MPRI-JHLAR | INTERNATIONAL JOURNAL OF HUMANITIES, LITERATURE AND ART RESEARCH
VOL. 02 NO. 1 OCT-2023 ISSN: 1116 - 2619

POWER SECTOR REFORM ACT 2005 AND ITS IMPACT ON ELECTRICITY SUPPLY IN NASARAWA STATE

SULEIMAN YUNUSA; ABDULLAHI MOHAMMED YAMMA; & LUKA RUTH CALEB
Department of Political Science, Nasarawa State University, Keffi

Abstract

Nigeria electricity sector reform was perceived as essential due to its undesirable state, consequently, it was embraced by the populace with a high expectation that it would mark the end of epileptic electricity supply. However, the low level of generating capacity and sanctity of the privatization process alongside the poor quality of distribution companies, the post-privatisation power supply make one worrisome about the efficacy of the reform. The poor electricity supply associated to the Nigeria power sector has been a cried challenge to Nasarawa state despite the power sector reform Act of 2005. The study examines power sector reform ACT 2005 and its impact on electricity supply in Nasarawa state from 2005-2021. The study discovers that Nigeria power sector reform was perceived as essential due to its undesirable state, consequently, it was embraced by the populace with a high expectation that it would mark the end of epileptic electricity supply. Whilst much progress has been made in opening the Nigerian electricity market to private investors, there persists deficit in generation capacity and poor incentives for massive investments into the sector. However, the low level of generating capacity and sanctity of the privatization process alongside the poor quality of distribution companies' post-privatization power supply make one worrisome about the efficacy of the reform. The power sector in Nigeria through the years has been a tortuous, difficult, painful, devastating and herculean task for both the governments and the populace in Nasarawa state. At the household level (residential users), public power is no more relied upon but private power source that remains the hard alternative. Almost every household has one size of generating plant or the other. The development does not only result in huge job loss and unemployment at all strata of the economy but also breeds overwhelming crime surge and security challenges in the system. Rational Choice Theory was employed for the study. Questionnaires and interviews were used for primary method while secondary data collection involves intense library search and internet browsing. Base on this finding, the study recommends that the government should continue the rehabilitation of the various power systems in a guided manner to allow a core Nigerian investor, consider alternative sources of energy like solar, tide, biomass and wind. Also, the regulatory body needs to check the excesses of the new Distribution companies by regulating tariffs and quality services. This will go a long way in improving the situation of electricity supply in Nigeria.

Keywords: Reform, Power Sector Reform, Electricity.

Introduction

Stable electricity supply is an important factor for socioeconomic development and economic growth in the world. Energy availability is crucial for a sustainable development in an economy while its non availability may present adverse effects which are detrimental to the society at large. Energy cannot be substituted in key areas of the economy such as industries, agriculture, transportation and service sector.

With the increase in the world population, standard of living and rapid industrialization, the future energy is expected to grow. Inadequate supply of energy restricts socioeconomic activities, constrains economic development and negatively affects the quality of life (Oseni, 2011).

Globally, electricity is the most widely used and desirable form of energy used around the world. Thailand with a population of 60.95 million of people generate 181,519,000 megawatts; Indonesia with a population of 16 million people has 11,000 megawatts above; Malaysia with a population of 32.98 million people has 148, 325.740 megawatts; Singapore with a population of 50.454 million people are having 433 watts; Cambodia with 4000 megawatts, India with 403,759 and Vietnam with 20,000 megawatts among many others (Energy World, 2022). Therefore, electricity in form of solar, wind and geothermal are very crucial and indispensable factor to a country that aspires a greater social and economic development. In the real sense, its level of output and stability largely determine the degree of other sectors of the economy efficiency since it is highly instrumental to their optimal functioning all over the world. One important observable trend is that the increase in country's population results to the increase in electricity demand.

In many developing countries especially African countries, power supply is generally known for its unreliability and high disruption costs which affects production efficiency and competiveness. Africa is indeed endowed with the widest possible range of energy resources for electricity generation such as coal, natural gas, petroleum, solar, hydro, geothermal, nuclear, etc. but the continent's power sector remains severely underdeveloped and the energy consumption in general and electricity consumption in particular are relatively low (Mayo, 2012).

Nigeria is heavily endowed with an abundant resources but electricity generation is relatively low with the current output less than 3000 (Bello-Iman, 2009). According to the World Bank (2013), only 48% of Nigeria's 174 million people have access to electricity. The access to electricity is relatively low compared to other African countries. The gap between the demand of electricity and the available capacity leads to the recurrent widespread power shortages due to poor distribution network, inefficiency in the management of billing system, and therefore results in resort to self-generation of power by all the classes of electricity users in Nigeria. Aside that the productive sector grapples with epileptic power supply, it also contends with high cost of private power source to support production and other economic activities. Amid huge government investments in the power sector since inception, dearth of electricity supply, owing to the apparent comatose condition of the source of public power supply often compels investors to resort to private power source for their businesses.

