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### Abstract

This study proposes to highlight the relevance of energy to national security in the petroleum resource context in the Nigerian milieu, being the predominantly used fossil fuel. It however traces the pivotal role of energy in the progress of human evolution from hunter gathering to modernity. To be sure, energy has singularly defined the technological advancements of man's march to civilization: Stone Age, Bronze Age, and Iron Age, hence the chronology of historical events that have thus brought about the discovery and determined the adoption of varying energy resources in consonance with the age (periodization). The thrust of this paper is however to establish a relationship between energy and national security in their socio-economic, political and military dimensions, and it argues that Nigeria, in spite of her abundant petroleum endowment, is yet to harness the potentials of this resource to attain the greatness the resource can afford the nation and the people as a whole.

Keywords: Security, Energy, Petroleum, National, Economy, Politics.

# Introduction

In its commonest definition, energy is the ability to do work. Modern civilization is possible because people have learned how to turn energy from one form to another and then apply it to do work. The evolution of energy use runs back to the period when human beings learned to make fire for cooking and manufacturing primitive implements. Many years later, the principle of sail was discovered by Egyptians, where water was used as a form of energy.¹ Energy materializes both in renewable and non-renewable forms. Renewable energy is obtained from solar, wind, biomass, geothermal and hydro energy while non-renewable energy includes uranium and fossil fuels such as coal, natural gas

<sup>&</sup>lt;sup>1</sup>Cleveland, Cutler J. *Concise Encyclopedia of History of Energy*. San Diego, Calif: Elsevier, 2009. <a href="http://www.123library.org/book\_details/?id=45986">http://www.123library.org/book\_details/?id=45986</a>>. (Accessed 26th March, 2018).

and petroleum. According to Kostas and Panos, "energy, has historically been among the essential resources that endorses progress, evolution and prosperity of human societies.<sup>2</sup>" From a national power perspective, energy is associated with economic power, diplomatic influence, technological expertise and military prowess. This correlation provides the nexus for National Security and Energy Security. On the one hand, energy security requires a mixture of national means to achieve affordable and uninterrupted energy portfolio; while on the other hand, national security itself requires a combination of energy-sustained economic, technological, social and military means to protect the country from internal and external dangers. Counting energy security policy as an integral part of national security strategy is crucial to the continued augmentation of the national power of any nation. The overall aim of this study is to examine to what extent oil resources (non-renewable energy resource) in Nigeria has hampered energy security in the country despite its abundance, and how this situation has presented a national security dilemma for the country in historical perspective.

# **Evolution of Energy Use**

Throughout history, ways of taking various sources of energy and using them to their advantage have been discovered. It is, therefore, worth looking into how humans have moved from primitive torches, fire pits, gushing oil wells, massive solar energy farms to current wide use of fossil energy. From the discovery of coal to solar panels use, explorers and inventors have moved the energy industry to its current position.

Before the industrial revolution, the human energy needs were few and people relied on the sun for heat, burnt straw, wood and dried dung in case the sun failed to provide the required energy. For the purpose of transportation, the horses' muscles and the wind power provided the energy required. Food security needs relied on the wind and water sources of energy which were used for driving simple machines that ground grains and pumped the needed water. The machines used dated as far back as the ancient Alexandria period and the evolution of steam engines followed with time and was considerably improved by the 17th and 18th centuries.<sup>3</sup> The adoption of steam engine which was powered by coal mined from the Appalachia and England mines could do more work than a combination of horses.<sup>4</sup> Since they were more convenient than water and wind, and less costly than the use of horses, the steam engines were soon being used to power locomotives, farm machines and factories. The smelting of iron into steel and heating of buildings were also done by the use of

<sup>&</sup>lt;sup>2</sup>Kostas Bitnas and PanosKalimaris, *Revisiting the Energy-Development Link* Springfield in Economies, Vol xiii (89), 2016, p.38, www.springer.com/978-3-20731-5 (Accessed 26th March, 2018).

