



*energies*



an Open Access Journal by MDPI

## High Penetration of Renewables in Power Systems: Challenges and Solutions

Guest Editors:

**Dr. Mohit Bajaj**

**Dr. Padmanabh Thakur**

**Dr. Olena Rubanenko**

**Dr. Arvind R. Singh**

Deadline for manuscript  
submissions:

**closed (30 June 2023)**

### Message from the Guest Editors

The high penetration of renewable energy in power systems could resolve the rising energy demands while also reducing fossil fuel consumption, as well as providing economic and technical merits. However, high penetration brings challenges such as harmonic distortion, distribution cable overloading, over-voltage, significant uncertainty, high fault current, and insufficient generating reserves and protection difficulties. Technologies that can overcome such challenges play an important role in increasing the renewable hosting capacity of distribution networks. A seamless grid integrating the operation of renewable energy systems with better performance characteristics is the primary focus of research in both industries, as well as academia.

The objective of this Special Issue is to serve as a single platform to bring together important original research and review works that focus on the challenges associated with the high renewable penetration in power systems, as well as discussing the solutions to total inertia reduction, low fault ride-through abilities, high uncertainties, voltage and frequency fluctuations, low power quality, harmonic distortions, feeder overloading, etc.



[mdpi.com/si/144552](https://mdpi.com/si/144552)

# Special Issue



# energies



an Open Access Journal by MDPI

## Editor-in-Chief

### **Prof. Dr. Enrico Sciubba**

Department of Mechanical and Industrial Engineering, University Niccolò Cusano, 00166 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 Compindex, 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)