
Implication of Unstable Power (Energy) on Administration of Tertiary Institutions in Nigeria

Ogunode Niyi Jacob

Ogunodejacob@gmail.com

Ayoko Victor Olugbenga

victorayoko@gmail.com

Abstract: Constant energy supply is key to the realization of tertiary education objectives. Provision of adequate and constant energy is critical to the development of tertiary institutions. Energy is one of the critical resources that the tertiary institution cannot do without. Stable energy provision to the tertiary institutions in Nigeria has been an issue. It is difficult to see any tertiary institutions enjoying stable supply of energy. This problem of unstable power supply is affecting the development of tertiary institutions in Nigeria. This paper discussed the implication of unstable power supply (energy) on the administration of tertiary institutions in Nigeria. This paper employed content analysis to select papers (published and unpublished). The papers were sorted on both print and online resources. The paper identified inadequate infrastructure facilities, poor management/corruption, poor transmission and end user distribution, technical factors, unstable energy policies, vandalism /insecurity and poor maintenance culture as factors responsible for unstable power supply in Nigerian tertiary institutions. The paper also identified the effects of unstable power supply (energy) on the tertiary institutions administration in Nigeria to include slowing down administrative activities, teaching programme, research programme and leading to poor academic performance of students, increasing administrative cost of the institutions, leading to environmental pollution and time wastage in the system. To solve these problems, the paper recommended that government should provide adequate funds for the development of the power sector in the country. The government should address all issue hindering development of power such as insecurity, corruption, poor management, unstable policies, inadequate facilities, shortage of personnel and poor training. The tertiary institutions in the country should seek alternative power generation for their respective institutions

Keywords: Administration, Tertiary Institutions, Public, Power Supply, Unstable.

Introduction

Nigeria as a country is faced with energy problems. This energy problem has affected all sector of Nigerian economy. For instance, *Addeh (2020) opined that* for many years, the Nigerian power sector has been in crisis, with the average annual per capita power consumption being only 155 kWh, which is among the lowest in the world. Indeed, some research suggests that self-generated power, mainly diesel or petrol generators, should be around 6,000MW, while many Nigerians, including students have had to resort to burning candles and kerosene and sometimes, rechargeable lamps, just to get by. While Nigeria continues to grapple with actual transmitted power of between 4,000MW to 4,500MW for its over 200 million population, in contrast, a country like Brazil generates 100,000MW of grid-based power for 201 million and South Africa generates 40,000MW for 50 million persons (*Addeh (2020)*). There's hardly any public university visited today, that is not either partly or wholly dependent on generating sets to power its libraries and laboratories and as expected,

this exacts a huge cost on the institutions' meagre resources, accompanied with the hazards posed by harmful emissions.

Adequate power supply is one of the requirement for the realization of the tertiary education goals. Tertiary education that was defined Federal Republic of Nigeria in her national policy on education (2013) as institutions owned by the government. Public tertiary institutions are institutions established by the law of the parliament to provide a public higher education for the people within the country. Tertiary Education is the education given after Post Basic Education in institutions such as Universities and Inter-University Centres such as the Nigeria French Language Village, Nigeria Arabic Language Village, National Institute of Nigerian Languages, institutions such as Innovation Enterprise Institutions (IEIs), and Colleges of Education, Mon technics, Polytechnics, and other specialized institutions such as Colleges of Agriculture, Schools of Health and Technology and the National Teachers' Institutes (NTI) (FRN, 2013). The national policy went further to outline the goals of Tertiary Education shall to include: contribute to national development through high level manpower training; provide accessible and affordable quality learning opportunities in formal and informal education in response to the needs and interests of all Nigerians; provide high quality career counseling and lifelong learning programmes that prepare students with the knowledge and skills for self-reliance and the world of work; reduce skill shortages through the production of skilled manpower relevant to the needs of the labour market; promote and encourage scholarship, entrepreneurship and community service; forge and cement national unity; and promote national and international understanding and interaction (FRN, 2013).

Tertiary Educational institutions shall pursue these goals through: Quality student intake; quality teaching and learning; research and development; high standards in the quality of facilities, services and resources; staff welfare and development programmes; provision of a more practical based curriculum relevant to the needs of the labour market; generation and dissemination of knowledge, skills and competencies that contribute to national and local economic goals which enable students to succeed in a knowledge-based economy; a variety of flexible learning modes including full-time, part time, block release, day-release, and sandwich programmes; access to training funds such as those provided by the Industrial Training Fund (ITF), Tertiary Education Trust Fund (TETFund); Students Industrial Work Experience Scheme (SIWES) that is well structured, coordinated and supervised; maintenance of minimum educational standards through appropriate regulatory agencies; an all-inclusive credible admissions policy for national unity; supporting affordable, equitable access to tertiary education through scholarships and students' loans; inter-institutional co-operation and linkages; and dedicated services to the community through extra-mural and extension services (FRN, 2013). The realization of the objectives of tertiary education hinges on the availability of human and material resources. One of the key materials resources is the energy resources/ power supply or light.

