

A fuzzy multi-objective model for a green generation expansion problem

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In this paper a comprehensive fuzzy multi-objective model is presented for generation expansion planning problem considering uncertainty in objective functions and demand constraints. The purpose of the model is determining the optimal generation amount in existing and new generation units along with calculating the transmission energy volume and required amount of imported fuel regarding emissions and environmental impacts. As the proposed model considers four fuzzy minimization objective functions, a fuzzy linear programming approach will be applied to solve the proposed model by transforming the fuzzy multi-objective model to a crisp single objective one. A case study is presented and sensitivity analysis is done on the model to illustrate the ability of the model to interpret real world problems.