

Growing vegetables under photovoltaic panels in Kubuqi Desert

What is China's largest environmental desert control photovoltaic project?

China's largest environmental desert control photovoltaic (PV) project in the Kubuqi desert, North China's Inner Mongolia, has connected to the grid. The 100,000-mu (6,666 hectares) project is providing clean energy for China's power grid while helping improve the environment of the desert, showing China's latest efforts at eco-development.

Why do we need a solar power station in the Kubuqi Desert?

The Kubuqi Desert was once the source of sandstorms sweeping over the North China, but with the development of clean energy, it is now full of vitality. The establishment of the Junma Solar Power Station helps revitalize the desert so that we can see the beautiful scene of "the sunset and the birds flying together" as described in an old poem.

Can a photovoltaic power station be built in the desert?

"Building a photovoltaic power station in the desert is not easy, and requirement for solar equipment is higher due to the windy and sandy environment in the desert," Miao Ruijun, deputy head of Mengxi New Energy Dalad Photovoltaic Power Station in SPIC Nei Mongol Energy Co, told the Global Times at the site on Saturday.

What is a Kubuqi solar power station?

On the Kubuqi's horizon appears a galloping horse made up of over 196,000 PV modules. It is the Junma Solar Power Station. Junma means "fine horse" in Chinese. The Junma Solar Power Station not only powers the region with sustainable energy, it is also part of a larger revitalization program fighting desertification.

Can jujube trees be grown between PV panels?

As a result, herbs and shrubbery can be grown between the rows of PV panels. Desert control is not an easy project and some of the first attempts failed. At the beginning, SPIC Nei Mongol Energy planted jujube trees brought over from Ningxia. However, their survival rate was less than 10%.

How to manage a solar power station in the desert?

Miao noted that to better manage running of the station in the desert environment and save personnel needed onsite, it has adopted smart PV solutions provided by Huawei Technologies, including solar inverters, power carrier communication (PLC), intelligent IV diagnosis, as well as intelligent photovoltaic management system.

The Dalad Photovoltaic Power Base in Ordos is the first PV power project in the Kubuqi Desert. It started construction in 2017, with full capacity grid connection achieved by the end of 2019.

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The company has seized the strategic opportunity of China's carbon emission peak and carbon neutrality goals, investing in the construction of a 3.2GW three-dimensional photovoltaic desert control ...

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The solar power base is part of an ambitious solar energy desert reclamation project known as the "great photovoltaic wall", spanning along the northern edge of the Kubuqi Desert. This grand project, though not able to rival the real Great Wall in length, is planned to extend about 400 km with an average width of five km, according to Liu Tianyun, deputy ...

The project spearheaded an innovative approach, with power generating solar panels placed on the top, allowing plants to grow on the ground and small livestock to graze under the panels. An aerial drone photo taken on ...

Moreover, under the PV panels, forage and medicinal plants are cultivated, and livestock such as chickens and sheep are raised. The panels help block light and wind, cool the land, reduce water evaporation, and increase soil moisture, creating a sustainable habitat for both vegetation and animals. ... The Kubuqi Desert, once known as the "Sea ...

Occupying an area of around 1.4 million square meters and composed of more than 196,000 photovoltaic panels to form the pattern of a galloping horse, the station is not only the largest desert PV station in China, but is also the largest solar panel image in the world and owner of a Guinness World Record.

After three years, the soil will be good enough to grow grain and vegetables. In Kubuqi, Elion has also built China's largest solar farm in a desert. Its 650,000 fixed and sun-tracking panels channel 500 million kilowatt hours of electricity into the national grid each year.

The Dalad Photovoltaic Power Base in Ordos is the first PV power project in the Kubuqi Desert. It started construction in 2017, with full capacity grid connection achieved by the end of 2019. The project has a capacity of 1 million kilowatts, covering a total area of 50,000 mu (around 3,333.33 hectares).

Potatoes, pumpkins and other crops are growing underneath the panels as goats are raised nearby. "Kubuqi Desert is rich in solar resources, with an average of 3,180 hours of effective light throughout the year. Relying on the advantages of resources, a 710 MW of photovoltaic solar plant has been built.

The treated drainage water from the coal mines is channeled from these mines to the solar power base and used to clean the solar panels and water the plants. Standing under a solar panel array in ...

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Now, Mongolian milk vetch, jujube trees, forage for cattle and sheep, even local shrubs are growing tall. Last year we planted watermelons on the side of the Shuijinghu PV Power Station, but the birds ate them." PV panels help reduce ground wind speeds by up to 50%. Sand fixation grids and growing plants have also helped to control the sandstorms.

Gardening in desert conditions can be challenging due to extreme temperatures, low humidity, and limited water resources. However, with the right selection of vegetables, you can create a thriving and productive garden even in arid climates. Many vegetables are well-adapted to the harsh conditions of the desert, and with proper care, they can yield bountiful [...]

??1.85%??· From the onset, SPIC Nei Mongol Energy adopted a hybrid model to generate electricity using PV while shading the sandy areas with PV panels to control the sand and ...

The heavy machinery couldn't enter, so the workers had to level the sandy terrain and install the photovoltaic panels manually. Once installed, new challenges emerged. The Kubuqi Desert is composed of shifting dunes, and without stabilizing the desert, the photovoltaic panels would be buried by sand in no time.

PV panels in the desert can collect enough dew to provide water for ecological restoration and develop agriculture under the panels, Tong Zhongming, general manager of Zhengzhou Ximei High-tech ...

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Workers spread dry reed grass under photovoltaic panels to repair and solidify the sand, on June 26. MEI TAO/HUBEI DAILY An aerial view of the 2 million kilowatt photovoltaic desert control project in the Kubuqi Desert, on June 24. MEI TAO/HUBEI DAILY Workers weed the planted Chinese herbal medicine under the photovoltaic panels, on June 25.

Photo shows chickens raised under solar panels of the 2 million-kilowatt Kubuqi desert control photovoltaic project in Duguitala township, Hangjin Banner, Erdos city, north China's Inner Mongolia Autonomous Region. (Photo courtesy of Inner Mongolia Kubuqi Photovoltaic Hydrogen Sand Control New Energy Co., Ltd.)

China's Kubuqi desert is offering its solution as the 7th Kubuqi International Desert Forum opened on July 27. Chinese President Xi Jinping and UN Secretary-General Antonio Guterres sent congratulatory letters to the biennial forum. ... "Your farmers here grow trees and under the trees, they grow vegetables. That's what we are teaching farmers ...

China's largest desert PV station --the Junma Solar Power Station, also located in the Kubuqi Desert and composed of more than 196,000 photovoltaic panels, has generated more than 2.312 billion ...

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Three Gorges Energy, a unit of China Three Gorges Corp., has switched on a 1 MW solar power plant using unspecified perovskite PV panels in the Kubuqi Desert, in China's Inner Mongolia region.

The deployment of PV power stations requires large amounts of land to accommodate solar arrays, roads, and transmission corridors, which will cause large-scale land conversion in desert areas (Edalat and Stephen, 2017; Lovich and Ennen, 2011).Vegetation coverage and inherent biological soil crusts will be disturbed during the construction process, ...

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