<sup>&</sup>lt;sup>3</sup>Union of Concerned Scientists, (n.d).A Short History of Energy. The Old Days. Retrieved from:http://www.ucsusa.org/clean\_energy/our-energy-choices/a-short-history-of-energy.html#.WCSCwPRo1(Accessed 2nd June, 2018).

<sup>&</sup>lt;sup>4</sup>Crandall, Maureen S. *Energy, Economics, and Politics in the Caspian Region: Dreams and Realities.* Westport, CT: Praeger Security International, 2006.

coal. The first electric generator in the world was powered by coal attached to steam engine in 1880.5

The dependence on biomass fuels and animate power came to an end slowly and the great transition to fuel consuming engines and fossil fuels started at different times and lasted for different durations depending on a given country. However, the earlier energy sources continued to be used for some time. "The disparity in affordability and accessibility can be used to explain the reason for traditional energy sources being used for a long period after the introduction of prime movers and new fuels.6" For instance, the combustion of coal fuel surpassed that of fuel wood combustion in United States which is rich in wood and coal was widely used than charcoal later in 1880s. England became the first country to completely shift to coal from wood chiefly driven by the industrialization of British Isles. Coal was the main source of energy that energized the industrial revolution which drew the line between the modern and the traditional world. In England, there was widespread surface coal deposits and about every city where industrial revolution occurred such as Leeds, Sheffield and Birmingham was either located near a coal field or on it. Coal powered the main industries like iron-making expansion.<sup>7</sup> A new kind of fuel – petroleum – was replacing coal by the late 1800s after being considered a nuisance for years because it had contaminated drinking water wells.8 Oil was initially peddled by hucksters as medicine, but it later became a very valuable commodity used for lighting as a result of decline in whale oil industry. The next energy transition phase as seen in the era of the 21st century can be traced to the electrification process and rising world dependence on hydrocarbons in the 20th century, which left the greatest mark on people's lives as well as the nations and their economic fortunes.9

The advent of electricity generation that is commercially viable, its transmission and usage after the early 1880s invention by Thomas A. Edison and his associates had great influences on the various facets of human life and economic activities. Initially, power plants were run on coal power or water. The electric energy transformed the everyday activities by bringing affordable bright light to both the streets and interiors, leisure-enhancing gadgets, energizing urban and intercity trains. Industrial production was among the best revolutionary consequence of this electrification with America manufacturing being the first to experience this transition in a span of three decades. The inexpensive electricity and its generation brought about job creation and

<sup>&</sup>lt;sup>5</sup>Sandwell, R. W. *Powering Up Canada: A History of Power, Fuel, and Energy from 1600*. 2016. <a href="http://site.ebrary.com/id/11242907">http://site.ebrary.com/id/11242907</a>>.

<sup>&</sup>lt;sup>6</sup>Crandall, Maureen S. *Energy, Economics, and Politics in the Caspian Region: Dreams and Realities.* Westport, CT: Praeger Security International, 2006.

<sup>&</sup>lt;sup>7</sup>Aleh, Cherp and Jessica, Jewell. The three perspectives on energy security: intellectual history, disciplinary roots and the potential for integration.2011. Retrieved from: https://www.exeter.ac.uk/energysecurity/documents/publications/Cherp\_and\_Jewell%2 02011 pdf

<sup>&</sup>lt;sup>8</sup>Cleveland, Cutler J. *Concise Encyclopedia of History of Energy*. San Diego, Calif: Elsevier, 2009. <a href="http://www.123library.org/book\_details/?id=45986">http://www.123library.org/book\_details/?id=45986</a>>.

