



State of power supply in Nigeria, the way out

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Abstract

The importance of power supply can never underestimated; From Stone Age era when energy was discovered to date, man's life had always depended on it. The industrial source of energy in Nigeria includes HEP and Thermal energy. Economic development seeks to improve the economic wellbeing and quality of life of the community, this is done by creating and retaining jobs thereby supporting in growing income. However, the economic development cannot be achieved without adequate power supply which is a major determinant in job and wealth creation. Epileptic power supply in Nigeria has retard development as it affects industrial development, economic development, and cost of productions, market price, and quality of services. The reasons for inadequate power supply in Nigeria include climate, administrative lapses, weak legislation, attitude of works and corruption. This paper among other things observed that water reservoirs should be improved by supplying water through pipeline from humid south to dry north; more thermal power stations should be built across the country, a strong legal system to protect the staff and power installations. Regular payment of workers and installation of standard equipment, certified by standard organization of Nigeria (SON) will also help power supply in Nigeria, which in turn enhances development.

Keywords: Development; Hydro Electric Power (HEP); Power Supply; Thermal Power; Vandalism

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1. Introduction

The importance of Power supply is all encompassing (it cut across all aspects of the society and economy). It is used by individuals, industries, institutions, religious organizations, etc. Since the stone-age when man could generate energy, man's life had always been dependent on it.

Sources of energy had varied with time and many improvements had taken place. For instance, wood is the first source of energy and it is used where and whenever available. It is used as fuel domestically and industrially. Wood is burnt to get charcoal, whose heat can smelt minerals, power electricity and drive engines to produce electricity. The use of charcoal (wood) helped in food preparation and generation of power (Alexander, 2013).

Coal is another generator of power. Coal is a rock which is either black or brown. It consists of carbon formed by the compression of vegetation remains of past ages. It is a sedimentary rock. Its quality depends on the length of years from formation, so also the heat value. Its heat is also used in the generation of electricity as in Oji in Anambra State of Nigeria (Aloni and Alexander, 2014).

Similarly, burning of crude oil and natural gas also drive turbines. Other sources of power known to man include the use of Uranium in nuclear power stations, solar energy, geothermal, wind energy, tidal energy, Bio mass energy and hydro energy. Some of these sources are renewable energy, while others are not. Mineral such as Coal, Petroleum, Natural gas, Uranium are exhaustible and non-renewable. Renewable resources include wind, geothermal; Biomass, Solar, hydro and Tidal. Alexander and Daminabo (2017) stated that the presence of energy minerals in a country is a step to cheap energy if the technical know-how, political will, and good leadership exist.

Development is a sustainable increase in living standards that encompasses material consumption, education, health and environmental protection (World Bank, 1991). Bukola, (1985) in his work "The problem with Nigeria" defined Development as "the transitional process sustaining a multifaceted improvement in the human condition resulting from positive structural and functional changes in conceivable spheres of human endeavour in any given human society.

Economic development is a subset of developmental process and it focuses on material issues such as employment, income, composition of production. She added that economic development involves positive structural and functional changes in the economy which leads to increased production and broad availability of goods and services. In other word, economic development leads to the improvement in material welfare and eradication of poverty and improvement in the standard of living of the people in any given society.

Economic development involves changes in the composition of inputs which negates positive output and efficiency in production. Power generation is very essential input for effective production in any form of development especially economic development.

Economic development as explained above seeks to improve the economic well-being and quality of life of the community. This is done by creating and retaining jobs, thereby supporting in growing income, which leads to improvement of quality of life and well-being of individual community or nation.

Daminabo, (2008) stated that the well-being of individual community or nation depends on creation and retaining of jobs. Power supply is a major determinant factor in job and wealth creation. Any country without significant power supply can barely have growth in its economy. Scholars have observed that self-generation of power that is power generated by the use of generating set retards and kills any form of growth in the economy. It leads to very high cost in production and subsequently high selling price. It encourages influx of goods from countries where the cost of production is lower and eventually crippling of the economy. This is the state of most developing countries and Nigeria in particular today.