The quest by the Nigeria government aimed at attainment of both the internal and external objectives of reform, identified by Renewable Energy Education Program/United International Development Organization (REEP/UNIDO) (2008) within the domestic context, enacted Power Sector Reform Bill (PSRB) in 2005, which enabled the private sector participation in the generation, transmission and distribution of electricity, establishment of National Electricity Regulatory Commission (NERC) as regulatory agency and Power Holding Company of Nigeria (PHCN) as successor to National Electricity Power Authority (NEPA), the monopoly public enterprise operator of the industry value chain. Moreover, PSRB also unbundled PHCN into eleven distribution companies (DISCOs), six generating companies (GENCOs) and one transmission company (TCN) (Onagoruwa, 2011).

The Electric Power Sector Reform Acts (2005) provides the legal framework for the power sector reform. It aimed at changing the monopoly enjoyed by moribund National Electric Power Authority (NEPA) that came into being in 1972. The idea of privatizing NEPA elicited obtrusive expectations for improved electricity supply for all round purposes in the country. Though PSRB was necessitated because the NEPA's commercialization in 1989, as part of the Structural Adjustment Programme employed to enhance its performance, seem to make a negligible impact on the effective and efficient services delivery to the increasing customers. Consequently, it is noteworthy that in 2013, the DISCOs and GENCOs were privatized while TCN operates under a management contract agreement (Enoche, Egware and Eyakanor, 2015). This was novel, unprecedented and marked a watershed in the annals of the electricity industry in Nigeria, particularly the

INTERNATIONAL JOURNAL – AIMR
VOL. 02 NO. 1 OCT-2023 ISSN: 1116 - 2619

structure and management system as liberalization was enthroned in lieu of total monopoly and non-competitive market.

The 2005 power sector reform Act is domicile in Nasarawa state. However, Nasarawa state just like other state in Nigeria, has the same history of poor electricity supply to its ever busy and continue growing population. In 2019, Nasarawa state planed to generate 1,000 megawatts of electricity from coal reserves in Obi Local Government Area of the State. Governor Abdullahi Sule made this known while flagging off the construction of a 2km solar powered streetlights in the council area (Gayam, 2019). Despite this plan, at the household level (residential users), public power is no more relied upon but private power source that remains the hard alternative. Almost every household have one size of generating plant or the other. The development does not only result in huge job loss and unemployment at all strata of the state's economy but also breeds overwhelming crime surge and security challenges in the system. It is against this background that this study attempts to examine power sector reform ACT 2005 and its impact on electricity supply in Nasarawa state from 2005-2021.

Research Questions

i. What are the factors that prompted power sector reforms in Nigeria?
ii. How have the power sector reforms of 2005 impacted on electricity in Nasarawa state?

Literature Review

Isola (2018) wrote on Power Sector Reforms in Nigeria: Challenges and the Way Forward. The study used only qualitative method. No theory was adopted. The study focused on the system of electricity generation, transmission, distribution and marketing that will be efficient, safe, affordable and cost-effective. The major objective of the study was to examine the challenges facing the power sector reforms in Nigeria. The finding shows that the effectiveness of the reforms in transforming the sector has remained uncertain. The study recommended that there is need to increase the quantity of electricity generated in Nigeria. Besides, there is an urgent need to ensure appropriate energy mix in the generation of electricity. It was also suggested that a research on the willingness to pay for good quality and uninterrupted electricity supply among the consumers be conducted across the six geo-political zones in Nigeria. However, the factors that prompted power sector reforms in Nigeria and how the power sector reform ACT 2005 has impacted on electricity supply in Nasarawa state from 2005-2021 were not addressed by the study.

Ademola, Adekunbi and Eyitayo (2019) analysed electricity generation and distribution in Nigeria with particular reference to Ibadan Electricity Distribution outlets. It also examined the legal and regulatory mechanisms intended to improve the efficiency of power supply in Nigeria. The qualitative approach was used in the study. Secondary data from scholarly published books, journals, articles, online materials and reports were used. The study concluded that unless the power supply situation improves in Nigeria, the country cannot truly experience sustainable economic development and all round growth. Hence, the study recommended that, the government should dedicate resources and energy into the generation of electricity sufficient for the country and her economic advancement. The factors that prompted power sector reforms in Nigeria and how the power sector reform ACT 2005 has impacted on electricity supply in Nasarawa state from 2005-2021 were not explained in the study.

Oyeleke (2020) examined the liberalization exercise in the Nigerian electricity sector in order to determine the pros and cons that have come about as a result and chart the progress of the country in the electric sector. The theory of public and private interest provides the framework, while the exploratory design was adopted utilising laws, case laws and legal principles. The purposively selected laws were the (1999) Constitution of the Federal Republic of Nigeria (FRN) (as amended), the Electric Power Sector Reform (EPSR) Act (2005), and Energy Commission of Nigeria Act (1979). Case laws that are relevant to the reform were selected from law reports and policy documents. Regulations have been identified to be ineffective in Nigeria due to the proliferations of institutions and regulatory agencies. The study discovered that the regulatory, legal and institutional framework of the electric power sector reform in Nigeria has not been effective. The amendment

of the conflicting provisions in the Electric Power Sector Reform Act (2005) needs to be in tandem with the (1999) Constitution Federal Republic of Nigeria as this is crucial and capable of strengthening the capacity of the relevant institutions. The study did not pay attention to the factors that prompted power sector reforms in Nigeria and how the power sector reform ACT 2005 has impacted on electricity supply in Nasarawa state from 2005-2021.

