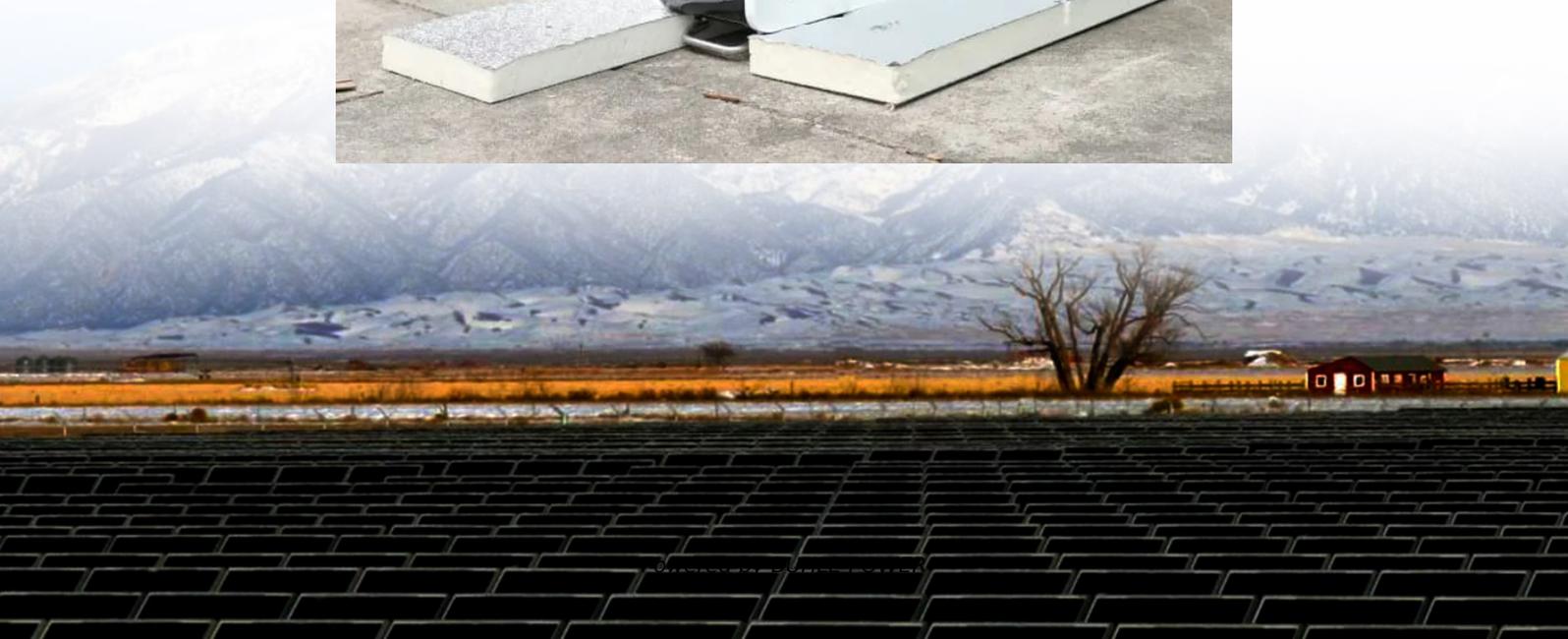


Solar and wind power concentrated power generation system





Overview

What is concentrated solar power (CSP)?

As an important form of clean energy generation that provides continuous and stable power generation and is grid-friendly, concentrated solar power (CSP) has been developing rapidly in recent years.

Can a solar-wind system meet future energy demands?

Accelerating energy transition towards renewables is central to net-zero emissions. However, building a global power system dominated by solar and wind energy presents immense challenges. Here, we demonstrate the potential of a globally interconnected solar-wind system to meet future electricity demands.

Why is accurate solar and wind generation forecasting important?

Accurate solar and wind generation forecasting along with high renewable energy penetration in power grids throughout the world are crucial to the days-ahead power scheduling of energy systems. It is difficult to precisely forecast on-site power generation due to the intermittency and fluctuation characteristics of solar and wind energy.

What is a new power generating system?

This paper proposes a new power generating system that combines wind power (WP), photovoltaic (PV), trough concentrating solar power (CSP) with a supercritical carbon dioxide (S-CO₂) Brayton power cycle, a thermal energy storage (TES), and an electric heater (EH) subsystem.



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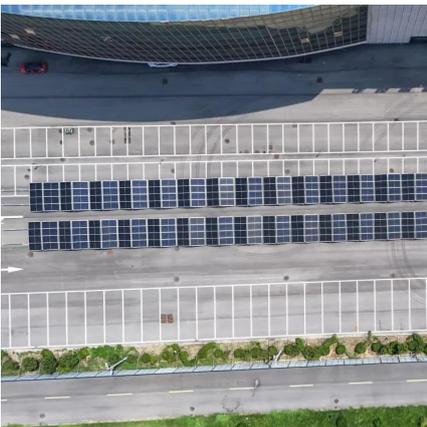
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