



## Ground Source Heat Pump and Renewable Energy Hybridization

Guest Editors:

**Prof. Dr. Charles Yousif**

Institute for Sustainable Energy,  
University of Malta, Barrakki  
Street, MXK 1531 Marsaxlokk,  
Malta

**Dr. Javier M. Rey Hernández**

Mechanical Engineering, Thermal  
Engines and Fluid Mechanics  
Department, University of  
Malaga, Malaga, Spain

Deadline for manuscript  
submissions:

**30 April 2025**

### Message from the Guest Editors

Although research on geothermal energy has progressed over the years, the coupling of this renewable energy resource to energy systems, such as heat pumps, continues to develop. This is further stimulated by the drive to achieve decarbonization while meeting the heating and cooling demands of buildings and other structures. This open access Special Issue aims to provide an effective channel for scholars to share their innovative research work, focusing on coupling ground-source heat pumps to the geothermal field, as well as their integration to other renewable energy sources and systems to facilitate the hybridization of heating and cooling processes and to achieve overall very low, or zero, carbon emissions.

Some of the suggested themes may include, but are not limited to, the following:

1. Small-scale shallow-ground heat pump systems for the space heating and cooling of buildings;
2. Hybrid solar/geothermal systems for industrial processes;
3. Centralized and decentralized district heating and cooling using ground-source heat pumps;
4. Long-term performance analysis of geothermal heat pump systems;
5. Environmental and cost/benefit analysis of ground-source heat pump systems.





an Open Access Journal by MDPI

## Editor-in-Chief

### **Prof. Dr. Marc A. Rosen**

Faculty of Engineering and  
Applied Science, University of  
Ontario Institute of Technology,  
Oshawa, ON L1G 0C5, Canada

## 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. *Sustainability* publishes original research articles, review 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.

## 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, AGRIS, RePEc, CAPlus / SciFinder, and other databases.

**Journal Rank:** JCR - Q2 (*Environmental Studies*) / CiteScore - Q1 (Geography, Planning and Development)

## Contact Us

---

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

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

[mdpi.com/journal/sustainability](http://mdpi.com/journal/sustainability)  
[sustainability@mdpi.com](mailto:sustainability@mdpi.com)  
[X@Sus\\_MDPI](https://twitter.com/Sus_MDPI)