Theoretical Framework

Theories are formulated to explain, interpret and understand phenomena and in many cases to extend existing knowledge within the limits of critical bounding assumption. It involves relating the problem under study to the assumption, postulations and the principles of a particular theory employed. Therefore, the study adopted Rational Choice Theory as its framework.

Rational choice theory originated in the eighteenth century, can be traced back to political economist and philosopher, Adam Smith (Boudon, 2003). The theory refers to a set of guidelines that help understand economic, politics and social behavior. It also suggests that an individual's self-driven rational actions will help better the overall economy. The theory postulates that an individual will perform a cost-benefit analysis to determine whether an option is right for them or not. Rational choice theory looks at three concepts: rational actors, self-interest and the invisible hand (Gary, Abigail and Frank, 2000).

William Stanley Jevons, a neoclassical economist is one of the earlier writer on rational choice, assumed that agents make consumption choices so as to maximize their happiness. That the rational choice theory relied on a set of choice that needs to be satisfied and mandates a consistent ranking of the alternatives (Grüne-Yanoff, 2012). Individuals will always like to choose the best among options according to their personal preferences and constraints facing them. One of the basic assumptions of rational choice theory is that the decisions made by individual actors in the society will collectively produce aggregate social behavior in return. The theory also postulates that individuals have preferences out of available choice alternatives. These preferences assume to be completes when individuals be able to say and determines which of the options they prefer. The rational agent will then perform their own cost-benefit analysis using a variety of criterion to perform their self-determined best choice of action. Rational choice theory can be seen in different understanding. At an individual level, the theory suggests that the agent will decide on the action (or outcome) they most prefer. If the actions (or outcomes) are evaluated in terms of costs and benefits, the choice with the maximum net benefit will be chosen by the rational individual. Rational behaviour is not solely driven by monetary gain, but can also be driven by service motive.

Rational choice theory assumed that individual performs a cost-benefit analysis to determine whether an option is right for them or not, the rational choice suggests that an individual is guided by self-driven rational actions which in a long run will help better the overall economy of the society. The Nigeria power sector reform act of 2005 was an action taken due to poor performance of the sector, the individuals actors in the field assumed that legal baking should be given to enable unbundle of the sector for cost efficiency and effectiveness. Such decision was taken after due consultation and careful analysis, actors in the power sector have weigh the cost benefit and took the preference action. Rational choice theory suggests that individual actors decide on action they most prefer after proper evaluation of the action in terms of costs and benefits, the choice with the maximum net benefit will be chosen by the rational individual.

Methodology

The research design that was adopted in this research is mixed research design. This is to collect information from a cross section of the population on defined subject-matter within a given period of time through the use of questionnaire and interviews to assess thought, opinions and feelings on the subject of discussion. The population of respondents used are adult male and female ranges from the age of 18 and above to be selected from two local governments from the three senatorial zones in Nasarawa State, namely, Akwanga and Wamba from Nasarawa North; Keffi and Nasarawa from Nasarawa West and Lafia and Obi from Nasarawa South respectively.

The respondents target both indigenes and residents of the study areas. Both male and female genders are considered objectively. This was based on the relevance to the problem under investigation. Relevant information on electricity supply to the study areas can best be ascertained through the people currently resides in the areas perhaps have fair knowledge on the problem and are related to the study. Therefore, the total number of population under study is 943,258 which is gotten from the result of 2006 census (National Population of Nigeria, 2006). Going further, a considerable sample size of the population was scientifically selected for the study that is considered fair enough to objectively represent the total subjects. The sample size of the study population was determined using Rakesh statistical formula to arrive at 400.

Purposive or judgmental sampling technique was used for the selection of respondents for the interview while systematic sampling techniques was adopted to select respondent for the questionnaire. The measuring instrument that was used by the researcher for this investigation is a five point structured Likert-type questionnaire to access the power sector and stable electricity supply in Nasarawa state. Apart from the questionnaire which is the main instrument of data collection, interview guides were also designed to elicit complementary information. This method was used to gather information from state, federal government officials and Civil Society Groups as well as officials from Transition Company of Nigeria (TCN), Nigerian Electricity Regulatory Commission (NERC), Rural Electrification Agency of Nigeria and Energy Information Administration (EIA).

Both qualitative and quantitative secondary sources were used for data collection in the study. For the quantitative secondary data, textbooks, journals, articles and magazines periodicals and Policy documents on power sector reform of 2005 and electricity supply in Nasarawa state were used including reports from publications in the national dailies. Secondary sources refers to a collection of data from existing works, this includes those in prints or in a data bank.

