



## **Alleviating Energy Poverty and Accelerating Development in Nigeria: Where do we Begin?**

Prince EZE, PhD

Faculty of Arts, Management and Social Sciences

Admiralty University of Nigeria

Email: [ezeprince87@gmail.com](mailto:ezeprince87@gmail.com); prince.eze-intrel@adun.edu.ng;

Phone no: +2347063084464

### **Abstract**

Energy poverty in Nigeria calls for serious concerns as the citizens struggle to survive for weeks, sometimes even months or years without access to electricity supply. Against this background, this paper using Common Ground theory seeks to interrogate the dearth of household energy in Nigeria, and its attendant consequences on household income, health, economy and the environment, within the prism of sustainable development goals. The data collected through secondary sources revealed that Nigeria although rich in natural resources yet faces endemic poverty, including energy poverty. It was also found that there are prospects for renewable energy in Nigeria though there is still a long walk towards a renewable energy transition. As a way forward, it is recommended among other things that, renewable energy systems should be tailored toward solving practical needs, instead of just serving as isolated government projects, which usually are an avenue for corruption and embezzlement of public funds. This can be achieved through community involvement and engagements throughout the process of energy politics. Manpower development, as it concerns renewable energy, needs to be the concern of the government and other relevant agencies as one of the long-term plans for solving the shortage of expertise in renewable energy.

**Keywords:** Energy poverty, Renewable energy, Development.



## **Introduction**

Nigeria's energy predicament is a paradox; a country that is rich in natural resources yet faces endemic poverty, including energy poverty. Available records show that Nigeria's untapped energy reserves are estimated to be about 37 billion barrels of crude oil (Worldometer, 2019), and 206 trillion standard cubic feet of natural gas – the fifth in the world - (DPR, 2021). Additionally, the country is naturally blessed with large bodies of water, coastal lands and vast hinterlands which are prospects for renewable energy such as hydropower, solar and wind farms (Emetere & Akinyemi, 2015; Adewuyi et al., 2020).

Despite these huge outlays of resources and potential for renewables, stand-by generators remain the main power source in Nigeria, as the country has only been able to provide electricity to just over 50 per cent of her citizens, thus, leaving out about 90 million people without electricity (Jeremiah, 2021, World Bank Data, 2021). Worse still, it is reported that 78 per cent of those who have access to electricity still suffer from an epileptic power supply, which, in most cases, is less than 8 hours per day (Newsom, 2012, Nnodim, 2019). There is a frightening supply deficiency in the country's electricity supply. According to Igwemezie (2017), the electricity requirement in the country is about 50,000 megawatts. This, however, dwarfs the epileptic 3,000 – 3,500 megawatts produced in the country. Notwithstanding, what is more, alarming to note is that Nigeria presently exports electricity to several neighbouring countries, including Chad, Niger and Togo, despite her citizens being engulfed in darkness (Asu & Nnodim, 2020, Jeremiah, 2020). It is very common to see populations struggling to survive for weeks (and, sometimes even months or years) without access to electricity supply. Without a doubt, this experience has severe consequences on the livelihoods, health, income and social life of the populations affected.

Nigeria's electric sector was privatized in 2013 by the Federal government in a bid to stem the low energy output from the National Electric Power Authority (NEPA) – a term which has now become synonymous with a power failure in the country. This saw the emergence of 11 distributing companies spread in all the states. However, the results have continued to be abysmal, and Nigerians still cannot tell if there is any significant difference between NEPA and the new companies.



This paper seeks to interrogate the dearth of household energy in Nigeria, the causes and its attendant consequences on household income, health, economy and the environment, within the prism of sustainable development goals. In addition, attempts will be made to explore the progress made towards the transition to modern energy.

