Security of Strategic Installations in Nigeria: The Case of the Electric Power Sector

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Introduction

Background

All over the world, the security of strategic installations, especially those in the defence (military), aviation, nuclear, and power sectors, occupies a priority position in the policies, plans, and actions of governments and concerned companies in the private sector. This position of primacy is derived from the crucial role that such installations play in the national security, development, and human welfare of any country. In European, Asian and Latin American nations for example, relevant measures are taken to ensure the safety of strategic installations from attacks by hostile nations, or occupation by terrorists (NEPSG, 1977; Watts, 2003), sabotage by militants and employees, geomagnetic storms, activities of hackers and other cyber criminals, and theft. Measures are even taken to guard against innocent domestic mistakes and other human errors. For example in the United Kingdom, new rules on electrical installations in homes were issued in 2004, aimed at reducing the number of fires and deaths attributed to faulty electrical installations or repairs (ODPM, UK, 2004).

The security of strategic installations especially nuclear reactors is being taken more seriously since the rise of terrorism in the 1970s. A group of fifteen guerrillas occupied the almost-completed Argentine Atucha I nuclear reactor in 1973 (Lovins & Lovins, 1982: 144). A year later, an activist protesting the siting of a proposed nuclear plant in Massachusetts, United States, toppled a significant meteorological tower near the proposed plant site. Also in 1975, bombs were detonated in separate incidents by unidentified, but suspected terrorists at French nuclear plants in Fessenheim, and Mt D'Arvee (NEPSG, 1977). The reasons for stricter measures in securing nuclear facilities stem from the fact that apart from blowing up these facilities, nuclear materials can be stolen from one country and used to attack another. As noted by the Nuclear Energy Policy Study Group (NEPSG), a United States nuclear think tank:

"The implications of terrorism are international in scope. Nuclear materials might be stolen in one country, fabricated into a weapon in a second, and used to threaten a third, in different parts of the world ... Radioactive clouds would not halt at national borders. The security of nuclear facilities everywhere is therefore of interest to the United States." (NEPSG 1977: 302)

The security of electric power installations is of strategic importance to industries, national development and the comfort of citizens. As noted by a United States energy agency’s report:

"The US economy is increasingly energy-efficient and increasingly dependent on electricity. Electric companies have undergone enormous change during the last 10 years. US electric company executives continue to work closely with Federal, State, and Local agencies to ensure that the electricity infrastructure remains as safe as possible. Industry leaders are reviewing best practices and policies in the"
areas of security, information disclosure, and insurance. (USEA Report, 2002: 35)

In Nigeria, strategic installations abound and these include armouries, bomb depots, defence industries (military); airports and air traffic control systems (aviation), atomic energy research centres (nuclear), oil production rigs, electric power generation plants, as well as electric power transmission towers and cables (energy).

After the explosion of bombs at the Ikeja military cantonment on January 27, 2002 (leading to hundreds of deaths due mainly to drowning in the Oke-Afa canal), and that of February 2005 in a military bomb depot in Kaduna, the safety of certain military installations in the country has been questioned. The Ikeja cantonment was only declared safe three years later. According to the then director of army public relations, Colonel Mohammed Yusuf:

This is to confirm to the public the clean bill of safety of the bomb blast epicenter and its environs given by the experts. The tour of the epicenter with stakeholders is designed to restore confidence and reassure the public of the progress made to clear the depot of unexploded bombs to make the affected areas and the entire environs of Ikeja military cantonment safe. (The Guardian, 2005: 3)

In the electric power sector, a series of serious crises have made it impossible for the Power Holding Company of Nigeria (PHCN) to guarantee adequate and uninterrupted power supply to Nigerians. This series of endless and frustrating outages endangers national security, human security, industrial output, economic growth and national development. Above all, it reduces the quality of life of the Nigerian people.

As a university lecturer, my personal experience with the electricity power sector in Nigeria is a mixed grill, but generally, has been most frustrating. When there is power, I can happily do what I enjoy doing most – reading, writing research papers, preparing my lecture notes, or marking examination scripts because I can see clearly, and the atmosphere is cool from fan or air-condition function. I can also drink cold water or mineral along with my recreation snacks. But when outage occurs, everything turns upside down. The room temperature rises and heat descends (very bad for brain work), soup goes sour, general body discomfort sets in, and at night I am forced to read or work with candle or kerosene lamp whenever rechargeable lamps pack up. In the office and classrooms with many more individuals congested in one room, things are worse in these days of computers. Students suffer more in their congested hostels. If it is examination period, blackouts can be really provoking to both students who need light to read, and lecturers who need power to process examination results.

I can also imagine what pains, financial losses, and frustrations small-scale industrialists, large-scale industrialists, and one-man businesses go through, for example those who grind pepper, operate barbing and hair dressing salons, hoteliers or those who make simple machine tools and spare parts. Industrialists, hoteliers, and others who are today forced to use generators, have their costs increased. Foreign investors are also kept away as no investor wants to power his machines with generators or even risk them with frequent power outages in the country. All these point to one direction and that is the urgency of ensuring steady electric power supply to every sector of Nigeria.

Statement of the Problem
A developing country like Nigeria needs adequate and steady electricity supply to all sectors of the economy to ensure meaningful development. Despite the fact that the country has vast potentials for electric power generation, as at 2007, it’s output remained at mere 2,150 mw.

The fundamental problem in Nigeria's electricity sector has been the insecurity of power generating plants, and energy supply lines such as gas pipelines, transmission pillars and other infrastructures.

Objectives of the Study
The general goal of this study is to enhance the efficiency and effectiveness of electricity supply services in Nigeria. The specific objectives however are:
To establish that the security of electric power installations is the fundamental issue in the epileptic nature of electricity supply in Nigeria, and that without its achievement, all the planned reforms in the sector will be ineffective.

To examine the factors responsible for the insecurity of electricity installations in Nigeria.

To advance strategies to maximize the security of electricity installations in Nigeria as the stepping stone for efficient and adequate power generation, transmission, and distribution in Nigeria.

Significance of the Study

This study is significant for several reasons. First, many people and bodies in authority do not seem to fully grasp the real problem facing Nigeria's electric power sector. Ubanna (2005) identified the problems of inadequate power generating stations, and how power producers can recover their money. In short, he asserted that 'until the new power stations come on stream, consumers' nightmare would remain.' The World Bank in the same vein asserts that Nigeria needs $5 billion or N700 billion for effective distribution of power and a similar amount for generation and transmission up to 2010. These arguments however miss the point. Corruption, inadequate funding, revenue collection problems, and inadequate number of power generating stations have been with the nation, yet the country enjoyed better electricity supply in 1999 than today.

