Special Issue

Renewable Energy System Forecasting and Maintenance Management

Message from the Guest Editors

The growing demand for sustainable energy has led to advancements in Renewable Energy System Forecasting and Maintenance Management. Maximizing energy production and minimizing maintenance downtime are essential for the reliability of sources like wind, solar, and hydropower. Accurate power production prediction is challenging due to variables such as equipment performance, grid demand, and weather. Recent developments in AI, machine learning, and big data analytics have improved forecast accuracy, enabling efficient energy storage and better grid integration, along with predictive maintenance for early fault detection. Maintenance management is crucial for the long-term viability of renewable projects. Techniques like vibration analysis, thermal imaging, and electrical signature analysis enhance real-time health monitoring. Advanced digital twin models and IoT-based monitoring assist in maintenance planning, reduce costs, and extend equipment life. This Special Issue will explore recent developments in AI-driven forecasting, condition monitoring, fault detection, optimization of electric machines, and digital twin solutions.

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About the Journal

Message from the Editor-in-Chief

Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

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