### **Background to Energy Poverty in Nigeria**

Energy poverty is a problem not limited to Nigeria; it has become a common feature in Africa, particularly the Sub-Saharan region. According to Lomborg (2016) the entire energy estimate of the totality of sub-Saharan Africa of about 860 million people, excluding South Africa, was said to be 28 Gigawatts. Even with the utilization of dirty energy and unhealthy sources in Africa, it is still very difficult to supply the energy demand of the citizens, industries, corporate organizations, and other entities. In the global rating of energy access, WEO (2016) described Sub-Saharan Africa as an 'electricity-poor' region. It is further argued that more than 620 million citizens are deprived of access to electricity, and do not enjoy the various developmental benefits that energy access has on offer (WEO, 2016b). Additionally, WEO (2016b) argued that 730 million citizens in Africa are left with the only option of using dirty and unhealthy energy sources that threaten man and his environment.

In Nigeria, according to the Rural Electricity Agency (2020), more than 80 million Nigerians are without access to electricity while 60 per cent of the operating cost of businesses, especially Small and Medium Scale Enterprises (SMEs) which are owned in most cases by youths and women are spent on noisy and dirty energy sources and other related unhealthy bio-energy conversion being used also for household purposes like cooking and lighting. This explains why the Doing Business Report (2020) identified access to electricity as one of the greatest challenges for the private sector in Nigeria. According to the World Bank (2020), the economic cost of such a power shortage is estimated at \$29 billion. In reality, this figure is equivalent to 2-3% of the Gross Domestic Product of Nigeria. Most if not all the primary health care centres in Nigeria lack access to steady and reliable electricity to power their equipment and facilities. This also applies to institutions of learning (primary, secondary, and even tertiary). Federal and State civil service secretariats and offices, business ventures, other government agencies, and parastatals are not exempted from this predicament.



In Nigeria today, the citizens, particularly women in rural and urban communities cannot walk freely at night because of darkness resulting from energy poverty. This situation makes it possible for predators to not only harass, abuse, and rape them but also collect their valuables. This is happening despite the huge financial investment in the energy sector. It is not surprising that these investments in the sector have not yielded any positive impact as anyone familiar with the nature and character of the Nigerian State will not be in a hurry to forget that the monster called corruption is a common feature of the State that threatens every sector, making it difficult to achieve any worthwhile developmental goal. Even with the diversification in the energy sector, energy poverty continues to ravage the entire country and threaten socio-economic growth and development.

Obafemi and Ifere (2014) identified reasons for energy poverty in Nigeria. In doing so, they mentioned three factors which are income, energy prices, and efficiency. As regards income, the ability to pay for energy consumed is determined by the income earned by the individual. In a country where the majority of the citizens live below \$1 a day, paying for electricity becomes problematic. It is even more problematic when one manages to pay from available limited resources but gets rewarded with darkness in return. Closely related to this, is the price of the energy, it must also be affordable for those in the lower class to be able to buy and such energy must be efficient and able to service the desired needs. This perhaps informed the decision of these scholars to view energy poverty from the perception of the amount of money per month that an individual spends on energy consumption. Seen from this perspective, there is energy poverty when an individual cannot pay for fuel for powering generating sets, cars, heating, lighting, and so on.

It is from this thinking also that an individual is said to be energy poor when he spends more than 10% of his/her monthly income on providing the energy needs of his household. The use of biomass, firewood, and other unhealthy sources of energy is also described as a testament to being energy-poor. It is however important to mention that the rich, the ruling class, and the privileged, instead of making electricity affordable for all, have disproportionately higher access to energy than the mass of people. With strains currently faced by the energy system in Nigeria, they are still largely catered at the expense of the masses, thereby creating more mass poverty, unemployment, insecurity, and other such characteristics that make the standard of living lower and difficult for the average citizens.



### **Theorizing Energy Poverty in Nigeria: The Common Ground Theoretical Framework**

The common ground theoretical thrust sees energy injustice as arising from a condition of competing demands whereby decisions on energy politics are based on the economic convenience of governments and multinationals. Hence, the theory aims to provide a framework that serves as the common ground for reaching such decisions, which would serve the interests of all parties involved. Developed by Sovacool, Heffron, McCauley, and Goldthau as fallout from their work, "*Energy Decisions Reframed as Justice and Ethical Concerns*", the Common Ground theoretical model diagnosed energy issues as comprising five main problems bordering on social justice and ethics. These problems are energy poverty, nuclear waste, energy pollution, climate change, and involuntary resettlement; all of these are identified as a direct consequence of the lack of aggregation of interests of all stakeholders involved.