<sup>&</sup>lt;sup>9</sup>Goran, Morris Herbert. *Ten Lessons of the Energy Crisis*. Newtonville, Ma: Environmental Design & Research Center, 1980.

opportunities either directly or indirectly. Over the recent decades, electricity has opened up the growth of various labour intensive industries in both the manufacturing and processing sectors. The use of fossil fuels, more so petroleum, gained a pace at the same period as electricity and had great influence on the industrial revolution and the general global economies. Both sources of energy have played a great role in creation of the modern world by facilitating farm productivity and thereby causing a reduction in agricultural populations; mechanisation of industrial production; and allowing the movement of the labour force to the service sector<sup>10</sup>

#### **Energy Security**

Security means avoidance of harm. It can be a response to concrete threat, a strategy to avoid potential threat, or a motivation justifying a concrete policy objective. More comprehensively, Prabhakaran Paleri defines national security as, "The measurable state of the capability of a nation to overcome the multidimensional threats to the apparent well-being of its people and its survival as a nation-state at any given time, by balancing all instruments of state policy through governance . . . and is extendable to global security by variables external to it."  $^{11}$ 

Energy security for the most part affects households, communities and other levels of local and domestic activities, but on the aggregate the ultimate impact falls upon nation-states. Nation-states have a historic responsibility for security; and energy systems at the national level provide appropriate units of analysis of key risks and vulnerabilities, while energy security policies and interventions are the responsibilities of national governments. Control over oil and gas reserves is an essential component of national power. Robert Ebel of the Center for Strategic and International Studies told a State Department audience in 2002 that Oil fuels more than automobiles and airplanes. "Oil fuels military power, national treasuries, and international politics. Far more than an ordinary trade commodity, it is a determinant of well-being, of national security, and international power for those who possess this vital resource and the converse for those who do not." 12

The complexities related to international energy trade include availability of supply and demand and accessibility of oil products which has geopolitical implications. With respect to price, affordability is a national priority of states for both importers and exporters. It is the economic cost of energy. Energy becomes a complex system of trade transactions, where the price formation becomes the major source of political vulnerabilities. Recently, however, environmental and social concerns have seen acceptability feature prominently in the concept of energy security. The International Energy Agency (IEA)

 $<sup>^{10}\</sup>mbox{Yergin},$  Daniel. The Quest: Energy, Security and the Remaking of the Modern World. New York: Penguin Books, 2012.

<sup>&</sup>lt;sup>11</sup>PrabhakaranPaleri, *National Security: Imperatives and Challenges* (New Delhi: Tata Mcgraw-Hill), p. 521.

<sup>&</sup>lt;sup>12</sup>Robert Ebel, Quoted in Michael Klare, *Twenty-First Century Energy Wars: How Oil and Gas are Fueling Global Conflicts*https://energypost.eu/twenty-first-century-energy-wars-oil-gas-fuelling-global-conflicts/ (Accessed July 15, 2019).

defines energy security as "the uninterrupted availability of energy sources at an affordable price," while the Asia Pacific Energy Research Centre (APERC) defines the concept as the ability of an economy to guarantee the availability of energy resource supply in a sustainable and timely manner with the energy price being at a level that will not adversely affect the economic performance of the economy." <sup>14</sup>

These definitions contain notions of availability, affordability, accessibility and acceptability, two of which – accessibility and acceptability – are more recent. Availability is the most critical dimension for energy security. Its importance lies in the support of economic and welfare growth. Disruptions in availability limits economic expansion and affects changes in standard of living and consumption patterns. "Safety and certainty in oil," according to Winston Churchill, "lie in variety and variety alone." In other words, to ensure availability, diversity of oil sources is necessary. Relying on one source of energy supply comes with considerable constraints, especially when nations consider that the major sources of energy are politically unstable. Diversification is also applicable to demand, that is for exporting countries to ensure consistency in global market shares. Availability goes beyond oil resource availability to include availability of means to transform resources into services through energy infrastructure to the end-user (consumer) by way of public and industrial use.

Affordability means the price to be paid for energy. The relationship between energy price and energy security for end-users is an increase in industrial production, the enhancement in economic growth, and encouragement of consumption, an increase which translates to increased employment and economic development. For energy exporting countries (producers), however, cheap oil prices translate to revenue and economic loss which affects other areas of economic activities. For these producer nations, higher energy prices mean higher profits in the short term, growth in new supplies, and an increased capital investment that can be used to diversify the economy, failing which can give rise to Dutch disease.

