



Issues and Challenges of Ownership and Privatization of Power Stations in Nigeria'

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Authors' contributions

This work was carried out in collaboration between all authors. Authors KKO and AMO designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript and managed literature searches. Authors KKO, AMO and AOA managed the analysis of the study and literature searches. All authors read and approved the final manuscript.

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ABSTRACT

A lot of attempts being made by the Nigeria government at industrialization and advancement of economic growth have been hindered by energy infrastructures deficit gap. Constant and adequate power supply is an important condition for an advance economic growth and to boost industrialization in the country. Many efforts to close this gap are being made, one of which is privatization of the power stations. The privatization of the power stations is meant to tackle the problems facing power supply in Nigeria, which include limited access power, inadequate generation and usage of power capacity etc. This issue of privatization is now rampant among countries, this paper discusses the efforts being made to give a stable power supply before it was privatized and after it was privatized, also this paper discuss on the challenges being encountered in the power sector during the ownership by government and when it was privatized. If the issues and challenges raised are properly tackled, there would be an increase/development in industrialization and the country's economy.

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1. INTRODUCTION

Power supply is a key factor that influences the economic sector of any country. It determines the level of industrialization, economy, and infrastructural facilities available within a country. Therefore, to increase the level of development in a country, the power sector needs to be adequately monitored. Ownership is the state of having complete legal control of the status of something, while privatization is the transfer of a company or organization from government to private ownership and control. The power sector in Nigeria has been facing series of challenges which has been affecting its productivity. This, in turn, has drastically affected the rate of development of the country. The legal control of the power sector in Nigeria formally belongs to the government, but of recent, the power sector has been privatized. With the step of privatization taken, the power station owned by the individual share holders is being effectively monitored.

When the Government was in control of the power station, the workers were being paid with fixed salary regardless of the amount of megawatts generated. But since it was privatized, the workers were being paid according to the number of megawatts generated. This reveals that their income depends on the rate of power generated. Despite the privatization process, the rate of power generation is still not improving because it encountered some challenges which include; political issues, problem of funding, consumers fraudulent practices, etc.

1.1 Objectives of Study

The objectives of the study include:

1. To look into the issue of the evolution of power generation in Nigeria.
2. To explain the issue and challenges of ownership of power sector in Nigeria.
3. To discuss the issue and challenges of privatization of the Nigerian power sector

1.2 Evolution of Power Generation in Nigeria

Electricity was first produced in Lagos in the year 1896, fifteen years after it was introduced in England [1]. In other words, the maximum demand as at 1896 was less than 60 KW because the total capacity of the generators used

then was 60 KW. In 1946, the Nigerian government electricity undertaking was established to take over the responsibility of electricity supply in Lagos state, under the jurisdiction of the public works department (PWD). A central body was established by the legislative council in 1950. In the early 1960, the Niger dam authorities (NDA) and Electricity Corporation amalgamated to form the electricity corporation of Nigeria (ECN). The responsibility of electricity supply and development was transferred to the care of the central body known as the Electricity Corporation of Nigeria (ECN). Other bodies like Native Authorities and the Nigerian Electricity Supply Company (NESCO) had licence to produce electricity in some locations in Nigeria. The body known as Niger Dam Authority (NDA) was established by an act of parliament. The NDA was responsible for the construction and maintenance of dams and other works on the river Niger and elsewhere. The NDA generates electricity by means of water power (hydroelectric power), improving navigation and promoting fish brines and irrigation [1]. The electricity produced by NDA was sold to ECN for distribution and sales at utility voltage.

Then, in April 1972, the operation of ECN and NDA were merged into a new organization known as the National Electric Power Authority (NEPA). Since ECN was mainly responsible for distribution and sales, while the NDA was created to build and run generating stations and transmission lines, the primary reason for merging the organizations were;

1. Vesting of the production and distribution of electricity power supply throughout the country in one organization which would assume responsibility for financial obligations.
2. For more effective utilization of the human, financial and other resources available to the electricity supply industry throughout the country [1].

1.3 Issue of Ownership by Government

In order to integrate electricity power development and make it effective, the then colonial government passed the ECN ordinance no.15 of 1950. With this ordinance in place, the electricity department and all those undertakings

which were controlled came under one body. The ECN and the Niger Dam Authority (NDA) were merged to become the National Electric Power Authority (NEPA) with effect from 1st of April, 1972. The actual merger did not take place until 6 January 1973, when the first general manager was appointed. Although the National Electric Power Authority was faced by series of problems, it has played an effective role in the nation's socio-economic development as a result of careful planning and hard work. This, in turn has steered Nigeria into a greater industrial society. The basic enacted function of the authority is to develop and maintain an effective co-ordinate and economical system of electricity supply throughout the federation. The decree further states that the monopoly of all commercial electric supply shall be enjoyed by NEPA to the exclusion of all other organizations. This does not, in any way, prevent privy individuals from buying and running thermal plants for domestic use.