Theoretical Framework

Systems theory hold that an organization is a social system made up of integrated parts. The theory was propounded by a biophysicist Ludwig Von Bertalanffy in 1920. The system was seen as a series of interrelated and interdependent parts in such a way that the interaction of any part of the system affects the whole system. That is, one part of the system must interact and depend on the other parts around it to function effectively. The system theory is relevant to education system because education system (school) is a system and the concept of interaction and interdependence of parts with the education system like all other social systems has identical properties with the other system.

This study is anchored on system theory. The schools are looked at in terms of social system

as complex interactive examined structurally and operationally. The theory is made up of input, conversion and output. The input includes all resources inputted into the system (energy, students, lecturers, administration staff, management staff and non-academic staff, ICT, policies, planning, supervision) to realize the object of the system. All the inputted resources passed through the processes of conversion (teaching, management, administration, lectures, assignments, seminars, workshops, researches, publications, studies, discussion and counseling). As a result, they come out as outputs (graduate). The implication of energy here is that the government and school administrators must ensure the institutions have access to adequate energy in order to realize the objective of the tertiary education. Energy is very important in the realization of the tertiary education and all efforts should be geared towards providing adequate energy for the tertiary institutions across the country.

Research methodology

The study adopted a qualitative multiple case study design and literature review in the interpretative research paradigm. Data was collected from secondary sources, arranged into themes and were analyzed for content. It is critical to highlight that the research approach looks at issues historically by addressing specific scenario that produce details when people answer to the why, how and what question (Hennink et al, 2011). The study used existing secondary data or empirical evidence to present issues especially in the literature review on tertiary institutions and unstable power supply.

Concept of Energy

Energy is considered by Energypedia (2017) as electricity (Power), which is the most versatile form of energy. Without access to reliable electricity, education becomes very difficult and the quality of services delivered becomes poor.

Energy is used for lighting room offices, lecture hall, theater and labs. Energy enables powering of A/C, working fans and many more which provides us comfort in the offices and halls within the campuses. Energy also provides means of entertainment in the schools; radio, television and cinema are possible because of stable power supply. Equipment like information communication technologies and computers also require energy to be used in the respective offices. Constant energy supply is critical for the development of the higher institutions. Energy keep moving the educational sector forward. The importance of adequate and stable energy supply in the tertiary institutions includes;

1. It makes implementation of teaching programme simple, fast and interesting,
2. It makes implementation of research programme possible
3. It makes provision of community services programme economical and reliable
4. It makes school administration fast and effective.

Factors Responsible for Unstable Power in Tertiary Institutions in Nigeria

There are many factors responsible for unstable power supply in Nigeria and in the tertiary institutions. Some of these factors include; Inadequate infrastructure facilities, poor management/corruption, poor transmission and end user distribution, technical factors, unstable energy policies, vandalism /insecurity and poor maintenance culture.

Inadequate Infrastructure Facilities

There is inadequate infrastructure across the entire value chain to service the power sector. For instance, the Uquo marginal oil field in AkwaIbom state came on stream in 2009 and powered the 560MW Calabar plant, Ibom power plant which ought to be about 170MW, but

with only one gas turbine functioning, produces 110 MW, Frontier oil field once fed Alaoji power plant but not anymore (Otombosoba, 2021; Thomas, 2017).

Poor Management/Corruption

Poor management and corruption in the management of sector is responsible for poor quality of energy supply in the country. Otombosoba, (2021) observed that poor history of corporate governance of electricity industry: In Nigeria the electricity sector is facing low productivity and corruption. This factor has resulted in commercial unsustainability of the power sector and hence makes planning very difficult. Mismanagement also means misallocation of resources which further worsens the availability of quality power service. According to the exclusive power probe report (2008) (as cited in Israel et al 2015) of all the house of representative committee on power the sum of \$16 billion was misappropriated in the power sector between 1999 and 2007. The committee recommended that 17 figures of interest should be investigated and or disciplined. These figures included the then president of the Federal republic of Nigeria, the minister of power in that period, some federal legislators, some top management of PHCN, some top business men and some companies. Consequent upon the allegations and counter allegations over the power corruption saga, the power probe committee was dissolved and never set up again.