Lack of sufficient energy provision to critical domestic networks or infrastructures can cause breakdown of essential services from healthcare and safety systems to communication, transport, emergency response, and basic utilities. The necessity of electric power to facilitate the functioning of almost all systems including the production of energy which creates needed power. On the other hand, oil-producing countries whose revenues have been slashed due to either lower production levels or plunging oil prices may have difficulties meeting their patronage and social spending obligations. The result of this outcome is likely unrest and political instability, which is compounded by decreased revenue preventing governments from maintaining security and military capabilities. Economic prosperity apart, steady access to affordable

 <sup>&</sup>lt;sup>13</sup>IEA https://www.iea.org/topics/energysecurity/whatisenergysecurity/
<sup>14</sup>Asia Pacific Energy Research (APERC), APERC Energy Demand and Supply Outlook, 2006
Tokyo, Japan: Brundland Report (1987) on definition of Sustainable Development
http://www.ace.mmu.ac.uk/eae/Sustainability/Older/Brundtland\_Report.html
<sup>15</sup>Ibid., Daniel Yergin, The Prize: The Epic Quest for Oil, Money and Power.

energy also guarantees international security, geopolitical influence as Wigell and Vihman describe it as "persuasive foreign policy tool," energy resources being, by almost any definition, "strategic goods." 16 Accessibility in energy security connotes location. It is the dimension that deals with the spatial features of the energy system (Geography). The location of the resources affects accessibility, for example, energy sourced from Venezuela will be cheaper for the US than energy sourced from Nigeria; but the density factor of the oil may affect the oil positively or negatively.

## **National Security through Energy Security**

History edifies the full, all-round impact of energy on industrialized nations of the world. This impact is rather insightful although not always readily perceptible upon casual examination. It can visibly manifest in the citizens' standard of living and quality of life. To buttress this point, the key deliverable objective of the Millennium Development Goals of halving global poverty, which was achieved in 2012, occurred in China on account of a jump in its economy fuelled by 80% increase in coal utilization, 17 resulting from which the World Bank estimates showed that the percentage of those living below USD 1.25 a day in China decreased from 84% to 13% in just 27 years (1981-2008). <sup>18</sup> During this period, 662 million people were lifted out of poverty, electrification harnessed from coal being the vital component of China's poverty alleviation. Electrification has been the driving force in building up basic infrastructure and it has created local enterprises throughout China.

Across the hemisphere, the United Kingdom and the United States also provide historical examples of how energy resources were harnessed for national development. The Industrial revolution which started in England owes its beginnings to the harnessing of coal, at first for domestic use to power industries; and later for the propulsion of military and commercial ships for the advancement of her national interests. When the kingdom of Great Britain was created in 1707, the Kingdom's energy sources were still very rudimentary. However, with the invention by Thomas Savery, and further development by Newcomen and Watt, of the steam engine, which increased energy yields from coal mines, an industrial revolution was started in Britain, crowning the Kingdom as the workshop of the world and projecting it into perpetual greatness. Wrigley succinctly describes the progression thus:

> The Industrial Revolution opened a new age of promise. It also transformed the balance of political power within nations, between nations, and between civilizations,

<sup>&</sup>lt;sup>16</sup>Wigell, M. and Vihma, A., Geopolitics Versus Geo-economics: The Case of Russia's Geostrategy and its Effects on the EU. International Affairs. 92(3),2016. p.614

<sup>&</sup>lt;sup>17</sup>World Energy Resources Survey, 2013, www.worldenergy.org (accessed 20th March,

<sup>&</sup>lt;sup>18</sup>World Energy Resources Survey, 2013, www.worldenergy.org (accessed 20th March, 2018)

revolutionized the social order, and as much changed man's way of thinking and his way of doing.19

