

عنوان مقاله:

Developing a Generation Expansion Planning Model based on Analytical Hierarchy Process by Using Entropy Technique

محل انتشار:

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خلاصه مقاله:

The expansion planning of the electricity delivery chain system is essential duo to the increasing electricity demand. Generation Expansion Planning (GEP) is one of the main parts of the system expansion that is focused in this paper. Here, a method is proposed for the GEP problem by identifying its effective criteria. The proposed method employed the Analytical Hierarchy Process (AHP) and entropy techniques. Entropy is one of the methods that could be utilized for the weight assessment of the decision-making in the Multi-Criteria Decision-making (MCDM) models. To this end, five criteria are presented and the Entropy-AHP (EAHP) is employed. Therefore, first, the Local Marginal Price (LMP) of each bus is computed using Optimal Power Flow (OPF) execution. Then, based on the identified criteria, the candidate places for the installation of the power plants are determined. Finally, the EAHP is utilized to assign a value to each criterion. By using these values, the optimal allocation of the power plant among the candidate places is performed. The IEEE ۱۴ bus system is used as the test system to simulate the proposed approach and evaluate the effectiveness of the method.

کلمات کلیدی:

Entropy-Analytical Hierarchy Process (EAHP), "Generation Expansion Planning (GEP)," "Local Marginal Price" ((LPM), "Multi-Criteria Decision-making (MCDM

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