Poor Transmission and End user Distribution

Poor transmission and distribution also affected the development of new energy for power generation; most governments in the world seem to prefer centralized distribution systems where everything seems to come from the headquarters or capital before any consideration to other areas. This tendency is a serious barrier to the development of new energies for power generation, which are usually at scattered locations and are produced on relatively small scale. Otombosoba, (2021) cited Damas (2016) posited that there is the need, therefore, to take a second look at the policy of generating, transmitting and distributing power based on national grid principle or format. The national grid principle is a system whereby whenever and wherever power is generated it has to find its way to the national transmission and distribution network. This principle therefore fore closes the ability to produce and distribute power in situ, based on the location and the resources. We could try to produce wind power where there is adequate

Technical factors

Lack of adequate manpower in the energy sector is among the factors responsible for the unstable power supply in the country especially in the tertiary institutions. Otombosoba, (2021) stated that weak human and technological capabilities is another problem in the power supply in Nigeria. This is essentially a problem of research and development which is made worse by lack of trained man power and information on the deployment of resources particularly in developing countries like Nigeria. In general terms there is inadequate skilled human capital, and knowledge about electric power system design as well as personnel with adequate technical, financial, economic and management skills to identify and implement specific power policies and program, According to Otombosoba, (2021) and Ohajianya et al (2014) Nigerians rejoiced as government handed over generation, transmission and distribution of electricity to private companies. However, after six months, Nigerian still complained that power supply had gone from bad to worse (Otombosoba, 2021; Ukokop et al 2014).

Unstable Energy Policies

The unstable energy policies in the administration of energy in Nigeria are hindering the development of the sector. Otombosoba, (2021) noted that inconsistent energy policies and

over-dependence for government for sustenance. Ohajianya et al (2014) posited that the inconsistent energy policy has contributed to the problem of unreliable power supply because from the establishment of ECN in 1950 and setting up of NEPA in 1972, the policy has been that of monopoly. However, if after these years there is need to unbundle the power sector then the previous policy has been unhelpful. Also, the power sector in Nigeria has been privatized yet the company has depended on government for bail out on several occasions.

Vandalism /insecurity

The high rate of vandalism of plant facilities and insecurity in the country is affecting ongoing works in the energy sector causing low supply of power across the country. Otombosoba, (2021) noted as a result of poverty in Nigeria, there is high incident of power equipment vandalism. Vandals have a field day stealing of cables and wires. Also, insecurity aids this process of vandalism which results in low capacity utilization.

Poor maintenance culture

The poor maintenance culture of Nigerian towards energy infrastructure across the country is also affecting the constant supply of power in the country. Otombosoba, (2021) opined that there is frequent breakdown of obsolete generating plants and equipment due to inadequate maintenance and lack of spare parts. The main problem against safe and efficient electricity supply in Nigeria is inadequate infrastructure, poor history of corporate governance and inadequate pricing structure to support the economics of power generation, transmission and end user distribution (NAPE, 2016)

Effects of unstable power (energy) on University administration in Nigeria

There are many effects of unstable power supply on the tertiary institutions administration in Nigeria. Some of the effects include slowing down university administration, teaching programme, research programme, affects academic performance of students, increase in administrative cost, environmental pollution and resulted to time wastage in the administration of universities.

University administration

The universities administration in Nigeria has being affected badly because of unstable power supply. The university administration constitutes activities that deal with typing, printing and photocopying of documents. The university system is designed to function with constant supply of light. Almost all the administrative activities in the universities required light. The university system is system that deals with activities of typing, photocopying, sending of mails and receiving mails and printing of documents. The university system is also a system that deals with production, distribution and consumption of documents that required typing, printing, photocopying and distribution. Everybody in the universities has something to do with energy. The non-academic staff needs light to do every single assignment in the office. Ola (2018) submitted that many non-academic staff in the Nigerian tertiary institutions are faced with the problem of unstable power supply. He went further to said that many staff have to wait for the school plant to be switch on before they can carry out their responsibilities in their respective offices. Ade (2017) lamented that in the universities communities, the amount of time spent shuttling the school and business centres to ensure learning materials are always available to students. When the power is off, these centres are the cheapest places to produce paper-based learning materials.