From 1989, NEPA gained another status of quasi-commercialisation, meaning that NEPA has been granted partial autonomy and it has to feed itself. The total generating capacity of the six major power stations as at then was 3,450 megawatts.

In spite of considerable achievements of recent times with regards to its generating capacity, additional power plant would be needed in order to cover expected future loads.

By 1970, the military government appointed a Canadian consultant firm, 'Showment Ltd', to look into the technical details of the merger. The report was submitted to the government in November 1971. By decree no.24 the ECN were merged to become the NEPA with effect from 1 April 1972. The actual merger did not take place until 6 January 1973 when the first general manager was appointed. The day to day running of the authority is the responsibility of the managing director.

What is currently referred to as the Power Holding Company of Nigeria (PHCN), was formally known as National Electric Power Authority (NEPA) for several years. Although the federal government made some perceived cash investment, power outages have been the standard for the citizens of the country, who do not see this as normal at all. Therefore, because of such outages, NEPA was humorously nicknamed as "Never Expect Power Always" [2].

1.4 Challenges of Ownership by Government

Towards the end of the Nigerian second republic, the company experienced series of problems such as frequent collapse in its transmission lines which led to instability in its grid system and power outages. Some other problems encountered by the company include:

1. Lack of efficiency in planning, management and maintenance.
2. Loss, as a result of government debt and lackof proper pricing.
3. Limited access to infrastructure
4. Low connection rates
5. Inadequate generation and usage of power capacity
6. Ineffective regulation
7. High technical losses and vandalism
8. Insufficient transmission and distribution facilities.

Therefore, due to the inability of the firm to guarantee constant power supply, many firms the manufacturing sector has resorted to providing for their own power infrastructure [3]. Due to these problems, they were given another alias; "No Electric Power Again". By the end of the 1980s, the company was only transmitting about half of its total installed capacity. NEPA's statutory obligations sometimes were contradicting and were rarely met before its extinction. NEPA was originally designed to be a self financing company remitting dividend to its owner. It was to provide constant electricity to consumers and expand electric provision to all local governments in Nigeria. However, most of all these financial developmental goals were not met.

As a result of the various challenges encountered, the federal government proposed the undertaking of aggressive rehabilitation of power infrastructure between 1999 and 2004, which was then called "the infrastructure rehabilitation phase of the reform".

2. PRIVATIZATION

According to the English dictionary, privatization is the transfer of a company or organization from the government to private ownership and control. It involves the exposure of public enterprises to competition. However, in a strict sense, privatization means the transfer of the ownership (and all the incidence of ownership including

management) of a public enterprise to private investors. The later meaning is the sense in which the term has been statutorily defined in Nigeria [4].

Also in same vein, Starr defined privatization as a shift from the public to the private sector, and not shifts within sectors [5].

2.1 Objectives of Privatization of Power Station

1. To reduce the cost of production in Nigeria so as to attract new investment. This can be achieved through the provision stable and reliable power supply, which is necessary to grow the economy via industrial, commercial and socio-domestic activities.
2. To improve the efficiency of the distribution, generation and transmission networks, which were faulty/inactive
3. To provide Nigeria with basic and affordable electricity infrastructure, a key to enabling self employment.
4. To create robust, commercial, competitive and sustainable electricity market that is private sector driven.
5. To inject sector managerial expertise and capital into the sector.
6. To reduce government expenditure in the sector and redirect savings to other social requirements [6].

2.2 Process of Privatization of Power Stations

Towards achieving the objectives set out in the Electric Power Sector Reform (EPSR) act of 2005, some organizations were established. The first was the power holding company of Nigeria plc (PHCN) and it was established to take over the functions, assets, liabilities and employees of NEPA, the onetime national power company. Then the second was the Nigeria Electricity Regulatory Commission (NERC), which was meant to regulate the sector and issue necessary operating licenses. Moreover, the Successor Companies (SC) was also established to deal with the generation, distribution and transmission of electric power. The generation companies are; Shiroro Hydro Power Plc, Kanji Hydro Power Plc, Afam Power Plc, Sapele Power Plc, Ughelli Power Plc and Geregu Power Plc. The successor transmission company is the transmission company of Nigeria (TCN).

