output VAT. The output VAT is only charged at the Disco level. This therefore implies that the Gencos will have to expense the input VAT incurred on gas

The net VAT payable to the FIRS is the excess of output VAT over (allowable) input VAT. Input VAT would only qualify as allowable if it relates to VAT paid for goods purchased or imported for resale or goods which form stock in trade used in the manufacturing of new products.

The above raises the question as to whether gas qualify as "goods which form stock in trade used in the manufacturing of new product (electricity). The answer to this question would confirm if the input VAT paid by a GENCO, on the purchase of gas, would

qualify as an allowable deduction from output VAT charged on the sale of electricity.

It may be necessary to obtain clarification on this issue from the FIRS as this would have a huge impact on the cash flow of the GENCOs.

5.4.2 Basis of VAT Remittance: Cash vs. Accrual

Companies are required to remit the net VAT payable (i.e. the excess of output VAT over (allowable) input VAT), to the FIRS not later than 21 days in the month following that in which the "VATable" transactions took place. This seems to suggest that remittances should be made on accrual basis. However, the operative words in the definition of input and output VAT by the VAT Act are "VAT paid" and "VAT collected," respectively. These words may suggest that the net VAT to be remitted should be the output VAT collected less the input VAT paid; which implies remittance on cash basis.

The resolution of the above debate is vital especially for the distribution companies, which may have a time lag between when the services are provided, income recognised, bills issued and payment received from the customers. This time lag may spread across more than one month. The question then would be when does a distribution company recognize a VAT liability and at which point in the transaction flow chain is the company expected to remit VAT to the FIRS. It may be extremely important for cash flow forecast and management that the necessary clarification is obtained from the FIRS. Also in providing such a clarification, the FIRS may also need to consider the pioneer nature of the industry and the need to continue to encourage investment and growth in the sector.

Appendix

APPENDIX 1 – LICENCE APPLICATION REQUIREMENTS (GENERATION, TRANSMISSION, SYSTEM OPERATION, DISTRIBUTION AND TRADING)

PART I – GENERAL REQUIREMENTS

A LEGAL

1. Certificate of Registration, Certificate of Incorporation, Memorandum and Articles of Association, Deed of Partnership, Deed of Trust (as applicable)
2. Certified Audited Financial Statements and Accounts for the last or latest three years (if applicable)
3. Tax Clearance Certificate for the last or latest three years (if applicable)
4. Environmental Impact Assessment Report and approval
5. Agreements (e.g. PPA, FSA etc.), if applicable
6. Certificate of Occupancy for project site (if any)
7. Evidence of consents or permits from other relevant Authorities and Agencies relating to the project

B FINANCIAL

1. Tariff methodology and calculation
2. Short term cash flow projection
3. Medium term cash flow projection
4. Funding arrangements
5. Investment plans
6. Asset base
7. Risk Management Strategy
8. Management experience and depth

C TECHNICAL

1. Details of experience in and knowledge of the electricity industry



2. Summary of skills and experience of the Directors and top management

- ix. On the site map show area required for the following:

- Fuel delivery point,
- fuel storage space,
- water pipe line,
- liquid waste disposal area,
- ash disposal area (in case of coal plant)

PART II - SPECIFIC REQUIREMENTS

A TECHNICAL DATA REQUIREMENTS FOR A NEW POWER STATION

1 Site Information of Power Station

- i. Furnish location map to scale showing roads, railway lines, transmission lines, rivers, and reservoirs if any.
- ii. For Hydro, map should show proposed dam, reservoir area, water conductor system, fore bay, powerhouse etc.
- iii. For Hydro station, provide information on area of villages, forestland, agricultural land etc. Submerged.
- iv. Fuel supply arrangement (contractual, gas and oil pipelines-where available)
- v. Furnish information on means of Coal transport from mines or means of coal carriage if coal is to be brought from distance.
- vi. In case of other fuels, furnish details of sources of fuel and their transport.
- vii. Water Sources (furnish information on availability of water for operation of the Power Station).
- viii. Environmental (State whether forests, wetlands, mining areas are affected).

2 Power Station Information

- i. Total Capacity (MW)
- ii. Number of Generating Units
- iii. Size of Generating Units (MW)
- iv. Fuel Type
- v. Annual Generation
- vi. Running Regime
- vii. Station load
- viii. Station Load Factor
- ix. Ancillary Services to be provided by station
- x. Single line diagram of station including connection at Transmission Substation
- xi. Commissioning Date
- xii. State whether development will be carried out in phases and if so, furnish details.
- xiii. Information on waste handling and management



