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Design and Study of a Wind-Solar Hybrid System for Lighting Application

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Abstract : Wind energy has been shown to be one of the most viable sources of renewable energy. With current technology, the low cost of wind energy is competitive with more conventional sources of energy such as coal. Most airfoil blades available for commercial grade wind turbines incorporate a straight span-wise profile and airfoil shaped cross sections. This paper is aimed at studying and designing a wind-solar hybrid system for light load application. The tools like qblade and solidworks are used to model and analyze the wind turbine system, the material used for the blade and hub is balsa wood and the tower a lattice type. The expected power output is 100 W for an average wind speed of 4.5 m/s.

Keywords : renewable energy, hybrid, airfoil blades, wind speeds, make-in-india, camber, QBlade, solidworks, balsa wood
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