

Regulating the Electricity Supply Industry in Nigeria. An Assessment of Consumers' Attitudes

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Abstract: The power sector is critical to the development of any country and Nigeria is no exception, incessant power outage has been the bane of economic development in the country. For the past three decades, the power sector of the country has been plagued by a lot of problems ranging from low power generation and distribution, decaying facilities most of which were commissioned before and shortly after the country's independence. The interaction of the electric power industry with climate is manifested both in the effect that severe weather has on the power system and through the contribution of electric power to the production of greenhouse gas (GHG) and other pollutants.

The paper examines and provides answers to (i) the nature of consumers' attitudes towards power consumption and (ii) suggest ways of informing the consumers on the need to conserve power when not in use. This study was carried out in Alimosho Local Government Area of Lagos State, south-west Nigeria. The findings show that 61 percent of electricity consumers' agreed that rationing of electricity consumption would stabilize the electricity distribution, whereas 39 percent were not in agreement. The study also shows that about 90 percent of the consumers were not satisfied with the services being offered by the Government owned company, while the remaining 10 percent were satisfied. We suggest the authority take to prepaid method of electricity consumption and also intensify efforts to enlighten the public on the need to conserve power.

Keywords: Electricity, Generation, Consumers, Development, conservation and Consumption

Introduction

The history of electricity in Nigeria dates back to 1896 when electricity was first produced in Lagos, fifteen years after its introduction in England (NPR, 1985). The total capacity of generators used then was 60kw. In other words, the maximum demand in 1896 was less than 60kw. In 1946, the Nigerian government electricity undertaking was established under the jurisdiction of public works department (PWD) to take over the responsibility of electricity supply in Lagos State. The history and perceive role of the power during the pre- and post-colonial period was one of a service utility. There was an apparent lack of futuristic planning or call it insight or projection for improving consumer access and best business practice. Supremely the electricity supply market in Nigeria eventually transformed into a vertically integrated monopoly, which was dictated by Electricity Corporation of Nigeria (ECN) and (NEPA). (Ehiorobo, 2007).

In 1950, a central body was established by the legislative council which transferred electricity supply and development to the care of the central body known as the Electricity Corporation of Nigeria (ECN). Other bodies like Native Authorities and Nigerian Electricity Supply company (NESCO) has licenses to produce electricity in some location in Nigeria.

There was another body known as Niger Dams Authority (NDA) established by an act of parliament. This was merger with Electricity Corporation of Nigeria (ECN) in April 1972, to form a new organization known as National Electric Power Authority (NEPA), (NPR, 1989). Since inception of NEPA, the Authority expands annually in order to meet the ever-increasing demand.

Unfortunately, majority of Nigerians have no access to electricity and the supply to those provided is not regular (Okoro, 2004).

Literature Review

Within the particular conception of socio-economic processes which underscore every economic system, economic development, globally, revolves around the issues of the character, structure, pattern and evolution of desirable inter-personal relations of production, allocation and utilisation of available resources in any country. In order to optimally develop and efficiently manage such available resources, equitably allocate and effectively utilise them and subsequently put economic development firmly on course, modern operational technologies with respect to production, allocation and utilisation are designed and tied strictly to the use of energy in one form or the other. Thus, the quest to rapidly and firmly put the Nigerian economy on the course of economic development is technically, a function of adequate supply and distribution of energy, particularly, electricity.

In this regard, adequate supply and distribution of electricity constitute a central development issue which cannot be over-emphasised. Apart from serving as the pillar of wealth creation in Nigeria, it is also the nucleus of operations and subsequently the 'engine of growth' for all sectors of the economy. In recognition of the consolidating linkage between the energy sector and the other sectors of the economy, electricity development and utilisation therefore have pervasive impacts on a range of socio-economic activities and consequently the living standard of citizens in the country.

