

How much does photovoltaic power generation and energy storage cost in Sudan





Overview

How much solar energy will Sudan produce in 2021?

A solar panel is seen on the roof of a house of Bank manager, Abdel Maged Khougly, in Khartoum, Sudan May 17, 2021. REUTERS/El Tayeb Siddig Hamid says the country is projected to be able to produce 2.4 gigawatts of solar energy annually within the next 10 years. "Some of that will be in the production of large power-generating plants," he said.

How much electricity does a solar PV plant produce a year?

A PV plant in the proposed location of Port Sudan, a city in eastern Sudan, was found to produce 8 566 750 kWh of electricity annually [10]. In the same way, Abuelyamen and Mohamed investigated the installation of a 10-MW solar PV plant in Dongola, Sudan.

What are the barriers to solar energy development in Sudan?

In the case of Sudan, technology and financing of solar energy projects are still the two big barriers to solar energy development in general. Other barriers include : High economic risk of CSP technologies and lack of public/private investment. High market concentration impeding new stakeholder entry.

Will Sudan's electricity demand increase by 2031?

Sudan's Ministry of Water Resources and Electricity (MWRE) – now called the Ministry of Energy and Mining (MEM) – forecast that by 2031, Sudan's electricity demand would increase from 29.72 TWh in 2021 to 46.14 TWh in 2031 due to the increasing industry sector demands and the rising demand for residential electricity .

What factors impede the full exploitation of hydropower in Sudan?

Other factors impeding the full exploitation of hydropower in Sudan include environmental and social considerations, financial factors, and lead times [23,



24]. Sustainable solutions for previously mentioned energy issues require exploiting the abundant indigenous RE sources such as solar energy .

How much does a power plant cost?

Taking advantage of these values, TCC, FOC, VOC and FCR are chosen to be 5627 \$/kW of installed capacity, 66 \$/kW of installed capacity, 0.004 \$/kWh of generated electricity and 0.082, respectively. Based on the inputs provided in the previous section, an annual analysis of the proposed plant is done.



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