Teaching Programme

Teaching programme in the tertiary institutions especially that of the universities in Nigeria is also been affected by unstable power supply. Teaching programme is the first programme of

the universities. The teaching programme constitutes activities that deal with teaching and learning. The lecturers are expected to lecture while the students learn. Teaching programme required a lot of resources for its implementation. Power supply or light is one of the resources that makes teaching programme interesting and fascinating. Modern teaching demands the use of information communication technologies which also required constant light supply. Teaching programme can both take place in a conversational model or on virtual model. It has been submitted that by Babatunde (2014) that lack of stable electricity supply is threatening effective online teaching and learning in the country. According to him, lack of stable power supply will hinder effective teaching and learning process. "It is not all about access to internet facilities. Even most staff and students who have access don't have stable electricity supply to follow lectures at the right time. He went further and observed that Electricity is a major threat to effective online education in Nigeria. Femi (2014) opined that a lecturer will try to use teaching aids like a Projector but sometimes this becomes impossible because of no power.

Research Programme

Another programme of the tertiary institutions affected by unstable power supply is the research programme. Research programme of many tertiary institutions is slowed down because of unstable power.

The research programme requires laboratories and other facilities to work and these facilities needs power supply to function. Research programme needs constant light. They need light to conduct test, analyze and heat some substance. Many researchers in the universities have to stop the research work because of power failure. Adahal (2020) observed that energy poverty remains a major problem, not just in Nigeria's tertiary institutions, but across the entire facet of the Nigerian society, leaving in its trail unnecessary difficulties in execution of simple tasks and grounding economic activities. However, it poses even more challenges in the universities where it has become a barrier to effective research, student learning and general smooth running of the tertiary institutions. Energypedia (2017) noted lack of electricity also affects their research output. For example, taking readings of an experiment from a machine in the laboratory and suddenly the power goes off and you realize you have wasted your effort without achieving your aim. This, in turn, demoralizes the faculty and consequently prevents them from building their academic career.

Academic Performance

Lack of access to electricity affects the student's academic performance. Students who tend to study at night have no choice but walking into the school to study. Some walk over 3Km to get to the school so they can have access to power. The problem sometimes is that there is no power even in the school campus. Students sometimes result to studying under the street lights which are powered by solar or they study with their personal lanterns. This affects the academic performance of students in the universities. Femi (2014) also observed that lack of access to electricity also affects students'. Given the fact that students try to optimize any chance they have access to electricity, they sometimes wake up at mid-nights when the power comes to charge their phones, laptops and other electronic gadgets. This shortens the time they have to sleep which consequently affects their health. Lack of access to electricity impoverishes the students financially.

Increase Administrative Cost

In order to provide power to the universities, universities administrators budgeted huge resources for plant fueling, maintenance and repairs. These expenditures are responsible for increased in the administrative cost of running the universities in Nigeria. Musa (2017)

submitted that every year universities spent huge money on fuels to power their various plants in the various universities across the country. Ojo (2012) reported that the management of university of Lagos in a memo pleaded with the students and directed the blame of unstable power supply to the Eko Electricity Distribution Company (EKDC). The management said power issue is a national phenomenon as it is infamously known by every Nigerian that our power status is down. A vital reason given for the unstable and inefficient power service on the campus is that the university currently relies on its generator which is only capable of handling 30% of the school's demand. World University (2012) reported that the poor electricity supply in Nigeria is proving a major impediment to the operation and growth of information and communication technologies in the nation's universities. Only a trickle of daily electricity production dribbles erratically into the country's 93 institutions, rendering ICT systems dysfunctional. Universities resort to diesel-propelled generators, but they are expensive and environmentally unfriendly. So now there are attempts to find alternative energy sources such as solar energy to accelerate ICT provision. Energypedia (2017) submitted that given the fact that it's more expensive to use electricity from generator sets than grid-connected power, service providers like photocopy shop owners, Hair barbers and even restaurants tend to increase their prices for services provided. These services are required by staff and students on a daily basis and as such, paying higher amount for them increases their expenditure from the usual which in turn impoverishes them more.

Environmental pollution

The problem of power in the Nigerian tertiary institutions that have led to the use of plant generators to provide power is causing environmental pollution in the campuses across the country. This noise and pollution affects both school administrators, academic staff and students. According to Musa (2014) unreliable electricity comes with environmental cost to the campuses. Petrol and diesel generators when used in the universities increases pollution, with a negative impact on climate change and human health. Energypedia (2017) noted that this generator sets emits CO which can destroy the mental state of a human being and also the noise associated with them is irritating. This generator sets can also lead to suffocation and even an outbreak of fire.