Due to epileptic power supply, most institutions, individuals and industries resorted to self-generation of power via generators, which does not only causes sound pollution, but very expensive. Electricity from private generators is more expensive than that from national grid, thus raising the price of domestic goods (Julia, Nick, Kyle, and Allison, 2008). Etiosa, (2007) study revealed that there are strong link between energy and poverty, besides 60% - 70% of Nigerian does not have access to electricity and modern energy services. This explains Nigeria's level of poverty and state of development. Similarly, it has been observed that power supply drives industrialization process, besides one important indicator whether a country is developed or not is the megawatt of electricity consumed. Country electricity consumption per capita in kilowatt hours is proportional to the state of industrialization of the country (Ndebbio, 2006). Ukpong, (1976) established the existence of positive relationship between electricity power consumption and economic development.

Much has been written about power supply and economic development in and outside Nigeria. The problems and remedies have also been written. Among such include the works of (Adedokun and Osunpidan, 2010; Ademole and Afeiwana, 2004; Chikuni and Okoro, 2007; Farinu, 2007; Sanusi and Bisiriyu, 2007; Usunamlele, 2001; Adegbamigbe, 2007; Afonja, 2003; Akpan, 2005 ; Alexander, 2013; Aloni, 2015; Okafor, 2008 and Alexander, 2016), to mention but a few. This paper shall dwell on Real situation of power electricity power supply in Nigeria, using the available sources of energy, and its effect on development of Nigeria.

2. Energy resources in Nigeria

The major energy resources in Nigeria include- Hydroelectric Power, Thermal Energy, and Solar Power. There are other ones, still at the crawling stage. Like Wind Energy and Bio-fuel.

2.1. Hydro energy

This is energy derived from falling or flowing water, it is a renewable resources; it is available in the northern part of Nigeria where there are rugged terrain or topography. Hydro Energy is one of the environmental friendly sources of energy. Apart from constant flowing river which is the first and important condition for the establishment of hydroelectric power station (HEP); other physical conditions, such as ruggedness of the topography, volume of water level and impermeability of rock are also important. Water bodies on the river courses can be manipulated, created or improved upon to provide favourable conditions for the construction

of HEP. Take for instance, dam can be built to reserve and maintain the volume and level of water, while dyke can provide the needed narrow valley.

Hydro Electric Power is dated back to 1882 in Wisconsin USA, where the first dam was built across Fox River in Appala chain plateau.

In Nigeria a large scale power generation became operational in 1968 when the first phase of Kainji dam was completed, before the decision to embark on large HEP, smaller ones had been built on Kura and Jekko falls by a private company called Nigeria Electricity Supply Company to power Jos, Bukuru and Most mining towns in the Jos Plateau region.

The rising demand for electricity led to the examination of the potentials of the upper parts of River Niger, from Jebba upwards for the construction of a large hydroelectric power station, including Kaduna River at Shiroro gorge that was also covered by the investigation.

The construction of the power station was started and completed within a space of four years (1964 – 1968). Kainji, Shiroro and Jebba dams remain the only major hydro power stations in the country. Having begun, the generation of power at a greater level, the authority to generate power, transmit, distribute and sell electricity in any quantity to all customers anywhere in the country was given to the body called Electricity Company of Nigeria (ECN) that was later changed to National Electric Power Authority (NEPA). NEPA, which is crescent as “Never Expect Power Always” because of its gross inadequacy, continued the supply of power units; however it is obvious that demand has become greater than the supply. These power generating stations never produced electricity to full capacity. There had always been problems laundering its full capacity production, thereby leading to its inability to meet the ever increasing demand. The state of inadequate power supply based on the aforementioned is responsible for slow development in Nigeria. Identifying reasons for inadequacy will lead to improvement.

2.2. Thermal energy

Thermal power plants are giant generators which are fuelled by coal, natural gas or petroleum. Nigeria has abundant crude oil, coal and natural gas that can be transported to any thermal station anywhere in the country via pipeline or truck. These alternative sources of power can address the problem of power supply in Nigeria if adequately harnessed. The fall in price of crude in international market and emergence of alternative energy sources, demand that thermal energy be utilized local. Table 1 shows some thermal stations in Nigeria.

2.3. Solar energy

Solar energy could also be a possibility, but the technological know-how. However, of recent individuals, firms and hospitals are using solar energy. The development is still at its lowest level, for instance, heavy machines and high power consuming devices requires very expensive solar technology, which for now is very expensive. Despite the expenses solar energy is the only guarantee for effective and constant electricity in Nigeria.

But the fact that Nigeria is located very close to the equator, where the sun is always abundant means that such energy if harness will solve the problem of power and its supply in Nigeria.

3. Challenges of energy resources over Nigeria

The various energy resources in Nigeria have peculiar challenges at one stage of production or another. These challenges have affect production and utilization of power in Nigeria.

