EmPower Nigeria

Improving Nigeria's electricity supply industry through public education

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Nextier Power is a consulting firm that provides policy advisory, investment advisory, and support services to the electricity supply industry. The firm aims to use this weekly publication to educate Nigerians on the intricacies of the Nigeria electricity supply industry on the assumption that a more informed public would advocate for the right policies and programmes which, in turn, would lead to a robust market that delivers the electricity needs of Nigerians. This column will cover everything from the basics of the industry to the more intricate, sometimes, complex policies and programmes.

Practical steps to Achieving Renewable Energy Target

Introduction

Nigeria is endowed with oil and natural resources but has grappled with providing adequate electricity supply throughout history. The country generates less than 5,000 megawatts (MW) for a population of over 180 million people and there are often complaints of power outage despite privatising the power sector four years ago. Nigeria electricity generation still lingers around 28,000MWH to 30,000MWH since privatization.

To improve the situation, Nigeria has set a target to achieving 45% of its electricity generation from Renewable Energy (RE) sources. This corresponds with the Climate Change agenda being adopted by developed nations.

RE sources comprise of electricity generated through solar panels; wind propelled turbines, biomass, geothermal energy and using hydro resources. These are said to be clean, efficient and reliable. Though Nigeria seems far off, its strategies contains opportunities to key into a robust renewable energy drive. Countries in Europe, Asia and the United States are setting targets to phase out combustion-based automobiles (those using petrol).

Last weekend, Germany said it could pay electricity users for taking more power because it had expected excess generation triggered by 39,370 MW of wind power forecast.

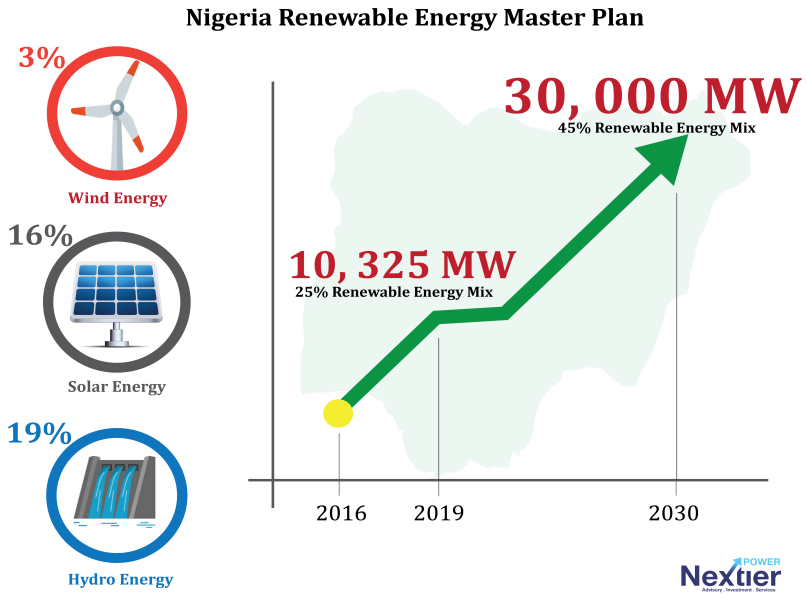
Nigeria Renewable Energy Master Plan

In an apparent move to correct this over concentration on gas, the Federal Ministry of Power, Works and Housing in July 2016, launched a robust energy mix roadmap contained in the document tagged: 'The Nigerian Power Sector Investment Opportunities and Guidelines'.

The guide which is the first of its kind for the power sector, seeks to diversify the electricity grid by 2019. It is expected that by then, Nigeria would have attained 10,325MW of electricity, and attained 30,000MW by 2030. The document contains the actual renewable energy target of 45 percent attainment for Nigeria by year 2030.

If the projection for 2030 becomes reality, it will no doubt solve issues of current overdependence on gas-to-power which currently accounts for 86% of electricity generation on the national grid, with Large Hydro Power (LHP) contributing only 14%. Achieving this target requires strict adherence to the guidelines.

In 2015, Nigeria delved into lighting up rural areas not connected to the national grid with solar photo voltaic (pv) technology. Through a programme tagged,



'Operation Light up Rural Nigeria (OLRN)', solar pilot projects were done in Durumi, Waru and Shape rural areas within the Federal Capital Territory (FCT).

