



Nigeria Country Report



By

Mr. Abdelnasser ABDALLAH and Dr. Aminu H. ISA
Energy Commission of Nigeria,
Plot 701C, Central Area, PMB 358, Garki, Abuja,
Nigeria

- *Presented at the JICA Knowledge Co-Creation Program (Group & Region Focus)
Training Course on Energy Policy, Tokyo, Japan 3th July, 2017.*

Acknowledgements

- The Energy Commission of Nigeria (ECN), on behalf of the Federal Government and people of Nigeria wish to express our profound appreciation to:
 - The Japan International Cooperation Agency (JICA) for providing the technical and financial support for the capacity building, through “The Knowledge Co-Creation Program” for knowledge on energy policy making and formulation, as well as funding our trip to this training;
 - The Government of Japan for hosting us in this historic and majestic country.

Contents of Country Report

1. General Information
 - a) Country profile
 - b) Economic indicators
2. Energy Reserves
3. Current Energy Policy and Measures
4. Past Energy Demand and Supply
 - a) Energy demand by sector
 - b) Demand and supply by energy
 - c) Energy Prices
5. Outlook of Energy Demand and Supply
6. Difficulties & Bottle Necks facing Energy Policy Formulations in Nigeria
7. Subjects we would like to study in the order of priority and reasons.

1. General Information ...

1.1 Country Profile

Area: 923, 768.00 sq. Km (356,700.0 sq. mi)

Capital: Abuja

Currency: Naira (₦)

Location: Lies on Latitude 4° north of the Equator and Latitudes 3° and 14° on the east of the Greenwich Meridian.

Seasons: Lies within the tropic with two distinctive seasons; wet (April – Oct.) and dry (Nov. – Mar.)

Temperature: generally high, ranging between 22 and 34°C, except on the three Plateaus, namely, Jos, Mambila and Obodu Cattle Ranch



Map of Nigeria, showing boarder Countries
Ref: www.bbc.com/news/world-africa-13949550

General Information ...

1.2 Economic and Social Indicators

	2011	2012	2013	2014	2015
GDP (Billion US\$)	414.10	460.90	514.9	568.5	492.5
GDP per Capita (US\$)	2,522.0	2,730.2	2,966.1	3.184.6	2,683.1
Real GDP Growth Rate (%)	5.3	4.2	5.5	6.2	2.8
Population (million)	164.2	168.8	173.6	178.5	183.6
Population Growth Rate (%)	2.8	2.8	2.8	2.8	2.8
Unemployment Rate (%)	6.0	10.6	10.0	7,8	10.4
Life Expectancy at Birth (Years)	47.6	47.6	47.6	52.9	52.9
Incidence of Poverty (%)	71.5	72.0	72.5	73.0	74.0

2. Energy Reserves

Nigeria is Endowed with A Variety of Abundant Energy Resources

Hydropower Potential



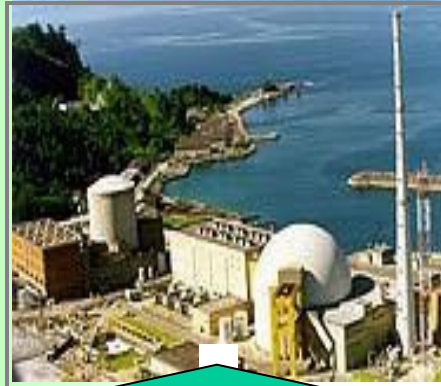
SHP: 3,500 MW; Large
Hydro:11,500 MW

Coal



Total reserves:
2.175 billion tonnes

Uranium



Total reserves: Not Yet
Quantified

Wind



(2-4) m/s at 10m height
(main land)

Crude Oil



Total reserves:
36.22 billion barrels

Biomass



Excess of 1.2m
Tonnes/day

Natural Gas



Total reserves:
187 Trillion SCF

Solar radiation



3.5-7.0 kWh/m²/day

Energy Resources in Nigeria ...

S/No.	Resource Type	Reserves (Natural Units)	Production Level (natural units)	Utilization (natural units)	
1.	Crude Oil	36.22 billion barrels	2.06 million barrels/day	445,000 barrels/day	
2.	Natural Gas	187 trillion SCF	7.1 Billion SCF/day	3.4 billion SCF/day	
3.	Coal and lignite	2.734 billion tonnes	insignificant	insignificant	
4.	Tar Sands	31 billion barrels of oil equivalent	-	-	
5.	Large Hydropower	11,250 MW	1,938 MW (167.4 million MWh/day)	167.4 Million MWh/day	
6.	Small Hydropower	3,500 MW	30 MW (2.6 million MWh/day)	2.6 million MWh/day	
7.	Solar Radiation	3.5 - 7.0 kWh/m ² /day (485.1 million MWh/day using 0.1% Nigeria land area)	Excess of 240 kWp of solar PV or 0.01 million MWh/day	Excess of 0.01million MWph/day of solar PV	
8.	Wind	(2-4) m/s at 10m height	-	-	
9.	Biomass	Fuelwood	11 million hectares of forest and woodland	0.110 million tonnes/day	0.120 million tonnes/day
		Animal waste	245 million assorted in 2001	0.781 million tonnes of waste/day in 2001	Not available
		Energy Crops and Agric Residue	72 million hectares of Agric. Land and all waste lands	Excess of 0.256 million tonnes of assorted crops residues/ day in 1996	Not available
10.	Nuclear Element	Not yet quantified	-	-	

3. The National Energy Policy (NEP), Reviewed 2013

- The NEP recognizes the multi-dimensional nature of energy and therefore addresses diverse issues such as:
 - research and development,
 - energy pricing and financing,
 - legislation,
 - energy efficiency,
 - Environment.
- The overall thrust of the energy policy is the optimal utilization of the nation's energy resources for sustainable development.

