

# **Solar photovoltaic power generation prices in Benin**





## Overview

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About 60.0% of Benin's population currently lacks access to reliable electricity to perform their daily activities. The Benin Republic has abundant solar energy resource, which could be harnessed efficiently t.

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.

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).

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.

Could incentives and subsidies increase solar PV investment in Benin?



The findings show that incentives and subsidies could lower the LCOE and increase solar PV investment in Benin. Investing in utility-scale PV systems could help Benin increase its electricity access rate and mitigate greenhouse gas emissions for sustainable development.

What type of energy is used in Benin?

The evolution of the electrical mix of Benin indicates that, in 2020, natural gas was the first form of energy used to produce electrical energy, representing a proportion of 71.63%. Solar photovoltaic (PV) accounts for 0.30% of the mix by form of energy compared with 1.36% in 2016, as shown in Fig. 3.



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### [Techno-economic analysis of a utility-scale grid-tied solar](#)

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. The RETScreen ...

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### [Quantifying the cost savings of global solar photovoltaic](#)

Modelling shows that a globalized solar photovoltaic module supply chain has resulted in photovoltaic installation cost savings of billions of dollars.

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### **Cost and CO2 reductions of solar photovoltaic power generation in China**

To improve the understanding of the cost and benefit of photovoltaic (PV) power generation in China, we analyze the per kWh cost, fossil energy replac...

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### [Benin 1000 mw solar power plant cost](#)

To achieve 100 % RE by 2050, Benin would need to install 1000 MW of solar PV, 300 MW of wind power, 600 MW of hydropower, and 538 MW of CSP, with an investment cost of USD 6.04 ...

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### [Realistic generation cost of solar photovoltaic electricity](#)

The first step in the calculation of generation cost of solar PV electricity is to calculate the specific initial investment ( $C_s$ ) of solar photovoltaic (SPV) power plant for ...

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### [Benin building solar power plants for energy access](#)

In 2021, the national electrification rate was 36.5% but this hides wide disparities between access rates in urban (59.2%) and rural areas (6.5%), according to the World Bank's ...

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### **A review of solar photovoltaic incentives and Policy: Selected**

Solar photovoltaic systems are also the most suitable energy generation systems for these needs. In this context, interest in solar systems is increasing day by day and solar ...

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### **Battery-coupled PV systems for residential applications in Benin: ...**

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### [Benin courtyard solar power generation](#)

Toyota Tsusho Signs Contract for Construction of a 25 MW Solar Power In addition, the majority of power generation facilities in the country are thermal power plants. . Benin ...

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### [Benin 1 mw solar power plant cost and profit](#)

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### **ENERGY PROFILE Benin**

mix of fossil fuels. In countries and years where no fossil fuel generation occurs, an average fossil fuel emission factor has been used to calculate t countries and areas. The IRENA statistics ...

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### [Benin Solar Energy Market \(2025-2031\) . Analysis & Companies](#)

Market Forecast By Type (Solar Photovoltaic (PV), Solar Thermal), By Application (Power Generation, Heating) And Competitive Landscape Report Description Table of Content

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**Low Voltage  
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### **Global Trends in Solar Power**

The solar PV market maintained its record-breaking streak, with new capacity installations totalling to approximately 191 GW in 2022 (IRENA, 2023). This was the largest annual ...

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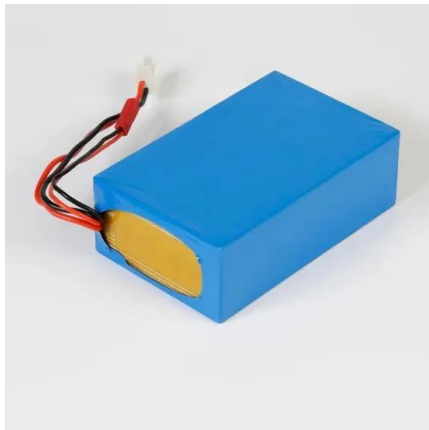


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## **Benin initiates the construction of four photovoltaic power plants ...**

Currently, Benin largely depends on thermal power plants and the import of electricity to meet its energy needs. The electric coverage rate is evaluated at 42 %, ...

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## **Renewable energy in Benin: current situation and future prospects**

This paper summarizes the current RE situation in Benin and examines its future prospects. The current energy situation of the country is discussed, followed by an ...

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