The data that was collected was edited, coded, analyzed and summarized in tabular forms. The quantitative data from the questionnaire was subjected to the analysis using the Statistical Package for the Social Scientists (SPSS) version 20. On the other hand, the qualitative data was subjected to qualitative analysis through content analysis with a view to bringing out the thematic view of the respondents through verbatim quotations, forecasting critique and drawing conclusion from the discussion of every relevant information that were gathered. Out of the four hundred (400) copies of questionnaire that were distributed to the respondents, three hundred and eighty-seven (387) copies were filled and retrieved. Thus 387 out of the 400 copies of questionnaire were used to analyze the data.

Data Analysis and Interpretation of Results

Table 1: Responses on the factors that prompted power sector reforms in Nigeria

Options		Frequency	Percentage
Inadequate funding		81	21%
Corruption		99	25%
Lack of political will		114	29%
Low capacity utilization		84	22%
Undecided		9	3%
Total		**387**	**100%**

Source: Field Work, February (2023).

Table 1 shows the responses supplied by respondents on the factors that prompted power sector reforms in Nigeria. Data revealed that lack of political will constitute the majority with one hundred and fourteen (114) respondents representing twenty-nine (29%) percent, ninety-nine (99) respondents representing twenty-five (25%) indicated corruption as a factor, eighty-four (84) accounting for twenty-two (22%) ticked low capacity utilization, eighty-one (81) respondents representing twenty-one (21%) indicated inadequate funding as a factors that prompted power sector reforms in Nigeria, while nine (9) respondents or three (3%)

percent were undecided. In an interview conducted with an official of the Rural Electrification Agency of Nigeria, he reveals that:

> On a general note, there is the problem of vandalism of installations, which escalates the issue of consumer's infidelity. Discoveries are made on regular basis about outright theft of current through illegal connections, direct connections, installation of appliances and equipment without due notification of the electricity providing sector. There is also the issue of lack of Turn-Around Maintenance (TAM), gross incompetence of management and staff. The incompetence that radiates all segments of the power sector compels reform that looks into the whole system with a view to making changes in ownership, operation and performance that is business and profit oriented (February 9th, 2023).

The results above corroborate with the submission of Victor and Ismail (2013) that, the Power Sector reform was embarked upon in March, 2005 due to inadequate supply of electricity, high demands, and issues with bills. The main goal of the reform is to accomplish full deregulation of the Electricity Supply Industry (ESI) in two years after its implementation. The objectives include making electricity generation and supply better and available to the customers, making the sector investor-friendly and dismantling NEPA's monopoly. This was achieved through passage of Electric Power Sector Reform (EPSR) the Act which came into being on the 11th of March, 2005.

In an interview with an official of the Nigerian Electricity Regulatory Commission (NERC), he outlined the reasons given for the reform to include: introduction of competition in the industry as a means of improving industry efficiency that will result in providing lower energy prices to end users, lack of price transparency in utility operations hence consumers and regulators demand price transparency and declaration of cross subsidies among different users, like many other public owned institutions, corruption, inefficiency and managerial incompetence prevailed and the electricity industry showed inconsistent policy direction and lack of strategy framework for its sustainable development, policy decisions by past Government were based on political or administrative interest instead of efficient resource allocation and cost recovery necessary for economic development and the strategic energy policy for the country was never implemented (February 3rd, 2023).

The response supplied above is in agreement with the views of Okoro & Madueme (2015) who stated in their research, that since the 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. It is against this backdrop that the federal government embarked on aggressive power sector reforms with the intention of resuscitating NEPA and making it more efficient, effective and responsive to the yawning of the teeming populace. NEPA as a result of unbundling and the power reform process was renamed Power holding Company of Nigeria (PHCN) in 2005.Isah Mohammed who is a Regional Manager for Keffi branch of AEDC submitted that:

> Keffi use 20-25 mega watts consumption, Nasarawa about 15-18mw. Akwanga gets 10-15mw. It is important to state that Keffi and Akwanga transmission get their source from Abuja. Lafia being the state capital currently get its source from Enugu line with supply of 10-15mw and supplies Obi and its environs (February 9th, 2023).

The ugly trend of poor power supply affects the micro-economic activities so much so that a good number of artisans leave their crafts due to poor electricity supply situation and switchover to whatever type of business that does not rely or depend on electricity. Similarly, it has forced many big business concerns, corporate bodies and prospective investors to leave Nigeria for other neighbouring countries like Ghana. At the household level (residential users), public power is no more relied upon but private power source that remains

the hard alternative. Almost every household have one size of generating plant or the other. The development does not only result in huge job loss and unemployment at all strata of the economy but also breeds overwhelming crime surge and security challenges in the system (February 9th, 2023).

An interview conducted with a respondent who is an official of the Rural Electrification Agency of Nigeria shows that liberalization of the power sector is a measure that was taken by the government of Nigeria in a bid to douse the myriad of challenges that characterized its electricity chain. The reforms were made in order to attract private sector investment in order to relieve government of the burden of financing the sector's needs. A number of measures were taken to remove some of the barriers which were seen to inhibit the flow of private capital into the sector. The most critical of the problems were the insufficient security to safeguard foreign direct investments, the limited size of the domestic market and the absence of a legislative framework for the evaluation of projects and the independent regulation of the sector (February 9th, 2023).

Table 2: Nigeria Power Reform Key Players and Their Functions.