Second, the newly established Nigeria Electricity Regulatory Commission (NERC) has recently stated its determination to generate 80,000 MW of electricity for the country (Ibrahim, 2007 and Muhammad, 2007). It also stated in Jos, based on this hope, that the epileptic power supply being experienced in the country would soon be over. It is not clear, however, how this ambitious target can be achieved, considering the present state and structure of PHCN.

Third, as the NERC has taken up 'the challenge of moving the power sector forward for the good of the nation' (Akhaine, 2007), it is important that proper awareness of the issue of security of electricity installations be ensured for all concerned. They should be made aware of the fact that there can never be steady and adequate electricity supply in the country without ensuring the security of electric infrastructures.

Thus, this study is necessary and timely to call the attention of government, licensed electricity companies, the PHCN, the organized private sector, and Nigerian citizens generally to the very critical issue of security in the electric power sector, without which the whole reform process, privatization of NEPA, and establishment of new power-generating stations will be meaningless and amount to a waste of resources.

Scope, Methodology and Limitations

The study covers the period of evolution and development of the electricity sector in Nigeria, from 1896 to the present, taking into consideration, the transformations in government agencies charged with the administration of the electric power sector in Nigeria. Data was collected from officials and the publications of the National Electric Power Authority (NEPA) and later Power Holding Company of Nigeria (PHCN). Unstructured interviews were also held with some PHCN officials. The author also visited some electricity installations to observe things firsthand.

The study suffered a few setbacks. For example, accusations of corruption, and tacit resistance by some PHCN officials against privatization moves. The fear of the Bureau for Public Enterprises in most PHCN installations made it very difficult to obtain more information needed. This author however, believes that enough reliable data were gotten to make the necessary case for all stakeholders to see the security of electricity infrastructure as the fundamental
problem militating against the generation and supply of adequate and steady electricity in Nigeria.

Evolution of PIICN and the Development of the Electricity Power Sector in Nigeria

The Roots of PIICN
Nigeria's first electricity generating plants were installed during the colonial period in the late nineteenth century (1896) when two 30 kilowatt plants were installed for power generation in Lagos (Kalu, 1988). Later, the Public Works Department (PWD) assisted interested persons and business companies to acquire more power generating plants. In the first quarter of the twentieth century (1924), Nigeria's first hydroelectric power generating plant was established by a mining company at the Kwale Falls, producing just 2 megawatts. A 4 megawatts hydroelectric power plant was later established in 1929 by the Nigerian Electricity Supply Corporation at the Kura Falls. By 1946, electricity matters were made the concern of a new organization – the Nigerian Government Electrical Undertaking (NGEU).

In 1950 however, the colonial government formulated the Electricity Corporation Ordinance Number 15, which established the Electricity Corporation of Nigeria (ECN), charged with the responsibility of looking into all matters concerning electricity – from generation and transmission, to distribution, sales, and revenue collection. These tasks necessitated that the ECN establish its presence in the regions of the country. It built the first major power line in 1962, two years after Nigeria's independence, with the establishment of the 132 KV line linking Ijora (Lagos) and Ibadan.

To tap the power potentials of the River Niger, an Act of Parliament was passed in the same year, setting up the Niger Dams Authority (NDA) for the purposes of constructing and maintaining dams on the River Niger, generating hydroelectricity, promoting fisheries and navigation on, and enhancing agriculture around the River Niger. The NDA did not get involved in the distribution or sale of electricity, as these were the functions of the ECN. The NDA’s first outstanding task was the construction of the Kainji Dam (constructed between 1964 and 1968). However, to avoid overlapping functions, and a clash of interests between the ECN and NDA, the federal government merged the two organizations through Decree Number 24 of June 29, 1972. The merger occurred, in reality, on January 6, 1973, when the National Electric Power Authority (NEPA) came into being with the following specific objectives:

a. to generate or acquire supply of electricity
b. to provide bulk supply of electricity for distribution within or outside Nigeria; and
c. to provide the supply of electricity for consumers in Nigeria as may, from time to time, be authorized by government. (National Electric Power Authority Act, 1972).

With this decree, NEPA took charge of all matters concerning electricity generation, transmission, distribution, sale, and tariff collection. Decree 24 also charged NEPA to develop and maintain an efficient, well-coordinated and economical system of electricity supply throughout Nigeria.

The inability of NEPA to effectively and efficiently supply adequate and uninterrupted power to Nigerians, and the accompanying frustration and hardships forced the Obasanjo administration to introduce, as part of its reform agenda, the privatization of NEPA. This involved the breaking down of the authority of NEPA into separate privatized units, now collectively called the Power Holding Company of Nigeria (PIICN).

Development of the Electricity Power Sector
The real development of the electricity power sector in Nigeria began with the emergence of NEPA in 1973. By this year, the total installed power generating capacity in Nigeria was 500 megawatts. These came from: the Ijora (A) station (1898), Oji River (1956), Ijora (B) (1956), Afam I (1965), Delta (1966), and Kainji (1968). In less than a decade (1980), the installed capacity rose to 2,402 megawatts. The figure rose further to 2,600 megawatts in 2000 (Agagu, 2001).

Table 1 shows the milestones in the development of the electricity sector in Nigeria, Table 2 shows NEPA’s original 8 stations, while table 3 shows the electric power generating stations in Nigeria in their expanded forms (1959-2001). Other stations not in the table include Ijora (1977) with 60 megawatts, and Kainji with 960 megawatts, and the recently commissioned plants such as
Osistoma B. C. Nwolise: Security of Strategic Installations in Nigeria: The case of the electric power sector

Geregu power generating plant (414 MW) in Kogi State.

New power stations are being constructed at Papalanto (Ogun State), Omotosho (Ondo State), and Ala-Oji (Abia State). The federal government, in March 2005, awarded a contract valued at N21.8 billion for the construction of Ala-Oji power station (Abia State), which was expected to contribute 348 megawatts to the national grid.