The eleven [7] successor distribution companies are as follows; Abuja electricity distribution Plc, Benin electricity distribution Plc, Eko electricity distribution Plc, Enugu electricity distribution Plc, Ibadan electricity distribution Plc, Ikeja electricity distribution Plc, Jos electricity distribution Plc, Kaduna electricity distribution Plc, Kano electricity distribution Plc, Portharcourt electricity distribution Plc and Yola electricity distribution Plc.

Also, the Nigeria Electricity Liability Management Company (NELMCO) was established to assume the liabilities of the successor companies. Then lastly, the Nigerian Bulk Electricity Trader (NBET) was formed to make power purchases from the GENCOS (generation companies) and IPP's (independent power plants), all these are being done to enhance the power sector through the privatization of the power stations [8].

2.3 Issue of Privatization

In order to correct the issue of poor generation of electricity power in Nigeria, the federal government embarked on the issue of privatizing the power stations. The electric power sector reform Act of 2005 established NERC's authority to impose mandatory reliability standards on the transmission system and to impose penalties on companies that manipulates the electricity market. The responsibilities of the NERC also include;

- ⇒ To regulate the generation, transmission, distribution and marketing of electricity in Nigeria and with Nigeria.
- ⇒ To license and inspect private and corporate electric power project 10MW and above, where 1-10MW are issued captive licenses.
- ⇒ To monitor and investigate energy markets.
- ⇒ To ensure the reliability of generating plants, high voltage transmission system and the zonal distribution system.
- ⇒ To ensure occupational health and safety of persons involved with electricity in the whole sector [9].

Prior the issue of enactment of the EPSR Act 2005, the federal government of Nigeria was responsible for policy formulation, regulation, operation and investment in the Nigerian power sector. The Federal Ministry of Power (FMP) regulated the power sector through the operation

of National Electric Power Authority (NEPA). The federal government of Nigeria amended the then prevailing laws (electricity and NEPA Acts) in 1998 to remove NEPA's monopoly and encourage private sector participation. This amendment informed the federal government of Nigeria of the need to undertake holistic policy, legal and regulatory reforms.

The National Electricity Power Policy 2001 specifies the reform agenda, while EPSR Act provides the legal basis for the unbundling of NEPA, the formation of successor companies and the privatization of NEPA. EPSR Act also provides for the development of a competitive electricity market, the establishment of a dedicated regulatory body and the establishment of a rural electrification agency.

Subsequently, the federal government of Nigeria established the Power Holding Company of Nigeria (PHCN- the initial holding company) and then unbundled it into eighteen (18) successor companies, six [9] generation companies, 11 distribution companies covering all 36 Nigeria states and 1 national power transmission company. The objectives of the reform done by the federal government of Nigeria include;

1. Transfer of management and financing of successor companies operations to the organised private sector.
2. The establishment of an independent and effective regulatory commission to oversee and monitor the industry and
3. Focusing the federal government of Nigeria on policy formulation and long term development of the industry, which will lead to;
 - Increased access to electricity services,
 - Improved efficiency, affordability, reliability and quality of services and,
 - Greater investment into the sector to stimulate economic growth [10].

The act of stipulating the ownership of these companies (18 successor companies) is granted to the Bureau of public enterprises (the privatization arm of the federal government) and the ministry of finance incorporated. This unbundling paved way for an ambitious privatization program to be carried out by the Bureau of public enterprises in Nigeria.

In 2007, the Bureau of public enterprises hired CPCS transcom limited, an international consulting firm based in Ottawa, Ontario, to

provide advice about the best ways to move forward with the privatization of the country's 11 distribution companies and the 6 generation companies. In 2010, CPCS was consulted again in order to provide advice on the privatization program embarked upon by the federal government of Nigeria. Therefore, PHCN ceased to exist from 30 September 2013 following the privatization process by the government [11].

Although with an installed generating capacity of about 7,500 MW and operating capacity of about 4,000 MW, electric power is still a major hindrance in Nigeria's objective to be regarded as one of the world's top 20 economies by 2020. For an industrial nation, the rule of thumb is about 1 MW for every thousand of population. Therefore, Nigeria, with its population of 160 million, has energy needs in the range of 160,000 MW. The federal government has a target of 40,000 MW by the year 2020. As a result of the size of Nigeria's power challenge, the federal government released the "Roadmap of the power sector reform" in August 2010, which is a blue print to conclude the privatization of the power sector. Since the release of the power sector roadmap, the privatization has gained momentum. The timeline set by the Bureau for public enterprises (BPE) have been met and significant milestones laid out in the roadmap achieved. Some of the achievements to date include;

- Successful review and implementation of Nigeria's multiyear tariff order (MYTO II).
- Additional 1000 MW of power generation by the national integrated power project (NIPP) and
- Successful bidding for 5 generation companies (GENCOS) and 10 distribution companies (DISCOS).

