

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.

Can solar power be used in Sudan?

Several research papers have examined the potential of solar PV in Sudan and especially on rooftops . These studies highlighted the excellent solar PV energy potential the country has due to its high solar irradiation rates and long hours of sunshine. ...

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.

The aim of this study was to utilize Hybrid Optimization Model for Electric Renewables (HOMER) to identify the optimal solar photovoltaic (PV) system for Sudan's conditions, identify the best...

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A technical guide for solar energy systems in homes energy conservation & efficiency, how to select appropriate appliances, site assessment, criteria for selecting the competent company, ...

The aim of this study was to utilize Hybrid Optimization Model for Electric Renewables (HOMER) to identify the optimal solar photovoltaic (PV) system for Sudan's conditions, identify the best locations, and analyze the costs and the pollution that might be avoided by employing a PV system in place of a diesel system.

A technical guide for solar energy systems in homes energy conservation & efficiency, how to select appropriate appliances, site assessment, criteria for selecting the competent company, assessing quality, system maintenance, and operation, environment, health, and safety. o The first-ever directory of solar energy companies in Sudan.

Community-shared solar PV systems support the democratization with the efficiency of centralized systems. The paper highlights the economic competitiveness of this model in Hungary.

Most of the attention is given to solar photovoltaic (PV) systems; no thorough techno-economic study has been carried out to evaluate the potential for CSP technologies in Sudan. The main aim of this paper is to encourage Sudan's authorities to pursue CSP technologies and overcome the associated challenges.

explains the different solar system configurations methods explicitly: grid connected Solar system, Solar in Microgrid and standalone directly connected to customer 2.1.

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This activity report presents GEF's work in Sudan to promote solar photovoltaic systems and bring much needed electricity to homes across the country. The GEF solar photovoltaic project seeks to build capacity and awareness and to help the Sudanese government develop policies and regulations that will create an environment favorable to the ...

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