Sovacool et al (2016), averred that energy problems persist because of the absence of a common ground model that allows for a beneficial resolution of inherent differences, thereby leaving powerful stakeholders such as governments and multinationals to prey on the weak stakeholders such as rural/host communities, and people in low-income neighbourhoods.

To solve these lingering issues, Sovacool et al. provide a framework predicated on the principles of availability, affordability, due process, transparency and accountability, sustainability, equity of access, intergenerational equity and responsibility (Sovacool, Heffron, McCauley & Goldthau, 2016, Wood & Roelich, 2020). They believe that these principles, as the core elements of this theoretical model, will provide the common ground upon which energy decisions that favour all stakeholders involved would emerge, thereby addressing the five energy problems identified above.

For instance, the problem of energy poverty, as applicable to the Nigerian context, can be addressed with the principles of availability, affordability and intergenerational equity. This means that energy decisions should be made to ensure its availability to all populations involved, not minding the location or region, which entails the elimination of urban bias. More so, the affordability principle will ensure that energy costs are subsidized to allow low-income households to access them, while the intergenerational equity principle brings to the fore the futuristic concerns of energy justice which seek to protect the interest of generations to come. Fundamentally, this theoretical thrust offers a broad spectrum of models that are very relevant in addressing Nigeria's energy issues, as it captures all the nagging issues in the country's energy



discourse, which are large because of poor policy initiatives. First, in addressing Nigeria's energy poverty, one major policy framework that has reinforced this is the urban bias associated with the generation and distribution of electricity in the country. Sovacool et al identified how governments unwittingly prioritize economic gains as the basis for the disproportionate power distribution, which has ultimately resulted in the lack of electricity supply in rural communities and suburbs. Electricity distribution in Nigeria is within the ratio of 1:3, skewed to the advantage of urban centres. The implication of this is that rural communities lack access to the economic opportunities and quality of life enjoyed by their counterparts in urban centres on account of this. In a bid to remedy this age-long systemic deprivation, the Nigerian government has embarked on some projects geared toward rural electrification, however, these have provided little or no results (Newsom, 2012, Monyei, Adewumi, Obolo & Sajou, 2015).

More so, Nigeria's energy discourse has been marred with the issue of forced displacements, as residential and farmlands have been appropriated from communities to house energy infrastructures such as pipelines, oil fields, and other oil installations. In Niger Delta communities, for instance, large outlays of land are being usurped by the government and oil companies for energy infrastructures, thereby further increasing the demands for arable lands which are already in short supply in the coastal regions. This jeopardizes the means of livelihood of the people there and exposes them to other harsh socioeconomic realities that come with displacements (Udoh, 2020, Osahon, 2021,). The same scenario plays out for host communities housing Nigeria's hydropower dams.

Similarly, oil exploration in Nigeria is associated with high levels of wastage (in the form of gas flaring) and oil spillage, both of which result in massive environmental pollution. These translate to the loss of livelihoods of the native populations occasioned by the destruction of the natural environments and ecological imbalances (Ismael & Umukoro, 2012, Ryan, Johanson & Rogers, 2016). Apart from this, gas flaring and environmental pollution expose local populations to severe health conditions. In the main, children are born with birth defects in regions heavily polluted in the Niger Delta, and the life expectancy there is less than 50 years (Sako, 2017, Ogbuagu & Oladejo, 2020), making it one of the lowest in the country. While these factors have relatable consequences at the individual, household and community level, of equal significance are the global effects of combustive pollution and GHG emissions.