3.1. Challenges of hydroelectric power in Nigeria

There are many problems in the generation of power from the Kainji dam projects. These include funding, management, training and retraining of technical staff, but the most disturbing ones are the volume of water and the maintenance of the system.

Kainji projects are sited on River Niger and its minor tributary, Kaduna River. River Niger flows from Futa Jalon highland in Guinea through Mali and Niger into Nigeria. The southern parts of Mali and Niger Republic through which the river flows, does not receive more than 508mm of rainfall annually in July which is the peak of rainy season in West Africa sub-region. The low rainfall and high temperature typical of tropical regions exposes the river to great evaporation. This implies low or reduced volume of water for the HEP project. Besides, inland flood plain of Niger depends on the river for specify substances, thereby affecting the volume of water that enters Nigeria and Kainji dam. Again the volume of water in most rivers of West Africa (including River Niger), fluctuates. Sometimes the volume is very high and at other times very low. Some rivers dry up leaving few ponds of water; this is because the rivers are "rain fed." As the rain comes, the rivers are resuscitated and volume generally increases. The volume of water available for the dam at any point in time determines the amount of power to be transmitted. Its fluctuation is the greatest problem to HEP generation. Before the rain by mid-July there is always inadequate water storage needed by the authorities in the two dams thereby hindering full operation of available generating units. With cautions and rational use of water only few of the turbines are turned on and consequently a fall in power generation.

Another fear which Nigeria has, though in the future, is the likely hood of Mali or Niger Republics constructing dams to generate power for their countries on section of River Niger within their territories. If this happens Nigeria's major hydroelectric power station at Kainji shall be endangered if not grounded, because of insufficient water for the operation of the turbines.

Rainfall, a climate factor is very vital and a huge constraint in HEP generation. The fact that Nigeria HEP depend on vagary of nature makes it very much unreliable. However, these suppose not to be problem for Nigeria as a country. In fact Nigeria supposes not to be providing free power to her neighbours like Niger Republic. Water can be connected to Kainji dam just as crude oil and gas are transported via pipelines to far northern states. Water in these pipelines will have a close value, when the volume of water in the dam reservoir is adequate the value will be closed, where the reverse is the case when the volume of water in the dam reduces, the pipeline will be opened to recharge the dam reservoir. This will address the problem of

fluctuation of volume of water in the dam (Ukpong, 1976). The fear of salinity of water can be solved, if the connected water is fresh water which is in abundant in the south-south states like Bayelsa, Delta and Rivers State.

Table 1. Some of the thermal stations in Nigeria are

S/N	State	Location	Type	Inauguration date	Installed capacity MW	Current output/NW)
1	Anambra	Oji	Coal	1956	30	-
2	Delta	Sapele	Gas	1978 - 1981	1,020	62
3	Rivers	Afam	Gas	1978 - 1982	969	85
4	Lagos	Ijora	Petroleum	1978	60	-
5	Lagos	Egbin	Petroleum	1985 - 1987	1,320	241
6	Cross River	Odukpani	Petroleum	2007	561	561
7	Imo	Egbema	Gas	2007	338	338
8	Edo	Ihovobori	Gas	2007	451	451
9	Bayelsa/Rivers	Gbarlan/Ubie	Gas	2007	225	225
10	Delta	Sapele	Gas	2007	508	457
11	Rivers	Omoku	Gas	2007	265	230
12	Akwa Ibom	Ikot Abasi	Gas	2007	300	300
13	Kogi	Geregu 1	Gas	2007	506	506
14	Kogi	Itobe	Gas	2015-2018	1200	1200
15	Ogun	Olurunsogbo	Gas	2007-2012	675	675
16	Abia	Alaoji	Gas	2009-2013	1131	1074
17	Ondo	Omotosho	Gas	2005-2015	513	336

Source: National Bureau of Statistics

3.2. Challenges of thermal power supply in Nigeria

Table 1 shows some established thermal stations in Nigeria. One of the greatest problems of thermal energy in Nigeria is the activities of militants in the oil producing states. Supply lines and oil well are damaged causing serious pollutions.

Another problem is incessant industrial action of workers. This will lead to a shutdown of the supplying line. Another serious concern is the inability of Electricity Company to pay for the acquired energy, due to non-payment of most consumers, especially schools, government establishments, military and police.

