

## Special Issue

# Planning, Operation, and Energy Efficiency of Sustainable Electric Power Systems

### Message from the Guest Editor

In response to escalating environmental degradation and climate change, accelerating the development of a sustainable power system dominated by renewable energy has become a crucial path for global low-carbon transformation. This Special Issue explores innovative approaches to the planning, operation, and energy efficiency of sustainable electric power systems, aiming to enhance clean energy utilization efficiency and facilitate the low-carbon transformation of power systems. Current research on the planning and operation of power systems faces numerous technical hurdles: renewable energy exhibits seasonal fluctuations, short-term uncertainties, and significant regional distribution differences; traditional flexible resource planning methods have limited multi-scenario adaptability, and resource response potential remains underexploited. Research must delve into multi-time-scale flexible resource planning/operation, cross-regional resource coordination and complementarity, and optimization of generation-grid-load-storage regulation characteristics to support multi-scenario flexible adjustment needs. Original research articles and reviews are welcome in this Special Issue.

---

### Guest Editor

Dr. Boyu Qin

1. School of Electrical Engineering, Xi'an Jiaotong University, Xi'an 710049, China
2. School of Energy and Electrical Engineering, Qinghai University, Xining 810016, China

---

### Deadline for manuscript submissions

31 December 2026



Sustainability

---

an Open Access Journal  
by MDPI

---

Impact Factor 3.3  
CiteScore 7.7



[mdpi.com/si/264107](https://mdpi.com/si/264107)

*Sustainability*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[sustainability@mdpi.com](mailto:sustainability@mdpi.com)

[mdpi.com/journal/  
sustainability](https://mdpi.com/journal/sustainability)





## Sustainability

---

an Open Access Journal  
by MDPI

---

Impact Factor 3.3  
CiteScore 7.7



[mdpi.com/journal/  
sustainability](https://mdpi.com/journal/sustainability)



# About the Journal

## 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

School of Environment and Natural Resources, Ohio State University,  
Columbus, OH 43210, USA

---

## Author Benefits

### Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

### High Visibility:

indexed within Scopus, SCIE and SSCI (Web of Science), GEOBASE, GeoRef, Inspec, RePEc, CAPlus / SciFinder, and other databases.

### Journal Rank:

JCR - Q2 (Environmental Studies) / CiteScore - Q1  
(Geography, Planning and Development)