The foregoing assertions subsequently explain why one of the most frustrating and disturbing economic development issues in the Nigerian economy and society, particularly since the 1990s, is that of the inadequacy of electricity supply and distribution. The situation of the emerging electricity outages from the supply inadequacy, especially one year before the inception of the Obasanjo led-civilian administration on May 29, 1999, was that of persistent electric power outages at alarming frequencies in the face of abundant primary electricity resources - coal, natural gas, geothermal, tide, solar, biogas, biomass etc. (CBN, 2001)

Incidentally, some analysts (Iwayemi, 1991; Adegoke, 1991; Ayodele 1992 & 98) have defined this period as a period of serious electricity crisis; a crucial or decisive movement; an undesirable turning point; a time of difficulty and distress; a state of confusion when things no longer happen in the normal or usual manner. In all, the situation of electricity supply inadequacy shows the emergence of a crisis situation in which electricity supply could not catch up with the demand requirements.

The Interaction of Electric Power and Global Warming

The interaction of the electric power industry with climate is manifested both in the effect that severe weather has on the power system and through the contribution of electric power to the production of greenhouse gas (GHG) and other pollutants. It is estimated that the United States is the source of one-fourth of the world's GHG emissions and that the electric power industry accounts

for one-third of the nation's GHG emissions. Within the total GHG emissions, CO₂ emissions account for more than 80 percent of the overall U.S. contribution and 38 percent of this amount comes from the electric power sector [Morgan, 2005].

The sources of greenhouse gas, GHG, emissions, the cause of global climate change, are from both natural (biogenic) and human (anthropogenic) sources. These are emissions from land use pattern, agriculture, transportation, and electric power.

Interaction of the Production of GHGs and Electric Power

The public and the electric utility industry are showing greater interest in environmental issues, including global climate change. It is widely known in scientific circles that life on Earth would not be possible without the greenhouse effect. The greenhouse effect plays a crucial role in maintaining the Earth's average temperature at about 59° F (15° C). Without the greenhouse effect, the Earth's average temperature would be about 60° F colder. Key naturally occurring greenhouse gases are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and water vapor. The greenhouse effect occurs when some of the radiation from the sun that reaches the Earth's surface through the atmosphere is prevented by atmospheric gases from being reflected back into space. This is similar to what occurs within a glass-enclosed space, such as a car or a greenhouse. On a global basis the greenhouse effect causes a rise in the Earth's temperature until there is a balance between incoming and outgoing radiation. Studies have shown that water vapor and CO₂ are responsible for most of the

Earth's greenhouse effects. Through a process known as the carbon cycle, the concentration of CO₂ in the atmosphere is regulated. The carbon cycle involves the movement of CO₂ between the atmosphere, the land and the oceans, with natural processes such as photosynthesis playing a dominant role.

Electricity Generation and Distribution in Nigeria

Power outages are the most dramatic instances the consuming public will see to make them see reasons why there is need for power to be rationed and conserved. This is as a result of the high costs of alternative supply for those who rely on the public supply of electricity, quality and reliable services have deteriorated and have adverse impact on consumers. (Ehiorobo, 2007). This failure may be associated with low operating efficiency caused by lack of maintenance, willful damage on power installations, and lack of strategic planning on the part of the authority and attitude of consumers towards electricity power consumption. It could also be associated with lack of investment caused by misappropriation of funds.

CONCEPTUAL FRAMEWORK

How much did the last administration spend on electricity? and why is the country still unable to enjoy uninterrupted electricity? These are questions that the House of Representatives is seeking answers to in the light of the disclosure by President Umaru Yar'Adua that the administration of former President Olusegun Obasanjo expended \$10 billion on electricity.

President Yar'Adua had on 14 January, 2008 told a World Bank team led by Mrs.

Oby Ezekwesili, a vice president in the organisation, that the Obasanjo administration spent a whopping 10 billion dollars on electricity within eight years. Mrs. Ezekwesili, who was a minister and a member of the economic team of that administration, later challenged that figure, saying the figure was not accurate.

The last administration embarked on various power projects with a pledge to increase electricity generation to about 6,000 megawatts (MW) by last December and 10,000 MW by the end of this year. Electricity generation before that administration came on board was about 3,500MW. But while a colossal \$10 billion, according to the figure given by President Yar'Adua, was spent on the power sector, the result in electricity generation has been minuscule. More than anything, Nigerians' battle with constant power outages and outrageously high electricity bills has become intense and frightening.

