



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Dana T. Hartman	Project Number J0814
Project Title Generating Electricity through Wave Motion	
Abstract Objectives/Goals In this experiment, I was trying to design and build a working generator that would use wave motion to generate electricity. Methods/Materials To build my generator I had to wrap two spools of magnet wire into their own little coils around a small tube and then placed some neodymium magnets inside and blocked off both ends with PVC end caps. I then built a waterproof housing using a plastic tube and PVC end caps that still allowed me to remove the generator at any time. Along with this, I built an anchoring system that used a small weight and a foam noodle to kept my generator from floating off. Results My results are inconclusive because of the lack of strong winds on the San Francisco Bay and my inability to create large enough waves. Conclusions/Discussion Because my results for this project are inconclusive, I cannot draw an accurate conclusion at this time. Because the idea of using wave motion to generate electricity is still fairly novel, not all the possibilities have yet been exploited. However, from other data collected so far, it seems like an efficient way to create electricity. From what I was able to gather from my project I agree. However, I cannot be completely sure because I was unable to complete my project. Some of the errors in this project were that there were not strong enough winds in the bay to create the necessary wave size, I was unable to synthesize large enough waves on my own, there was a very slight leakage in my waterproof housing system, and the generator would not always point directly into the oncoming wave. If I was to expand on this project, I would make sure to test my design during the summer, when the winds on the San Francisco Bay are strongest. I would make the fin on my waterproof housing longer so the setup wouldn't move around as much and I would also try and use more sealant to make sure my housing stayed completely watertight.	
Summary Statement This project explored the idea of building a machine that could be used to harness and convert wave motion into electricity and if this could be used as a renewable resource.	
Help Received My father supervised me while I used dangerous tools such as drills and saws.	