In April 2005, the then president of the federation, Chief Olusegun Obasanjo inaugurated the 330 megawatts initial capacity from AGIP which was added to the grid. Another 165 megawatts were added in 2006 along with 485 megawatts from the AGIP NNPC Joint Venture earlier announced by the minister of power and steel, Mr. Liyel Imoke (The Punch, 2005: 10). The new Papalanto, Omotosho, Geregun, and Ala-Oji power stations will collectively add 1600 MW to the national grid. They were commenced in 2005 based on an agreement between the federal government and a Chinese firm (National Machinery and Equipment-Import-Export Company of China, on a Build Operate and Transfer (BOT) basis.

Two Chinese firms are also working on a 2600 MW N1.6 billion Manbilla hydroelectric power project at Gembu. It will involve 3 dams and 3 towns and is intended to serve Adamawa and Taraba states; as well as parts of Cameroon, Benin Republic, Togo, Ghana, Côte d'Ivoire and others (Nigerian Television Authority (NTA) Network News, 2007).

Licences were granted to five companies in June 2007 for the generation of an additional 8000 MW as part of the 10,000 MW target planned by the federal government by the end of 2007 (NTA Network News, 2007). This is aimed at growing the economy by 10 per cent per annum. As at July 2007, the NERC had licensed 21 electricity generation companies, which are expected to bring electric power generation up to 10,000 MW by the time they all go into full operation. (Nigerian Tribune, 2007:21).

Finally, there is a 25 year plan for 100,000 MW of electricity generation for Nigeria’s development and consolidation. No doubt these are great dreams and a far cry from the 1,500 MW that was being generated by the country as at May 29, 1999, and the 5000 MW available in the country today. There is also no doubt that if this spirit and momentum are sustained, the five goals of the Electric Power Sector Reform Act of March 11, 2005 will be realized viz: unbundle NEPA, privatize the unbundled units, establish a national regulatory agency (to create and promote efficiency in the power sector, ensure optimum utilization of services, ensure adequate supply of electricity, and ensure that licensed private companies charge fair prices), set up a rural electrification fund and agency, and set up a power consumer assistance fund. But the point remains that these great dreams can only be realized if the security of the electricity infrastructure is guaranteed.

The electricity sector in Nigeria has the following strategic installations among others:

i. Several electric power-generating stations such as Afam, Kainji, Sapele, Delta, Egbin, Shiroro, etc. (table 1), all using either hydro, steam, or gas.

ii. Hundreds of electricity transmission towers with a network of high tension cables criss-crossing the country (table 4). Nigeria’s electricity transmission is carried out in a single national grid made up of 6,000 kilometres of 132 KV lines, 5000 kilometres of 330 KV lines, 23 units of 330/132 KV sub-stations, and 91 units of 132/33/11 KV sub stations all controlled from Oshogbo, the national control centre.

iii. Hundreds of electricity transformers/transmitters, located in towns and villages all over the country.

iv. Hundreds of PHCN stores and workshops.

v. Numerous distribution and marketing zonal/district offices: there are eleven pre-reform zones with their headquarters at Benin, Enugu, Ibadan, Jos, Kaduna, Kano, Lagos (south), Lagos (north), Port Harcourt, Yola, and Abuja.

vi. One national control centre for electricity transmission in Nigeria at Oshogbo in Osun State.

vii. One national supplementary control centre at Shiroro, Niger State.
Table 1. Milestones in the development of the electricity sector in Nigeria (1896-2007)

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1896</td>
<td>First ever introduction of electric power in Nigeria through the installation of a 30 kW, 80 Hz single-phase locomotive generator at Ijora, Lagos under the management of the Public Works Department (PWD).</td>
</tr>
<tr>
<td>1924</td>
<td>Installation of the 3-phase 50 Hz system which supplied power to a few Nigerian citizens through isolated generating stations like the Cameroon's Development Corporation, African Timber and Plywood Company, and Nigeria Electrical Supply Corporation.</td>
</tr>
<tr>
<td>1946</td>
<td>Management of electricity supply taken over by the Nigerian Government Electricity Undertaking (NGEU).</td>
</tr>
<tr>
<td>1952</td>
<td>Establishment of the Electricity Corporation of Nigeria (ECN) which midwifed the establishment of the Ijora Power Station, operating two 10 MW coal-fired turbo generators to serve the city of Lagos.</td>
</tr>
<tr>
<td>1953</td>
<td>Hydrological investigations began for possible siting of hydroelectric power stations in the country by the Dutch's engineering consultant for the ECN, paving the way for Kainji dam construction.</td>
</tr>
<tr>
<td>1964</td>
<td>Establishment of the Niger Dam Authority (NDA) to construct the Kainji Dam Power Station, and the 330 KV transmission lines between Kainji and Oshugbo which was designated as the National Control Centre.</td>
</tr>
<tr>
<td>1968</td>
<td>Commencement of power generation by the Kainji Hydroelectric Power Station with installed capacity of 760 MW.</td>
</tr>
<tr>
<td>1972</td>
<td>Merging of ECN and the NDA to form the National Electric Power Authority (NEPA) to supply power to all parts of Nigeria.</td>
</tr>
<tr>
<td>2006</td>
<td>NEPA was reformed and renamed Power Holding Company of Nigeria (PHCN) with 18 business units.</td>
</tr>
</tbody>
</table>


Table 2. The eight key power-generating plants of NEPA (PHCN)

<table>
<thead>
<tr>
<th>S/No</th>
<th>Name</th>
<th>Location</th>
<th>Capacity in Megawatts (MW)</th>
<th>Year established</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ijora Thermal Power Station</td>
<td>Lagos, Lagos State</td>
<td>60</td>
<td>1956</td>
</tr>
<tr>
<td>2</td>
<td>Afam Thermal Power Station</td>
<td>Afam near Port Harcourt, Rivers State</td>
<td>55.5</td>
<td>1962</td>
</tr>
<tr>
<td>3</td>
<td>Kainji Hydro Power Station</td>
<td>Kainji, Niger State</td>
<td>760</td>
<td>1968</td>
</tr>
<tr>
<td>4</td>
<td>Ogoro Delta Thermal Power Station</td>
<td>Sapele, Delta State</td>
<td>760</td>
<td>1978</td>
</tr>
<tr>
<td>5</td>
<td>Jebba Hydro Power Station</td>
<td>Jebba, Kwara State</td>
<td>540</td>
<td>1985</td>
</tr>
<tr>
<td>6</td>
<td>Lagos Thermal Power Station</td>
<td>Lagos, Lagos State</td>
<td>540</td>
<td>1987</td>
</tr>
<tr>
<td>7</td>
<td>Shiroro Hydro Power Station</td>
<td>Abiror, Niger State</td>
<td>600</td>
<td>1990</td>
</tr>
<tr>
<td>8</td>
<td>Delta IV Thermal Power Station</td>
<td>Ugbiri, Delta State</td>
<td>600</td>
<td>1991</td>
</tr>
</tbody>
</table>


