

Trend of wind and solar complementarity in solar container communication stations





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 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.

Does spatial and temporal complementarity of wind and solar power match electricity demand?

Therefore, analyzing the spatial and temporal complementarity of wind and solar power and their matching characteristics with electricity demand is of great significance for constructing reliable and cost-effective high-proportion renewable energy systems.

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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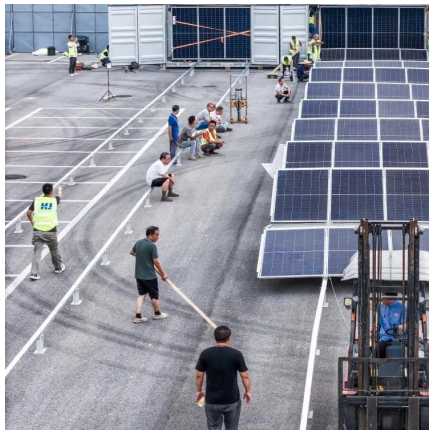


these two resources ...



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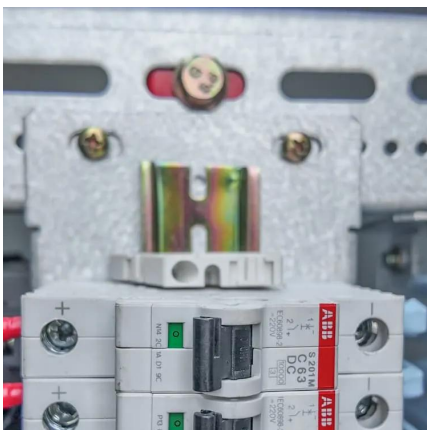
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Variation-based complementarity assessment between ...

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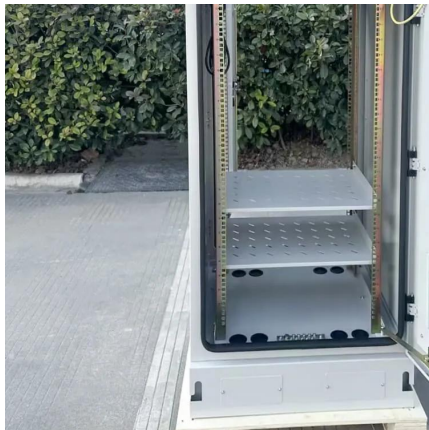
Assessing the potential and complementary

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