

## 35 kva solar system Sudan

Which type of solar PV system is best for Sudan?

HOMER simulation results demonstrated that the optimal type of PV for Sudan is the Studer VarioTrack VT-65 with Generic PV. The utilization of a solar PV system will avoid the production of approximately 27 million kg/year of pollutants and will reduce the cost of energy to USD\$0.08746/kWh.

Where can solar energy be used in Sudan?

The optimal locations found in Sudan for utilizing solar energy were Wawa, followed by Kutum, Wadi Halfa, Dongola and Al-Goled due to their low costs of electricity, high clearness index and high levels of solar radiation.

Is solar energy feasible in Sudan?

Situated in the sunbelt, Sudan is one of the largest countries in Africa endowed with an extremely high solar irradiation potential. However, no work has been done in the literature with a strategic context to study specifically the feasibility of renewable energy systems in Sudan despite the abundance of solar resource.

Does reducing PV costs reduce energy costs in Sudan?

Reducing the PV costs by 25% has a significant impact; the cost of energy produced reduces in the range of USD\$ 0.06697/kWh and USD\$ 0.06808/kWh, while a reduction in PV costs of 50% further reduces the cost of energy, ranging between USD\$ 0.05273/kWh and USD\$ 0.05361/kWh in the top five locations in Sudan.

Will solar power help solve Sudan's electricity crisis?

Given that Sudan is endowed with an extremely high solar irradiation potential, the government has set a target of achieving a 667 MW of PV installed capacity by the end of 2031 ( Murdock et al. 2019 ). This clearly reflects that the latter technology will play a key role in adjusting the electricity crisis of Sudan in the near future.

Which country has the highest level of solar radiation in Sudan?

Kutum and Wawa have the maximum level of solar radiation in Sudan followed by Al-Goled, Dongola and Wadi Halfa ( Fig. 9 ). With regard to clearness index ( Fig. 10 ), Wawa has the maximum clearness index followed by Wadi Halfa, Dongola, Al-Goled and Kutum. These locations also had the lowest energy costs compared to the other sites in Sudan.

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Sudan has much unrealized potential for generating solar energy, particularly in the northern region. This research study focuses on designing a 1-GW solar power station in northern Sudan...

Hydropower contributes 64% of Sudan's total electricity generation while very little (10-19 MWe) is based on solar PV systems that are used by telecommunication towers in remote regions [12, 15, 21]. Although Sudan has invested in thermal generation and hydropower technology, the country struggles to meet electricity demands for all sectors.

"Sudan targets to increase the share of solar in the overall generation mix to about 15% by 2026.6 "According to Sudan's strategic plan (2021-2035), the targeted renewable energy installed capacity is slated to reach 4.405 GW by 2030.6

However, rooftop solar PV has not yet been widely adopted in many sub-Saharan African countries, such as Sudan, although they are endowed with high solar radiation and in dire need of...

o Status of solar energy in Sudan. o Consumer awareness. o Sudan energy market. o Business and finance models. o Public & Private sectors contribution. Steps of starting a solar system for a home, business, or farm. o Understanding solar cost calculations and benefits. Dr. Mohamed concluded his speech with a

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The present study was carried out to identify the optimal type of solar PV to utilize to meet an electric load of 20 megawatts (MW) for a chosen village in Sudan. The solar PV systems under consideration were simulated in HOMER software in 21 locations in Sudan: Port Sudan, Omdurman, Al-Qadarif, Kassala, Kosti, Al-Obeid, Dongola, Al-Junaynah ...

HOMER simulation results demonstrated that the optimal type of PV for Sudan is the Studer VarioTrack VT-65 with Generic PV. The utilization of a solar PV system will avoid the production of approximately 27 million kg/year of pollutants and will reduce the cost of energy to USD\$ 0.08746/kWh.

35 sets of solar system projects in Sudan have been installed. Issuing time:2023-04-07 11:25. 35 sets of solar system projects in Sudan have been installed. 15sets 15KW Off Grid Solar System. 10sets 3.5KW Off Grid Solar System. 10sets 1.5KW Off Grid Solar System.

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