

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELGAUM – 590 010



PROJECT REPORT ON

(10ME 85)

**“Design and Fabrication of Vertical Wind Turbine for Power Generation at Highway Medians”**

*Sponsored by KSCST*

*Submitted in partial fulfillment of the requirements for the award of the degree*

BACHELOR OF ENGINEERING

IN

MECHANICAL ENGINEERING

UNDER THE GUIDANCE OF

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# **ABSTRACT**

Wind energy, a kinetic energy of air in motion, which is a renewable energy resource, has been recognized as a major contributor for commercial purpose. Using wind energy the mechanical energy is converted into electrical energy.

Increased turbulence levels yield greater fluctuations in wind speed and direction. Unlike traditional horizontal axis wind turbine (HAWT), vertical axis wind turbine effectively captures turbulent winds which are typical flowing in the highways. An effort is made to create a vertical axis highway wind mill of 500W capacity for generating electricity. Our aim is to design the turbine which will capture the maximum of wind in any direction by placing it at optimum place and height at the highways, by considering both the cost and safety of the system.

The main requirements of this wind mill are 4 aluminium sheet blades, alternator, adjustable shaft, bearings, housings and base.

As the wind blows, blades of wind mill start rotating which in turn rotates the magnet rotors. So it cuts the magnetic flux and generates the electric current which can be directly used for the different applications.

This project is very economical and a new approach which will offset the amount of pollution created by burning fossil fuels, which are the main source of pollution these days. It would be a giant leap satisfying the basic energy needs of the major parts in India.