KEY PLAYERS	FUNCTIONS
Presidential Task Force	Drives the reforms by uniting different Stakeholders, monitors, plans and implements projects.
Bureau of Public Enterprise (BPE)	Drives the privatization of government owned enterprise in the sector like GensCos and DisCos
Nigeria Electricity Regulatory Commission (NERC)	Regulates the sector, issues licences and set tariffs.
Nigeria Electricity Liability Management Company (NELMCO)	Manages legacy liabilities and stranded assets
National Power Training Institute of Nigeria	Provides training required to support the power sector
Power Consumer Assistance Fund (POLAF)	Subsidizes electricity for consumers

Source: Victor and Ismail (2013).

Again, Victor and Ismail (2013) also stated that all the successor companies and all the agencies mentioned above have been fully established. The Government on its part as a way of encouraging private sector participation in the power sector granted the following incentives: tax exemptions for the first five years, custom duty exceptions for importation of power plants equipment and its auxiliaries and any other assistance to any Independent Power Producers (IPP) that fulfils all technical and commercial requirements towards building power plants.

The epileptic supply and poor quality electricity in Nigeria is a common knowledge and a great source of concern for all Nigerians. It cripples the economy by stunting the manufacturing sector, inhibits employment generation, wade off foreign direct investment, restrict banks to double-digit interest rate, increases individual spending on alternative sources of energy thereby inhibiting savings, drain resources from government for maintaining which could have been used to improve other sectors. Since independence, government monopolizes power supply have been injecting public fund to sustain and improve electricity quality and supply in the country but to no avail. The country's population continues to rise in geometric progression while the generation and transmission of electricity is growing in arithmetic progression which makes it grossly inadequate for a developing nation like Nigeria. A brief comparative analysis of population and power generation in some countries of some countries of the world proves that Nigeria is left behind which translate into its economic backwardness.

Table 3: New Electricity Tariffs for Residential Consumers

DISCOS	2015 (R2)	2016 (R2)	2017 (R2)	2018 (R2)	2019 (R2)
Abuja	14.70	24.30	24.30	24.03	**20.40**
Benin- single phase	14.82	24.08	31.27	31.26	**30.98**

- Three phase	14.82	24.45	34.40	34.40	**34.08**
Nasarawa-single phase	16.44	27.13	30.93	31.00	**22.91**
Three phase	16.44	27.13	34.36	34.36	**25.40**
Ibadan	16.11	23.09	24.97	25.71	**25.76**
Jos	16.75	26.93	29.81	30.93	**32.05**
Kaduna-single phase	17.00	26.37	27.40	28.75	**20.45**
Three phase	17.00	28.05	32.33	33.93	**24.13**
Kano – single phase	**16.01**	**20.26**	**22.50**	**25.46**	**24.82**
- Three phase	**16.01**	**26.41**	**29.61**	**33.50**	**32.65**

Source: NERC (2016)

The quantity of electricity generated in Nigeria is still very meager while the quality of the service delivery is very poor. Despite the private sector's participation in the business of power sector, the general consensus of the people is that power supply has not significantly improved. A substantial supply gap for electricity generation exists in Nigeria. This shows the huge gap between demand and supply of electricity in Nigeria.

Table 4: Responses on how the Power Sector Reform of 2005 has impacted on electricity in Nasarawa State

Impacts	Frequency	%
Brings stable electricity	31	**8**
Increase poverty level	81	**21**
High rate of sharp practices (meter by-passing)	56	**14**
Frequent blackouts	49	**13**
Electricity tariff does not reflects the supply	97	**25**
Unsubstantiated Services Voltage	**73**	**19**
Total	387	100

Source: Field Work, February (2023).

Table 4 presents data on how the Power Sector Reform of 2005 has impacted on electricity in Nasarawa State. Numerically, it reveals that ninety-seven (97) respondents representing twenty-five (25) percent indicated that electricity tariff does not reflects the supply, eighty-one (81) respondents representing twenty-one (21) percent ticked that it increase poverty level, seventy-three (73) respondents representing nineteen (19) percent indicated unsubstantiated services voltage, fifty-six (56) respondents accounting for fourteen (14) percent pointed to high rate of sharp practices (meter by-passing), forty-nine (49) respondents or thirteen (13) percent identified frequent blackouts, while thirty-one (31) respondents representing eight (8) percent agreed that it brings stable electricity.

This is supported by the following interview and secondary information:

> In Nasarawa state especially rural areas like Obi, Wamba and Nasarawa local government areas, the electricity generation and distribution is at an all round low for more than decades. There is constant failure and instability in power supply and this inhibits the economic growth in the country. The power sector in Nigeria through the years has been a tortuous, difficult, painful, devastating and herculean task for both the governments and the populace. Instability in the power sector, negatively affects the domestic and economic lives of the people. Individual and organisations are forced to invest on expensive backup systems like generators and maybe solar system in few cases (February 3rd, 2023).

