Abstract

This paper examines optimum selection of wind turbines between site and wind turbine generators. An analysis methodology is done at the planning and development stages of installation of wind power stations will enable the wind power developer or the power utilities to make a judicious and rapid choice of suitable wind energy conversion system from the available potential sites. The methodology of analysis is based on the computations of annual capacity factors, which are done using the Weibull distribution function and power curve model. The methodology helps to the determination of the speeds characteristic range of the wind machines and to make easy the choice of the suitable wind turbine for a given site, in order to maximize the delivered energy for a given amount of available wind energy. This methodology is applied to install a wind energy conversion system at four sites in Algeria.


Optimal selection of Wind Turbine Generators


**Index Terms**

Computer Science

Applied Sciences

**Keywords**
Probability density function; power curve law; capacity factors; wind turbine generators; optimum siting; energy output.