

عنوان مقاله:

Feasibility Study of Wind Energy Potential in Alborz Province for Generate Electricity, a case study: Eshtehard

محل انتشار:

نخستین همایش علمی تخصصی باد و خورشید (سال: 1390)

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خلاصه مقاله:

In this study, the measured wind speed data for year 2007 at 10 m, 30 m and 40 m heights for Alborz Province Iran, in the Eshtehard, have been statistically analyzed to determine the potential of wind power generation. The objective is to evaluate the most important characteristic of wind energy in the studied site. The statistical attitudes permit us to estimate the mean wind speed, the wind speed distribution function, the mean wind power density in the site at the height of 10 m, 30 m and 40 m. Wind speed frequencies were approximated using Weibull probability function. The Weibull parameters k (dimensionless) and c (m/s) have been studied. Also energy pattern factor, U_{me} , U_{mp} , standard deviation, annual direction, surface roughness length, probability of wind speed $P(U > 5\text{m/s})$, annual power density, wind rose have been studied. The magnitude of power density in 40m height is $170 \text{ (W/m}^2\text{)}$ which is suitable for water pumping and battery charging.

کلمات کلیدی:

Wind energy, Weibull distribution, Power density, Wind rose, Alborz Province, Eshtehard

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