Parameters of solar panels used in Sudan

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 potentialthe country has due to its high solar irradiation rates and long hours of sunshine. ...

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-65with 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.

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 workhas 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.

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.

Why is subsidizing solar energy important in Sudan?
Second,subsidizing this field is imperative as the costs of initial installation and maintenance are high. With the Sudanese administration allocating a budget for science and technology as restricted as 0.2% of the GDP as in 2006,the consideration of adopting solar energy diminishes by time.

Do PGF values change if a solar system is installed in Sudan?
It is a rule of thumb that PGF values change according to the season and location of the city or country in question(Mainali and Dhital,2015). Hence,a predetermination of this factor is a must if detailed engineering designs of solar PV systems around the wide-ranging land of Sudan are required. Eq.

In this research, the authors used the Peaks over Threshold (POT) method alongside short-term electricity generation data belonging to a 5.5 kW p off-grid photovoltaic (PV) system installed on the premises of the National Energy Research Center in Soba district, Khartoum, to estimate the panel generation factor (PGF) of the city that rests ...

The optimal locations found in Sudan for utilizing solar energy were Wawa, followed by Kutum, Wadi Halfa,

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Dongola and Al-Goled due to their low costs of electricity, high ...

In this study, recorded data at Hudeiba and Dongola stations have been used to develop 15 models for estimation of monthly average daily global solar radiation on a horizontal surface in ...

JNTECH offers a wide range of solar solutions, including home and office systems, solar air conditioning systems, solar pumps for agriculture, and other related products. As the leading Sudan solar company, Alramah Solar has ...

This was basic working principle of a solar cell now we will discuss about different parameters of a solar or photovoltaic cell upon which the rating of a solar panel depends. During choosing a particular solar cell for ...

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...

Any implementation of a sustainable photovoltaic solar energy system implies the optimization of the resources to be used. Therefore, it is the basis for the design and assembly of solar installations to optimize renewable energy production.. To achieve optimal conversion of solar energy, it is essential to know the solar path, the profile of the needs, and the ...

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 additional ...

This research looks on the feasibility of capturing solar energy resources found in Sudan. Simulations for a grid connected solar photovoltaic power plant were run using input data from selected areas in Sudan, including hourly meteorological data, economic considerations, and technology type.

Sudan is in North-Eastern Africa within the sub-Saharan region and has a population of 43 million people and area of 1,886,068 km2, making it the third-largest country in Africa.

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A solar panel data sheet gives you an idea of the product"s performance, efficiency, and durability. Knowing these parameters allows you to select a panel that suits your energy needs, climate, and budget. Whether you"re a homeowner, business owner, or solar installer, taking the time to analyze the data sheet ensures you make an investment that ...

The study used techno-economic analysis for two of the most mature CSP technologies - solar power tower

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(SPT) and parabolic trough (PT) technology - to produce electricity in Sudan. Two ...

Explore the solar photovoltaic (PV) potential across 4 locations in Sudan, from Port Sudan to Singa. We have utilized empirical solar and meteorological data obtained from NASA"s POWER API to determine solar PV potential and identify the optimal panel tilt angles for these locations.

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. Given the recent rapid decrease in PV pricing and predictions for continued reductions, the costs of PV were varied to ...

In this study, recorded data at Hudeiba and Dongola stations have been used to develop 15 models for estimation of monthly average daily global solar radiation on a horizontal surface in northern Sudan. The developed models have been extensively evaluated by using 14 ...

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