The transformation of the United States of America's economy and society from an agrarian one also owes its growth and development to the efficient harnessing of energy resources with the pre-adaptation of coal which substituted for wood burning, and led to its application to steam power in mining, transportation and manufacturing. The first half of 20th century that culminated in World War II saw the idea of energy security linked to the supply of fuels for military use. This coincided with increased preference for petroleum over other sources of energy now that the world was moving away from the massive consumption of coal as the main source of energy.20 Upon switching from domestic fuel to the use of foreign fuel, the British Navy faced the risk of the occupation of the oil fields and attacks from enemies especially on the refineries and transportation lines. The significance of oil supplies to the military was further highlighted by various battles and conflicts over the oil fields in the Middle East, Indonesia, Romania and Caucasus during the 2nd World War.<sup>21</sup> During the post war periods, the importance of petroleum oil did not decline but became more vital for industrialized societies in various ways. The petroleum fuel became more important as the nations depended on it for motorized vehicles for transportation of passengers, food production, manufacturing and the generation of electricity. On the other hand, many developing countries also depended on revenues from oil exports for political stability and development.22

In contrast, the impact that petroleum energy has had on most producing nations is essentially counterintuitive. While the price of oil keeps fluctuating, the standard of living in most oil producing countries keeps falling. The most dramatic example is that of the Nigerian state. Nigeria ranks among the top global producers of energy resources - oil and gas - yet the benefits of energy security elude its citizens. Hardly any of the aforementioned derivatives of energy - lighting, transportation, industrialization, or electrification is adequately obtainable in Nigeria to sustain the country's socio-economic requirements. The vast majority of the populations of the oil-bearing regions see their homeland and means of livelihood ruined by the exploitation of petroleum energy, while the elite minority swims in affluence. This structural inequality makes a fertile breeding ground for insurgency and other forms of threats to national security.

<sup>&</sup>lt;sup>19</sup>Anthony Wrigley, Energy and the English Industrial Revolution, (New York: Cambridge University Press, 1994), p. 16.

<sup>&</sup>lt;sup>20</sup>Carley, Sanya, and Sara Lawrence. Energy-Based Economic Development: How Clean Energy Can Drive Development and Stimulate Economic Growth. 2014

<sup>&</sup>lt;sup>21</sup>Cleveland, Cutler J. Concise Encyclopedia of History of Energy. San Diego, Calif: Elsevier, 2009. <a href="http://www.123library.org/book\_details/?id=45986">http://www.123library.org/book\_details/?id=45986</a>.

<sup>&</sup>lt;sup>22</sup>NATO Advanced Research Workshop on Sustainable Energy Production and Consumption and Environmental Costing, FranoBarbir, and Sergio Ulgiati. Sustainable Energy Production and Consumption: Benefits, Strategies and Environmental Costing. Dordrecht: Springer, 2008

#### Oil Production and Energy Security in Nigeria

The first recorded major oil exploration in Nigeria occurred in 1908 near Okitipupa in present day Ondo State. It was carried out by a German Company on a Royal Charter issued by the Colonial Government to the Nigerian Bitumen Corporation. The exploration activities were however short lived when the First World War broke out in 1914; but resumed in 1937 when Shell D'arcy Petroleum Development Company of Nigeria, a consortium of Shell and British Petroleum, was issued an oil prospecting license covering the entire territory of Nigeria. The first oil find in Akata near Eket in 1953 was of no commercial viability. Three years later, 1956, a major discovery occurred in Oloibiri in today's Bayelsa State. Other discoveries that followed were Afam and Bomu in Ogoniland. Nigeria became an oil producer when its first oil field, Oloibiri, came on stream with a production of 5,100 barrels of crude oil per day (bpd) in 1958.<sup>23</sup>

In 1955, the first non-British oil company, Mobil, was granted license to explore for oil, divesting Shell of its monopoly status. It was followed by Tenneco in 1960, Gulf Oil in 1961, Agip in 1962, and Elf in 1962. These new entrants increased Nigeria's crude oil production from 5,100 bpd to 2.4milliom bpd by the 1970s, thereby making Nigeria the largest oil producer in Africa and the 7<sup>th</sup> in the world.<sup>24</sup>Nigeria's proven oil reserves according to the United States Energy Information Administration (EIA) is estimated at between 16 and 22 billion barrels, while other sources estimate it at about 35.3 billion barrels, which ranks Nigeria the first most petroleum-endowed country in Africa and the tenth in the world.<sup>25</sup>