Contents of the NEP (cont ...)

- The policy objectives and implementation strategies have been carefully defined with the following guiding principles, that:
 - energy is crucial to national development goals,
 - government has a prime role in meeting the energy challenges facing the nation,
 - the dependence on oil can be reduced through the diversification of the nation's energy resources,
 - aggressive research, development and demonstration (R D& D), in addition to human resources development must be pursued.

Contents of the NEP (cont ...)

- Consequently the overall energy policy objectives are to:
 - ensure the development of the nation's energy resources, with diversified energy resources option, for the achievement of national energy security and an efficient energy delivery system with an optimal energy resource mix,
 - guarantee increased contribution of energy to productive activities to national income,
 - guarantee adequate, reliable and sustainable supply of energy at appropriate costs and in an environmentally friendly manner, to the various sectors of the economy, for national development,

Contents of the NEP (cont ...)

- guarantee an efficient and cost effective consumption pattern of energy resources,
- accelerate the process of acquisition and diffusion of technology and managerial expertise in the energy sector and indigenous participation in energy sector industries, for stability and self-reliance,
- promote increased investments and development of the energy sector industries with substantial private sector participation.

Contents of the NEP (cont ...)

- **The policy generally aims at a private-sector led energy sector, which:**
 - optimally develops the viable energy resources in environmentally sound manner,
 - guarantees rapid expansion of overall access to a diversified energy mix at efficient prices,
 - guarantees technology diffusion and indigenous capacity building in energy technology.

Contents of the NEP (cont ...)

The layout of the NEP is such that:

- specific policy objectives, policies and strategies were developed and presented for each:
 - energy resource (oil & gas, coal, nuclear, solar, etc.),
 - energy utilization sector (electricity, industry, agriculture, transport),
 - related energy issues (environment, energy efficiency, R&D, indigenous participation, financing, etc),
 - short, medium and long-term implementation strategies.

4. ENERGY DEMAND PROJECTIONS

Past Energy Demand by Sector by Energy Forms (million toe) based on 7% Economic Growth Rate, 2009 Base year data

Economic Sector	Fossil	Motor fuels	Coal	Feedstock	Electricity	Non-Commer- cials	Total
Industry	385.9	47.0	50.8	37.0	512.4	112.4	1145.5
Transport	00.0	7655.6	00.0	00.0	00.0	00.0	7655.6
Househol d	305.6	00.0	00.0	00.0	1336.4	22447.9	24089. 9
Services	74.1	00.0	00.0	00.0	629.6	2422.5	3126.2
Total	765.6	7702.7	175.4	37.7	2478.3	24982.7	36142. 4

