

## Renewable Energy: An Authentic Instrument Aimed at Extenuating Youth Unemployment in Nigeria

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### ABSTRACT

The menace of unemployment among Nigerian youths cannot be procrastinated. The momentous social, economic, ethnic, religious problems attached with this ugly development has injured the doppelganger of the country in the comity of nations. The current global scenario warrants immediate and effective action towards climate change mitigation and achieving the sustainable development goals. The links between shielding the global environment while providing employment opportunities to the youth is critical in encouraging sustainable development in the twenty-first century. Therefore, it is a necessity to train the teeming youth in the development of renewable energy businesses. Notwithstanding energy needs are among the most basic needs of communities both rural and urban in Nigerian stance and the availability of adequate energy can act as the driving force behind the transition from a developing economy to a developed one. Renewable energy being one of the most auspicious opportunities for combining the goals of youth employment and sustainable development. Renewable energy will provide abundant economic benefits to the youths which will promote the improvement of the standard of living of the entire country.

**Keywords:** Renewable Energy, Sustainable Development, Unemployment, Climate Change, Youth

### INTRODUCTION

Vibrant, creative, and energetic – these words essentially sum up today's youth. Ironically, the same qualities in youth, if thwarted, lead to social unrest, conflict, and economic instability. Young people when productively employed are an asset to their communities and to the world which provides evidence that there is actually an urgent need to innovative volunteerism.

Renewable energy is energy that is collected from renewable resources, which are naturally replenished on a human timescale, such as sunlight, wind, rain, tides, waves, and geothermal heat (Omar *et. al.* 2014). Renewable energy often provides energy in four important areas: electricity generation, air and water heating/cooling, transportation, and rural (off-grid) energy services (REN21, 2010).

Renewable energy can be defined initially as any energy source that is derived directly or indirectly from solar energy. In the broadest sense, however, almost all of the energy we use today, including fossil fuels, can be considered a

form of solar energy. The most familiar forms of energy, such as wood, oil, gas, and coal, are embodied forms of solar energy gathered, stored, and transformed by natural processes.

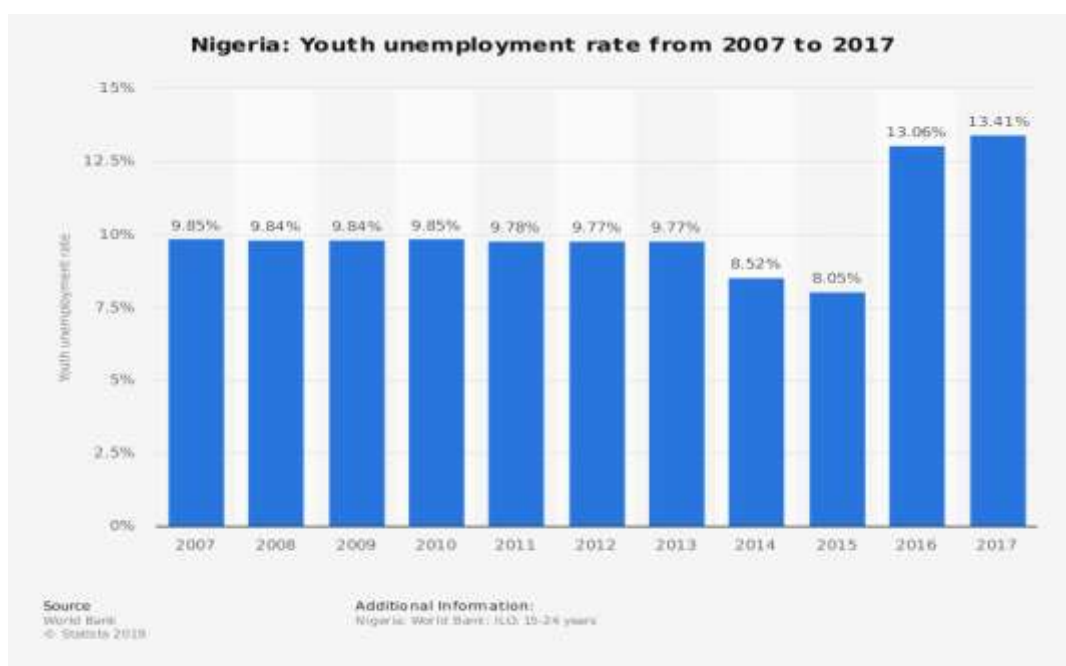
Climate change due to emissions of GHGs, particularly CO<sub>2</sub>, becomes an issue when stored solar energy is converted to useable forms of energy (heat, electricity, fuels, chemicals) at a rate far exceeding the rate of formation. For coal, oil, and natural gas, the ratio of time between formation and use is on the order of 1 million to one: that is, the world uses in one year what took natural processes one million years to create. Only biomass among these stored forms has a time ratio that is within a human time frame of years or decades. Renewable energy can now be defined as forms of solar energy that are available and replenished in time scales no longer than human lifetimes.