According to Ejoh (2018), 13 years after the commencement of the reform and 5 years of post-privatisation regime, 2.4 trillion Naira (approximately 60 billion dollars) investment worth is required to revamp the

decayed infrastructure in Nigeria. This queries the financial capacity of the private operators, especially the DISCOs and GENCOs that assume ownership and managers position of the privatized Power Holding Company of Nigeria (PHCN). In this sense, maximization of inherent potentials, upon which the sector present and future potency and forecast could be predicated, is under threat. Be that as it may, one is left but with little wonders at Enoche, Egware and Eyakanor (2015) striking assertion that the sector reform has failed to bring noticeable changes to the challenges of a high cost of power generation, weak transmission system and effective distribution network. In other words, the value chain private investors have not actually imprint any semblance of innovative managerial competency, hence, appear as grossly incapable of circumventing the huge investment capital demand for the sector buoyancy.

Table 5: Responses on Category of Customer's Complains despite the Power Sector Reform Act 2005

Customer's Complains	Frequency	%
Billing related	81	**21**
Interruption	67	**17**
Metering	32	**8**
Disconnection related	52	**13**
Delay in connection	26	**7**
Load shedding	**33**	**9**
Voltage	**32**	**8**
Unsatisfactory service (Others)	**64**	**17**
Total	**387**	**100**

Source: Field Work, February (2023).

Regarding the category of customer's complains despite the Power Sector Reform Act 2005, eighty-one (81) respondents representing twenty-one (21) percent complained of bill related issue, followed by sixty-seven (67) respondents representing seventeen (17) percent who complained of interruption in power supply, sixty-four (64) respondents or seventeen (17) percent complained of unsatisfactory service (Others), fifty-two (52) respondents representing thirteen (13) percent pointed to disconnection related issue, thirty-nine (39) respondents representing nine (9) percent indicated load shedding, thirty-two (32) respondents representing eight (8) complained of metering. Also, thirty-two (32) respondents representing eight (8) complained of voltage while twenty-six (26) respondents accounting for seven (7) percent indicated delay in connection.

The above analysis is in tandem with an earlier study conducted by Asu (2016) who noted that even after the privatization of the power sector in Nigeria, consumers continue to complain about slow distribution of pre-paid meters, receipts of crazy estimated billings, unstable electricity supply and relatively high tariffs. The new ten-year tariff approved by the Nigerian Electricity Regulatory Commission (NERC) which took effect from February 2016, and which brought about an average of 40% increase in electricity has generated intense debate and reactions amongst Nigerians. The general consensus of opinions among Nigerians is that there is no correlation between the quality of service delivery, electricity supply and the increment of tariff.

However, even a cursory observation reveals that numerous infractions, non-compliance with extant rules and regulations, arbitrariness and impunity still persist in the Nigerian electricity industry. Such malfeasance, according to Ojo (2016), in the industry include: the unwillingness of the electricity companies to provide prepaid meters to ensure appropriate pricing of electricity; relatively high tariffs in the face of unstable electricity supply; load rejection by distribution companies and refusal of consumers particularly Government ministries, departments and agencies at all levels to pay for electricity consumed. In spite of all these overt malpractices, the NERC has been unwilling to enforce its authority as a regulator by applying appropriate penalties and sanctions. This has resulted in laxity in compliance with the rules and regulations instituted by the agency. It has also emboldened the operators to run the sector in whichever way that suited their own interests to the detriment of the Nigerian power consumers.

Table 6: The Power Sector Reform of 2005 has not been Impactful on Electricity in Nasarawa State

Option	Frequency	Percentage
Strongly Agree	126	33%
Agree	134	35%
Disagree	55	14%
Strongly Disagree	63	16%
Undecided	9	2%
Total	**387**	**100%**

Source: Field Work, February (2023).

For the question on whether the power sector reform of 2005 has not been impactful on electricity in Nasarawa state, data supplied show that one hundred and twenty-six respondents (126) representing thirty - three (33%) percent strongly agreed while one hundred and thirty-four (134) respondents accounting for thirty-five (35%) percent agreed. Those who disagreed are fifty-five (55) respondents or fourteen (14%) percent while sixty-three (63) respondents representing sixteen (16%) percent strongly disagreed. Nine (9) respondents or two (2%) percent are undecided. It is evident from the data analysis that the power sector reform of 2005 has not been impactful on electricity in Nasarawa state. An official of Energy Information Administration (EIA) submitted that: Efforts to bring drastic changes in Nigeria electricity power sector have occupied the national frontier since 2005 when the bill providing the legal framework was passed into law. The unprecedented steps bestir hope for stable electricity supply in the consumers, that is, Residential, Commercial and Industrial. However, while concretization of the customers' expectation seems to remain in abeyance, a number of factors are identified as obstacles to its actualization. These are challenges that are yet to be resolved in the national bid for a transformed electricity sector. One of the fears expressed by consumers about the privatization of the power sector is a likely high tariff. This is borne out of uncertainty surrounding the customers' ability to pay especially, the residential customers, due to an increasing level of poverty in the country. It is believed that the resultant effect of poverty, account in part, for the high rate of sharp practices such as meter by-passing and similar indecent acts. The situation has not improved much since after the privatization, even with continued government subsidies for some users (February 9th, 2023).

