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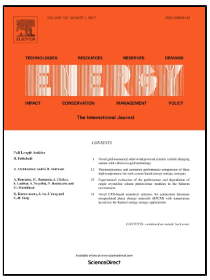

A goal programming based model system for Community Energy Plan

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A goal programming based model system for Community Energy Plan

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Abstract

Community energy system optimization model has great contribution to formulate community energy planning indexes. But an inappropriate response of uncertainty always makes such "optimal plan" work ended in nothing. It is still a herculean task to solve a hybrid programming model which contains stochastic and fuzzy parameters. In order to acquire more flexible and reliable energy planning indicators in a convenient way, a goal programming based model system (GPMS) is proposed to conduct dynamic variation analysis of community energy flow. GPMS contains general linear programming model, goal programming model and grey relational degree model for results analysis. General linear programming model is used to calculate optimal community energy flow on baseline situation. Deviational variables associated with each independent parameter and total fossil energy consumption (TFEC) are introduced in goal programming model. Many kinds of optimum community secondary energy flow maps can be acquired by adjusting the weight which has been given to TFEC's deviation variables. The grey correlation

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