Given this definition of renewable energy, it becomes clearer why renewable energy is an important option for mitigating climate change. Because renewable energy creates little if any net greenhouse gas emissions, its use will not

disrupt the radioactive energy balance of the earth's atmosphere and will permit sustainable, long-term mitigation of climate change. The renewable energy option will allow climate change mitigation, energy use, and economic development to proceed in synergy rather than in opposition. Unemployment or joblessness is a situation in which able-bodied people who are looking for a job cannot find a job (Mc Gaughey, 2018). A high level of unemployment and underemployment is one of the critical socio-economic problems facing Nigeria (Aiyedogbon and Ohwofasa, 2012). With an estimated population of 180 million, Nigeria is the seventh most populous country in the world (Worldometers, 2015). Nigeria is the eighth largest oil producing country in the world, but it has the largest population of poor and unemployed people in sub-Saharan Africa and is ranked 158th on the human development index. There is general high-income inequality, which has perpetuated the concentration of wealth of the nation in the hands of a few individuals (ActionAid Nigeria, 2009). Unemployment, which occurs when a person who is actively searching for employment is unable to find work (Investopedia, 2015a), as classified by economist, could be frictional, structural or cyclical (Duijlo, 2004). Of these three types, the most prominent among Nigerian youth are frictional and structural unemployment. Unemployment has become a major problem bedeviling the lives of Nigerian youth causing frustration, dejection and dependency on family members and friends (Ajufo, 2013). The high

prevalence of unemployment among Nigerian youth have also increased their criminal tendencies, of which militancy, arson, armed robbery, prostitution and kidnapping are almost becoming the order of the day. Youths occupy a prominent place in any society. They are one of the greatest assets any nation can have. Apart from being the leaders of tomorrow, they outnumber the middle aged and the aged (Onyekpe, 2007; Ajufo, 2013).

The National Youth Policy defines youth as a Nigerian citizen between the ages of 18 – 35 years (NBS, 2012). It is worthy of note that the population of Nigerians below the age of 35 years comprises 60 per cent of the entire population of the country (NBS, 2012). In Nigeria, it is reported that youth unemployment is as high as 50%. Also, in the third quarter of 2016, it is 59.9% of Nigerians in the labour force aged 15-24 years were, either unemployed or underemployed. Due to the general belief that the Nigerian unemployment figure is underreported, the figure of unemployment and underemployment could be as high as 65% (Doreo Partner, 2015; NBS, 2017). A report from the National Bureau of Statistics (NBS) iterated that the number of unemployed Nigerians rose by 3.3 million to 20.9 million in the third quarter of 2018 (Q3'18). Also, Figure 1 shows that the percentages of unemployment rate in Nigeria from 2007 to 2017 which shows that 13.41% are employed which is recorded as the highest unemployment rate in a decade (i.e from 2007-2017).



**Figure 1.** Nigeria Youth Unemployment Rate from 2007-2017 (World Bank, 2019)

The following are identified among others as the major causes of high rate of youth unemployment in Nigeria, especially in rural areas; population growth, lack of employable skills, mismatch between skills and available job, poor governance, epileptic electric power supply, neglect of agriculture and other natural resources, tribalism and nepotism, ignorance, lack of quality education, preoccupation with political ambition, retirement policies, lack of establishment expansion, unfavorable environment for entrepreneurship, undeveloped government sectors, closed industrial sector, ghost workers, religious sentiments, and lack of sustainable measures have been identified as some of the factors responsible for high rate of youth unemployment in Nigeria (Musari, 2009; Agufo, 2013; Nigerian Finder, 2015, Olawale, 2018, Eskay 2018). Of all these factors, lack of regular electric power supply is the biggest cause of unemployment in Nigeria. According to Olawale (2018), for the average Nigerian youth that wants to venture into entrepreneurship, constant sources of power supply is essential for most businesses, the current situation of little or no power supply is detrimental to the development of small and medium scale enterprises (SMEs), hence such businesses fold up and unemployment sets in. For a country like Nigeria with abundant natural resources and manpower, this has caused set back to Nigeria as far as foreign investment is concerned because according to Nigerian Finder (2015), many foreign investors have jettisoned the country for neighboring countries with regular supply of electricity. This does not augur well for the country considering her quest to be among the top twenty largest economies in the world. Renewable energy is one opportunity that is waiting to be harnessed in order for Nigeria to overcome its high rate of youth unemployment and other economy challenges.