After the privatization process, the federal government-owned electricity system now comprises;

1. Three hydro and seven thermal generating stations with a total installed capacity of about 6,852MW, with available capacity of 3,542 MW (as of 31 July 2010).
2. A radial transmission grid (330 KV and 132 KV), owned and managed by the transmission company of Nigeria, with the responsibility of undertaking the system operation and market settlement functions, respectively.
3. Eleven distribution companies (33 KV and below) that undertake the wires, sales,

billing, collection and customer care functions within their area of geographical monopoly.

2.4 Benefits of Privatization

The benefits of privatization process in the power sector of Nigeria are as follows;

1. Electricity power sustainability, reliability and stability.
2. Lowers production cost and makes Nigeria's manufacturing sectors more competitive internationally.
3. Rapid growth in power and reduction in federal government of Nigeria's expenditure.
4. Empowering other economic and social service activities such as tele-centres, healthcare delivery systems and educational institutions.
5. Empowering Small/Medium Enterprises; welders, hair-dressers, barbers, printing presses, tailors, small-scale food processors etc.
6. Source of job and wealth creation.

2.5 Challenges of Privatization

Despite the privatization of the PHCN in 2013, Nigeria's electricity generation capacity has still declined from the peak generation level of about 4,517.6 MW recorded as at December 2012 to about 3,670 MW in January, 2014. The electricity generation forecast was 12,800 MW of electricity energy generation capacity 3,670 MW hour per hour (MWH/H), while actual electricity sent out into the national grid was 3,585.32 MWH/H [7]. Some of the problems hindering the development of our countries power supply after the privatization process are as follows;

1. **Problem of Funding:-** Funding the power sector has been a very great task. Many of the investors that acquired the unbundled PHCN borrowed money from banks. The power sector, being a highly capital intensive industry, needs continuous financing. Therefore, to finance its projects becomes a herculean task since most of its investors loan money from banks.
2. **Inadequate Supply of Gas:-** The power sector reform is anchored on the use of gas to power systems in order to meet the needs of the country. However, the availability of gas to ensure consistency in power supply has been a great challenge due to the inadequate infrastructure

needed for gas gathering, processing and transportation. The negative effects of saboteurs and vandals in gas production also affect the availability of gas.

3. **Consumers Fraudulent Practices:-** There are many fraudulent practices by many electricity consumers that were ignored by the former PHCN either due to lack of information or as a result of the operation of dubious staffs of the organisation. These fraudulent activities reduce the income generation of the former PHCN and if left unchecked, it will hinder the revenue of the new owners of the privatized PHCN.
4. **Reconciliation of Assets and Liabilities of PHCN:-** In this aspect, there is the challenge of not having detailed information on the assets and liabilities of the erstwhile PHCN because it was not well managed. This caused the problem of not being able to generate enough revenue to remain in operation [12].
5. **Challenges of Skilled Manpower:-** There is scarcity of skilled manpower in the sector; therefore, purchasers are inheriting an aged, undisciplined and unmotivated workforce. New owners needs a clear strategy of managing the movement from state-run to a privately managed entity, so there is need for collaboration between the purchasers and the national training power institute (NAPTIN) to assist in bridging the manpower requirement of the sector.
6. **Monitoring The Investors Business Plans:-** One of the biggest challenges in any privatization is ensuring that necessary investments are made by the private sector/new owner, because mostly at times, the investors focused more on aggressive revenue generation than on developing the businesses and deploying the needed technology for adequate generation [13]. Therefore, the Bureau of public enterprises (BPE) has to ensure that the purchasers are contractually required to bring in this investment, so that the BPE and the federal government will be monitoring this requirement closely and continuously.
7. **Transmission:-** Transmission is seen by some private sectors participants as the "WEAK LINK" between generation and distribution stations, therefore, while a reputable management contractor has been put in place, there is still a need to ensure that the management contractor is

fully empowered to do its work, there are also needs to ensure that the transmission sector is adequately supported by the government through funding, so that it can make the investments necessary for wheeling the increased generation capacity.