Table 3. Expanded electric power-generating stations in Nigeria

<table>
<thead>
<tr>
<th>S/No</th>
<th>Name</th>
<th>Location</th>
<th>Year established</th>
<th>Capacity (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Afam 1</td>
<td>1959</td>
<td>20.6</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Afam 1</td>
<td>1965</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Delta 1</td>
<td>1966</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Kainji</td>
<td>1968</td>
<td>520</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Delta II</td>
<td>1975</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Afam II</td>
<td>1976</td>
<td>95.6</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Kainji</td>
<td>1976</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Sapele (steam)</td>
<td>1978</td>
<td>720</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Kainji</td>
<td>1978</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Delta 12</td>
<td>1978</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Afam 11</td>
<td>1978</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Sapele (gas)</td>
<td>1981</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Afam IV</td>
<td>1982</td>
<td>450</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Egbin</td>
<td>1985</td>
<td>440</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Egbin</td>
<td>1986</td>
<td>440</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Jebba</td>
<td>1986</td>
<td>540</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Egbin</td>
<td>1987</td>
<td>440</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Shiroro</td>
<td>1989</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Shiroro</td>
<td>1990</td>
<td>450</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Delta IV</td>
<td>1990</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Egbin (Eron)</td>
<td>2001</td>
<td>270</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Afam (Siemens)</td>
<td>2001</td>
<td>276</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Aboja</td>
<td>2001</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

Table 4. PHCN transmission lines (old and new)

<table>
<thead>
<tr>
<th>Transmission line</th>
<th>KV line</th>
<th>Kilometres</th>
<th>Value (N billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aba-Umuahia-Mbano-Ohaifo-Arochukwu</td>
<td>132</td>
<td>221</td>
<td>6.1</td>
</tr>
<tr>
<td>Akala-Calabar</td>
<td>330</td>
<td>111</td>
<td>5.2</td>
</tr>
<tr>
<td>Akure-Ado-Ekiti</td>
<td>132</td>
<td>47</td>
<td>0.6</td>
</tr>
<tr>
<td>Shiero-Abuja</td>
<td>330</td>
<td>144</td>
<td>9.6</td>
</tr>
<tr>
<td>Xano-Date-Azare</td>
<td>132</td>
<td>250</td>
<td>7.6</td>
</tr>
<tr>
<td>Owerrri-Ahosad-Yenogon-Abonnetua</td>
<td>132</td>
<td>140</td>
<td>6.6</td>
</tr>
<tr>
<td>Gombe-Yola-Jalingo</td>
<td>330</td>
<td>131</td>
<td>9.8</td>
</tr>
<tr>
<td>Benin-Onaisha II</td>
<td>330</td>
<td>131</td>
<td>9.8</td>
</tr>
</tbody>
</table>


The Neglect of Security of Electricity Installations

There are many problems facing the electric power sector in Nigeria and PHCN (table 5), and these include poor funding, obsolete equipment, huge debts, inadequate or lack of gas supply, and corruption. However, the thesis of this paper is that these are not the fundamental problems that have almost completely paralysed the electricity sector in Nigeria today. Poor funding, corruption and other problems have existed in this sector for decades, yet its performance never got so bad until insecurity set in, such as acts of vandalism by criminals, and sabotage especially by militants and community members as a sign of protest against the federal government, which they feel has neglected them, and subjected them to a life of poverty, misery and squalor.

Factors Responsible for the Insecurity of Electricity Installations in Nigeria

Vandalism

Acts of vandalism against electricity installations have remained the most widespread and devastating index of insecurity facing the electric power sector, especially in the last decade. Vandals pull down towers and cart them away, along with high tension cables, insulators, etc., throwing affected states, towns, and villages into prolonged darkness. Between 1990 and 2003, PHCN lost over N20,000,000,000 to vandals (New Age, 2003: 22).

In 2003, six states of the federation (Emugu, Ebonyi, Imo, Cross River, Anambra, and Benue) were thrown into sudden darkness for over six weeks (New Age, 2003: 22). The loud outcries from the defunct NEPA and consumers, and the devastating impact of vandalism of electricity installations in 2003 made Anayo Okorie (New Age, 2003: 22) to refer to the phenomenon as a national tragedy. In his words:

"Vandalisation of public property, especially equipment and installations of the National Electric Power Authority (NEPA) by unpatriotic Nigerians has become a national tragedy. The willful act of removing and carting away of towers, cables and aluminium conductors, as well as insulators among others by the vandals, accounts for more than 60 per cent of blackouts recorded across the country."

In July 2003, vandals pulled down an extra high tension tower, throwing Enugu into 36 days of darkness (This Day, 2003: 22). Also, the vandalization of towers 114 and 117 along Benin-Ikeja West 330 KV line 1, and carting away of towers 217 and 220 conductors and insulators on the Benin-Ikeja West 330 KV line 2 greatly reduced power supply to Lagos and Benin, for several days. Between November 17 and December 23, 2002, the vandalization of New Heaven/Nkalagu 132 KV Line causing the collapse of towers 72, 75, and 79 plunged Ebonyi and parts of Cross River states into darkness for a whole week (New Age, 2003: 22).

In February 2005, vandals carted away 600 metres of aluminium cables from the network of PHCN installations in Abuja, valued at over N11,000,000 (Nigerian Tribune, 2005: 5). Table 6 shows the location of some vandalized towers and the high cost of repairs. For example repairs and replacement of the vandalized 12 towers along the Delta-Benin 132 KV line cost PHCN and the nation N174.2 million.
Table 5. Other strictly non-security problems facing the electric power sector and PIICN