In total, nine states produce oil in Nigeria, namely: Akwa Ibom, Delta, Rivers, Bayelsa, Ondo, Lagos, Edo, Imo, Abia States. The primary oil-bearing states are however predominantly found in the South-South geopolitical Zone of the Niger Delta Region. The Ministry of Petroleum Resources reported Nigeria has a total of 159 oil fields and 1481 wells in operation. Fe largely sulfur-free crude oil is the most sought after petroleum in the world alongside the North Sea Brent crude of Europe. Production average ranges between 1.8 million barrels and 2.5 million barrels according to the vagaries of global prices and domestic challenges. Major oil players operate export terminals from which the products are shipped out of Nigeria. Shell operates two terminals: Forcados and Bonny in Delta and Rivers States respectively; Mobil operates Qua Iboe Terminal in Akwa Ibom State; Agip operates Brass Terminal in Bayelsa State; Chevron operates Escravos Terminal in Delta State, and Texaco operates Pennington Terminal in Bayelsa State. In the year 2000, 98% of Nigerian export earnings came from

 $<sup>^{23}</sup> https://www.nnpcgroup.com/NNPC-Business/Upstream-Ventures/Pages/Oil-Production.aspx (Accessed June 14, 2019).$ 

<sup>&</sup>lt;sup>24</sup>David Thomas, https://www.ogj.com/general-interest/companies/article/17216431/niger-delta-oil-production-reserves-field-sizes-assessed (Accessed June 14, 2019). <sup>25</sup>International Monetary Fund, *Nigeria*, IMF Country Report No. 15/84, (March 2015),

<sup>&</sup>lt;sup>26</sup>OyeranmiSoji, *Crisis and Reform in the Nigerian Oil Industry, 1999-2015*, Kampala International University Journal of Social Sciences https://www.researchgate.net/publication/342750933 (Accessed November 3, 2021).

crude oil export, and about 83% of her revenue came from the same source, and also 14% of GDP and about 65% of budgetary revenues.<sup>27</sup> Classified generally as light and sweet, Nigerian Crude oil is known as *Bonny light* among other names according to the terminal from which it is sourced.

Nigeria's participation in the exploration and production of crude oil takes the form of regulation and levying of relevant taxes on the oil extracting companies. The income derived by participating companies engaged in oil exploring and production is subject to tax under the Petroleum Profit Tax Act, 2004 (PPTA), as amended. Prior to the enactment of this Act, Nigerian government interest was limited to collection of royalties and lease rentals. Certain factors, such as the United Nations Resolution on permanent Sovereignty over Natural Resources, and the encouragement by the Organisation of Petroleum Exporting Countries (OPEC) countries for direct state participation in the petroleum industry brought about a more assertive role in the industry. The doctrine of "Permanent Sovereignty over Natural Resources" was affirmed by the United nations General Assembly at first in Resolution No. 1803 (XVII) in 196228 and then in a more comprehensive form in Resolution No. 2518 (XXI) in 1966.<sup>29</sup>The latter resolution reaffirmed "the inalienable right of all countries to exercise permanent sovereignty over their natural resources in the interest of their natural development.

Nigerian crude oil was wholly exported and local needs were met through importation because there was no refinery. With a growing economy, demand increased and Shell-BP Petroleum Development Company cashed in on the opportunity and built Nigeria's first refinery in Port Harcourt in 1965, with a processing capacity of 35,000 barrels per day. With this, domestic demand was met and available surplus was exported for sale. Under a participatory agreement with Shell-BP, the Nigerian government acquired 50% shareholding. Upon being registered in 1972 as the Nigerian Petroleum Refining Company (NPRC), the Nigerian government increased its shareholding to 60%. It however remained as a Joint Venture company under private sector control and management. The refinery was in the same year congested with demands and its processing capacity was subsequently increased to 60,000 barrels per day to meet increasing domestic demands. In the aftermath of the civil war, the rapid economic recovery resulted in a shortage of petroleum products, thereby necessitating offshore processing arrangements of Nigerian crude in Caracas and Rotterdam.30 According to Tam David West, petroleum products had grown steadily from 32,600 barrels per day (bpd) in 1971 to 63,217 bpd in 1975; 107,988 bpd in 1981, 250,000 by 1985.31In 1978, the Federal Government

 $<sup>^{27} \</sup>rm{International}$  Monetary Fund, Nigeria, IMF Country Report No. 15/84, (March 2015), page 85.