8. **Regulatory:-** Investors tend to be concerned about the lack of an extensive regulatory history. Therefore, there is a need for transparency, consistency, certainty in regulation making. Also, the regulators needs to adequately resource for efficiency-human and funding, so that regulation making and tariff adjustments will be responsive and timely.
9. **Patience:-** Change will not be immediate; investments in the power sector will take time in order to achieve results. Construction of new generation capacity will take two to five years to achieve most of the results envisaged. Therefore, expectations will need to be managed for the public to understand that a power sector cannot be built overnight and that this country is recovering from decades of under investment and corresponding crumbling infrastructure.
10. **Rapidly Changing Market/Unpredictability:-** For some years ahead, the market will be moving through a period of rapid transformation, as capacity will increase. Large investments being made in the sector will lead to some degree of unpredictability for the regulatory, the government, the private sector and the public itself. The market will adjust the working under a new commercial framework, based on bankable contracts that will require adjustments and upgrading of information available systems and technologies in place. Therefore, all participants will need to show flexibility and adaptability in this situation of flux [14].

3. RECOMMENDATION

From the above findings about the issues and challenges of ownership and privatisation of the Nigerian power sector, the following recommendations are made:

- ⇒ There should be efficient planning, management and maintenance of the power sector.
- ⇒ Adequate skilled manpower should be employed to work in the power sector in

other to ensure increase in power productivity.

- ⇒ There should be adequate funding in order to avoid inconsistencies in power generation.

4. CONCLUSION

The issues and challenges examined in this paper will no doubt significantly affect the aims and objectives of boosting the power sector in Nigeria. Therefore, there is need by the government to boldly tackle these issues and challenges. The power sector is indeed a very important sector critical to the rapid transformation of any economy. Therefore, the reform is in the right direction. The challenges being talked about here are by no means exhaustive, if the government can intervene and resolve them, it will create a peaceful environment for the new investors to operate. The challenges of power generation however have series of impacts on the management, especially of producing companies. It has the following impacts:

- ⇒ It affects the production rates of industries which depend on electrical energy for aiding their production.
- ⇒ It weakens the current reform efforts in the industry and creates low-competitive electricity market where market-responsive pricing dominates.
- ⇒ Radical changes to reduce and weaken industry governance structure, thereby causing increase in corruption and minimal accountability [15].

In order to correct the issue of poor generation of electricity power in Nigeria, the federal government embarked on the issue of privatizing the power stations. However, the educational sector has vital roles to play in developing the Nigerian power sector. This includes the technical and vocational education, which specialize in providing skills, knowledge and attitudes to prepare individuals for employment in occupation or career for national development. It also helps young people to develop occupation competencies for industrial work [16].

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Power Supply Nigeria. Contemporary political issues and updates; 2013.
2. Umez Bedford Nwabueze. Your Excellency. Otsego, Michigan: 2005;36. ISBN 1589613376.
3. Alex Anas, Kyu Sik Lee. Infrastructure investment and productivity: The case of Nigerian manufacturing a framework for policy study. Review of Urban and Regional Development Studies. 1989;1(2): 65-76.
4. IHEME E. The incubus: The story of public enterprises in Nigeria, Lagos. The Helmsman Associates. 1997.
5. Starr P. The Meaning of privatization. 1998.
Available: <http://www.paulstarr.com>
6. Ibrahim Baba Gana. Power privatization: Objective, current status, prospects and challenges. 2013;(Pdf page)7,42.
7. Nigeria power reform.org; 2012.
8. Privatization in the Power Sector. 2013;2-3,36.
9. Hinshaw Drea. Can Moguls Untangle Nigeria's Power Lines? WSJ. Retrieved. 2014.
10. Nigeria Electricity Privatization Project (PHCN); 2010-2013.
11. Ifedi V. Power reform and electricity generation. Available: dawodu.com Retrieved 29th March, 2006 from Umez, Bedford Nwabueze (2005), your excellency, Otsego, Michigan: page free page 36; 2005.
12. Anyurouh F. The challenges of the Nigeria electric power reform. Vanguard. 2013. Available:<http://www.vanguardng.com/2013/02/the-challenges-of-the-nigerian-electric-power-sector-reform-1/>
13. Who Owns Nigerian Power? Copyright 2015 Vanguard media limited, Nigeria; 2014.
14. Ibrahim Baba Gana. Power privatization: Objectives, current status, prospects and challenges. 2013;(Pdf page) 33-40,42.
15. Akin Iwayemi. Investment in electricity generation and transmission in Nigeria: Issues and Options. International Association for Energy Economics. 2008;37-42.
16. Okorieocha Christopher Ndudi, Duru Felix Chukwuma. Technical vocational education and training for industrial development and economic growth. International journal of Innovative Educational Research. 2014;2(1):37-44.

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