



## Recent Advances and New Challenges in Solar–Wind Hybrid Energy Systems

Guest Editor:

**Prof. Dr. Adrian Ilinca**

École de Technologie  
Supérieure, Université du  
Québec, Montreal, QC H3C 1K3,  
Canada

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### Message from the Guest Editor

Solar and wind energy are two key renewable energy sources that have gained significant traction recently. Solar photovoltaic (PV) and wind turbine technologies have advanced rapidly, substantially contributing to global energy generation. Combining these two renewable sources into hybrid energy systems offers several advantages, including improved reliability, energy production optimization, and better resource utilization. This Special Issue explores recent advances and addresses emerging challenges in developing, integrating, and optimizing solar–wind hybrid energy systems.

### Keywords

- solar–wind hybrid systems
- renewable energy integration
- energy storage
- grid integration
- optimization
- modeling and simulation
- energy management
- case studies
- smart grid
- microgrid
- hybrid energy generation
- energy transition





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

Department of Mechanical and Industrial Engineering, University Niccolò Cusano, 00166 Roma, Italy

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*Energies* Editorial Office  
MDPI, Grosspeteranlage 5  
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