



*energies*



an Open Access Journal by MDPI

## Control and Operation of the Modern Power System with High Penetration of Renewables

Guest Editors:

**Dr. Chao Zheng**

China Electric Power Research Institute, Beijing 100192, China

**Dr. Junru Chen**

Engineering Research Center of Renewable Energy Power Generation and Grid-connected Control, Ministry of Education, Xinjiang University, Urumqi 830017, China

**Xiqiang Chang**

State Grid Xinjiang Electric Power CO. LTD., Urumqi 830004, China

Deadline for manuscript submissions:

**closed (15 December 2023)**

### Message from the Guest Editors

Current power systems are transitioning towards the high integration of power electronics-interfaced renewables. Power electronics-interfaced renewable energy has become one of most dominant resources. The performances of modern and future electricity grids are affected and even determined by power converter-interfaced resources. Compared to conventional synchronous generators, interfaced power converters have different terminal characteristics in terms of their output impedance, equivalent circuit model, power-frequency/voltage characteristics and dynamic response principles. Such a transition results in the power system suffering from frequency-related inertia and stability issues as well as voltage-related problems. For the purpose of the stability and safety of modern power systems with a high integration of renewables, the control and operation of the interfaced converters and power systems is essential.

This Special Issue aims to present and disseminate the most recent advances related to the control and operation of modern power systems to improve their safety, reliability, resilience and stability.



[mdpi.com/si/120209](https://mdpi.com/si/120209)

**Special** Issue



# energies



an Open Access Journal by MDPI

## Editor-in-Chief

### Prof. Dr. Enrico Sciubba

Department of Mechanical and  
Aerospace Engineering,  
University of Roma Sapienza, Via  
Eudossiana 18, 00184 Roma, Italy

## 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.

## Author Benefits

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

**High Visibility:** indexed within Scopus, SCIE (Web of Science), Ei Compendex, RePEc, Inspec, CAPlus / SciFinder, and other databases.

**Journal Rank:** CiteScore - Q1 (Control and Optimization)

## Contact Us

---

*Energies* Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
[www.mdpi.com](http://www.mdpi.com)

[mdpi.com/journal/energies](http://mdpi.com/journal/energies)  
[energies@mdpi.com](mailto:energies@mdpi.com)  
[X@energies\\_mdpi](https://twitter.com/energies_mdpi)