Corrupt staffs of the electric supplying company remain the greatest challenges for power supply in Nigeria. The field worker disconnect a defaulter, owning thousands of Naira, later same field workers collect

just two thousand naira to reconnect the defaulter. Since reconnection is cheaper than bills, many tend to pay reconnection fees than pay bill. Mean that the firm will struggle to pay for energy and their staff.

3.3. The challenges of solar power in Nigeria

The basic challenges of solar power in Nigeria include the cost and technology (Technical knowhow). Despite the tropical blasting sun in Nigeria, solar energy remains very expensive. A lumous box that discharges, 75 watts power costs over 200,000 Naira in a country where majority of the people live below the middle earner class.

The position of this paper is that more of such projects are sited in different parts of the country and water be linked to the dam. Especially now that price of crude oil has dropped in international market. Diversification means that new product should be produced and exported from the country.

Table 2. Some of the Hydro Electric Power Stations in Nigeria

S/N	State	Location	Type	Inauguration Date	Installed Capacity	Current Output
1	Niger	Kainji	HEP	1968	800	680
2	Niger	Jebba	HEP	1985	540	500
3	Kaduna	Shiroro	HEP	1990	600	600
4	Zamfara	Zamfara	HEP	2012	100	100
5	Kano	Kano	HEP	2015	100	100
6	Benue	Kiri	HEP	2016	35	35
7	Taraba	Mambila	HEP	-	3050	-

Source: National Bureau of Statistics

Economic development of any nation does not depend on the abundance of mineral deposits and population. It depends rather on the acquisition and implementation of the acquired skills and techniques to harness and utilize it.

Power supply is very essential in acquisition and implementation of skill and technology. It encourages the establishment of centres for acquisition of skills, mini factories, small and large scale firms and industries where skills can be acquired and provisions made for technological advancement. As a result many youths shall be engaged, and crime is reduced. Terrorism will barely be patronized; production will increase and there will be advancement in the economy (Julia, Nick, Kyle, and Allison, 2008).

Extraction of mineral deposits will not only be made easier but processed to semi-finished or finished products before exportation. The finished products are sold also within the country. This will reduce importation and the value of Naira will increase when compared to other currencies. With adequate power supply, innovations can easily be applied, making products finer than imported ones and encouraging more

exportation. Also, with regular and uninterrupted power supply, the quality of life of the citizen is impacted; modern and life-made easy gadget can be utilized effectively, life span is extended or elongated as a result of new ideas and knowledge acquired through information gadgets-like, television, computer, internet.

Storage facilities will become meaningful whereby food items can be eaten fresh with their nutritional values intact. Clothing will no longer be worn un-ironed or un-pressed. Markets and stores can operate for 24 hours; sky scrapers with operational elevators can be built and used as residential homes; constant and regular supply of power is indeed the beginning of development.

Power supply is very important at all levels and stages of production for smooth growth of the economy. The cobbler for instance needs power to facilitate his shoe making business. The dress maker requires constant power to operate her motor, gum the stickers, and to iron materials. It is absolutely impossible for the welder to operate without constant and regular supply of electricity. Even the sachet water deal requires power to sealing and cooling of water. Ndebbio, (2006) among other scholars, stated that "Regular power supply is the prime mover of technological and social development (Economic development). There is hardly any enterprise or indeed any aspect of human development that does not require energy in one form or the other. There is hardly any factory or industry, the size notwithstanding, that can conveniently operate without regular power supply. Any that generates power through generator set transfers the cost of such power generation to the final consumers. There by creating hardship, poverty and inability to save or to consequently invest into any meaningful capital project that can impact on the society.

A nation without regular and constant supply of power is regarded as a dark nation or underdeveloped nation. Apart from the fact that the aerial view of such national, cities and communities at night reveals total darkness, it indicates the state of backwardness of the nation. Her airport is poorly illuminated and hot because the air conditioners cannot be switch on since the generator set has limited load to carry (Etiosa, 2007).

For any nation to develop socially and economically, the power sector must be functional. The supply of three quarter, quarter or half current should not be mentioned as this type of supply destroys existing gadgets.

4. Causes of inefficiency

Many factors are responsible for the poor power supply in Nigeria; and most of it has been documented and published. The ineffective power supply in Nigeria can be divided into four (4) – Administrative, Climatic, Attitude of the people and Weak legislation.

The problem starts with procurement and installation of inferior materials, irregular charges and non-remittance of fund, tampering of meters, removing of transfer oil or armoured cables, even short circulating or bridging of line. Most often it seems as if the cables that are vandalized are done with assistance of PHCN staff. If not how do you explain the removal of armoured cable and high tension wires.

