Energy in building

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The impact of personal environmental control on the performance of thermal ...

Sinergym - A virtual testbed for building energy optimization with Reinforcement ...

Energy, Wellbeing, and Environmental Sustainability in Building Communities in ...

Sustainable Cities and Society (SCS) is an international journal focusing on ...

An international journal devoted to investigations of energy use and ...

Applied Thermal Engineering disseminates novel research related to the design, ...

Building energy system modeling, Computational Fluid Dynamics, Smart ...

Measurement and Verification Building Energy Prediction (MVBEP): An ...

??,?,1977?Mat Santamouris?

The operations of buildings account for 30% of global final energy consumption and 26% of global energy-related emissions1 (8% being direct emissions in buildings and 18% indirect emissions from the production of electricity and heat used in buildings). Direct emissions from the buildings sector decreased in 2022 compared to the year before, despite extreme temperatures driving up heating-related emissions in certain regions. In 2022, buildings sector energy use increased by around 1%.

Minimum performance standards and building energy codes are increasing in scope and stringency across countries, and the use of efficient and renewable buildings technologies is accelerating. Yet the sector needs more rapid changes to get on track with the Net Zero Emissions by 2050 (NZE) Scenario. This decade is crucial for implementing the measures required to achieve the targets of all new buildings and 20% of the existing building stock being zero-carbon-ready2 by 2030.

1Energy sector CO2emissions include emissions from energy combustion and industrial processes.