عنوان مقاله:

The optimal energy carriers substitutes in thermal power plants:A fuzzy linear programming model

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خلاصه مقاله:

In this paper, a dynamic optimization approach for optimal choice of energy carriers in thermal power plants is proposed that analyzes the substitution of energy carriers in short-term planning of a power plant. The model is based on the linear programming method with the objective of minimizing costs under constraints of resource availability, energy balances, environmental regulations and electricity production needs. The restriction of resource availability in cold months (e.g.,due to the depletion of gas pressure) is also considered. This research tries to demonstrate the application of a model for the determination of efficient subsites and optimization of their consumption in two thermal power plants in Iran as case studies. In these case studies, the reasonable solutions for dynamic planning of substitution of energy carriers in two power plants have been obtained. Furthermore in this paper, the effects of uncertainties in the fuel price on the a model is examined. Thus, a fuzzy linear programming model with fuzzy objective coefficients is formulated. For one of the power plants, the model is solved as a case study and its results are compared with the crisp model results.

کلمات کلیدی:

Energy planning, Fuel substitution, Fuzzy linear programming

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