However, a breakdown of the energy target in the investment guide shows that by 2019 and at 10,325MW power, renewable energy contribution should have risen to about 25 percent. Solar power is expected to contribute 10 percent, 12 percent is expected from Large Hydro Power (LHP), two per cent from Small Hydro Power (SHP), and one per cent from Coal-to-power.

The guide which supports huge private sector investments by 2030, targets an energy mix of 45% gas-to-power. The renewable energy sources would include 16% of solar, 15% of Large Hydro Power (LHP), and 4% from coal-to-power. Other renewable sources are 4 per cent Small Hydro Power (SHP), 4 per cent from Biomass, and 3 per cent from wind.

A study by the German GiZ identified 47,489 population clusters. Of these, approximately 34,446 of the clusters having 57.1million people could have access to grid power by grid extension while the other 13,043 clusters of 116.9m be electrified with renewable energy sources. 7,210 clusters with a population of 2.8m people mostly in rural and off-grid areas were recommended for electrification using Solar Home System (SHS).

Renewable Energy Strategy and Implementation Plan (RESIP)

The RESIP plan gives substantial consideration to mini grid and off grid solutions to light up unserved rural communities across Nigeria. Its primary objective is to expand access to electricity as rapidly as possible in a cost-effective manner. In addition to addressing the immediate need for power, mini-grids can be an important step towards eventual interconnection to the grid by building upload and willingness to pay for electricity service, thus improving the viability of grid extension to a given locality.

Identifying the Gap

With over 80 million Nigerians without access to power from the national grid, there are many opportunities to light up these communities them via renewable energy sources.

Although the RE target applied so both grid and off-grid electrification, a significant step made to diversify grid electricity by the FG was the signing of about 14 Power Purchase Agreements (PPA) on solar-based power plants with the Nigeria Bulk Electricity Trading Plc (NBET) in 2016.

The construction of the plants worth over $1.75 billion would begin as soon as the financial close is reached and would be taking about 18 months to get them on the grid. Situated across Katsina, Bauchi, Nasarawa, Kaduna and the FCT, the plants are expected to add 1,125MW electricity to the grid just from solar.

Following these, the Nigeria Electricity Regulatory Commission (NERC) has also developed a Feed-In Tariff (FIT) for solar-based electricity just as it is for present grid generation under the Multi Year Tariff Order (MYTO) 2015. The new Mini Grid Regulation by NERC now allows more investments in small and medium renewable energy projects across industrial clusters and communities.

Policy Making

Tax: Part of FG support for renewable energy sources is to remove taxes or grant tax waivers on the importation of renewable energy equipment. This is seen as a huge incentive along with a solar energy tariff and the mini grid regulation for private investment to thrive. Such incentives are encouraging some current investors in the sector to execute solar projects. For example, Mainstream Energy Solutions Limited (MESL) is one of such, planning a 350MW solar generation.

Financing: is vital for renewable projects. Deliberate policies of the FG are required to lower interest rates, and enhance access to foreign exchange, as most of the equipment need to be imported until Nigeria develops a robust capacity to locally manufacture components.

Renewable Energy Bank (REB): There is a need to create a REB to encourage knowledge sharing and data sharing to encourage this segment to grow quickly. This is because the power sector is the centre of economic development for any country globally. It is on record that once we can fix the Nigerian power sector, our Gross Domestic Product (GDP) cannot be equaled in the African continent.

Risk to Achieving the RE Targets

To achieve the 45% energy mix target by 2030, it is important that all relevant stakeholders remain committed to their roles as envisaged by the RE Master Plan.

Fluctuation of macroeconomic variables such as interest rates, the forex earnings from crude oil sales etc. continues to risk the achievement of the RE target.

Conclusion

Over dependence on gas for electricity has caused more outages in times of vandalism, hence developing alternative solutions is best.

Equally, rather than seeking huge and time consuming investments in building more gas-fired power plants, government must encourage private investors to raise solar, wind and other renewable energy power plants that takes less than 24 months to construct, and have zero impact on the environment. These steps will also catalysing industrial and economic activities across states and places in Nigeria.

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