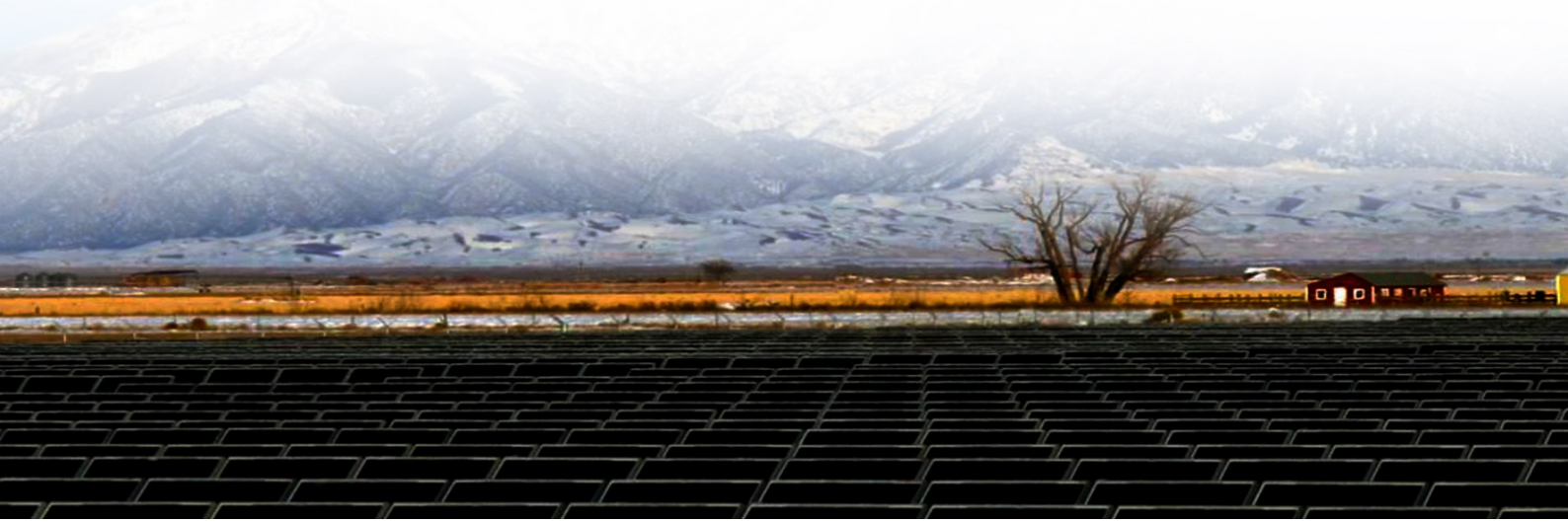
Intelligent control of wind and solar hybrid system



Overview

This study proposes intelligent control strategies for optimizing the grid integration of photovoltaic (PV) and wind energy in hybrid systems using an adaptive neuro-fuzzy inference system (ANFIS).

This study proposes intelligent control strategies for optimizing the grid integration of photovoltaic (PV) and wind energy in hybrid systems using an adaptive neuro-fuzzy inference system (ANFIS).

A gap in existing renewable energy systems, particularly in terms of stability and efficiency under variable environmental conditions, has been recognized, leading to the introduction of a novel hybrid system that combines photovoltaic (PV) and wind energy. The innovation of this study lies in the.

Wind-solar hybrid renewable energy systems leverage the sustainability and complementarity of wind and solar resources. However, the intermittent and fluctuating nature of these energy sources leads to unstable power output, negatively impacting supply reliability and power quality. Optimizing.

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The proposed system addresses the dynamic challenges of hybrid renewable energy sources, optimizing power flow and improving grid stability. By integrating Maximum Power Point Tracking (MPPT) techniques, the system maximizes efficiency, while the ANFIS-based controller ensures adaptive management.

This study proposes intelligent control strategies for optimizing the grid integration of photovoltaic (PV) and wind energy in hybrid systems using an adaptive neuro-fuzzy inference system (ANFIS). The ANFIS control aims to enhance grid stability, improve power management, and maximize renewable.

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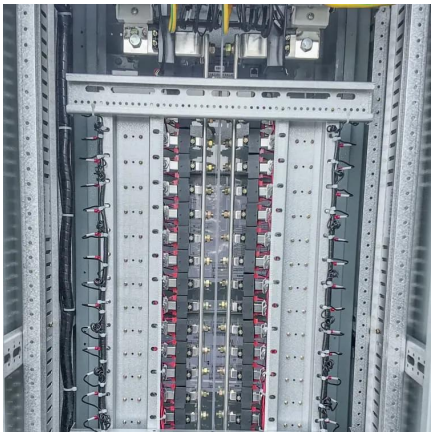

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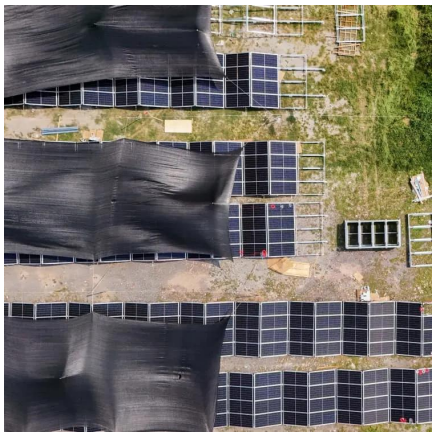

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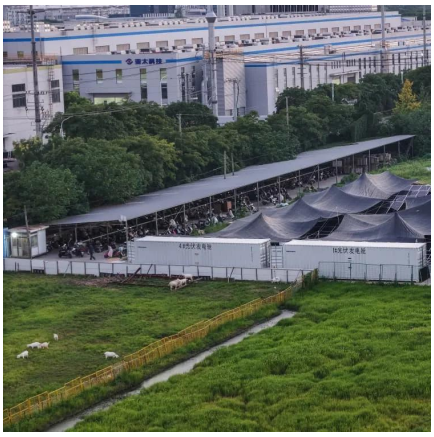

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