



# CALIFORNIA SCIENCE & ENGINEERING FAIR 2018 PROJECT SUMMARY

<b>Name(s)</b> <b>Brianna H. Vu</b>	<b>Project Number</b>  38621
<b>Project Title</b> <b>Turbines: A Wind Wind Solution</b>	
<b>Objectives/Goals</b> In our daily life, electricity is the most common usage in our entire world. With wind energy, life is a lot cleaner, faster, healthier, and more efficient than any other energy producer. This project focuses on how electricity could be produced without harming our environment using a free energy source, wind. With testing which blade will generate the most electricity, it will improve our society by being able to generate more electricity in more time. This is the problem, our society uses so much electricity that we sometimes even have to pay more money, but with this project being done, we will be able to produce more electricity in faster time. <b>Abstract</b> <b>Methods/Materials</b> This experiment requires, a motor/generator, 2 Blades, 3 Blades, 4 blades, 5 blades, 6 Blades, a fan, multi#meter, data charts, collet, wood, wires, light bulb, and a "L" bracket. <b>Results</b> At the speed level of 9.1 miles per hour, the average amount of voltage for 2 blades is 1.71 volts;3 blades is 1.70 volts;4 blades is 1.68 volts;5 blades is 1.68 volts;6 blades is 1.68 volts. At the speed level 8.5 miles per hour, the average amount of voltage of 2 blades is 1.67 volts;3 blades is 1.65 volts;4 blades is 1.63 volts;5 blades is 1.62 volts;6 blades is 1.62 volts. At the speed level of 8.0 miles per hour, the average amount of voltage of 2 blades is 1.63 volts;3 blades is 1.59 volts;4 blades is 1.55 volts;5 blades is 1.51 volts; 6 blades is 1.52 volts. This experiment shows that, as matter as a fact, 2 blades generates the most electricity because of how easily the fan pushes the blades from one to the other. <b>Conclusions/Discussion</b> In conclusion, my hypothesis was incorrect. My hypothesis was: If different numbers of blades are tested on a wind turbine, then 3 blades will produce the most electricity. I was very surprised to see that 2 blades have actually created the most electricity. Around many parts of the world, I have noticed some 2 bladed wind turbines, but wind turbines with 3 blades seemed to be more common, thus, I thought that 3 blades will produce the most. With 3 blades, there would be more balance to rotate faster, but I was wrong. My data results have shown that 2 blades generated the most electricity, then 3 blades, after that, 4 blades, next, 6 blades, and lastly 5 blades. The number of blades that produced the most electricity is 2 blades. Two blades generate enough momentum to spin faster than any other blade.	
<b>Summary Statement</b> Testing the amount of blades on a wind turbine and how it would affect the voltage, wind energy benefits our society in an eco-friendly and safe process.	
<b>Help Received</b> With the supervision and wisdom of my science teacher and father, I have done this whole project individually.	