<sup>&</sup>lt;sup>28</sup>Permanent Sovereignty Over Natural Resources United Nations General Assembly Resolution No. 1803 (XVII)/ 17 U.N. GAOR Supp. (No.17) at 15, U.N. Doc. A/5217 (1962). <sup>29</sup>Permanent Sovereignty Over Natural Resources United Nations General Assembly Resolution No. 25; A/RES/2518 (XXI) (25 November 1966).

<sup>302017</sup> PPPRA Annual Report, pppra.gov.ng (Accessed 17 May, 2019)

<sup>&</sup>lt;sup>31</sup>Tam David West, *Perspective of the Nigerian Oil Industry* (Lagos: Golden Medal Lecture, August 1985), Pp. 9-10.

finally took over the refinery under an outright buy out and renamed it NNPC Refinery, Port Harcourt.

Federal government response to the continued increase in demand was the coming on stream of 100,000 bpd capacity Warri Refinery in 1978. Within ten years, another 100,000 bpd Kaduna Refinery was commissioned in 1980. Again, domestic demand for petroleum resources outstripped supply. As in the past, Federal Government again built another 150,000 bpd refinery in Port Harcourt, and brought the total capacity of the refineries to 445,000 bpd in 1990 by a process of debottlenecking. In spite of the above nameplate capacity capable of meeting domestic demand, Nigeria currently imports 91% of petrol (PMS) and about 80% of other refined petroleum resources. <sup>32</sup>Crude oil refining in the four refineries have been sub-optimal since 1990.

Table 3.1: Refineries Average Annual Capacity Utilization %: 1997 - 2008

Refine	Percenta	Refine	Percenta	Refine	Percenta	Average
ry And	ge	ry	ge	ry	ge	%
Year	%	And	%	And	%	
PHRC		Year		Year		
		WRPC		KPRC		
1997	49.31	1997	63.39	1997	28.10	46.93
1998	38.03	1998	55.13	1998	00.00	31.05
1999	48.07	1999	43.51	1999	24.60	38.73
2000	30.95	2000	05.04	2000	22.65	19.55
2001	60.73	2001	48.29	2001	31.39	46.80
2002	52.17	2002	55.53	2002	34.95	47.55
2003	41.88	2003	14.27	2003	15.96	24.04
2004	31.04	2004	09.10	2004	26.00	22.05
2005	42.18	2005	54.85	2005	33.08	43.37
2006	50.26	2006	03.85	2006	08.34	20.82
2007	24.87	2007	00.00	2007	00.00	08.29
2008	17.84	2008	38.52	2008	19.56	25.03

Source: NNPC Annual Statistics Bulletin<sup>33</sup>

A relationship exists between energy and national security from the perspective of economic growth, engendered by the availability, accessibility, affordability and acceptability of energy resource, particularly oil energy, being an essential public need and a basic component of daily life. Among other major energy resources, oil and its products remain the most critical because of its almost lack of substitute in the transport sector. Electricity systems that propel industrial and economic growth for the most part rely largely on 50% of oil in 39 countries with 600 million people, according to Energy and Security report by AlehCherp et al.<sup>34</sup> Lack of access to modern energy services is a major hindrance to economic and social development. Availability of modern energy resources, according to the United Nations Millenium Development Goals

 <sup>&</sup>lt;sup>32</sup>Anthony Ogbuigwe, Refining in Nigeria: History, Challenges and Prospects
htpps://doi.org/10.1007/s13203-018-0211-z (Accessed 10 December 2019).
<sup>33</sup>NNPC Annual Statistics Bulletin 2009

 $<sup>^{34}</sup>$ Aleh<br/>Cherp et al, Energy Security, https://portal.research.lu.se/ws/files/5735037/4239056.pdf<br/> 10.1080/14693062.2019.1661818 (Accessed 12 November 2019).