### Status of Renewable Energy in Nigeria

The economic development of modern societies is crucially dependent on energy. Energy is vital for sustainable development. It is used to generate electricity for a variety of needs, among which are domestic needs, transport needs, and industrial needs. The methods of production, supply and consumption of energy are key issues in sustainable development because they strongly affect the local and global environment. However, the current methods of energy production are primarily by the use of fossil fuels. These fossil fuels are largely responsible for global warming and the

greenhouse effect, as they are accompanied by huge emissions of carbon dioxide and other greenhouse gases into the atmosphere. These methods of production are not sustainable in the long run and therefore do not contribute to sustainable development.

Renewable energy has not experienced much development in Nigeria despite its long existence in Nigeria's energy sector. 21.55% of the country's energy generation is from renewable energy (Wikipedia, 2015). Nigeria's primary energy consumption was about 108 Mtoe in 2011 (USEIA, 2019). Most of the energy comes from traditional biomass and waste, which account for 83% of total primary production. The rest is from fossil fuels (16%) and hydropower (1%) (USEIA, 2019). Nigeria has oil reserves of about 35 billion barrels ( $5.6 \times 10^9$  m<sup>3</sup>) and gas reserves of about 5 trillion cubic metres, ranking 10th and 9th in the world, respectively. Global production in 2009 reached 29 billion barrels ( $4.6 \times 10^9$  m<sup>3</sup>) of oil and 3 trillion cubic meters of natural gas (USEIA, 2019). Nigeria is a member of the Organization of the Petroleum Exporting Countries. However, Adebayo (2014) asserted that, today, wind power is not used in Nigeria for electricity production. And this wind energy is an outstanding source of energy. This implies that the status of renewable energy use and consumption is below standard of expectation and thus, there is need for robust participation of both public and private sectors in renewable energy generation which will provide abundant employment opportunities for the teeming youths and sustainable environment, production and consumption towards achieving the sustainable development goals.

### Renewable Energy and Youth Unemployment

Renewable energy has a demonstrated job creation effect. For example, energy created through solar photovoltaic cells, landfill gas, or biomass plants have a higher number of jobs created per unit of energy produced than energy produced through conventional sources. The positive job creation effect of renewable energy is a result of longer and more diverse supply chains, higher labor intensity, and increased net profit margins. Jobs in renewable energy can be created directly and indirectly along the entire value chain, including in the manufacturing and distribution of equipment; the production of inputs such as chemicals; or even in services like project management, installation, operation, and maintenance. Those working in the

agricultural sector, particularly women and the youth, can benefit from job increases in the harvesting of feedstock and other biomass. Improved energy supply through renewable sources can also contribute to the expansion of existing economic activities in other sectors. Jobs created through renewable energy production furthermore carry the benefit of less hazardous working conditions. Employment in renewable energy can mean new opportunities to enter into innovative dialogue arrangements between workers and employers, increasing the quality of jobs when compared to traditional energy sectors. This not only means more jobs, but better and decent jobs. Of course, as the demand for energy from renewable sources increases, it is expected that there will be a decrease in demand for oil, coal, and gas. However, recent studies show that renewable energy projects can offset job losses from a decline in extractive industries and can in turn create a net employment gain (ILO, 2019).

Renewable energy is a means to combine the goals of youth employment (therefore income generation) and environmental protection, thereby contributing to sustainable development. One method to implement this potential link between youth employment and environmental protection is to develop youth-led enterprises to produce and market renewable energy to off-grid consumers. Youth-led renewable energy enterprises are a viable means of achieving sustainable development, as they promote technologies that are less harmful to the global environs (as compared to conventional technologies), while at the same time providing sustainable income-generating opportunities for youth (Youth Employment & Livelihoods, 2002).

Tapping the energy of youth for promoting renewable energy will have a three-fold effect.

- It will release new energy in accomplishing many of the goals set by the global community for climate change
- It will move young people into productive and long-term nation building activities, away from non-productive pursuits
- It will direct youth to income generating activities in this sector.

Opportunities for youth in the renewable energy sector can be generated by government institutions, non-government institutions, and the private sector or can be purely self-

employment. Several governments and organizations have identified ways and means of conserving and preserving renewable sources of energy.

