

ABSTRACT

The bladeless windmills uses a radically new approach for capturing both intermittent wind energy pulses and constant wind flow under specified wind velocity and pressure. The windmill utilizes the energy of vorticity, an aerodynamic effect (vortex shedding). As wind strikes a fixed structure, its flow changes and a cyclical pattern of eddies or vortices are formed in the vicinity of the structure. As these forces go strong, the structure starts vibrating. Consequently, these aerodynamic instabilities can be utilized to run a linear alternator or a crankshaft. The natural frequency of the structure should not match with the frequency of vibration, which is one of the design criteria, design takes care of this major criteria. The design of windmill is entirely different from a traditional windmill. Instead of huge tower, nacelle and blades, this device has a conical frustum mast made up of fiber glass (pivoted at one-third length from bottom). The hollow and light weight mast makes this device portable and user-friendly. Also, this low cost components opens a way for low cost renewable source of energy. cost of installation is less compare to traditional windmill. This windmill is portable so it can be fixed at the top of the house.