Examining the Efficiency of Vertical Axis Wind Turbines Using Inexpensive Materials

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Due to the recent depletion of our world's natural resources, the expansion of technology into other methods of clean energy has become a new world focus. Wind energy has become a newly popular type of clean energy due to its renewability and it availability all around the world. At its current state of development, wind technology is not efficient. The efficiency levels alter depending upon the type of turbine that is used. Vertical Axis Wind Turbines (VAWT) are more efficient that Horizontal Axis Wind Turbines (HAWT). The first prototype that was constructed was a prototype that had a single goal of increasing wind speed through the application of Bernoulli's Principal and the ideas of the continuity principal. The second prototype was constructed to resemble the characteristics of the Savonius turbine. Prototype C was constructed to resemble a helix turbine. Findings were that the prototype A could be improved by paying closer attention to specific dimensions. Findings from the second prototype, prototype B, were that the turbine currently works under its current conditions when the turbine is stabilized at its apex with an engine that also serves as a method of measuring data. With this stabilization technique, the turbine is able to create a continuous flow of potential energy without having to compensate for the previous unanchored movement. Finally Prototype C was found to be the most productive in harnessing the most voltage and maintained the highest efficiency.

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