



**CALIFORNIA STATE SCIENCE FAIR  
2017 PROJECT SUMMARY**

<b>Name(s)</b> <b>Ximena E. Greatorex</b>	<b>Project Number</b> <b>J0205</b>
<b>Project Title</b> <b>Compressed Air Energy Storage</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of this project is to design a compressed air energy storage system that could replace batteries in a more environmentally responsible way.</p> <p><b>Methods/Materials</b> 3D printed fan blades, shaft with bearings, electric motor (to be used as a generator), and tested with air compressor.</p> <p><b>Results</b> By increasing the pressure on the air source, my output voltage of the turbine generator also increased.</p> <p><b>Conclusions/Discussion</b> Based on my data I realized that the idea of Compressed Air Energy Storage is feasible. The problems with efficiency will need to be fixed before it can be used on a larger scale, particularly with the design of the turbine blades and the electric motor.</p>	
<b>Summary Statement</b> I showed that a compressed air turbine can be used to regain energy stored as compressed air.	
<b>Help Received</b> My father helped me with knowledge of engineering and purchasing materials.	