The above response made Onochie, Egware & Eyakwanor (2015) to generally conclude that, the problem with the issue of privatization and under-performance after the reform specifically is that those who packaged the program did not design it to be a means towards ending the problem of irregular power supply in the country. Nigerians still experience the usual blackout for days, unmaintained facilities, low voltage most times due to overloading of transformers, high voltage sometimes, systems collapse, high bills (usually outrageous estimated bills), connection and reconnection charges, and inadequate generation, among others (Okolobah & Ismail, 2013). It is noticeable that since after the privatization of the power sector, every passing day, Nigeria seems farther away from the promise of privatization, as not only has private monopoly replaced public monopoly of power generation and distribution, it is arguable if power supply during pre-privatization era was not better than post-privatization (AhiumaYoung, 2017).

Discussion of Findings

i. The study finds that the call for power sector reform in Nigeria is primarily as a result of inadequate electricity supply, incessant power outages, low generating plant availability and high technical and non-technical losses that have characterized the Nigerian electricity industry. Again, it was discovered that the driving principle for the reform is the desire by the Nigerian government to withdraw from the power sector as owner, operator and regulator of NEPA and to have commercially operated entities functioning in a competitive and appropriately regulated electricity market. Pursuant to this objective, the Electric Power Sector Reform Act was passed, incorporating the above principles and measures for their implementation.

Data supplied by the respondents from questionnaire on the factors that prompted power sector reforms in Nigeria revealed that lack of political will constitute the majority with one hundred and fourteen (114) respondents representing twenty-nine (29%) percent, ninety-nine (99) respondents representing twenty-five (25%) indicated corruption as a factor, eighty-four (84) accounting for twenty-two (22%) ticked low capacity utilization, eighty-one respondents representing twenty-one indicated inadequate funding as a factors that prompted power sector reforms in Nigeria, while nine (9) respondents or three (3%) percent were undecided.

Also, the finding is in tandem with an earlier study conducted by Okoro & Madueme (2015) who stated in their research, that since the 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. It is against this backdrop that the federal government embarked on aggressive power sector reforms with the intention of resuscitating NEPA and making it more efficient, effective and responsive to the yawning of the teeming populace. NEPA as a result of unbundling and the power reform process was renamed Power holding Company of Nigeria (PHCN) in 2005.

ii. Nigeria power sector reform was perceived as essential due to its undesirable state, consequently, it was embraced by the populace with a high expectation that it would mark the end of epileptic electricity supply. Whilst much progress has been made in opening the Nigerian electricity market to private investors, there persists deficit in generation capacity and poor incentives for massive investments into the sector. However, the low level of generating capacity and sanctity of the privatization process alongside the poor quality of distribution companies' post-privatization power supply make one worrisome about the efficacy of the reform. The power sector in Nigeria through the years has been a tortuous, difficult, painful, devastating and herculean task for both the governments and the populace in Nasarawa state. At the household level (residential users), public power is no more relied upon but private power source that remains the hard alternative. Almost every household have one size of generating plant or the other. The development does not only result in huge job loss and unemployment at all strata of the economy but also breeds overwhelming crime surge and security challenges in the system.

Findings, in this work, have confirmed that privatization of the power sector has not yet had the desired effect on efficiency of the Nigerian power sector. There are still power outages as reflected in the responses from the respondents; data supplied show that one hundred and twenty-six respondents (126) representing thirty - three (33%) percent strongly agreed that the power sector reform of 2005 has not been impactful on electricity in Nasarawa state while one hundred and thirty-four (134) respondents accounting for thirty-five (35%) percent agreed. Those who disagreed are fifty-five (55) respondents or fourteen (14%) percent while sixty-three (63) respondents representing sixteen (16%) percent strongly disagreed. Nine (9) respondents or two (2%) percent are undecided. This agrees with research proposition three (3) which states that the power sector reform of 2005 has not been impactful on electricity in Nasarawa state.

The finding above validates the argument by Ahiuma-Young (2017) that, it is noticeable that since after the privatization of the power sector, every passing day, Nigeria seems farther away from the promise of privatization, as not only has private monopoly replaced public monopoly of power generation and distribution, it is arguable if power supply during pre-privatization era was not better than post-privatization. The ugly trend affects the micro-economic activities so much so that a good number of artisans leave their crafts due to poor electricity supply situation and switchover to whatever type of business that does not rely or depend on electricity.

Conclusion

Nigeria power sector reform was birthed as a necessary measure deploys to transmogrify the ailing industry. While the policy was greeted with hoopla, populace expectation of reliable power supply raised, it was nonetheless entangled with many besetting challenges. The harrowing effects of the technical, social, economic and political problems enervate the positive deliverables and thus extenuating its impact while eliciting the systemic nature of the sector operations at the same time. Hence, the purposes underlying the reform were undermined making a marginal difference or indifferent to exist between the pre and post-reforms regime performance.

The study reveals that critical issues that fueled public demands for reforms in the power sector remain alive in the post-reformed power sector. It draws attention to the significant difference between reform and privatization. Reform entails internal restructuring in a system to change the operation methods, the management system, staff orientation that encompasses ways of doing things in the envisaged organization, by defining financial obligations of all parties, the role of stakeholders and the public. On the other hand, privatization focuses on defining modalities for ceding public owned enterprises to private ownership and management. The power sector in Nigeria underwent through the two processes at different degrees but neither of the two has facilitated efficient operation of the sector to guarantee service delivery and reinvent micro economic activities in the country.

