Analysis of Cost Effective Vertical Axis Wind Turbine (CEVAWT)

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Abstract

Wind turbines are the conventional type of energy source. The main focus of this work is the analysis and fabrication of cost effective vertical-axis wind turbine (VAWT). Cost of the turbine is reduced by low cost material and minimizing its total weight.There are two main types of the wind turbines i.e. Horizontal axis wind turbine and Vertical axis wind turbine. Savonius VAWT is more preferable for energy generation, because it has more advantages than the HAWT . The design of main parts of turbine like shaft, blades are designed by using torsion and bending formulas. On the basis of the shaft design, we decided the dimensions of the other parts of turbine. The turbine is having six blades and 12 connectors.

The performance of the turbine will be checked with the help of Structural Mechanics Module in COMSOL Multiphysics® software.

The analysis will give the performance of turbine at different wind speed. This work gives the reduction the cost of the VAWT with available resources.
Conclusion:
This work will help to increase performance of VAWT for further study.