

SolarInnovate Energy Solutions

Nigeria Northwest Gobi Solar Panel Photovoltaic Panel



Overview

Can photovoltaic power plants be developed in the Gobi Desert?

Author to whom correspondence should be addressed. The global expansion of photovoltaic (PV) power plants, especially in ecologically fragile regions like the Gobi Desert, highlights the suitability of such areas for large-scale PV development.

Do larger solar power plants increase cooling in the Gobi Desert?

Considering the cumulative LST throughout the daytime and nighttime, we propose that constructing larger PV power plants in the wetter Gobi Desert will yield a more substantial LST cooling effect. Finally, in winter, larger solar angles lead to more panel shading, increasing cooling .

Can Gobi PV power plants increase plant growth?

The combination of daytime cooling and nighttime warming from Gobi PV power plants might enhance vegetation growth. Temperature and water availability play crucial roles in plant growth in arid regions, where elevated daytime temperatures can trigger heat stress, hindering root growth and plant regeneration [61, 62].

Can solar power plants reduce soil carbon stock in the Gobi Desert?

At the same time, the decrease in surface soil carbon stock with warming may be mitigated by the cooling effect of PV power plants in the Gobi Desert. The combination of daytime cooling and nighttime warming from Gobi PV power plants might enhance vegetation growth.

How many PV plants are in the Gobi Desert?

The map was developed by integrating a multiresolution segmentation algorithm, the object-based classification (ISOC) algorithm, and Landsat imagery within Google Earth Engine. This map includes a total of 885 PV panels in northwestern China, 95 PV plants of which occurred within the Gobi

Desert.

Does PV affect the Gobi Desert?

By 2019, the area covered by PV in Northwestern China had nearly tripled compared to 2013, with PV in the Gobi Desert accounting for 37% of that change [32, 33]. At the same time, the Gobi Desert is an ecologically fragile ecosystem characterized by high variable microclimatic conditions, low plant cover, and low biodiversity [34, 35].

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