



# CALIFORNIA SCIENCE & ENGINEERING FAIR 2019 PROJECT SUMMARY

<b>Name(s)</b> <b>Megan Maggiora</b>	<b>Project Number</b> <b>J0114</b>
<b>Project Title</b> <b>The Effect of Blade Variables on Wind Turbines</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives</b> The objective of this study is to determine if the weight and number of blades on wind turbines effect the voltage output it generates. This could help us generate better energy with wind turbines.</p> <p><b>Methods</b> Make 1 wind turbine stand, use hairdryer to spin wind turbine, attach hair pins to blades to test weight variable, use different amounts of blades to test number of blades variable, use a voltage meter to measure how many DC volts per minute the wind turbine generates.</p> <p><b>Results</b> As a result, when testing the voltage outputs of each different variable, I found that the 2 bladed, unweighted wind turbine had an average of 2.009DC volts, and the 2 bladed, weighted one had an average of 2.002DC volts. The 4 bladed, unweighted wind turbine had an average of 2.099DC volts, and the weighted one had an average of 2.082DC volts. The 8 bladed, unweighted wind turbine had an average of 2.102DC volts, and the weighted one had an average of 2.117DC volts.</p> <p><b>Conclusions</b> In conclusion, there was no drastic change between the different weights and number of blades. Despite this, the weighted wind turbine with 8 blades generated the most energy. My hypothesis was incorrect because I thought the wind turbine with the most voltage output would be the smallest and lightest one.</p>	
<b>Summary Statement</b> My hypothesis was that the lightest blades would produce better energy, but I was incorrect because the wind turbine with 8 blades did.	
<b>Help Received</b> My teacher Ms. Talavera, my parents Mike and Brenda Maggiora, and Darla	