<table>
<thead>
<tr>
<th>S/No</th>
<th>Problem Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Poor funding Given the vast network of installations, large work force, the huge debt owed (NEPA) PHCN, huge resources needed to repair, maintain, and replace equipment, PHCN needs a lot of money. Former Minister of Power and Steel, Mr. Liyel Imoke once observed that the improved funding gotten by NEPA when it was under NEPA Technical Board accounted for the improvement in power supply at that time. He however, lamented that since the technical board left office, the funding reduced and remained in retreat. <em>(The Guardian, 2003, April 28: p. 30).</em></td>
</tr>
<tr>
<td>2</td>
<td>Obsolete and ageing equipment Liyel Imoke asserted that (NEPA) PHCN &quot;equipment are old and there is urgent need to replace bad equipment&quot; <em>(The Guardian, 2003, April 28: p. 30).</em> Liyel Imoke was, in short convinced that poor funding and obsolete equipment are the two key factors responsible for the inability of the electric power sector to perform optimally.</td>
</tr>
<tr>
<td>3</td>
<td>Poor record keeping and lack of accountability Poor record keeping creates the problem of accountability because it aids theft, diversion of tariff to personal pockets, and reduction of tariff for customers by PHCN tariff collectors. In 2003 for example, Liyel Imoke revealed that over 55% of the revenue accruable to the then NEPA were not accounted for due to poor record keeping. <em>(The Guardian, 2003, September 15: p. 23 and 25)</em></td>
</tr>
<tr>
<td>4</td>
<td>Huge debts owed (NEPA) PHCN by consumers The federal, state and local governments, as well as the armed forces, police, and several corporate organizations, and individuals owe PHCN huge debts. For example, the Enugu territory alone owed the defunct NEPA N3.3 billion by April 2003, made up of N630.06 million owed by the federal government, N735.28 million by states, and N584.30 million by armed forces, etc. <em>(The Guardian, 2003, April 28: p. 23)</em> In the Lagos area, the then NEPA owed N31.5 million by the Federal Ministry of Works and Housing, N873.7 million by the Nigerian Army, N200.3 million by the Federal Aviation Authority, N500.6 million by the Nigerian Navy, N211.4 million by Nigerian Police, N476.8 million by the Nigeria Air Force, N61.6 million by NITEL, N86.6 million by the University of Lagos, and so on <em>(The Punch 2003, March 26: p. 62)</em></td>
</tr>
<tr>
<td>5</td>
<td>Illegal electricity connections People at times connect electricity to their newly-built houses without informing NEPA/PHCN. This causes overloading of transformers which trip-off and result in power outages.</td>
</tr>
<tr>
<td>6</td>
<td>Inadequate gas supply Thermal power generating states need steady supply of natural gas from the Nigeria Gas Company, failure which leads to load shedding (rationing of light), or outright shut down of the stations. This has happened several times, as a result of either invasion of the gas company or exploding of gas pipes by militants.</td>
</tr>
<tr>
<td>7</td>
<td>Corruption Corruptiion is a serious problem facing PIICN carried over from NEPA days. It manifests in the forms of poor record keeping to hide facts, lack of accountability, stealing of PHCN equipment, cancellation or reduction of consumers’ bills by tariff collectors, and outright embezzlement of funds allocated to PHCN.</td>
</tr>
<tr>
<td>8</td>
<td>Dependence on imported equipment Dependence on imported equipment like boilers, turbines, generator motors, meters, switch gears, and transformers constitutes a problem to PIICN. These equipment take time to arrive, and require huge foreign exchange.</td>
</tr>
<tr>
<td>9</td>
<td>Lack of data for planning There is an absence of a database in the country to enhance planning and action.</td>
</tr>
<tr>
<td>10</td>
<td>Staff mobility Trained staff leave the service for greener pastures due to poor working conditions.</td>
</tr>
<tr>
<td>11</td>
<td>Retiring of experienced staff Several experienced staff retire and leave the service of PHCN.</td>
</tr>
<tr>
<td>12</td>
<td>Lack of maintenance Equipment are not maintained as and when due.</td>
</tr>
</tbody>
</table>

Source: These information were gathered from diverse sources including few senior staff of the PIICN who, for obvious reasons, prefer to be anonymous.

Table 6. Selected vandalised electrical installations and the money lost to repairs and replacements

<table>
<thead>
<tr>
<th>S/No</th>
<th>Locus of vandalization</th>
<th>Nature of line</th>
<th>Physical impact</th>
<th>Monetary impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Oshogbo-Ikeja West</td>
<td>330 KV</td>
<td>Towers 28, 29, 30, and 31 rendered dysfunctional</td>
<td>N15.0 million</td>
</tr>
<tr>
<td>2</td>
<td>New Heaven-Oji River</td>
<td>132 KV</td>
<td>Many towers collapsed</td>
<td>N56.8 million</td>
</tr>
<tr>
<td>3</td>
<td>Delta Benin</td>
<td>132 KV</td>
<td>12 towers pulled down</td>
<td>N174.2 million</td>
</tr>
<tr>
<td>4</td>
<td>New Heaven-Nkologa</td>
<td>132 KV</td>
<td>Towers 72, 73, 74 and 75 collapsed</td>
<td>N7.7 million</td>
</tr>
<tr>
<td>5</td>
<td>Gombe-Yola</td>
<td>132 KV</td>
<td>Towers 24, 25, 26, 27, 28, 29, 30 looted</td>
<td>N7.8 million</td>
</tr>
<tr>
<td>6</td>
<td>Ile-Ife West - Ayede</td>
<td>330 KV</td>
<td>Towers 425, 426, 427, 428, 429, and 430 pulled down and looted</td>
<td>N20.6 million</td>
</tr>
<tr>
<td>7</td>
<td>Jos-Bauchi</td>
<td>132 KV</td>
<td>23 Towers were vandalized</td>
<td>N14.5 million</td>
</tr>
<tr>
<td>8</td>
<td>Gombe-Bauchi</td>
<td>132 KV</td>
<td>Towers 474, 475, 476, and 477 looted</td>
<td>N3.5 million</td>
</tr>
</tbody>
</table>

Sabotage
While vandalization can be attributed mainly to the activities of criminals who pull down transmission pillars and steal relevant parts for sale and money making, sabotage has to do with deliberate, planned attacks and destruction of installations that feed power generating plants (such as gas and petrol pipelines), as well as power stations and transmission lines. For example, on February 9, 2006, Ijaw militants fighting for resource control in the Niger Delta destroyed the pipelines that supply gas to the Egbin power plant in Lagos State, and Afam in Rivers State. The significance of this attack is that the two power plants account for 75 per cent of the total electricity supply in Nigeria. Also, 75 per cent of PHCN’s electricity generating capacity of 3,200MW is from gas-fired plants while only 25 per cent is from hydro power stations. The destruction of the pipelines led to instant load shedding of 850 MW leaving the nation with the 2,150 MW (Atandare, 2007: 48) that it is consuming now. The second source of sabotage action, which is not frequent and not as serious, is when PHCN staff go on strike and remove vital parts of installed plants. The third aspect of sabotage is when PHCN staff set office records or buildings on fire in order to cover up corrupt practices.