Expected job opportunities in renewable energy lie in the following areas:

- Design and Planning,
- Energy Policy Analysis and Development,
- Energy Economics and Energy Management,
- Energy Efficiency Consulting,
- Assessment of Social and Environmental Impacts of Energy Systems,
- Research and Development

With the above opportunities provided by the renewable energy sector, the rate of unemployment in Nigeria will be reduced to the bare rest minimum and hence mitigating the rate of thuggery, rubbery, kidnappings, drug abuse among other societal vices which are as a result of unemployment among youths.

### Future Prospects

Nigeria is only able to supply power to half of its population of 198 million (Gerretsen, 2018). Currently, Nigeria generates a small amount of energy from renewable sources such as hydro power, solar, wind and biomass (Aliyu et, al. 2018). In 2005, the Energy Commission of Nigeria developed the Renewable Energy Master Plan (REMP), which suggests ideas for renewable energy policies, as well as possible technologies that can be used to fulfill their goals.[22] They are targeting to expand their energy access to 90 percent of the population by 2030 and 30 percent of their total generation to be from renewable sources (Gerretsen, 2018).

Due to its geographic location near the equator, Nigeria has the potential to generate most of its energy through solar (Aliyu et, al. 2015). Most of the big cities in Nigeria (Lagos, Abuja, Benin City, Port Harcourt, Kaduna and Kano) now power their street lighting with solar energy through state beautification projects (Ojo, 2013). Low Energy Designs, a firm from the United Kingdom, was contracted to build solar powered street lights across Nigeria (Andiva, 2018). This twelve-month project is expected to cover about 300 km and cost about 7 million U.S. dollars. In addition, the World Bank has lent Nigeria about 350 million to build a solar power grid by 2023 that will help generate power for



hospitals, rural areas, schools and households (Gerretsen, 2018).

In February 2018, Nigeria completed the Renewable Energy and Energy Efficiency Project, which supplies about 261,938 citizens with clean renewable energy (USAID, 2018). This project was in partnership with USAID, private donors, government agencies, financial institutions and non-governmental organizations (USAID, 2018). The goal of the project was to build connections to 2.5 MW of power through off and on grid sources, which will reduce carbon dioxide emissions by 4.5 million metric tons (USAID, 2018).

Nigeria has secured financial support from Chinese lenders to start construction on their Hydro-electric plant in Mambilla (Vanguard News Nigeria, 2018). The idea to create this project was originally proposed in 1972 and is finally ready to be put into action over 45 years later (Wakili, 2017). Chinese lenders are providing 85% of the total 5.8 billion dollar project and Nigerian government will provide the rest of the funding (Mongalvy et al., 2018). The 3,050 megawatt power plant is expect to take five years to build (Mongalvy et al., 2018). The project will create four dams that measure about 50 meters in width and 150 meters in height.

According to Adeyanju, Ayelegun and Oyedele (2018) Renewable energy is an effective tool for tackling youth unemployment in Nigeria. With due attention and commitment by all concerned, renewable energy will be creating over a million jobs in no distance future. This will therefore make socio-economic problems associated with youth unemployment will be reduced to the barest minimum.

### CONCLUSION

The current global scenario warrants immediate and effective action towards climate change mitigation and achieving the sustainable development goals. The need for a synchronization of activities to ensure a simultaneous tactic to youth employment and environmental sustainability cannot be overemphasized. The links between shielding the global environment while providing employment opportunities to the youth is critical in encouraging sustainable development in the twenty-first century. Therefore, it is a necessity to train the teeming youth in the development of renewable energy businesses. Notwithstanding energy needs are among the most basic needs of communities both rural and urban in Nigerian

stance and the availability of adequate energy can act as the driving force behind the transition from a developing economy to a developed one. Renewable energy being one of the most auspicious opportunities for combining the goals of youth employment and sustainable development.

Renewable energy will provide abundant economic benefits to the youths which will promote the improvement of the standard of living of the entire country.

### RECOMMENDATIONS

- Nigeria needs to conduct outstanding research in the renewable energy sector and analyzing the achievements of developed countries in that scenario. This will further help in avoiding some of the unnecessary pitfalls and provision of sustainable energy.
- Commitment in the renewable energy sector is necessary. Reviewing existing policies on renewable energy with immediate implementation of such policies which will provide job opportunities to the youth and Nigerians as a whole.
- Nigeria is a country with biomass and bio-energy potential compared to other forms of renewable energy, the need for bioenergy technology is essential by the government, providing funding for sustainable and renewable energy research and development which will promote the liberation of the country economy from the shackles of poor power and youth unemployment.
- There is need for a synergy between the public and private sector because the success of renewable energy depends on the cooperation of all. Hence, it has become imperative for the government to publicize the renewable energy policies so that everyone will know what it is expected of them so as to be able to derive the opportunities inherent in them (Adeyanju et al., 2018).

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