

Identifying factors for wind farm location determination by integrating GQM, FDEMATEL and ANP

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ABSTRACT

Subject to the rapid increase of installation of wind turbine electricity generators and wind electricity generation demonstrating increasingly complications far more than ever domestically, the top priority issue for the wind electricity enterprises could be achieving full grasping of local neighborhood residents' perceptiveness and recognition toward the installation of such the wind turbine electricity generators prior to decision of the aforesaid wind electricity system installation location. This research is created for intending to explore the factors that shall be required for decision of the wind electricity generator installation location and also to achieve a comprehensive understanding the differences of adopting variables for making evaluation among various industries. The metric measurement of this research adopts 6 aspects, including safety and quality, economy and efficiency, social perception, environment protection and ecology, legal stipulations, and government policies, and also 28 assessment criteria for making judgment on the counteracting relevancy among all individual elements for decision of an installation location and also utilizes the Decision Making Trial and Evaluation Laboratory (DEMATEL) for searching the associated relevancy structure among all aspects in conjunction of applying Analytic Network Process (ANP) for determinants of the mutual weight average ratios among all assessment criteria. The results show that safety and quality and environment and ecology are the two major influential constructs. Business circle puts the most emphasis on the distance of safety setting; however, academic circle stresses most on the monitor of environment ecology. Hopefully, the assessment results of this research can promote the social public's understanding of wind electricity generation, provide references for domestic energy policies and the enterprises that are interested at making such an investment for serving the purpose of making the optimal distribution of limited resources, achieving the best efficiency and benefiting the domestic energy source diversification and self-dominance.

Keywords : wind power、FDEMATEL、ANP

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