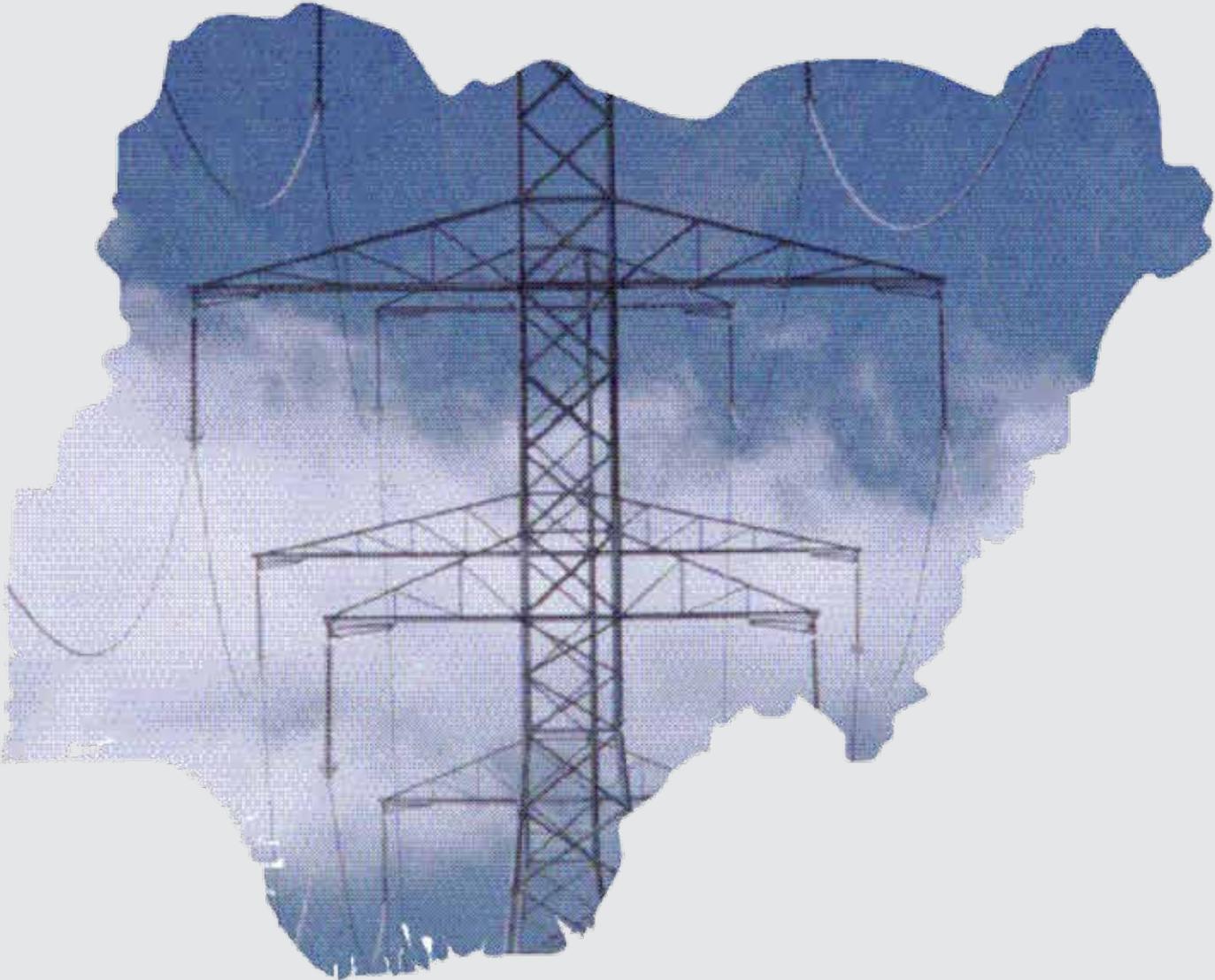
3 Generating Unit Information

- i. Generator Type
- ii. Rating (MVA)
- iii. Terminal Voltage (KV)
- iv. Rated Power Factor
- v. Unit efficiency
- vi. Reactive Power capability (MVA_r) in the range 0.95 leading and 0.85 lagging.
- vii. Short Circuit Ratio
- viii. Direct axis transient reactance (% on MVA rating).
- ix. Direct axis sub-transient reactance (% on MVA rating).
- x. Auxiliary Power requirement.
- xi. Generator Transformer/Station Transformer
 - Rated Capacity (MVA)
 - Voltage Ratio (HV/LV)
 - Tap change range (+% to -%)
 - Percentage Impedance (Positive Sequence at Full load).
- xii. Turbine (Thermal Power Plant)
 - Boiler and Major accessories (for steam turbines)
 - State Type
 - capacity (minimum and rated)
 - Steam pressure
 - Steam temperatures (superheat and reheat)

- Heat Rates (minimum, maximum, incremental)
- Efficiency at rated capacity
- Gas turbine pressure ratio
- Gas temperatures (gas turbine)

B TECHNICAL DATA REQUIREMENTS FOR CAPTIVE/OFF GRID GENERATION

- i. Total Capacity (MW) per site
- ii. Number of Generating Units per site
- iii. Size of Generating Units (MW and MVA)
- iv. Fuel Type
- v. Terminal Voltage
- vi. Rated Power Factor
- vii. Reactive Power Capability
- viii. Noise Level (State distance from power plant)
- ix. Environmental Impact Assessment (for plants greater than 10MW). If EIA is not applicable, give detailed information on effluents and discharges and how they will be managed
- x. State if generator will be connected directly or indirectly to Distribution or Transmission Network.
- xi. Provide information on protective measures against infeed current (if applicable)



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