They are not remitting the appropriate sum leaving the firm with no option than owe clients likes NNPC and NGC which will sometimes cease supplying or reduce the quantity. All these affects power supply and performance.

Climate also affects the two most important electric supplies in Nigeria that is Hydro Electric Power and Thermal Energy. Precipitation determines the volume of water use for hydro- electricity. There is nothing human could do about the amount of rainfall of a given area. The West African region where the Kainji dam is located over the years has experienced low rainfall that has affected its output and effective distribution of power. Most of the water used in cooling thermal energy plants like the Egbin thermal plant in Lagos is saline water, which sometimes causes forceful shut down.

Majority of Nigerians like what is known locally as FOC (Free of Charge) which is not to pay for services rendered. That attitude has made majority not to pay their bills as at when due. Majority have decided not to pay bill to the appropriate quarter, instead liaising with corrupt staff to short change the marketing company of PHCN. Others instead of paying allow the staff of PHCN to cut them off and in the night they reconnect. Friends can connect to the national grid from the friend's house unknown to PHCN.

Vandalism is another problem of PHCN. Vital materials can be removed at any point by criminals who parades as Boko Haram, Militant, cultists etc. These damages sometimes are so much that it cannot be fixed for months, when fixed the cooperation acquired huge debt which force them to incur big debt.

The legal system and government hardly punish offenders or protect the equipment of PHCN. Sometimes even when the officials are man-handled nothing is done. Because of lack of prosecution the vandalizing of PHCN equipment has become lucrative business for vandals. Those that reconnect illegally are not prosecuted; and the attitude continued. It also has made the staff of PHCN to accept bribe or out rightly pocket the money.

5. Government interventions

The Federal Government of Nigeria is very much aware of the erratic and unpredictable nature of electricity supply in the country. In this wise, the following steps have been taken to remedy the situation.

Firstly a National Electric Power policy was formulated in 2002. In it, the issue of ownership, control and regulation of the sector were outline for better service implementation. Secondly, the policy was enshrined in the Electric Power Sector Reform (EPSR) Act of 2005. Thirdly, the private sector is integrated into the power sector, this has become necessary since the federal government had realized that the huge amount of money required to make meaningful impart in the sector is too heavy for only one sector of the economy. Federal Government has made frantic effort to encourage private sector investment in various ways. One of the efforts made is to give independent power producers (IPPS) some credit support and also by creating an efficient and motivated workforce.

Government has reached an agreement with labour union to settle all outstanding entitlement of NEPA workers. This is expected to create efficiency and motivate the workforce. Newly recruited staffs are expected to be trained, while old ones shall also be retrained to improve competence and effective operation

of the sector. Government has also provided a national gas master plan which is being followed and implanted so that all generating plants will not lack gas supply.

The Federal Government is not only rehabilitating existing PHCN Power Stations but also unbundling it into 18 successor companies for effective distribution and power generation. The power generated by independent power project IPPS and National Integrated power projects (NIPPS) government has decided to maintain the current power allocation to every part of the country but industrial cities like Lagos, Port Harcourt, Kaduna and Ibadan, etc. Significant portion of power from NIPPS will be allocated to them. And probably in the future government intends to domicile power produced by IPPS in the local domain where the power is produced.

Most of the plans and policies were implemented during Jonathan led administration. The effects were not felt by the consumers of our country until May 27th 2015 when he left office. The 'conspiracy' against power supply was relaxed; this claim has become necessary because before then power supply for 12 hours was luxury. But on the 28th May 2015 power was supplied for four (4) consecutive days without interruption in most part of Rivers State. Since then power supply has been regular within, Emohua-Odegu, Rumuola – Rumuokwuta, Rumuokoro – Choba, Mgbuoba – Ozuoba, Port Harcourt Townhship axis. The shout "UP NEPA" each time power supply was restored has reduced.

Jonathan led administration put much effort to improve the power supply situation in the country, when he came into power in 2011, generated power was only 2,200MW. This he increased to 4500MW by December, 31st 2014. This has been the highest since civilian rule in 1999. His administration was the first to privatize the power industry successfully. During his days in office, he flagged off massive rural electrification projects in over 300 communities in 2012 out of these, 190 communities have been lightened. The rest are still under construction. This improvement in the power sector showed his commitment to better the sector. He travelled round the world to fish out reputable leaders in the power sector. General electric was one of the renewed leaders he entered into a memorandum of understanding with. General Electric took the challenge of investing 15% equity in the sector. By this, power shall reach 15,000MW by 2020. This is feasible if Buhari's administration continued with this project or improves on it.