Source: Energy Implications for Vision 20:2020, ECN, 2014

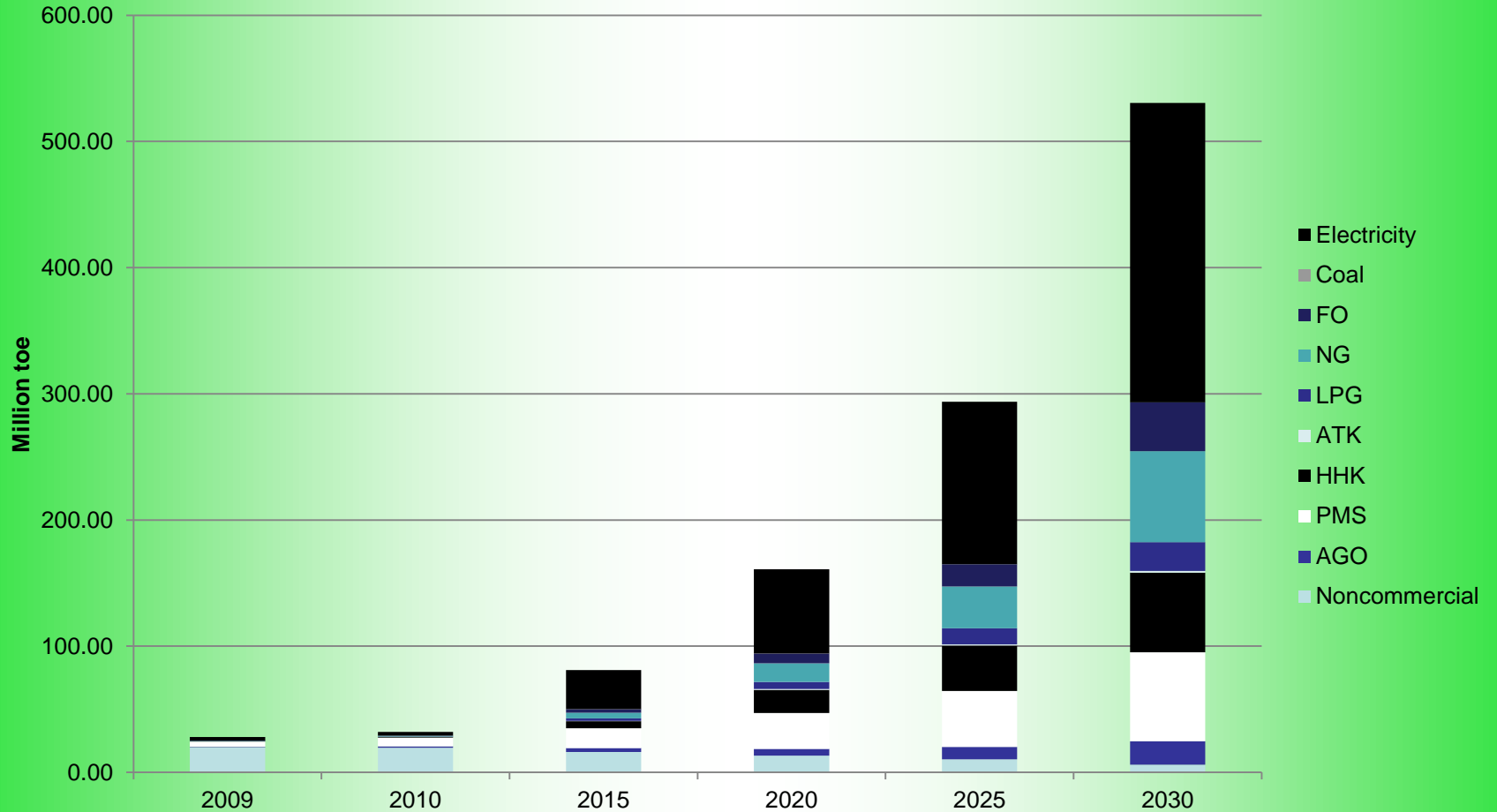
6. Percentage Contribution to Electricity Supply by Energy Form

	2009	2010	2015	2020	2025	2030
Coal	0.00	15.79	7.06	13.67	8.17	6.47
Electricity import	0.00	0.00	0.00	0.00	0.00	18.83
Gas	66.10	61.73	55.65	56.37	70.23	52.13
Hydro	33.55	19.57	23.60	13.68	7.07	3.85
Nuclear	0.00	0.00	7.58	8.12	4.20	2.28
Small hydro	0.35	0.49	0.67	0.86	0.97	1.11
Solar	0.00	2.31	5.36	7.23	9.31	15.27
Wind	0.00	0.11	0.08	0.05	0.03	0.02
Biomass	0.00	0.00	0.01	0.03	0.04	0.03
Total	100.00	100.00	100.00	100.00	100.00	100.00

Petroleum Products Prices in US \$/barrel

Petroleum Products	2009	2010	2011	2012	2013
Premium Motor spirit	9.38	97.13	69.08	97.07	98.07
Diesel oil	99.75	111.24	158.75	158.05	158.04
Kerosene	102.66	124.61	173.56	50.04	50.55
Fuel oil	76.56	na	64.17	116.98	116.97

5. Outlook of Energy Demand



ECN,2014

6. Major Difficulties Facing Energy Policies Formulation in Nigeria

- Disaggregated energy policy formulations and documents
- Different government agencies in charge of energy policy formulation, do not have defined centralized mandates, leading to conflict.
- Inadequate human capacity for comprehensive energy policy formulation
- Inconsistency in Government policies
- Lack of government's continuity commitment to policies

7. Subjects we would like to study in the order of priority and the reasons

- Energy Policy Planning: To better understand and plan on issues of sustainable energy development, including energy production, distribution and consumption, and also legislation, international treaties, incentives to investments, guidelines for energy conservation, taxation and other public policy techniques.

Subjects we would like to study in the order of priority and the reasons..... Cont'd

- Energy Supply and Demand Forecasting: Understanding the changes and trend in and demand and supply; to ascertain how to meet up Nigeria's suppressed demand situation.
- Comparative Studies of Energy Situations and energy policies in Japan and the Rest of the world: It will give a better understanding of energy situations around the world and for better comparative study.

Subjects we would like to study in the order of priority and the reasons..... Cont'd

- **Global Environmental Issues:** Understand the concerns and contemporary issues in environment as it relates to energy, also to understand the externalities in the energy resources utilization

7. CONCLUSION

- Nigeria is endowed with reasonable varieties of fossil-type and renewable energy resources such as petroleum, coal and tar sands as well as solar, wind, hydropower and biomass, respectively.
- With adequate legal instrument, adoption of appropriate technology and human skills, these resources can be transformed to provide sustainable energy for economic and infrastructural development in Nigeria.

THANK YOU

