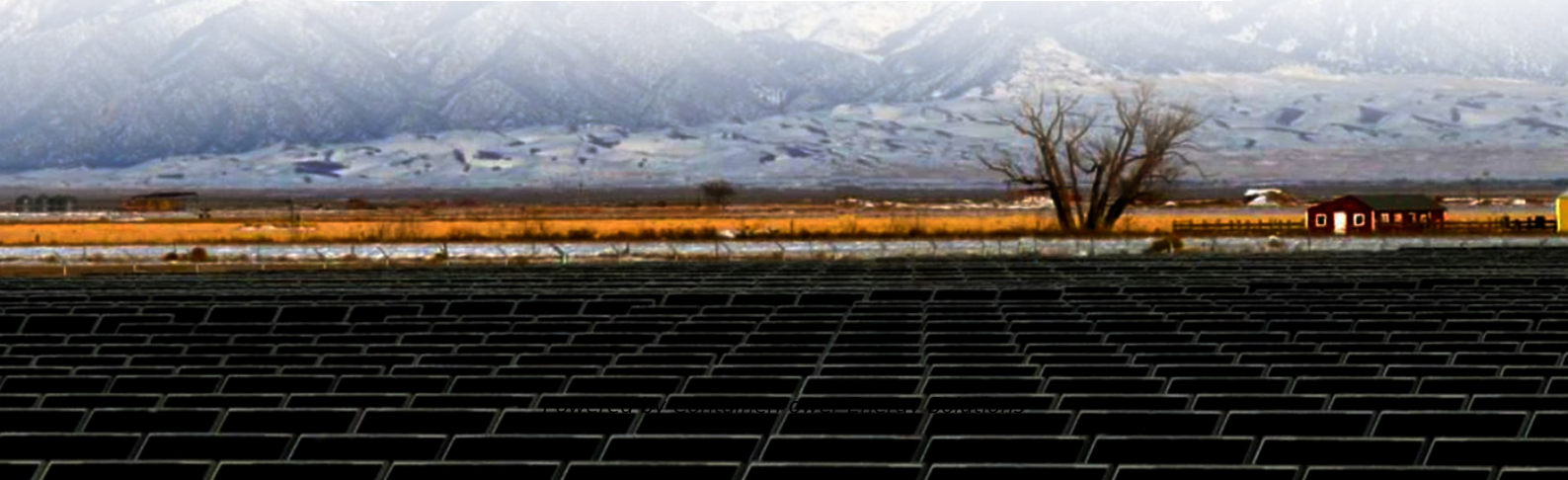
ContainerPower Energy Solutions

# Yijian Communication Base Station Wind and Solar Complementarity



## Overview

Do wind and solar power outputs in China have a temporal complementarity?

Overall, wind and solar power outputs in various provinces of China exhibit strong temporal complementarity. Although there is no negative correlation in Tibet, Yunnan, and Sichuan, wind-solar power joint output can smooth the fluctuations of solar or wind power outputs.

Do wind and solar power joint output improve time complementarity?

Wind and solar power output exhibit relatively strong time complementarity. Wind-solar power joint output improves the power supply–demand matching degree.

How can wind power from Fujian and Xinjiang be interconnected?

The wind power from Fujian or Xinjiang can be interconnected with other provinces to reduce the wind power output fluctuations of those provinces, and the maximum standard deviation reduction rate of the wind power output can be achieved by interconnecting with Fujian or Xinjiang.

Which provinces have a temporal complementarity between wind and solar power?

At the annual scale, except for Tibet, Yunnan, and Sichuan, all other provinces exhibit a temporal complementary relationship between wind and solar power outputs (with negative Kendall’s correlation coefficients). Provinces with richer wind and solar resources demonstrate stronger temporal complementarity.

What is the complementary coefficient between wind power stations and photovoltaic stations?

Utilizing the clustering outcomes, we computed the complementary coefficient R between the wind speed of wind power stations and the radiation of photovoltaic stations, resulting in the following complementary coefficient matrix (Fig. 17.).

Do wind and solar power joint output vary between provinces?

The results show that the temporal complementarity of wind and solar power among provinces is strong and exhibits significant seasonal differences, with the strongest complementarity in summer. Wind and solar power joint output can smooth individual output fluctuations, particularly in provinces and seasons with richer wind and solar resources.

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