

Can solar power be generated across time zones



Overview

However, when solar power is spread over a large geographical area with significant time differences, the intermittency can be significantly reduced and also the electricity market balancing cost.

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[Solar Energy Availability: Factors and Global Variations](#)

Delve into the natural science behind why solar energy potential differs globally, revealing the true accessibility of this vital resource.

Global Solar Atlas

Start exploring solar potential by clicking on the map. Select sites, draw rectangles or polygons by clicking the respective map controls. Calculate energy production for selected sites. The Global Solar



[Solar Resource Data, Tools, and Maps , Geospatial Data Science , NLR](#)

Find and download resource map images and data for North America, the contiguous United States, Canada, Mexico, and Central America. View an interactive map or download

[Photovoltaic Geographical Information System \(PVGIS\)](#)

PVGIS is a free web application that allows the user to get data on solar radiation and photovoltaic system energy production, in most parts of the world.



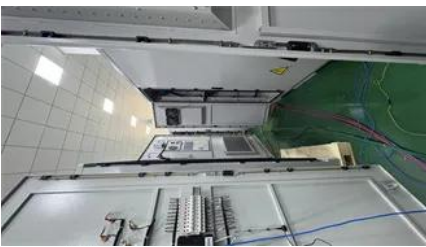
Solar explained



Buildings, trees, and mountains may shade a location during different times of the day in different months of the year. Seasonal (monthly) variations in solar resources increase with

Solar power generation intermittency and aggregation

In addition, global aggregation of solar power of all continents will introduce the least CV because solar power from diverse time zones are complementary and the intermittency can be greatly decreased.



Distributed solar electricity generation across large geographic areas

We show that linking regions in different time zones and on the two hemispheres can fully eliminate intermittency without the need for fuel and renewable energy other than solar.

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Find the exact time difference with the Time Zone Converter - Time Difference Calculator which converts the time difference between places and time zones all over the world.



Solar power generation intermittency and aggregation

The inherent intermittency of solar power due to diurnal and seasonal cycles has usually resulted in the need for alternative generation sources thereby increasing system operation costs.

[How Location Affects Solar Energy Efficiency: Complete 2025 Guide](#)

Discover how geographic location impacts solar panel efficiency. Learn optimization strategies for climate, orientation, and site-specific factors to maximize your solar energy ROI.



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