

How much solar energy does Uganda have?

Given Uganda's total surface area of 236 040 km<sup>2</sup>, and, on average, over 5 kWh/m<sup>2</sup>/day global solar radiation on horizontal surface, Uganda has more than 400 000 TWh of solar energy potential, each year falling on its surface area.

How much power does Uganda have?

Historically, the generation capacity of Uganda's electricity sub-sector grew from 609.4 MW in 2011 to 1268.8 MW as of 2020 ( Fig. 1), and it is dominated by hydropower, which accounted for 79.65% by 2020.

What is the energy sector in Uganda?

Overall, the energy sector of Uganda is dominated by use of biomass of fuel wood, charcoal and agricultural residues, contributing 88% to national primary energy mix by mid-2019, while electricity and petroleum products contributed 2% and 10%, respectively [32 ]. This overdependence on wood fuel is mainly due to its accessibility and affordability.

What is Uganda Vision 2040?

The approved Government of Uganda Vision 2040 development plan anticipated an increase in the country's power generation from the 822 MW (in 2012) to about 41 800 MW (by 2040) and electricity consumption per capita to 3668 kWh/year [34 ].

What are the economic indicators for Soroti solar power plant?

Table 6. Summary of the estimated economic indicators for the Soroti solar power plant. When a tariff of US\$0.1637/kWh is used, which is the amount receivable by the project owner, the simple payback period and discounted payback period are estimated as 8.20 years and 9.28 years, respectively.

Is Soroti solar power plant economically viable?

For an economically viable utility-scale grid connected solar PV system, a payback period between 8 and 18 years is recommended by Ref. . Therefore, at this tariff rate, it can be concluded that Soroti solar power plant is economically viable.

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Techno-economic assessment of 10 MW centralised grid-tied solar photovoltaic system in Uganda: Performance analysis of a 10 MW solar photovoltaic plant installed in Soroti city, in ...

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Solar power is free once the system is installed, and excess energy can be sold back to the grid, earning homeowners additional income. ... There are two main types of solar systems for homes in Uganda: grid-tied systems and off-grid ...

These studies do not analyze the techno-economic performance of grid-connected solar PV Power Plants in Uganda curtailing their roll out. Up to now, the installed solar power capacity stands at 88.3 MW which is (4.8 %) of the 1847.5 MW as of 2023 (ERA, 2024b) and yet the country's vision is 5000 MW or 12 % of the total energy required by 2040 ...

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