

# Changing the renewable landscape in West Africa

For the better part of the last decade, West Africa has been identified as a region with unparalleled potential for renewable energy. According to World Bank statistics from 2014, many West African nations remain painfully underserved with regard to energy security: in Burkina Faso, less than 20 % of the population has access to electricity; in Niger, less than 15 % of the population is served with reliable electricity. A recent BreakBulk report stated that more than half of West Africans have no access to electricity.



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These figures come in spite of the fact that West African nations sit atop a wealth of natural resources. Initiatives like IRENA's West Africa Clean Energy Corridor have identified multiple options for clean energy to supplement the region's future energy needs. Hydro, solar, wind and biomass are all useful resources that could bridge the gap in an area rife with potential for innovative thinking.

Recognising the pressing need for electricity in underserved West African populations as well as the unparalleled opportunities for growth throughout the region, many entrepreneurs, investors and initiatives have moved forward with projects that could bring an end to the darkness of West Africa.

## Africa Renewable Energy Initiative

Established in 2015 by the European Union and a consortium of African institutions, the Africa Renewable Energy Initiative (AREI) has attracted considerable pledges from foreign donors and is widely supported both on the African continent and throughout the world. As the AREI moves from its founding and planning stages to actual implementation, multiple projects in West Africa have been identified for investment support.

Three West African nations will develop major solar plants with AREI assistance. In Benin, where less than 40 % of the population has access to electricity, a 25-megawatt solar plant will offer a new renewable energy source. Niger will benefit from a new 30-megawatt solar power plant, and Nigeria will develop a 100-megawatt solar power plant - the Bauchi solar project. Supported as part of a 256-million Euro grant from the European Commission, these projects are expected to be developed and completed with remarkable speed.

## Nzema Project

Currently under construction in Western Ghana, the Nzema Solar Power Station will be the largest installation of its kind in Africa. Based on 630,000 solar photovoltaic modules, the Nzema Project will increase Ghana's electricity generating capacity by 6 % and bring clean energy to nearly 100,000 homes.

Led by Blue Energy Group, a British renewable energy firm, the Nzema Project is a vital component of the Ghanaian government's plan to generate 10 % of its energy from renewable resources by 2020. When completed, the Nzema Solar Power Station will provide 20% of the power necessary to meet government targets.

## **Project Cabeólica**

While Cabo Verde is one of West Africa's energy success stories, with more than 90 % of its population served with electricity access as of 2014, there remains work to be done to solidify the country's energy security and pivot towards renewable resources. The Cabeólica wind farm represents the island nation's most ambitious effort to supplement its energy supply. The 155-megawatt Cabeólica wind farm began generating electricity in 2011 and supplies more than 20 % of the country's energy needs. Spread out over four islands of the nation's archipelago, the wind farm consists of four substations and 30 V52 turbines. According to statistics from the project's lead investor, the Africa Finance Corporation, energy produced by the Cabeólica wind farm saves an estimated \$12 million per year in expensive imported fuels.

## **Taiba Ndiaye Wind Project**

Project Cabeólica in Senegal could serve as a vision for the future of the country. Senegal is a West African nation with roughly 40 % of its population unable to access electricity. The Taiba Ndiaye Wind Project, led by investors Lekela Power, will be a 158-megawatt wind farm with 40 turbines. Offering a low-cost, renewable resource to serve Senegal's energy needs, the Taiba Ndiaye Wind Project is expected to become a crucial component of the country's security and economic growth.

As more African nations transition from reliance on fossil fuels for their energy needs, the renewable energy market continues to grow in potential. Government initiatives and the development of the skills and infrastructure necessary to complete large energy projects have made West Africa an attractive area for investment; projects like Cabo Verde's Cabeólica wind farm demonstrate the results that can be achieved with a combination of big ideas and skilled execution.