Special Issue

Building Energy Consumption and Urban Energy Planning

Message from the Guest Editors

This Special Issue explores the quantitative and qualitative dimensions of building and urban energy, given that buildings account for one-third of global energy-related greenhouse gas emissions, and the share is even higher in cities. Therefore, building and urban energy stand on the frontline of mitigating and adapting to climate change [1]. Many interesting topics deserve investigation, e.g., precise modelling and simulation of building energy in urban context [2], multi-vector energy integration towards establishing low-carbon cities [3], flexibility provision by AI-enhanced smart buildings [4], and building energy transition towards carbon neutrality [5,6]. All these promising topics call for greater research efforts to address the technical, economic, environmental, and climate aspects of building energy consumption in urban environments and eventually to make cities more energy-efficient and decarbonized. Overall, research, analysis, methods, and synthesis papers are warmly welcome for submission to the Special Issue "Building Energy Consumption and Urban Energy Planning".

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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.

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