

Special Issue

Smart and Efficient Power Systems: Renewable Energy Storage and Grid Integration for a Sustainable Future

Message from the Guest Editor

The global imperative to mitigate climate change and reduce carbon emissions has significantly accelerated the demand for sustainable energy solutions.

Renewable energy sources such as solar, wind, and hydroelectric power are pivotal in this transition, but their inherent variability and intermittency pose significant challenges to power system stability and reliability. As the penetration of renewables into power grids continues to grow, the development of smart and efficient power systems that incorporate advanced energy storage and seamless grid integration will become essential to ensure a resilient and sustainable energy future. This Special Issue aligns directly with the scope of *Sustainability* by promoting interdisciplinary research that advances the environmental, economic, and social dimensions of sustainable development in energy systems. It will emphasize the critical role of energy storage solutions—notably batteries, supercapacitors, and hybrid systems—in stabilizing power grids and enabling the large-scale deployment of renewable energy.

Guest Editor

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Message from the Editor-in-Chief

I encourage you to contribute a research or comprehensive review article for consideration for publication in Sustainability, an international open access journal which provides an advanced forum for research findings in areas related to sustainability and sustainable development. The journal publishes original research articles, reviews, conference proceedings (peer reviewed full articles) and communications. I am confident you will find the journal contributes to enhancing understanding of sustainability and fostering initiatives and applications of sustainability-based measures and activities.

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