

عنوان مقاله:

The location optimization of wind turbine sites with using the MCDM approach: A case study

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خلاصه مقاله:

The many advantages of renewable energies—especially wind—such as abundance, permanence, and lack of pollution, have encouraged many industrialized and developing countries to focus more on these clean sources of energy. The purpose of this study is to prioritize and rank 13 cities of the Fars province in Iran in terms of their suitability for the construction of a wind farm. Six important criteria are used to prioritize and rank these cities. Among these, wind power density—the most important criterion—was calculated by obtaining the three-hourly wind speed data at the height of 10 m above ground level related to the time period between 2004 and 2013 and then extrapolating these data to acquire wind speed related to the height of 40 m. The Data Envelopment Analysis (DEA) method was used for prioritizing and ranking the cities, after which Analytical Hierarchy Process (AHP) and Fuzzy Technique for Order of Preference by Similarity to Ideal Solution (FTOPSIS) methods were used to assess the validity of the results. According to the results obtained from these three methods, the city of Izadkhast is recommended as the best location for the construction of a wind farm.

کلمات کلیدی:

(Wind Farm, Prioritizing, Optimization, Fars Province, Data Envelopment Analysis (DEA

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