All these are a result of the fact that the powerful stakeholders – government and oil multinationals – renege on their responsibility to play by the rules and abide by global best practices, and the governments that should extract accountability from them are part of the oppression and corruption. Decisions around energy politics are made to superimpose on local populations' housing energy infrastructures, rather than following the principles of due process, transparency and inclusiveness. This can be seen in the Land Use Act of 1979, the Petroleum Act and the recently signed Petroleum Industrial Bill, all designed to subjugate local populations, dispossess them of their lands, and alienate them from the proceeds the resources generate, while also destroying the environment through pollution, gas flaring and environmental degradation (EPA, 1999, Ismael & Umukoro, 2012, Abumoghli & Goncalves, 2020, Naibbi, Chindo & Murtala, 2020,

### **Energy Crisis & the Challenges of Development**

Energy is an important resource, as every human activity needs one form of energy or another. It is either used in the household for daily recurrent needs such as cooking, lighting, and heating, or it is used for essential services in industries, health centres, schools, and other institutions, it could also be used for income generation, as it remains one of the avenues through which citizens are gainfully employed. For whatever purpose for which it may be utilized, what is constant and indispensable is its usage in day-to-day activities and in everyday life. Despite the importance of energy in development, and as a catalyst for socio-economic growth, Nigeria has continued to top the list of countries with poor energy supply. This is happening even with the abundance of natural resources and oil wealth; the energy crisis among other things explains why Nigeria is currently the poverty capital of the world, as no country can experience rapid social and economic transformation without developing her energy sector, as energy sufficiency is driving force for growth and development.

Whichever perspective development is viewed; whether the idea of development is conceived from the perspective of growth indices of per capita income, Gross National Product (GNP), Gross Domestic Product (GDP), or growth in physical infrastructure as advanced by scholars of liberal orientation or it is considered from the perspective of the fulfilment of human potentials and improvement of the social and economic well-being of a people as advocated by Rodney and other Marxian Scholars, energy sufficiency is an indispensable asset needed to achieve any meaningful development in the society. It is argued that even the achievement of other goals in the United





Nations Sustainable Development Goals (SDGs) will become difficult if not impossible without first and foremost achieving the goal of affordable and clean energy (Rodney, 1972).

In line with this thought, elements of underdevelopment such as an increase in unemployment, low production, widespread poverty, economic crisis, slow rate of economic growth, inflation, scarcity of skilled manpower and capital, poor managerial and entrepreneurial skills, malnutrition, diseases, illiteracy, shantytown, lack of infrastructure, poor health care services, hunger, lack of good health and well-being, gender disparity, lack of decent work and economic growth, increase inequality, lack of sustainable cities and communities, lack of responsible consumption and production and other such characteristics associated with underdeveloped countries like Nigeria are linked to lack of energy sufficiency.

Oyedepo 2012, Pietrosemoli and Rodriguez-Monroy 2019 Shaikh et al., 2017 are among the researchers who identified the important relationship between energy sufficiency and social and economic transformation in their works. They argued that energy is not optional for any country that thinks of achieving development. It is therefore not surprising that countries with energy sufficiency are enjoying greater economic prosperity and development while countries with energy deficiency remain underdeveloped and relatively poor. This interdependence and interconnection account for the underdevelopment narrative associated with the Nigerian State and other countries in Sub-Sahara Africa bedevilled by energy poverty. Taking Nigeria as a case in point, there is slow economic growth and prosperity, because of energy poverty.

### **Energy Crisis, Health, and Environment**

The environment is critical for man and other living organisms, as their continuous existence, safety and health are dependent on the environment. The environment provides the basic needs of all living organisms including man. Food, shelter, clothing, and other forms of nourishment are usually provided by the environment. According to Nigeria Environmental Impact Assessment Act, the environment comprises “the components of the earth and includes land, water, and air, including all layers of the atmosphere, all organic and inorganic matter and living organisms, and the interacting natural systems ...” Implicit in this explanation is the fact that the environment plays a vital role in healthy living and ensuring our continuous survival on planet earth, this is because the health of the environment determines the health of a nation. The citizens are at risk when they live in a nation with a compromised environment. It is, therefore, our collective





responsibility to keep the environment safe and protect it from all forms of harm. When unhealthy and dirty sources are utilized as an alternative to energy supply, it becomes imperative to ask: What becomes of the environment? Will the environment be safe and healthy under such conditions? What will be the implications for the health of man as well as, other living organisms when the health of the environment is compromised? The lack of affordable and clean energy has led to the utilization of dirty and unhealthy energy sources and this has serious implications for man and the environment.

