

METEOROLOGICAL ASPECTS OF WIND ENERGY

N.A. Bokade¹ and K.W. Desai²

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ABSTRACT : The wind data as wind speed, temperature etc. were collected at site 307.4 m elevations from mean sea level of meteorological department Dr. PDKV, Akola. The wind speed data collected at 10 m height from ground level further converted to respected heights of wind speed i.e. 40 m, 50 m and 70 m. by using wind shear exponent. The wind speed data of the site have been analysed in HOMER for studying the wind power potential characteristics. The wind speeds at different heights have been studied for better understanding of the wind speed characteristics. The mean hourly average wind velocity of the selected site at 10 m, 40 m and 70 m heights has been observed to be 1.42 m/s, 2.05 m/s and 2.3 m/s respectively. The rated wind speed at 40 m and 70 m height increases 23.52% and 58.8% over 10 m height respectively.

Key Words : Wind speed, wind velocity, wind energy, HOMER.