

The Cost of Electricity in Nigeria

By Adesiji Rabi*^{*}

This article explores the cost of electricity in Nigeria, a developing nation with 140 million inhabitants and an epileptic supply of electricity. It reviews the current state and future state of electricity in Nigeria. In addition, it reviews the existing gaps between these states and in conclusion, it proffers some recommendations regarding moving forward and resolving the current electricity impasse in the country.

The Director General of Debt Management Office (DMO), Nigeria, Abraham Nwankwo, identified four infrastructure areas in which Nigeria must invest over \$100 billion to revive her economy. These, according to him, are power (\$18-20 billion), rail tracks (\$8-17 billion), roads (\$14 billion) and oil and gas (\$60 billion).¹

This current state is well understood, accepted and shared by many. For the past three decades, inadequate quantity, quality and access to electricity service has been a regular feature in Nigeria, a country with a majority living on less than US\$2 a day.² Generally, it is widely believed that over half of the Nigerian population does not have access to electricity. Many articles and newspapers quote and estimate that Nigeria requires a minimum of 10,000 MW of electricity; this is a far cry from the current production capacity of below 3,000 MW. Although the installed capacity of electricity is much greater than 3,000 MW, infrastructure utilization has been very poor and power supply has been epileptic as result of a lack of maintenance and unscheduled outages.

Presently, Nigeria has a retrogressing economy; the education and the health care systems are in shambles; industries are collapsing; joblessness and crimes are multiplying astronomically, etc. Typically, people store electricity-generating plants that utilize petrol directly inside their homes. As a result of this hazardous practice, property and lives have been lost because of fire accidents, and in some cases, suffocation of occupants from smoke and CO₂. In addition to this unenviable economic climate, the political and business climates have been unstable and unpredictable; many of these ills are attributable to inefficient leadership, which is largely responsible for the inadequacy of quantitative and qualitative access to electricity. Consumer demand has been reduced artificially and forcefully causing the need for infrastructure development to appear inconsequential!

The cost of electricity in Nigeria is apparently far greater than the \$20 billion estimate suggested by the Director General of Debt Management Office. It is opined that the actual cost of electricity in Nigeria will include, inter alia, the cost of creating employment; reviving distressed businesses and industries; rebuilding lost property due to fire accidents; creating stable and 'investable' political and business climate; fighting crime and educating over 50% of her population; and the cost of addressing other risks and contingencies.

Like the current state, the future or desired state is well understood, accepted and shared by many. From informal conversations with friends residing in Nigeria, it is common to find people who spend the equivalent of US\$1,000 on petroleum per month to generate electricity for their personal use at home. They claim this is not conducive for their respective family members, because it involves storing petroleum and diesel, for the generators, at home. They also indicated that they would pay whatever amount to have public or investor-owned electricity transmitted to their homes. A few rural people I discussed this with last April, during my visit to Nigeria, reported they have had electricity transmitted to their homes for less than two weeks since January 2008. They have been in the dark, perpetually, and when there is electricity supply, it is epileptic and voltage is either too high or too low, sometimes resulting in expensive damages to electrical devices and appliances. They said if they could afford it, they would pay the right amount to have consistent supply of electricity. In addition, in an article titled "Poor electricity supply bane of Nigeria's SMEs –Manufacturers" posted in *Businessday*, a Nigerian newspaper, on August 21 2008, Duro Kuteyi, chairperson of Lagos State Chapter of Nigeria Association of Small Scale Industrialists (NASSI) said "I spend an average of N400,000 (US\$3,300) on diesel every month just to remain in business. I still pay my bills in spite of the erratic power supply, and PHCN still disconnects companies."³ In the same article, Mojisola Abbas, managing director, Lydin Pure Water, said "I spend over N120,000 (US\$1,000) weekly on diesel to meet the demand of customers. It seems the PHCN does not want us to survive."

Generally, there is consensus about the future state. The expected future or desired state envisioned is a situation where electricity is available to everyone, in both urban and rural areas, at just and reasonable rates. In the desired

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See footnotes at end of text.

state, there will be adequate electricity for Nigerians, and perhaps some exportation of electricity to its neighboring countries, including Benin Republic, Cameroon, Niger, Togo and Ghana; her education, health care and industries will be up and running; and there will be jobs for the majority of the population. This would result in a reduced crime rate since more people would be gainfully employed and foster stable political and business climates that will attract foreign direct investments. The result will be a buoyant economy and a healthy nation.