6. Some possible solution

The Federal Government has been very much on the problem of power sector trying to proffer solutions. The attempts or efforts are not made known to the populace or better put, much publicity is not given to the effort so far made by the government. However, it is better to have positive result than advertising government's projects and intentions.

The nation already has thermal power stations and hydro power stations; more should be built or expanded to boost power production so that failure of any power station to generate power will not throw any section of the country into darkness. Although private investors are encouraged to invest in power sectors by the removal of some battle necks that may discourage them, more should be done. For instance

the prepaid metre should be enforced all over the federation to reduce wastage and to ensure that money spent in power generation would be recovered quickly.

Most importantly, effort should be made to improve water reserves on the hydroelectric power stations dam. This could be achieved by constructing water pipeline from humid south to hydro-electric dams. Prosecution of electric wires, transformers, cable variably illegal connection and short payment should be taken serious to discourage perpetrators. Harassment of officials or preventing them from doing their work should be discouraged. Any inferior material purchased, the purchaser should be made to forfeit money spent. All purchase should be certified by Standard Organization of Nigeria (SON). State governments that have the capacity to generate power should be allowed to do so. This will foster competition among states thereby encouraging development. Privatization of power generation and transmission will help Nigeria in coming out from darkness and will also enhance development. Privatisation has improved some sensitive sectors like the Mass media and telecommunication already. These are areas where the Federal Government before privatisation has not done enough. Privatisation can break the bottleneck and let the light shine in Nigeria.

Security of gas and petroleum pipeline should be paramount. This will reduce vandalism and shortage of supply to the power stations. Strike and protest should be discouraged among power sector workers and union, in fact they should be enlisted as those in essential duties, because power stations can be shut down as long as the protest lasts, this will cripple the economy. Adequate arrangement should be made to avert any shortage of supply of gas to power stations in any event of routine maintenance by servicing firms. This paper suggests in strong terms that there should be continuity in governance. The federal government under the leadership of Buhari should endeavour to maintain all the power stations inherited by his administration and improve on the generation, storage and distribution of power above 5000MW. The government need to embark on building of giant solar station to supply affordable and reliable power.

Finally, as power supply becomes constant, the Federal Government through the Ministry of Information and Culture, Power, and National Orientation should educate consumers on who to manage electricity and reduce wastage.

7. Summary

Every nation economic development is a function of its power supply efficiency. The manufacturing industries, processing firms, hospitable, institutions, schools, hospital, research centres, mining companies all depends on availability of power.

Adequate power supply encouraged mass production and low cost of production, which will translate to availability of product in the market at affordable price. When there are functional firms, job is created which will impact on the citizenry. Collective improvement on individual condition will translate to an improved economy. In the other hand when individual generate their power, especially with high cost of fuel in Nigeria; those expenses will be forced down the throat of the common people that are already tight pressed. This will create a breeding ground for social miscreant. The evidence is obvious in the Nigerian society.

Nigeria should be proactive in handling power supply issues. There is no time to copy other nations on how they handle their problem. Without delay water pipeline should be connected from reach fresh water south to the north where we have favourable terrain for hydro-electric power. Stage of development is not an issue when it was said that volume of water is a problem.

8. Conclusion

The Federal Government should be able to continue on a laudable project of past administration and even improve on it. There is no short cut to the importance of adequate power supply on economic development of any nation. The advantages of adequate power supply outweighed the self-generated power supply, in economic development.

The fluctuation in the volumes of water in various HEP dams can be overcome by transporting fresh water from south to the HEP stations in the North. By so doing the full capacity of the HEP stations would be achieved.

More thermal stations should be built across the nation, to achieve this; the numerous flared gases should be used for power generation.

The effectiveness of adequate power supply can be seen in tariff charge on GSM globally and in West African sub-region. The charge in Nigeria is highest, reason they generate more of their power in Nigeria than any other country. The stand of this paper is that government should do everything possible to boost power supply. Enact legislation that will checkmate people activity on power supply, materials and staff. Encourage private firms and states to participate on power supply. Sanction on inferior material and workers defrauding the institution. To move out of utter darkness, we must, no matter what, embark on adequate power supply, which is a catalyst to economic development.

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