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**SolarInnovate Energy Solutions**

# Photovoltaic power generation in Benin

## Overview

Specifically for Benin, country factsheet has been elaborated, including the information on solar resource and PV power potential country statistics, seasonal electricity generation variations, LCOE estimates and cross-correlation with the relevant socio-economic indicators.How much does a photovoltaic power plant cost in Benin?

Photovoltaic power plants' levelized cost of energy ranges from 0.11 USD/kWh to 0.125 USD/kWh. Incentives and subsidies could lower the levelized cost of energy and increase solar photovoltaic investment in Benin. About 60.0% of Benin's population currently lacks access to reliable electricity to perform their daily activities.

Does Benin have solar power?

Despite the country's abundant solar resources, only 8.0 MW of solar capacity had been installed by 2017 (Mensah et al., 2022). The cities in the northern parts of Benin have the highest solar energy potential. However, these cities have the lowest access rates to electricity (Odou et al., 2020).

Can solar power improve living standards in Benin?

The Benin Republic has abundant solar energy resource, which could be harnessed efficiently to increase its access rate to electricity and improve living standards. This study evaluates the techno-economic viability of installing a 10.0 MW utility-scale grid-tied solar photovoltaic (PV) system in seven cities located in Benin.

Are solar PV projects feasible in Benin?

This study considers a 10.0 MW grid-tied system in seven different regions to evaluate the feasibility of solar PV projects in Benin. Grid-connected solar PV systems have two main components: the PV array and the inverter. The connection to the national grid is done using appropriate inverters that must be carefully selected (Etier et al., 2015).

Should Benin implement a grid-tied solar photovoltaic project?

The country must foster the development of policies that can accelerate the deployment of renewable energy projects and promote the use of new technologies for a cleaner and safer environment. The study results could guide Benin and other developing countries willing to implement a utility-scale grid-tied solar photovoltaic project.

Could a solar power plant increase Benin's electricity rate?

Based on this current data, it can be deduced that using the 10.0 MW solar power plant for electricity generation could increase Benin's electricity rate by about 1.8%. This means that putting in the 10.0 MW at all the suggested sites could give about 12.0% more people access to electricity.

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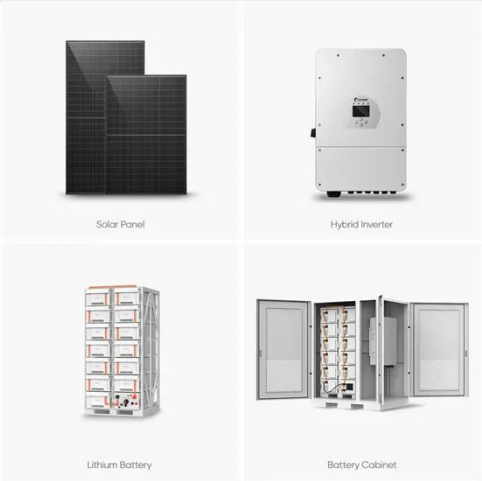
### A critical analysis of the energy situation in the Benin ...

Jan 1, 2023 · A study from Ref. [50], estimated energy potential for each territory in Benin, and determined that 187 MW could be produced from small hydroelectric power plants (SHP), 761 ...

### Potentials and financial viability of solar photovoltaic power

Jan 2, 2020 · Abstract Power generation processes are major contributors of greenhouse gases (GHGs), which have been linked to the global warming phenomenon, and by relying on solar ...




### GIS-based assessment of photovoltaic (PV) and concentrated solar power

Jan 1, 2018 · Against this background it is the objective of this study to estimate the geographical and technical potential of photovoltaic (PV) and concentrated solar power (CSP) electricity ...

## Toyota Tsusho Signs Contract for Construction of a 25 MW Solar Power

Benin established a national plan to develop renewable energy power, mainly solar photovoltaic power, in order to overcome these challenges. It is aiming to install a total of 150 MW of solar ...

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