Solar power in Khartoum

Does Sudan have solar energy technology?

Sudan's total solar energy technology achievements as of 2010(Omer,A.M.,2015,p.254) The country,represented by its Ministry of Higher Education and Scientific Research (MHESR),does realize the importance of renewable energy and solar energy in particular in solving essential live problems especially in rural parts of the country.

Should solar energy be adopted in the Sudan?

There are definitely huge potentials(theoretically,technically,realizable and long term) should solar energy be adopted in The Sudan. The present transition phase requires a serious practical focused strategy to make positive contributions to its energy sector and development altogether.

Is Sudan a good country for solar energy?

Besides the hydro resources,there is further renewable energy potential through solar and wind energy,biomass and biogas,and geothermal energy. Sudan provides an excellent base for solar photovoltaic power development. Its favorable geographic position provides comparatively high global horizontal irradiation of 1900 to 2500 kWh/m2/year.

What is the average solar energy density in Sudan?

Where most regions in the world exhibit annual average solar energy density ranging between 100 to 250 W/m2 (Sustainable Energies,No Date) ; Sudan's solar energy density ranges between 436-639 W/m2(Omer,A.M.,2015,p.250). The map below (Fig. 5) reflects Sudan's Global Horizontal Irradiation.

What is the corresponding factor value for solar irradiance in Sudan?

In the literature,the corresponding factor value is 4.8,illustrated in Sudan's PV potential map,based on historical long-term solar irradiance satellite records. Consequently,a 16.67% Percent Error between the two values is present due to the big difference in data amount,favoring the literature.

How much solar energy will Saudi Arabia have by 2040?

Saudi Arabia: A recent report published by Orient Planet revealed that solar energy will take up to 76%of Saudi Arabia's sustainable energy plans by year 2040 (Al Arabiya English,2017).

three types of a vertical farm as powered by solar photovoltaics to meet the annual demand for 66,000 kg of Yellow Potato and 79,200 heads of Rocket Arugula by the local grocery store Al- Anfal Supermarket in Sudan"s capital city of Khartoum; and (2) To assess the economic

The study aimed to generate informative data on solar radiation in order to establish sustainable solar energy that will support domestic needs and agricultural production and processing ...

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Khartoum, Sudan, with its latitude of 15.5006544 and longitude of 32.5598994, is a highly suitable location for solar power generation throughout the year.The average energy production per day for each kilowatt (kW) of installed solar capacity varies by season: 7.17 kWh/day in summer, 6.84 kWh/day in autumn, 6.45 kWh/day in winter, and an impressive 8.00 kWh/day in spring.

(Elhassan et al. 2018) showed the use of photovoltaic systems in housing at Khartoum, with 24kW batteries backup, and a peak power 1.5kW; and a daily energy ...

Solar power, Khartum. 4,494 likes. ????? ???? ????? .?

Khartoum North, Sudan, located at latitude 15.6483 and longitude 32.5245, presents a favorable environment for solar energy generation throughout the year. This tropical location benefits ...

This paper assesses and analyses the solar energy potential in Ghardaïa area (south Algeria) to help users for solar energy applications. A database of solar radiation components has been ...

Khartoum North, Sudan, located at latitude 15.6483 and longitude 32.5245, presents a favorable environment for solar energy generation throughout the year. This tropical location benefits from consistent sunlight, with seasons primarily distinguished by wet and dry periods rather than significant temperature fluctuations.

The solar Photovoltaic power potential in Khartoum is around 5 kWh/kWp (SolarGIS, 2019)), this means for every 1 kW of solar panel around 5 kWh in energy is generated per day on average. These numbers are comparatively high when compared to other regions (Pravalie et al., 2019) and encourage solar PV use in Khartoum.

Dongola, Khartoum has the lowest COE (0.08254USD$/KWh), (0.08298 USD$/KWh respectively high intensity of solar radiation, and clearness. Sudan solar Irradiation [11] Table 1 Statistics of total ...

Khartoum Solar Power Project is a solar photovoltaic (PV) farm in Khartoum, Sudan. Read more about Solar capacity ratings . Loading map... To access additional data, including an interactive map of global solar farms, a downloadable dataset, and summary data, please visit the Global Solar Power Tracker on the Global Energy Monitor website.

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 withi...

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