The future, or desired, state of Nigeria is known; her leadership is aware there is huge infrastructure deficit in generation, transmission and distribution (GTD). Unfortunately, ineffective decisions have been made to correct the situation and almost all incentives have been denied to potential investors. PHCN is supposed to have the authority to govern the use of electricity in Nigeria; and the Ministry of Energy (power) is supposed to ensure there is adequate GTD. However, it appears it is unclear who makes the decisions pertaining to GTD. Who is the regulator of electricity? How is the Nigerian electricity market operated? Where are the bottlenecks? Can the citizens afford electricity without government subsidy? What incentives are in place to attract investment in the electricity market? These are some of the key questions to consider when developing solutions to the current electricity issues in Nigeria.

In the province of Alberta, Canada, for example, the Alberta Utilities Commission (AUC) regulates investor-owned natural gas, electric, and water utilities and certain municipally owned electric utilities to ensure that customers receive safe and reliable service at just and reasonable rates [www.auc.ab.ca].

Building power plants and generating electricity involves large capital and long-term investments. The Nigerian government needs to decide now how much it wants to partake in resolving electricity problems. For example, in my opinion, because the vast majority of Nigerians are unemployed and those employed are not buoyant enough to afford the electricity, it will be impossible to attract foreign investments in GTD without government subsidy and incentives.

Energy issues are global; the sources of electrical energy, or the energy mix, including choice of Solar-, Hydro-, Coal-, Biomass-, coal gasification-, and wind-generated electricity, which are ideal for a country, are largely influenced by the region in which the country is located and the resources readily available. For example, about 70% of France's electricity supply is generated by Nuclear Power Plants because coal and natural gas are scarce. About 80% of Alberta's electricity is generated by coal-fired and natural gas power plants because coal and natural gas are in abundance in the province. Good energy policies provide economic incentives and drivers that ensure stability and security of supply, and affordability of clean energy solutions. Moving forward, today must mark the turning point for Nigeria. The journey of a thousand miles begins with a single step. The level of awareness, understanding and acceptance of the Nigerian electricity issues are at a peak; and the magnitude of associated challenges can no longer be misconstrued. Implementing solutions can begin today; in single steps, decisions and positive actions can begin now.

Given the current state, future state and existing gaps outlined above, I think a good approach to solution should include the following steps:

Phase 1:

Do first things first. The government, leadership, must make a real decision to resolve the problem. This would involve committing to positive actions, including:

- reviving dilapidated and ill-maintained electricity infrastructures (GTD)
- defining and strengthening institutional and regulatory jurisdictions
- Providing a required subsidy to those who need it

There are speculations there is agreement expressing convergence of will between the Nigerian and German governments "to facilitate the supply of 6,500 megawatts of electricity between now and 2020 by Germany through the execution of various power supply projects, expansion of existing dams, rehabilitation of substations and construction of new power plants in different parts of the country." [August 21, 2008, www.allafrica.com]. This is a positive move in the right direction although negligible compared to what Nigeria should set as target in a 12-year (2008 – 2020) timeframe.

Phase 2:

Next, decisions must be made to identify generation options that are in line with National Energy Strategy. Because of its geographical location and resources, suitable options for Nigeria include solar-, natural gas- and wind-generated electricity. In addition, firm decision must be made to continue to bundle, or to unbundle Generation, Transmission and Distribution.

Phase 3:

Finally, once phases 1 and 2 have been implemented in the near-term, the next steps must include actions and policies to further strengthen her National Energy Strategy in the long-term, such as:

- Creating incentives that would encourage the development of investor owned generation, transmission and distribution
- Forming alliances and partnerships with local and foreign power generation and transmission companies

A precise estimation of the amount of electricity required by Nigeria is a difficult endeavor; neither is the task as simple as computing the amount singularly by her population. Other factors, such as the level of development, the number of industries, current skills sets of her work force, current demand and climate are key parameters to consider in determining or extrapolating how much electricity the country requires today or in the future.

Conclusion

What is most important is to say YES to development in rural and urban communities; to COMMIT resources to repair existing infrastructure and develop a maintenance culture; to develop realistic National Energy Strategy and policies; and decide on the right energy mix.

Providing electricity in Nigeria is a huge challenge. Monetarily, it is much more than the \$20 billion estimate provided; it will also call for lots of person-hours, planning, goodwill and management of other contending issues and risks.

Footnotes

¹ David Agba, "Nigeria Needs \$100b Investment In Four Infrastructure Areas", INDEPENDENT, August 8, 2008

² Dr. Akin Iwayemi, "Investment in Electricity Generation and Transmission in Nigeria: Issues and Options", The Energy Journal, First Quarter 2008, Page 37

³ The Power Holding Company of Nigeria (PHCN) governs the use of electricity in Nigeria. It was formerly named the National Electric Power Authority (NEPA)



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