Therefore, because of the unimpressive result of the previous investment, President Yar'Adua said his government was not in a hurry to commit more funds to the power sector. According to the president: "While we are targeting 6,000MW by 2009, the \$10 billion invested in the sector between 2000 and 2007 has not translated into power generation, transmission and distribution. So we are exercising caution to ensure that any further funds to the sector would translate into production and delivery of energy to the ordinary Nigerian."

But, a new twist was introduced into the electricity generation issue when the Speaker of the House of Representatives, Honourable Dimeji Bankole, claimed that the Obasanjo administration actually spent \$16 billion on electricity. The House has already raised a

panel to investigate the power projects embarked upon by the last administration.

Already, the panel had invited some state governors, Olusegun Agagu of Ondo State, Liyel Imoke of Cross River, Danjuma Goje of Gombe and Gabriel Suswan of Benue, to appear before it. They were at one time or another ministers and Senate Committee Chairmen on Power and Steel in the Obasanjo government.

One of the promises the Obasanjo government made when it came to power in 1999 was the provision of adequate power supply within 24 months. However, the late Chief Bola Ige, who made the promise as Minister of Power and Steel, was shortly after redeployed. He was transferred to another ministry. And the promise the late Chief Ige made on behalf of that government was put on hold.

The administration later went into partnership with some organisations both within and outside the country on various power generation projects and began what is known as independent power projects (IPPs). This was in addition to the billions of naira the government sank into the National Electric Power Authority (NEPA) which was later unbundled into several companies as Power Holding Company of Nigeria (PHCN). In spite of these huge investments, the power situation has remained epileptic.

This pathetic power situation has caused great economic distress to the country. Many thriving industries have collapsed; they had to close shop because they could not meet the cost of diesel. Not too long ago, Michelin closed down its Nigerian production office. The once thriving textile industry is tottering towards collapse. Even the small businesses are not spared the agony of poor electricity generation. Hundreds of macro

and micro-economic ventures have been battered into extinction. Those that are still operating are doing so at a great cost. All these have taken a serious toll on the employment situation in the country.

There is every need to know what happened to the huge amount the last administration spent on electricity. Nigerians and even the administration of Yar'Adua need to know what went wrong. And if it is as Mrs. Ezekwesili stated, that the profit of that huge investment takes time to grow, Nigerians need to know when they will start earning the profit of uninterrupted power supply. It is against this background that we are in full support of the panel raised by the House of Representatives to get to the bottom of the power generation crisis.

Whether it is \$10 billion or \$16 billion that the last government spent on the power projects, it is the result that matters. But as it is, the state of the country's power sector grossly contradicts these amounts. All well-meaning Nigerians and the Presidency should support the House of Representatives in the task to unravel the mystery surrounding the nation's power sector. The findings of the panel will go a long way in getting a solution to the country's energy crisis. They will instructively reveal what went wrong and what the country needs to put right. This is why the House of Representatives Committee should take the assignment with all seriousness. The country can never get it right, if either \$10 billion or \$16 billion was spent on a sector without any tangible result and without Nigerians knowing how such a huge amount was spent.

Like the former president, President Yar'Adua has set a target for his administration

on electricity. The 6,000MW he promised by the end of 2009 can only be realised if the administration musters enough political will and courage. The president should note that without adequate electricity, his seven-point agenda will be as cannot be actualized; it will be unrealistic and unreliable.

The foundation of any meaningful and enduring economic prosperity lies in the power sector. Therefore, it is important for the Federal Government to know how either \$10 billion or \$16 billion went down the

drain— or if it was spent judiciously or stolen— so that it can learn useful and appropriate lessons from that. Nigerian Tribune (2008)

Electric power has remained the major source of energy throughout the world. Virtually all facets of economic and social development of nations are highly if not totally dependent on electricity energy. There are originally eight government owned and seven private owned power generating stations in Nigeria. Table 1 below shows the generating capacity of these stations.