Stealing of PHCN equipment
Theft of equipment from PHCN stores, as well as transformers/transmitters located in towns and villages contribute greatly to the poor performance of the electric sector. The stealing of these equipment has been found to be second to vandalism in terms of the insecurity impact to PHCN and the electricity power sector. In this wise, a PHCN manager asserted:

It has been discovered and confirmed by NEPA Management that some greedy NEPA staff have been collaborating with robbers who attack NEPA stores, or by switching off light at agreed moments to enable such criminal acts as the stealing of functioning transformers.

(Interview, 2005)

Natural disasters
Natural disasters constitute serious security threats to PHCN installations in Nigeria. These are flood, fires occasioned by petroleum pipeline vandals, bushfires, reptiles and rodents that get into PHCN installations, erosion of tower and transformer basements, road accidents in which vehicles crash into and push down electrical facilities, lightning and thunderstorms, as well as drought that reduce water levels of hydro power stations. The flooding of hydro power stations during the rainy season trips off the turbines resulting in nationwide blackouts. During the dry season, when water levels become too low and reduced or stopped the water flow into the turbines, they are shut down, leading to power outages.

Mob action
When citizens riot, especially against PHCN, they destroy the company’s facilities. This occurs mainly when power outages occur during important national or international events such as soccer competition, or when PHCN wires electrocute people out of negligence on the part of the company’s personnel.

These factors constitute the security factor in the entire power generation and supply calculus of Nigeria, which is the real determinant of the state of affairs in the power sector today.

From government and the literature in the field, the security factor is yet to be taken seriously or given the attention it deserves. To government, corruption and inadequate funding are mainly responsible. For example, on assumption of office, the government of President Obasanjo, with Chief Bola Ige as the minister of power and steel, promised Nigerians adequate and uninterrupted power supply within 6 months. The promise was not fulfilled. The government was only able to raise power generation from 1900 MW in 1999 to 3,200 MW in 2005, but this fell to 2150 in early 2007.

President Obasanjo did not acknowledge the role of security issues in the sharp decline of power generation. Instead, he held corruption as the chief culprit. He stated that, as at 2005, the government had spent $2 billion or N280 billion on NEPA, for rehabilitation of generating units at Jebba, Kainji,
and Shiroro hydro stations, and the thermal stations at Ijora, Afam, Sapele, Ughelli, and Egbin, yet not much result was gotten in terms of power generation and supply. The President publicly stated towards the end of his eight-year tenure that his government had underestimated the problems of the power sector when it came to office in 1999, concluding regrettably: 'If we had known then, what we know now, we would have done things differently' (Tell, 2005: 50).

The premise of this paper is that factors such as corruption and inadequate funding existed in the old NEPA, and were transferred to PHCN. Corruption existed when power generation rose from 1900 MW in 1999 to 3,200 MW in 2005 and it was not corruption or inadequate funding that led to the decrease in power generation from that improved mark of 3200 MW down to 2,150 in early 2007, it was as a result of acts of sabotage by Niger Delta militants. Corruption and inadequate funding should therefore be regarded as secondary factors.

A review of the existing literature in the field shows that no research has been done on the security of electricity installations as a crucial factor. 'The focus of most scholars in the field has mainly been on appropriate pricing and higher tariff for electricity, causes of power outages, and costs of outages or haulage. For example, much of the works of Ayodele Sesan, (1981; 1992), a well-known authority in the field of electricity, has been on appropriate pricing. Other examples are: Iyanda's work (1982) on cost implications of electric power failures, Uchendu's work (1993) on the costs of electricity outages, Tinubu's work (2005) on benefits and constraints of bulk movement of petroleum products, as well as the work of Taiwo (1982), on the cost of electricity supply in Nigeria.

Ukpong's two important works (1976; 1973), are in the area of causes of power shortages and the economic consequences of power failures; while Uchendu Okorie (1992), Sule and Anyanwu (1993), and Grace Eyoma (2007), dealt with the privatization of the electric power sector. Atandare (2007) identified several factors as being responsible for Nigeria's abysmal power supply. While listing these factors, he only mentioned the 'activities of vandals and saboteurs' in passing:

Lack of adequate planning on PHCN, obsolete plants and equipment, corruption and gross negligence, activates of vandals and saboteurs, gross indiscipline on the part of PHCN staff and other erring consumers, lopsided allocation of power, technical constraints, lack of proper maintenance culture... (Atandare, 2007: 32)

There is thus a gap in the field yet to be filled, to highlight the urgency, relevance and timeliness of focusing the attention of scholars, government, PHCN, and the private sector on the issue of security of electricity installations in Nigeria.

Consequences of Insecurity and Other Problems

The insecurity of electricity installations and other problems facing the sector have had a myriad of consequences on PHCN, Nigerian citizens, corporate organizations and various levels of government. These consequences include:

i. Frequent power outages, several of which occur unannounced, and last for hours, days, and sometimes weeks.

ii. Huge revenue loss to PHCN and the business community.\(^4\)

iii. Discomfort for consumers in their homes, offices, and factories, leading to poor living conditions.

iv. Exploitation of citizens and communities that are at times asked by NEPA officials to contribute money for the purchase of stolen or damaged installations such as transformers.

v. Deaths resulting from electrocution due to collapsed cables and wires resulting from road accidents or acts of vandalism of installations, or from rain storms.

vi. Fire incidents in homes, offices and factories following sudden restoration of power.

vii. Damaged electrical appliances in homes, offices or factories resulting from sudden restoration of electricity (eg., televisions, machines, fridges, computers and musical instruments), or prolonged absence of power (for factory and certain office equipment).

viii. Power outages which enable all manners of criminals, such as, armed robbers, rapists,

\(^4\) World Bank estimates that Nigeria loses N135 billion annually that would have accrued it due to power outages.
kidnappers, ritual murder, cross-border bandits, assassins, thugs, looters, and others to operate much more freely under the cover of darkness.

ix. Diversion of PHCN’s scarce revenue to undue repairs and replacements. (NEPA Review, 2000: 12; Nigerian Tribune, 2005: 5)

x. Reduction in national productivity and income

xi. Higher cost of manufactured goods resulting from factories having to use alternative sources of energy, such as generators, inverters, and others. Stephen Ubanna (2005: 48) calculates that at the price of ₦65 to ₦68 per litre of diesel, a medium-size company consuming 20,000 litres per week would spend about ₦1.3 million on diesel alone.