Recommendations

Base on the two research questions answered and the findings that emerged from them, the following two recommendations are hereby forwarded:

i. The present predicaments of the power sector are not different from what it was before government embarked on the sector's privatisation. Therefore, it is recommended that there should be repositioning of the privatised power sector operations in line with the objectives of the privatization for greater efficiency in service delivery in Nigeria at large and Nasarawa state in particular.

ii. The government should continue the rehabilitation of the various power systems in a guided manner to allow a core Nigerian investor, consider alternative sources of energy like solar, tide, biomass and wind. Also, the regulatory body needs to check the excesses of the new Distribution companies by regulating tariffs and quality services. This will go a long way in improving the situation of electricity supply in Nigeria.

References

Ademola, T., Adekunbi, I., and Eyitayo, A. (2019). Legal and Regulatory Mechanism of Electricity generation and distribution in Nigeria: A Review of Ibadan Electricity Distribution Outlets. *European Journal of Social Sciences*, 267 Vol. 58 No 4 November, 2019, pp.267-276

Ahiuma-Young, V. (2017). "Labour Demands Review of Power Sector Privatization Process". *Vanguard News*, December 14.

Asu, F. (2016). "Electricity Drops to Zero Six Times One Month", *The Punch Newspaper*, available at: http//www.punchng.com/electricity-drops-zero-six-times-one-month. Retrieved 5/2/2023.

Boudon, R. (August 2003). "Beyond Rational Choice Theory". *Annual Review of Sociology.*

Ejoh, E. (2018), Five Years After Privatisation: Power Sector Losses #90 Billion; Receives #2.9 Trillion; Needs 2.4 Trillion. Available from: https://www.vanguardngr.com/2018/09/five-years-afterprivatisation-power-sector-loses-n. Retrieved 9/2/2023.

Enoche, U.P., Egware, H.O., Eyakanor, T.O. (2015). The Nigeria Electric Power Sector (Opportunities and Challenges). *Journal of Multidisciplinary Engineering Science and Technology*, 2(4), 494-502.

Energy World (2022). Global Renewable Capacity Set to Double Over Next Five Years: *IEA, Reuters.*

Gary, B. (2016). A Better Kind of Violence: *The Chicago School of Political Economy, Public Choice, and The Quest for an Ultimate Theory of Power*. Cooper-Wolfling Press, 2016

Gayam, H. (2019). Electricity: Nasarawa to Generate 1,000 Megawatts from Coal. *Channelstv.com August 10.*

Grüne-Yanoff, T. (2012). *"Paradoxes of Rational Choice Theory"*. In Sabine Roeser; Rafaela Hillerbrand; Per Sandin; Martin Peterson (eds.). Handbook of Risk Theory. pp. 499–516. doi:10.1007/978-94-007-1433-5_19. ISBN 978-94-007-1432-8

Isola, W. (2018). Power Sector Reforms in Nigeria: *Challenges and the Way Forward; Department of Economics,* University of Lagos, Akoka

Mayo, B. (2012). Do Power Cuts Affect Productivity ? A Case Study of Nigerian Manufacturing Firms. *International Business & Economics Research Journal*, Vol. 11, 10.

NERC Nigerian Electricity Regulatory Commission (2017).

Ojo, J. (2016). "Nigeria's Energy Crisis and Rising Cost of Living", *The Punch Newspaper*, available at: http://www.punchng.com/. Retrieved 5/2/2023.

Okolobah, V., & Ismail, Z. (2013). "On The Issues, Challenges and Prospects of Electrical Power Sector in Nigeria". *International Journal of Economy, Management and Social Sciences* 2(6) June, Pages: 410-418

Okoro, O.I., and Madueme, T.C. (2015). Solar Energy Investments in a Developing Economy, *Renewable Energy,* vol. 29, 2004, pp. 1599-1610.

Onochie, U.P., Egware, H.O., and Eyakwanor, T.O. (2015). The Nigeria Electric Power Sector (Opportunities and Challenges). *Journal of Multidisciplinary Engineering Science and Technology (JMEST),* Vol. 2 Issue 4, April – 2015.

Oseni, M.O. (2011). An Analysis of the Power Sector Performance in Nigeria. Renewable and Sustainable Energy Reviews. 15 (9): 4765–4774. doi:10.1016/j.rser.2011.07.075.

Oyeleke, I.L. (2020). Liberalization of the Electricity Sector: The Nigerian Experience. *World Journalof Innovative Research (WJIR)* Volume-8, Issue-3, March 2020 Pages 69-75 www.wjir.org

Victor, U., and Ismail, K. (2013). On the Issues, Challenges and Prospects of Electrical Power Sector in Nigeria. Nigerian Power Sector Guide, NPSG, 2013.

World Bank Databank (2013). "Access to Electricity". Available online at: www.worldbank.com. Accessed on 2nd November, 2022.