

## NKOSITHANDILEB SOLAR

# Benin Hotel Uses 10kW Photovoltaic Container



## 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.

How much does a photovoltaic power plant cost in Benin?

Photovoltaic power plants' leveled cost of energy ranges from 0.11 USD/kWh to 0.125 USD/kWh. Incentives and subsidies could lower the leveled 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.

What is the solar energy potential of Benin?

Benin's solar energy potential and global horizontal irradiation increase from the south to the north, as presented in Fig. 1. Similarly, the cities' daily solar irradiation is shown in Table 3. In Benin, the annual daily horizontal solar radiation ranges from 4.89 to 5.68 kWh/m<sup>2</sup>/day in the chosen seven cities.

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).

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