Time Wastage

Unstable power supply to tertiary institutions in Nigeria is responsible for time wastage in the system. Many administrative officers sometime have to wait till the generators is switch on before they can carry out any administrative work. Some meeting, lectures and research in the laboratories have to been suspended because there is no power in the universities Energypedia (2017) observed that poor access to electricity also results to poor time management. Many researchers and students working in the laboratory for their project and research work. A work they supposed to finish normally in 3 days took them over a week to finish because there was no power and the supposed machine they were to use can't function without light. Also, the time students spend while seeking for alternative source of power and walking distances to have access to power can be diverted to other productive and rewarding activities. Energypedia(2017) submitted that some time lectures was canceled in many universities because of lack of power, seminars delayed and students fighting over charging ports among others.

Way Forward

Energy is very critical to the realization of the tertiary education goals. Therefore this paper recommends the following:

- 1) The government should provide adequate funds for the development of the power sector

in the country.

- 2) The government should address all issue hindering development of power such as insecurity, corruption, poor management, unstable policies, inadequate facilities, shortage of personnel and poor training.
- 3) The tertiary institutions in the country should seek alternative power generation for their respective institutions.
- 4) The federal government should ensure the newly introduced Energizing Education Programme (EEP) which has the aims to provide sustainable and clean power supply to 37 federal universities and seven university teaching hospitals across Nigeria. Component of the project includes the provision of an independent power plant, upgrading existing distribution infrastructure, street lighting to improve security within the universities' campuses, as well as the development of a world class training centre on renewable energy for each university are implemented as planned.
- 5) The tertiary institutions managers should introduce a programme that will help to reduce wastage of energy in their various campuses.

Conclusion

Constant energy supply is key to the realization of tertiary education objectives. Provision of adequate and constant energy is critical to the development of tertiary institutions. It is difficult to see any tertiary institutions enjoying stable supply of energy. This problem of unstable power supply is affecting the development of tertiary institutions in Nigeria. This paper discussed the implication of unstable power supply (energy) on the administration of tertiary institutions in Nigeria. The paper identified inadequate infrastructure facilities, poor management/corruption, poor transmission and end user distribution, technical factors, unstable energy policies, vandalism /insecurity and poor maintenance culture as factors responsible for unstable power supply in Nigerian tertiary institutions. The paper also identified the effects of unstable power supply (energy) on the tertiary institutions administration in Nigeria to include slowing down administrative activities, teaching programme, research programme and leading to poor academic performance of students, increasing administrative cost of the institutions, leading to environmental pollution and time wastage in the system. To solve these problems, the paper recommended that government should provide adequate funds for the development of the power sector in the country. The government should address all issue hindering development of power such as insecurity, corruption, poor management, unstable policies, inadequate facilities, shortage of personnel and poor training. The tertiary institutions in the country should seek alternative power generation for their respective institutions.

References

1. *Addeh, E. (2020) Powering Nigeria's Universities.* <https://www.thisdaylive.com/index.php/2020/12/15/powering-nigerias-universities/>
2. Dada Thomas (2017): Natural gas key to economic diversification: Oilweek Nigeria premier oil and gas business Newspaper volume 8 No 13
3. DamasOdocha (2016): Energy deficiency and misery of a nation: The Nigerian petroleum business Bulletin. A NAPE publication.
4. Energypedia (2017) Energy Access and Education in Nigeria. https://energypedia.info/wiki/Energy_Access_and_Education_in_Nigeria

5. Guardian (2016) Erratic power supply in UNILAG. <https://guardian.ng/opinion/erratic-power-supply-in-unilag/>
6. Hennink, M., Hutter, I. & Bailey, A. (2011). *Qualitative Research Methods*. London, Sage Publishing Private Ltd.
7. Ukokop, J, Odogwu,T, Admise O (2014): power DISCO still fumbling six months after, daily news watch, April 5th 2014. Available at: (<http://www.mydailynewswatching.com/power-discos-still-fumbling-six-months/>), Retrieved: 3rd May, 2014.
8. Ohajianya A.C, AbumereO.E ,Owate I.O, Osarolube, E. (2014): Erratic Power Supply In Nigeria: Causes And Solutions. *International Journal of Engineering Science Invention* ISSN (Online): 2319 – 6734, ISSN (Print): 2319 – 6726 www.ijesi.org Volume 3 Issue 7 July 2014 PP.51-55
9. Otombosoba, O., H (2021)*Constraints to Efficient Electricity Supply In Nigeria*