

Global Renewable Energy Sources and its Potential in West Africa

Africa is gifted with biomass resources which can be used sustainably to produce fuels to solve most of its energy problems, Fabrice Adjakly writes...

LOMé, TOGO, August 24, 2020 /EINPresswire.com/ -- Renewable energy sources make up 26% of the world's electricity today, but according to the International Energy Agency (IEA) its share is expected to reach 30% by 2024. The report predicts that by 2024, the world's solar capacity will almost double. Before we go in-depth, the below are the key sources of renewable energy.

- Solar Energy
- Wind Energy
- Biomass Energy
- Geothermal energy
- Marine Energy
- Hydro Energy

Tidal Energy is also considered to be one of the renewable sources, but the return on investment and the predictability of the tides makes it less attractive, however in some parts of the world tidal energy is tapped to its best.

The top three future sources of energy are solar, wind and biomass energy. One may be surprised to see why hydro energy has gone down the list. The reasons are environmental side-effects which are caused by storing water in a large landmass. This includes extinction of tropical animals and imbalance in flora and fauna, landslides etc. Let us have a quick look into the top three future sources of energy and its forecast in the [west African](#) region.

West African Solar Opportunities

As the deployment of solar energy continues its onward march around the globe, one region that is quietly eyeing up the opportunities is West Africa. With the GDP growth in a number of West African countries now surpassing many of their western counterparts, the demand for electricity is on the increase.

West Africa has abundant solar energy potential, averaging from 4 to 6.5 KW/m², making this form of energy generation a future promise to meet the region's growing appetite for affordable

power.

In terms of an abundance of resources, countries like Mali, Senegal, Cape Verde Islands, Niger, [Togo](#), Burkina Faso, Nigeria and Côte d'Ivoire are on the frontline. Promises to the next generation includes the contribution to communities like the Benin Electric Community (Communauté Electrique du Bénin in Togo - CEB) established in 1980s as a result of an agreement between Togo and Benin with the mission of producing and transporting electrical energy in the region.

Wind Energy Expansion in the sub-Saharan Africa

Onshore wind capacity is expected to expand by 57% to 850 GW by 2024. Annual onshore wind additions will be led by the US and China, owing to a development rush and a policy transition. Expansion will accelerate in the EU as competitive auctions continue to keep costs relatively low. These auctions will mean that growth in Latin America, the MENA region, Eurasia and sub-Saharan Africa will remain stable over the forecast period.

Nevertheless, annual additions are expected to expand in sub-Saharan Africa and in the ASEAN region as untapped potential is used to meet rising power demand.

Biomass Potentials in Africa

Biomass is obtained from plants that use sunlight to grow which include plant and animal material such as wood from forests, material left over from agricultural and forestry processes and organic industrial, human and animal wastes. Biomass can generate electricity in a number of ways, but the most common is combustion which is by burning agricultural waste or woody materials to heat water and produce steam, which spins the turbines.

Biomass comes from a variety of sources which includes but no limited to:

- Agricultural residues such as straw, stover, cane trash and green agricultural wastes
- Agro-industrial wastes, such as sugarcane bagasse and rice husk
- Animal and human wastes
- Industrial wastes, such as black liquor from paper manufacturing
- Sewage
- Municipal solid wastes
- Food processing wastes

Traditional biomass is an important energy source in West African countries including Togo with the biomass potential estimated to soar high in the coming years. Charcoal and biogas production have been increasing over the past years. In order to beef-up the production in the region more foreign investment is needed to expand its usage. In my next article we will analyse the challenges and barriers of renewable energy production in Africa.

I look forward to more ideas and topics from the readers, please visit [Fabrice Adjakly](#) to send in your thoughts or comments.

Sources: <https://www.knust.edu.gh> | <https://wedocs.unep.org> | <https://www.gogla.org>
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