Obafemi & Ifere (2014) identified health risks as one of the consequences of dirty energy usage in Nigeria. The scholars (Lelieveld et al., 2018, Jerneck and Olsson, 2013, Fullerton et al., 2008) underscored the dangerous effects of indoor pollution arising from the use of dirty energy such as cow dung and firewood. It is difficult to deny that the use of dirty energy causes harm to man & his environment. Apart from the fact that dirty energy increases the danger posed by the climate such as intensification of flooding, weakening agriculture, regular drought, etc. It also causes health-related problems. Air and water pollution, asthma, bronchitis, emphysema, lung cancer, blood disorder, respiratory and cardiovascular disease, etc are some of the health risks associated with the use of dirty energy (Adyani & Waller, 2015). The environment is also not safe from these threats. The harm posed by dirty energy usage to the environment includes soil degradation, ozone layer depletion, acid rain, indiscriminate waste disposal, global warming, nitrogen cycle, etc. It is also important to mention that the use of dirty energy has also caused a social and humanitarian crisis. For instance, coal mining for energy usually leads to the emission of CO<sub>2</sub> which in most cases makes the community unsafe for people to live and work. Community members are being displaced, and sources of livelihood are destroyed, thereby creating unemployment, social problems, and other humanitarian concerns.

It is even more worrisome to discover that children and women are usually the most impacted victims of dirty energy usage. According to a report published by the World Health Organization, 4 million deaths per year usually occur from indoor air pollution and it is caused by solid fuels, and half of these deaths are children who are below the age of five years (WHO, 2020). Children are the leaders of tomorrow and women are nation builders. These people occupy important places in society as they serve as veritable tools in engineering development and nation-building, hence, a reference to posterity. Their lives and those of others must not be threatened by dirty energy usage. Clean and affordable energy must be embraced, and the lives and properties of citizens



must be protected at all costs, as this function remains the primary responsibility of the government. The right to basic energy supply and to live in a clean environment free from unhealthy energy usage must be included as a fundamental right, energy supply, and environmental rights are needed to enjoy other fundamental human rights enshrined in the constitution and protected by law.

### **Conclusion/Recommendation**

The energy transition is at the heart of global, regional, and national developmental issues, and just like every other critical developmental index, less developed nations like Nigeria are playing catch-up. From historical records, transitions to modern energy usually happen over a prolonged period. The development of the NREEEP was greeted with a lot of fanfare and optimism (Okafor, et 2021, Esan et al., 2021). However, the truth remains that Nigeria is still lagging behind the renewable energy revolution. With the government glaringly interested in further search for potential oil deposits, it will not be out of place to state that the Nigerian state is not sincere in its push for sustainable energy transition, despite the plethora of policy frameworks they have developed in this regard. From the foregoing, it is evident that there is an abundance of legal and regulatory frameworks capable of instigating rapid progress in renewables, thereby steering the country towards sustainable energy goals. However, there is a lack of willpower on the part of leadership to make this happen (Anyagou, 2020). The recently debated Petroleum Industry Bill is a testament to this assertion. The bill contains a provision that allows the government to use 35 per cent of oil proceeds to invest in further exploration of potential oil fields in some "frontier states", suspected to have some oil. As expected, this bill has been accompanied by hot debates, opposition and criticisms from rights groups, communities and sections of the country (Elumoye, 2021, Emenyonu, 2021). Nigeria still has a long walk toward a renewable energy transition. As a way forward, it is recommended among other things that, renewable energy systems should be tailored toward solving practical needs, instead of just serving as isolated government projects, which usually are an avenue for corruption and embezzlement of public funds. This can be achieved through community involvement and engagements throughout the process of energy politics. Manpower development, as it concerns renewable energy, needs to be the concern of the government and other relevant agencies as one of the long-term plans for solving the shortage of expertise in renewable energy. There is a need for more funded research on renewable energy development. This will help in providing the technical framework for renewable energy exploration and development in Nigeria.



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