SolarInnovate Energy Solutions

Ngerulmud communication base station has more wind and solar complementarity

Overview

How can a complementary development of wind and photovoltaic energy help?

The complementary development of wind and photovoltaic energy can enhance the integration of variable renewables into the future energy structure. It can be employed as a unified solution to address the discrepancy between the supply and demand of power within the power system .

Does complementarity affect the utilization of intermittent renewable power sources?

The complementarity between wind and solar resources is considered one of the factors that restrict the utilization of intermittent renewable power sources such as these, but the traditional complementarity assessment rely on the strength of the negatively correlated variables and do not consider the scale of those different variables.

Do wind and solar resources have a complementarity metric system?

To this end, we propose a novel variation-based complementarity metrics system based on the description of series’ fluctuation characteristics from quantitative and contoured dimensions. From this, the complementarity between wind and solar resources in China is assessed, and the trend and persistence are tested.

Do wind and solar resources have a gratifying complementarity?

The variation-based complementarity metrics system proposed by this study attempts to describe the complementarity among multiple energy resources as comprehensively as possible and provides sufficient evidence for decision makers. Generally, the wind and solar resources in China have a gratifying complementarity.

What is a complementary evaluation framework for wind-solar-hydro multi-energy systems?

Han et al. proposed a complementary evaluation framework for wind-solar-hydro multi-energy systems based on multi-criteria assessment and K-means clustering algorithms. Using historical data from observation stations, they assessed the complementary characteristics of wind-solar-hydro multi-energy systems in northern China.

Does a complementarity evaluation index match the total output of renewable power?

In this paper, a complementarity evaluation index is proposed to describe the matching ability of the total output of renewable power generation to the load. The interaction between the proposed index and an optimal allocation model of wind and photovoltaic capacity is analyzed in detail.

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Variation-based complementarity assessment between wind and solar

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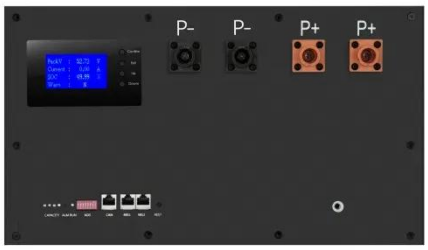

Wind and solar resource complementarity and its viability in wind...

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Global atlas of solar and wind

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