Special Issue

Sustainable Energy Transitions in Buildings and Cities: Insights from Data Analytics

Message from the Guest Editors

This Special Issue aims to uncover how data-driven approaches can optimize energy use, improve resource management, reduce carbon footprints, and enhance overall energy efficiency. Special attention will be given to the application of generative AI in energy system design, predictive analytics for building performance, and the real-time optimization of energy consumption in urban infrastructures. We invite scholars, engineers, and practitioners to submit papers that address, but are not limited to, the following themes:

- Data analytics applications for energy-efficient building design and operation;
- The role of big data and machine learning in optimizing energy consumption in cities;
- Generative AI techniques for smart energy systems and predictive modeling in buildings;
- Sustainable urban planning through data-driven energy solutions;
- The integration of renewable energy technologies and smart grids in urban environments.

We welcome high-quality submissions that explore new methodologies, case studies, and theoretical advancements in these areas, with an emphasis on practical, actionable insights that can help cities and buildings achieve energy sustainability goals.

Guest Editors

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Deadline for manuscript submissions

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About the Journal

Message from the Editor-in-Chief

Current urban environments are home to multi-modal transit systems, extensive energy grids, a building stock, and integrated services. Sprawling neighborhoods are composed of buildings that accommodate living and working quarters. However, it is expected that the cities and communities of the future will face complex and enormous challenges, including maintenance, interconnectivity, resilience, energy efficiency, and sustainability issues, to name but a few. A smart city uses advanced technologies and a digital infrastructure to improve the outcomes in every aspect of a city's operations. A smart building optimizes the experience of occupants, staff, and management by using a modern and connected environment. Innovations in technology that can bring dramatic improvements to design, planning, and policy are critical in developing the cities and buildings of the future.

Editor-in-Chief

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