

Where are PV power plants located in China?

Eventually, we established a map of PV power plants in China by 2020, covering a total area of 2917 km². We found that most PV power plants were situated on cropland, followed by barren land and grassland, based on the derived national PV map. In addition, the installation of PV power plants has generally decreased the vegetation cover.

Do PV power plants reduce vegetation in China?

The PV power plants in China are more likely to be installed in suitable natural conditions but with low power demand or in areas with high local energy demand. We also found that installing PV power plants will generally decrease the vegetation. Our dataset is conducive to policy management and environmental assessment.

Will centralized PV power plants achieve grid parity in 2021?

Moreover, China PV Industry Association (CPIA) predicted that a new round of development upsurge will appear in centralized PV power plants in 2021 (CPIA, 2020). Therefore, the generation-side grid parity of centralized PV will promote the realization of comprehensive grid parity.

What is the LCOE of centralized PV projects in Ningxia province?

According to Eq. 22, the LCOE of centralized PV projects in Ningxia Province from 2020 to 2030 is calculated, as shown in Figure 11. The LCOE value was 0.3063 CNY/kW_h in 2020 and has been developing with a decreasing trend. FIGURE 11. LCOE of Ningxia centralized PV in four scenarios from 2020 to 2030.

Can machine learning map PV power plants across China?

This study developed a workflow, combining machine learning and visual interpretation methods with big satellite data, to map PV power plants across China. We applied a pixel-based random forest (RF) model to classify the PV power plants from composite images in 2020 with a 30 m spatial resolution on the Google Earth Engine (GEE).

Does China need a comprehensive map of PV power plants?

With the world's highest cumulative and fastest built PV capacity, China needs to assess the environmental and social impacts of these established PV power plants. However, a comprehensive map regarding the PV power plants' locations and extent remains scarce on the country scale.

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DOI: 10.1016/J.NANOEN.2021.106112 Corpus ID: 235525304; Self-regulating and asymmetric evaporator for efficient solar water-electricity generation @article{Liu2021SelfregulatingAA, ...

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