xii. Reduction in the effectiveness and efficiency of PHCN

xiii. Unnecessary deaths in hospitals because surgical operations cannot be carried out and life-saving equipment, such as incubators for premature babies cannot be used.

xiv. Decomposition of corpses deposited at mortuaries, thereby causing their sudden removal and burial, which constitute health hazard.

xv. Retrenchment of workers and eventual closing down of firms that cannot cope with the inadequate supplies of light by PHCN, thereby increasing the number of people in the crime pool and, reducing income, living standards, and savings for investment.

xvi. Discouragement of domestic investors and small scale industries.

xvii. Frightening away of foreign investors, thereby denying Nigeria the huge foreign capital input needed to diversify the economy for rapid national development.

xviii. Discouragement and retardation of research efforts in universities, polytechnics, research institutes, and industries, with the associated blow to national development, problem solving, and scientific and technological advancement.

xix. Mounting criticisms against PHCN and the Nigerian government.

xx. Small-scale industries remain in chains, unable to play their expected role in wealth creation and poverty eradication and employment generation.

It is important for PHCN and the Nigerian government to use these consequences as part of a well-packaged public enlightenment and education programme. PHCN and the federal government should make these far-reaching consequences widely known to the public through a well-packaged programme, so as to discourage the vandals and saboteurs and to mobilize the people to defend PHCN installations.

Strategies for Improved Security of Electricity Installations

PHCN has not been sitting idle over the issue of insecurity of electricity installations in Nigeria. Some of the existing measures include: block fencing of some PHCN stations, bush clearance around PHCN stations and along the high tension transmission lines, use of security guards in PHCN stations, exclusion of climbing facilities in new PHCN towers being installed, involvement of local vigilantes in a few communities, deployment of police, and in some cases the army, to protect vulnerable power generating plant sites, and so on.

Experience however, has shown that the existing measures are not effective and have not been able to arrest certain security threats. New strategies must therefore be identified to combat threats to the security of electricity installations to enable PHCN provide adequate and uninterrupted power supply to Nigerians. This paper presents eight areas in which policies can be formulated and executed policies that will serve as measures to protect strategic electricity installations in Nigeria.

Executive measures

The Federal Executive Council needs to urgently undertake five strategic actions, namely:

a. Improve the funding for PHCN until the ongoing reforms in the electricity power sector is completed.

b. Pursue the reforms in the electricity power sector to a logical conclusion.

c. Authorize and empower the Nigerian Air Force to carry out aerial surveillance of electricity transmission line towers and cables until PHCN or reform-produced private agencies can take over such function.

d. Redefine Nigeria’s conception of national security away from the outdated Cold War era
confines of armaments amassment. Security must be all-embracing in such a way that poverty, hunger, and unemployment are recognized as threats to the nation’s security as these factors play very serious roles in motivating the vandalization of electricity installations and the stealing of PHCN equipment.

e. Negotiate a quick end to the on-going Niger-Delta crisis by granting the 25 per cent of oil revenue, as demanded by the oil producing states, as a major step towards true federalism.

Legislative measures
The National Assembly should:
a. Pass more stringent laws that recognize acts of vandalism against, and sabotage of electricity installations as crimes against the state, so that tough punishment can be meted out to offenders. Life imprisonment and compulsory forfeiture of property by convicted vandals will go a long way to deter potential vandals.
b. Pass laws that regulate the manufacture, importation, exportation, transportation, movement and sale of equipment and spare parts strategic to PHCN operations. Such laws should restrict the movement and sale of strategic materials and equipment used by PHCN to companies registered by government or the PHCN.
c. Pass laws that empower PHCN to charge interests on money owed it, especially by government and corporate bodies, after a period of grace not exceeding 30 days. The essence is to terminate the huge debts owed PHCN, and enable it to have more funds. This is crucial in these days of independent power producers, which need a guarantee that they will get back their money.
d. The option of banning generator importation into Nigeria may be considered as a way of shoring up the electricity sector.

Judicial measures
a. The courts need to impose punishments harsh enough to deter potential criminals from vandalising electricity installations. Such punishment could include life imprisonment, confiscation of convicts’ properties and payment of huge sums of money to PHCN and government.
b. Speedy trial of reported cases of vandalism, or theft of electricity installations and equipment.

Intelligence measures
The intelligence community (the State Security Service and the National Intelligence Agency) should assist PHCN in combating the threats to the safety of electricity installations. This will be in the area of prevention, detection and prosecution of offenders, through provision of information to PHCN and the police.

Law enforcement measures
a. Adequate and effective contingency arrangements for rapid police reinforcement in cases of reports of vandalism, sabotage, or theft of electricity installations.
b. Adequate plans by PHCN for the patrol of vulnerable areas of electricity installations in urban and rural areas by the police and local vigilante.

Civil society measures
Non-government organizations (NGOs), media houses, schools, churches, and mosques should educate and enlighten the people constantly on the importance of electricity installations to national security and the economy, and citizens’ quality of life. The essence is to raise awareness, and mobilize the populace for full participation in combating threats to the security of electricity installations.

Research and database measures
a. PHCN, the intelligence community, and the police should establish a database on the peculiar threats and (types of) vandals operating in different areas of the country. Vulnerable areas, as well as markets for vandalized and stolen electricity equipment should also be studied on a continuous basis.
b. There is a need to set up a centre for electricity sector security research. This centre will ensure that the country continuously finds better ways of combating the threats to the security of the electricity power sector installations; and come up with the best ways to continuously improve on service delivery in the sector.
PHCN measures

PHCN has to urgently put the following measures in place to enhance the security of electricity installations, and ensure better performance in the generation and supply of electric power to Nigerian consumers:

a. Acquire surveillance helicopters, fitted with modern communication and security equipment for constant surveillance of transmission lines. This strategy will greatly deter vandals and thieves, and help to promptly detect actual acts of vandalism or sabotage operations.

b. Engage community vigilante groups for the protection of key installations, all over the country.

c. Embark on massive public enlightenment and education to raise awareness about the relevance of electricity installations to the quality of life, national security, and development; and thus mobilize the people to combat threats to the security of these installations.

d. Constantly educate, enlighten, and educate PHCN staff on the relevance of electricity installations, existing threats to them, and the imperative of their security.

