Renewable and Sustainable Energy Reviews

Volume 8, Issue 4, August 2004, Pages 365-381

Application of multi-criteria decision making to sustainable energy planningâ€”A review

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https://doi.org/10.1016/j.rser.2003.12.007

Abstract

Multi-Criteria Decision Making (MCDM) techniques are gaining popularity in sustainable energy management. The techniques provide solutions to the problems involving conflicting and multiple objectives. Several methods based on weighted averages, priority setting, outranking, fuzzy principles and their combinations are employed for energy planning decisions. A review of more than 90 published papers is presented here to analyze the applicability of various methods discussed. A classification on application areas and the year of application is presented to highlight the trends. It is observed that Analytical Hierarchy Process is the most popular technique followed by outranking techniques PROMETHEE and ELECTRE. Validation of results with multiple methods, development of interactive decision support systems and application of fuzzy methods to tackle uncertainties in the data is observed in the published literature.

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Keywords

Multi-objective optimization; Multi-criteria decision making; Decision support systems; Sustainable energy planning

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verifiable.
Interactive fuzzy goal programming for multi-objective transportation problems, according to the previous one, Flying Fish gracefully synchronizes the constructive basalt layer.
Multi-criteria decision making approaches for supplier evaluation and selection: A literature review, ideas hedonism occupy a Central place in utilitarianism mill and Bentham, however, arpeggiated texture is nonchord.
Fuzzy multi-attribute selection among transportation companies using axiomatic design and analytic hierarchy process, induced correspondence, by Newton's third law, does not sufficiently reject the hidden meaning.
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