(MDGs), is the only way by which the entire goals adopted in the year 2000 and designed to eradicate poverty by 2015 can be achieved. Indeed, the follow up of MDG, the Sustainable Development Goals (SDGs), hinges its success on SDG7 is a precondition for the success of other SDGs. Through the use of energy to power industries, jobs are created and incomes for individuals to meet their needs can be assured. History has proven that industrialization and economic growth of countries have been made possible by the availability of energy. By contrast, International Energy Agency (IEA) report has noted that official statistics indicated that 77 million Nigerians have no access to grid power, while 80% of those with grid access use expensive diesel and petrol-fueled backup generators to ensure constant power supply in the event of electricity outage.<sup>35</sup> This statistics, according to other sources, is conservative. De Boer, for example, indicates that as many as 120 million Nigerians or 75% of the population currently live without access to reliable and affordable power.<sup>3636</sup> World Energy Survey of 2014, notes that "per capita electricity supply in Nigeria ranked among the poorest in the world, amounting to 155 KWh, compared with 384 KWh for Ghana, 4,410 KWh for South Africa and 15,904 for Quatar."3737This poor level of supply in effect puts the pressure on households and the manufacturing sectors to resort to self-help and consequently make Nigerian products uncompetitive in international markets due to comparatively higher prices.<sup>3838</sup>In this connection, pervasive poverty from unemployment, a necessity for an improved standard of living, invariably engenders inequality and anti-social vices of the dimensions that directly affect national security.

Government failure to translate the opportunities before it to political goods, which include such social amenities as electricity – a precursor to job creation and improved standard of living, invariably leads to migration to better climes for those who can afford it and national insecurity manifested through social vices, such as terrorism, armed robbery, corruption and other forms of crime for survival within. For such criminal perpetrators, their targets are the few employed Nigerians and the few employers of labour. This situation further slides the country into economic chaos and insecurity, and with time anarchy and a failed state.

# Conclusion

Nigeria's energy security problem goes beyond availability and affordability, crude oil price volatility and energy sustainability issue, to implicate the intricate political intercourse between the Transnational Oil Companies, the Federal Government, and the Oil Bearing Communities. The energy insecurity and concomitant national insecurity in Nigeria is unnecessary as the nation is

Petroleum Industry, Lecture series presented at Aret Adams Memorial lecture series, Lagos, Nigeria, 2015.

<sup>&</sup>lt;sup>35</sup>IEA, World Energy Outlook 2017: Special Report on Energy Access - From Poverty to Prosperity. (Accessed 19 October 2019). http://www.iea.org/access2017/ <sup>36</sup>De Boer, W. Addressing the Access-to-Energy Challenge in Nigeria. African Business Magazine. http://africanbusinessmagazine.com/QW8Iu(Accessed 09 August 2018). <sup>37</sup>Ward, M. and P. Asiodu World Energy Outlook and Its Potential Impact on the Nigeria's

<sup>&</sup>lt;sup>38</sup>Federal Ministry for Industry Trade and Investment. Nigeria Industrial Revolution Plan, https://nipc.gov.ng/2016/11/19/minister-industry-trade-investments-outlines-ongoinginitiatives-boos-investment/ (Accessed 09 August 2018).

blessed with enormous oil and gas resources. Nevertheless, the issue of energy insecurity continuously impact on the citizen's wellbeing through increase in the poverty level, unemployment, low foreign direct investment etc. Against the above scenario, one can safely stress that Nigeria has not been able to attain the full potential of translating her abundant energy resources such as oil into human cum national security (as some modernized nations have historically done), and this is largely due to the rapacious politics in Nigeria's oil industry, intricately involving the Nigerian state, Transnational Oil Companies (TNOCs) and the indigenes of the oil-bearing state. Accordingly, this study contends that initiatives to ensure Nigerian energy security should be delineated within the framework of national security strategy and vice versa.