

What is the solar energy potential in Cuba?

Solar energy potential in Cuba is high when considering that the country's geographic position can enable a generation of 5kWh per square meter - about the average daily usage of one household. Although solar energy projects have thus far been limited to remote areas, capacity has increased considerably in recent years.

Does Cuba need solar energy?

Cuba's electricity supply is still highly dependent on oil imports from neighboring Venezuela. But, like most Caribbean nations, Cuba has immense potential for energy generation from renewable alternatives, including solar energy, which can be utilized to meet domestic and small business needs.

How much solar energy will Cuba have by 2030?

The Cuban government has stated that it wants to have 700 MW of solar energy capacity installed by 2030. Cuba can rely on local expertise to help support the growth of solar energy around the country.

Can Cuba build a solar power plant?

The loan should partly help finance four 10 MW solar power plants. Beyond that, the Cuban government has a long way to go if it is to build the planned 700 MW of solar capacity and secure the \$3.5 billion that are necessary to fund its vision of a countrywide energy transformation.

How many solar panels are produced in Cuba?

The government has built a manufacturing plant that has produced 14,000 photovoltaic solar panels, also near Cienfuegos. Currently, the Granma Province has the largest percentage of renewable energy generation within Cuba at about 37% in 2013.

How will solar energy impact Cuba's energy demand and production?

For solar energy to have a long-term impact on Cuba's energy demand and production, projects must expand beyond off-grid usage. The focus should shift toward urban applications of solar systems and the further development of solar-powered domestic appliances.

The report highlights the issue that not only is Cuba's energy infrastructure in a precarious state of aging and disrepair, but also that its entire energy system relies heavily on external aid and imported fossil fuels.

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According to many studies, Cuba receives an average solar irradiance of over 5 kW per m² per day, which is considered high and presents great potential on this archipelago with over 110,800 km² and an annual average of 330 sunny days.

Mariel Solar is the first privately owned, utility scale, renewable energy project in Cuba, divided across three sites. The site is based in Artemisa, Cuba, and has been operational since January 2022.

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So far in Cuba, 227 MW have been installed in photovoltaic systems connected to the electricity system, of which 215 MW in 72 farms synchronized with the Electric System and 12 MW installed...

But over the past 10 years, Cuba's policymakers have identified some potential pathways towards a clean and resilient energy system. For example, Cuba committed to generating 24% of its electricity from renewable energy sources by 2030 as part of the country's Nationally Determined Contribution (NDC) under the Paris Agreement.

By optimizing calculation times and parameterizing the entire surface latitudinally, a high-resolution solar resource map for Matanzas has been developed. This map significantly enhances the understanding of solar resources in Cuba and enables the proposal of new methodologies for analyzing solar potential in similarly large regions.

Photovoltaic solar parks in Cuba: a project based on science and innovation. Cuba needs every effort to strengthen its Electric System, and this knowledge is key to achieve such an important objective for the life of the country

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