

Solar power in Africa

Africa is often considered and referred as the "Sun continent" or the continent where the Sun's influence is the greatest. According to the "World Sunshine Map", Africa receives many more hours of bright sunshine during the course of the year than any other continent of the Earth; and many of the sunniest countries on the planet are in Africa;

Despite its immense solar power potential, Africa continues to lag behind other continents when it comes to building up grid and off-grid solar capacity, in part due to a lack of investment;

The whole continent has a long duration of sunshine, and excluding the large areas of tropical rainforests (the Guinean Forests of West Africa and much of the Congo Basin), as the desert and savannah regions of Africa represent Earth's largest cloud-free area; Africa is dominated by clear skies even beyond deserts (ex: Sahara, Namib, Kalahari); however, the regions located along the equator are considerably cloudier than the tropics and subtropics.

The low latitude of the landmass is another asset: much of the continent lies in the intertropical zone, where the intensity and the strength of the sunlight are always high. The area contains lots of vast sun-drenched arid and semi-arid expanses in the north, in the south, and to a lesser extent in the east. About two fifths of the continent are desert, and thus continuously sunny.

The combination of all these geographical and climatic factors is the cause of the large solar potential of Africa. The number of days of sunlight allows the potential of bringing solar power to much of Africa without large scale grid infrastructure;

By 2023, South Africa had installed 500 MW in concentrated solar power, 2286 MW in utility scale solar; and 4400 MW in rooftop solar; Several 75 MW PV plants and 2 CSP plants at 100 MW each were the largest in the country and among the largest in Africa. South Africa has announced a plan to install a minigrid on Robben Island; adding PV and battery storage is predicted to reduce diesel usage by half;

A 55 MW photovoltaic power plant has been constructed in Garissa in Kenya, a city located at the equator where the sun is said to shine for about 3,144 hours each year on average, and it is expected to produce approximately 76,473 MWh/year;

Ghana, which aims to produce 10% of its electricity from renewable sources by 2030, has commissioned several projects, including a floating solar power plant in the reservoir of the Bui Dam;

There are also many small-scale modular solar power installations being implemented across the continent at



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the village and household levels. In 2015, Sub-Saharan Africa was the leading region for purchases of off-grid solar products.

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