e. Conduct a war against corruption within PHCN itself. This will involve the dismissal of staff who embezzle funds, steal equipment, or connive with outsiders to defraud the company, and vandalize or steal electricity installations. Such dismissed staff must forfeit their pay up to the nation to the level of their current enrichment.

f. Improve the welfare package of PHCN staff in the form of prompt payment of adequate salaries, promotion as and when due, assistance to staff who suffer accident on duty, awards to outstanding and honest staff who reject huge bribes, and assistance to the family of a staff who dies on duty.

g. Ensure stricter security measures in and around PHCN stores, workshops, and injection/distribution sub-stations. These should include: high block fencing to keep out intruders, thieves, and wild animals; employment of well-screened and well-trained security men; proper and adequate lighting to illuminate the premises and surroundings, institute computerized safety control rooms, and install other technical and electronic devices and barriers designed to be sensitive to PHCN equipment to prevent internal theft.

h. Institute measures to combat natural disasters. Flood control facilities should be installed in all hydro stations such as canals and reservoirs to absorb excess water for farming purposes. Also reinforced concrete should be used to protect the basement of high-tension transmission towers, and transformers against erosion. The threats of lightning and thunderstorms shall be better neutralized by ensuring that all electricity-transmitting installations are earthed. As observed above, proper lighting and block fencings of installations will keep out reptiles and rodents.

i. Speedy and satisfactory resolution of labour disputes between PHCN management and staff to avoid strikes and internal sabotage.

j. Construct reservoirs in which millions of metric tons of gas and fuel can be stored to avoid shortfalls in the supply of these critical inputs to electricity generation.

k. Block the marketing of vandalized or stolen PHCN equipment in Nigeria or outside, through engraving or stamping the authority’s labels on items; and identifying and scrutinizing companies that can purchase and utilize stolen PHCN equipment.

l. Adopt more aggressive debt collection strategies, which go beyond mere disconnection from supplies of electricity. For example imposition of interest on debts, and obtaining court permits to seal off government and company premises for debts over ₦1,000,000.

m. Institution of attractive price awards for members of the public for information leading to the prevention of acts of vandalism, sabotage and theft of electricity installations or to the recovery of same and the arrest of culprits.

n. Provide suitable locks for all ring main units and feeder pillars, use of anti-vandal bolts and knots on transmission towers, and the use of galvanized angle irons and cross arms on 33 KV and 11 KV lines.

o. Ensure proper trace clearing of transmission and sub-transmission lines annually.

p. Trace and disconnect all illegal connections, and prosecute the offenders.
q. Improve on the record keeping processes, and inventory, and accounting systems to keep better track of PHCN materials and revenue. This requires effective supervision.

r. Establish a system of alternative power paths for the supply of electricity during emergencies so that companies can buy and sell power from and to others.

Conclusion
The electricity power sector is extremely relevant to national security, national development, and the quality of human life in Nigeria as elsewhere. It lightens up the nation, thereby making crime detection and prevention easy. It also provides the energy needed to power the machines, electrical and electronic systems that enhance production and service delivery in the country, and make life comfortable and more meaningful for Nigerians.

Apart from small-scale, light, and heavy industries, millions of ordinary Nigerians depend on electricity for their daily bread. Thus, blackouts and irregularities in the supply of electricity even for one hour impact devastatingly on people’s income, quality of life, national security, and national economic development. As rightly noted by Iwayemi (2001: 4) who lamented the 'legendary power shortages evident in frequent power blackouts and brownouts, and large voltage variations' in Nigeria:

The chaos in the energy sector has not only wreaked havoc on the economy, it has been a significant factor in the sharp fall in the quality of life of most Nigerians in the past decade.

Olusegun Agagu, (2001: 1), Nigeria’s former minister of power and steel, similarly stated:

Electricity consumption is one of the most important indices for measuring the standard of living of a country. This is so because almost all aspects of modern living such as provision of potable water, industry, education, health care delivery, transportation, communication, food processing and preservation amongst others all depend on electricity for their functioning.

The former minister lamented the inability of government to provide adequate and steady supply of electricity to consumers, asserting that this inability has led to the priority attention being given to the electricity power sector in contemporary Nigeria. In his words again:

The inability of our country to be self-sufficient in its power requirements has therefore been one of the major impediments to our social and economic development. Hence the elevation of our power supply problems to the front burner of our national debate today. (Agagu 2001: 1)

Insecurity, which is the most urgent problem facing Nigeria’s electricity power sector today needs more innovative combat strategies including stricter laws and punishments as well as political solution to the Niger Delta crisis. If not checked, it may spell doom for the electricity power sector in Nigeria. Even if the power sector achieves 100,000 megawatts power generating target there is no guarantee of adequate and uninterrupted power supply if resolving the issue of security of the electricity installations is not addressed. Meanwhile, foreign multinational corporations manufacturing and selling generators keep milking the country dry of her scarce foreign exchange. The question seems to be: ‘when shall Nigerians learn?’

Finally, Nigeria should diversify its sources of electricity away from the current hydro and gas base. Coal supplies 50 per cent of the United States’ electricity requirements, and Nigeria has an abundance of coal deposit. The country should urgently move to exploit this coal option as well as the other options: the nuclear, solar, and wastes sources for electricity generation. With these diverse sources and security of electricity installations, the country can definitely put epileptic power supply behind it, catalyse its development, and improve the quality of life of Nigerians. In this way, as noted by Chikereuba (2007: 3), citizens will not have to wait until 2010, to enjoy improved supply of electricity as earlier promised by government. Instead national energy and resources will be mobilized in pursuit of the new 100,000 MW target.

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News and editorials
Nigerian Television Authority (NTA) Network News (2007), Monitored on April 4. Chairman of NERC was monitored on June 19.
Tell (2005), March 21, p. 50. It is important to note that the then director of NEPA (now PHCN) told this magazine that the Authority only received N100 million from government and not N280 billion.
The Guardian (2005), March 16, p.10.
This Day 2003), August 31, p. 22.

Interviews
Interview with defence and security personnel in Thailand (1997).
Interview with security personnel in Greece in 1998.
Interview with a very Senior Staff of PHCN in Oyo State, Nigeria (2005), who preferred his identity to be protected for official reasons.
Discussions with two senior PHCN staff at Abuja in 2005 and 2006 confirmed illegal, unpatriotic and criminal practice by some PHCN staff. The interviewed officials also preferred to remain anonymous.

Biographical Note
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