

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.

Why are solar power plants growing in the Gobi Desert?

The Gobi Desert, mainly located in northern China and southern Mongolia in East Asia, is experiencing rapid expansion of PV power plants because of its low cloud cover, abundant solar radiation, and cheap land resources.

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.

Can solar energy improve ecological conditions in Gobi deserts?

PV-induced climate effects could contribute to improving ecological conditions in Gobi Deserts. In this study, a promising photovoltaic (PV) deployment scenario is firstly designed to represent China's solar energy development in the context of its dual carbon target.

What is the Gobi Desert solar park?

The 2.2 gigawatt facility spans an area of over 25 square kilometers in the Gobi desert. This \$3 billion flagship project demonstrates the epic scale of renewable infrastructure developing worldwide. Traveling to the Tengger Desert Solar Park in northwestern China, rows upon rows of solar panels extend endlessly under the barren sky.

Do Gobi PV power plants affect LST?

Ultimately, a comprehensive understanding of the impacts of Gobi PV power plants on LST can provide valuable insights for informed decision-making regarding power plant siting, scale, design, and land management. Our study suggests that the cooling effects of PV power plants are scale-dependent, with larger installations causing more cooling.

ZHOU Maorong, WANG Xijun. Influence of photovoltaic power station engineering on soil and vegetation: Taking the Gobi Desert Area in the Hexi corridor of Gansu as an example[J]. ...

The modeling results indicate that the projected PV plants in China's Gobi Deserts could impact the local climate, causing positive change of 3.71 °C; 0.03 % in the surface ...



Gobi Desert Photovoltaic Solar Support

Based on the meteorological observation data of air temperature, surface temperature and albedo data retrieved from remote sensing images inside and outside the photovoltaic station, as well as the measured soil ...

from north to south. The type of landform is Gobi Desert, with a continental plateau climate. The dominant wind direction in Golmud is the westerly wind. Photovoltaic arrays are fixed. The ...

Using data observed at a photovoltaic (PV) power plant at the edge of the Gurbantag Desert and at an undeveloped site in the Gobi desert in the summers of 2019 ...



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