

How many hectare is a diesel generator in Sudan?

The first phase of the project has been already completed with a successful reclamation of around 400 Hectare, where the existing electrical energy system is isolated from the national grid of Sudan and consisted from one standalone diesel generator, which is denoted by DG1 in this study.

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.

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. ...

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.

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.

Could Sudan be the world's largest solar photovoltaic area?

The project is funded with \$4 billion from the government and is projected to generate a total capacity of 1.8 GW, which would make it the world's largest solar photovoltaic area. In 2018, the first phase was completed and 50 MW was generated [58, 59]. Sudan could exploit its renewable resources by adopting a strategy similar to Egypt.

Sudan's solar, wind, and geothermal potential in the transition to renewable energy. Many countries face the challenge of combining fossil fuels with other RE resources to help achieve energy security, mitigate the effects of ...

Abstract- This paper aims to design and to compare between four hybrid systems combination build from solar

photovoltaic, battery and diesel generators to provide El Daein city east of Darfur state in Sudan with electric power, where most of electrical power

Hybrid systems: A solar photovoltaic system can be combined with other energy sources, such as biomass generator, wind turbines, diesel generator, all to ensure a constant and sufficient supply of electricity, since it is known that all renewable energy sources, including photovoltaic systems, are not constant in energy production. It means ...

The objective of the present study is that the performance evaluation of the solar PV system, diesel generator in hybrid power system. The present work discusses design of the solar PV-grid-diesel hybrid power system and also explains the parameters that will affect the performance of ...

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.

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Hybrid renewable energy system (HRES) can provide safe, eco-friendly and economic solutions for supplying the electrical load demand. This paper developed an autonomous HRES comprising PV, WT, diesel generator, battery, and converter technologies for electrification of an agriculture-isolated area...

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