

Special Issue

Recent Advances in Smart Grids for a Sustainable Energy System

Message from the Guest Editors

The innovation and utilization of sustainable energy is considered to be the solution to the energy crisis. However, the use of sustainable energy still faces challenges, such as the cost of technology, control and consumption of energy, energy storage, and the construction of energy infrastructure. Against this background, virtual power plants are a new type of power plant that can realize the effective management of sustainable energy and demand-side response resources connected to the grid, and it is an effective way to achieve the sustainable development of power systems. This Special Issue focuses on contributions addressing the challenges in optimization and operation control for sustainable virtual power plants with renewable energy. Topics for the Special Issue include, but are not limited to:

- Emerging technology of sustainable energy generation technology;
- Emerging technology of future smart grids;
- Emerging technology of sustainable energy systems;
- Optimal planning and operation methods for virtual power plants;
- New power generation control technology of grid-forming converters.

We look forward to receiving your contributions.

Guest Editors

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Deadline for manuscript submissions

closed (31 May 2025)



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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.

Editor-in-Chief

Prof. Dr. Steve W. Lyon

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