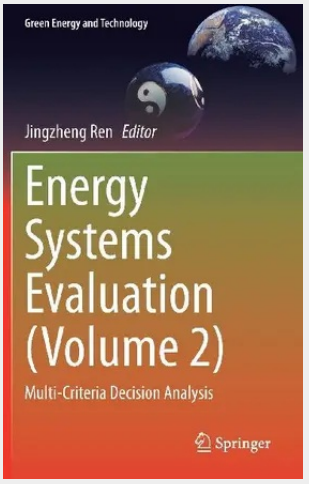
Ren

Energy Systems Evaluation (Volume 2)

Multi-Criteria Decision Analysis



This book presents various multi-criteria analysis methods for sustainability-oriented analysis and decision-making for energy systems, under various different conditions and scenarios. It presents methodologies to answer the questions relating to which of the options are the most sustainable among the alternatives, and how multi-criteria decision analysis methods can be used to select the most sustainable energy systems. A systematic innovative methodological framework is presented, which enables the most appropriate energy system to be selected under different conditions including: - Scientific decision support tools for sustainable energy system selection; - Fuzzy, grey, and rough sets based multi-criteria decision analysis; - Decision-making models under uncertainties; and The combination of life cycle thinking and multi-criteria decision analysis This book is of interest to researchers, engineers, decision makers, and postgraduate students within the field of energy systems, sustainability, and multi-criteria decision analysis.

Overview of Multi-Criteria Decision Analysis and Its Applications on Energy Systems.- Development of Decision Support Tools: Methodological Framework of System Dynamics Energy Models.- Multi-Criteria Decision Analysis Methods for Sustainability Assessment of Renewable Energy Systems and Its Potential Application to Sustainable STEM Education.- Integration of Multi-Criteria Decision Analysis and Sustainability Assessment for Better Energy Systems: Methods and Case Studies.- Multi-Criteria Assessment of Sustainability for Energy Systems Under Uncertainty: Grey Based Approach.- Coupling LCSA and Multi-Criteria Decision Analysis for Energy System Prioritization.- Multi-Criteria Decision Analysis Methods for Sustainability Assessment of Energy Systems under Uncertainties.- Fuzzy Multi-Criteria Decision Analysis Methods for Sustainability Assessment of Energy Systems.- Application of Fuzzy MCDM Methods in Sustainable and Effective Energy Management.- Rough Set-based Multi-Criteria Decision Analysis Methods in Sustainability Assessment of Photovoltaic Projects.- Multi-Criteria Oriented Optimization of Building Energy Performances: the Annex 72 IEA-EBC Experience.

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