Special Issue

Smart Energy Systems for Carbon-Neutral Urban Communities

Message from the Guest Editors

zero-carbon buildings generally require complicated control systems to achieve the integration of the diversified renewable energy sources (e.g., solar energy, geothermal energy, or wind energy), advanced energy storage systems (e.g., phase change energy storage, hydrogen storage, or electric vehicles) and electricity grids, which seriously affects its large-scale implementation in practical projects. Smart energy systems integrating multi-energy sectors are considered a promising technical and managerial approach to provide comprehensive and optimal control solutions for attainable, affordable, and sustainable energy systems in the future. Smart energy systems can contribute to the goal of zero carbon emissions in buildings by more intelligently utilizing renewable energy sources, and energy storage systems to achieve operational goals and respond to grid signals. This topic will provide a significant perspective on zero carbon emissions in buildings and establish the basis for strategic decision tools to support the high-quality development of zero-carbon buildings.

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Deadline for manuscript submissions

closed (31 October 2024)

Applied Sciences

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.5

mdpi.com/si/123003

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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