



**CALIFORNIA STATE SCIENCE FAIR  
2010 PROJECT SUMMARY**

<b>Name(s)</b> <b>Hannah J. Richey</b>	<b>Project Number</b> <b>J0127</b>
<b>Project Title</b> <b>The Efficiency of Different Savonius Wind Turbines</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> My project is determining which of three constructed Savonius wind turbines (built with different designs) will be most efficient in utilizing the power of wind. I will compare the advantages of a Savonius wind turbine to that of a Horizontal Axis Wind Turbine used frequently today.</p> <p><b>Methods/Materials</b> First I will construct an apparatus to display and hold the designs for testing when finished. Three different turbines of identical weight and size will be constructed and tested. Each has a different design on its vertical axis. They will be tested using the same fan, with the same wind velocity, at the same angle and distance from it for revolutions per minute. Each will be tested 10 times for accurate results that will then be averaged.</p> <p><b>Results</b> I found that when three different Savonius Windmills were tested under the same circumstances that Savonius A had the largest number of revolutions per minute.(RPM)Thus proving my hypothesis that Savonius A has the highest ability to utilize low velocity wind. Therefore it is appropriate to say that Savonius A is the most efficient and that using this design would be far more advantageous over the commonly-used Horizontal Axis Wind Turbine.</p> <p><b>Conclusions/Discussion</b> My project is one in many steps bringing society closer to a much more efficient, dependable, and reliable energy source. The possibilities are endless when you consider what this could do for the world. These ideas and many others can be explored through my experiment and future experiments I intend on conducting.</p>	
<b>Summary Statement</b> My project is about advancing the technology of windmills by studying and testing alternatives to the turbines used today.	
<b>Help Received</b> Mother and sister took me to buy materials. Mother paid for the project.	