Table 1

Owners	Technology	Generators	MW Generated (Ave)
Federal Government	Thermal	AFAM	266.9
Federal Government	Thermal	DELTA	482.7
Federal Government	Thermal	EGBIN	99.3
Federal Government	Thermal	GEREGU	0
Federal Government	Thermal	SAPELE	42.72
Federal Government	Hydro	JEBBA	514.8
Federal Government	Hydro	KAINJI	388.9
Federal Government	Hydro	SHIRORO	527
Private Companies	Thermal	AEES	233
Private Companies	Thermal	AGIP	426.2
Private Companies	Thermal	AJAOKUTA	72.06
Private Companies	Thermal	ELEME	0
Private Companies	Thermal	OMOKU	0
Private Companies	Thermal	T/AMADI	0
Private Companies	Hydro	NESCO	33
Total			4007

Source: Ehiorobo (2007)

Methodology

Questionnaires were administered to one thousand (1000) respondents of Alimosho

local Government area at the point of payment of their electricity bills. This was done for a period of two weeks (2) using systematic random sampling K^{th} interval was taken as ten (10).

Findings and Discussion

The table 2 below shows the respondents' source of electricity supply. The table reveals that most electricity consumers are

being supplied and charged based on the electricity meter reading system i.e 88 per cent while prepaid system, generating sets and solar energy system contributed only 12 percent of the total respondents.

Table 2

Respondents	PHCN Meter Reading System	PHCN Prepaid System	Generator set	Solar Energy System	Total
Numbers	813 (88.08)	13(1.41)	84(9.1)	3 (0.33)	923 (100%)

Sources: Field Survey (2008)

Table 3 reveals the respondents' service delivery rating of the electricity provider. The study shows that about 90 percent of the respondents are not satisfied with the

services being offered by the Power Holding Company of Nigeria (PHCN), while the remaining 10 percent are satisfied.

Table 3

Respondents	Satisfactory	Unsatisfactory	Total
Numbers	98 (10.62)	825 (89.38)	923 (100%)

Sources: Field Survey (2008)

The table 4 of the study shows that the respondents' attitudes towards electricity consumption and conservation patterns. The findings show that the larger percentage i.e 61.1% of the respondents agreed that

rationing of electricity consumption will stabilize the electricity distribution; where as about 39 percent of the respondents were not in agreement.

Table 4

Respondents	Agree	Not Agree	Total
Numbers	564 (61.11)	359 (38.89)	923 (100%)

Sources: Field Survey (2008)

Conclusion and Recommendations

In recognition of the consolidating linkage between the energy sector and the other

sectors of the economy, electricity development and utilisation therefore have pervasive impacts on a range of socio-economic activities and consequently the living standard of

citizens in the country. In this regard, adequate supply and distribution of electricity constitute a central development issue which cannot be over-emphasised. Apart from serving as the pillar of wealth creation in Nigeria, it is also the nucleus of operations and subsequently the 'engine of growth' for all sectors of the economy. From the findings and discussion above, most electricity consumers are being supplied and charged based on the electricity meter reading system, that majority of the respondents are not satisfied with the services being offered by the Power Holding Company of Nigeria (PHCN) and most of the respondents also agreed that rationing of electricity consumption will stabilize the electricity distribution. Like the former president, President Yar'Adua has set a target for his administration on electricity. The 6,000MW he promised by the end of 2009 can only be realized if the administration musters enough political will and courage. The president should note that without

adequate electricity, his seven-point agenda will not be actualized; it will be unrealistic and unreliable. Whether it is \$10 billion or \$16 billion that the last government spent on the power projects, it is the result that matters. But as it is, the state of the country's power sector grossly contradicts these amounts. All well-meaning Nigerians and the Presidency should support the House of Representatives in the task to unravel the mystery surrounding the nation's power sector. The findings of the panel will go a long way in getting a solution to the country's energy crisis. They will instructively reveal what went wrong and what the country needs to put right. This is why the House of Representatives Committee should take the assignment with all seriousness. The country can never get it right, if either \$10 billion or \$16 billion was spent on a sector without any tangible result and without Nigerians knowing how such a huge amount was spent.

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