CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY

Name(s)
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Project Number
J0824

Project Title
Wave Hello to Clean Energy

Abstract

Objectives/Goals
This project, Wave Hello to Clean Energy, concerns the recent developments at Oregon State University. Their Motor Systems Resource Facility has created a buoy system, which translates wave energy into electricity using Faraday's Law of Electromagnetic Induction. This is important because it is clean and efficient. The purpose of my project is to find out whether waves with large amplitude and wavelength or small amplitude and wavelength will allow the buoy to generate more electricity.

Methods/Materials
To test my hypothesis, that the smaller waves will produce more electricity, I built a 6.5 foot wave tank and working replica of OSU's buoy. I then exposed the buoy to both types of waves and then measured the energy produced in the capacitor of the buoy with a voltmeter.

Results
The results of my tests supported my hypothesis: that the small waves would help produce more elctricity. This is because of their more frequent occurences and the speed at which they induced the buoy to move.

Summary Statement
The purpose of this project is to find whether waves with large amplitudes and wavelengths or small amplitudes and wavelengths will allow an energy producing buoy to create more electricity.

Help Received
Father helped build tank and buoy, Mother helped cut and mount for board, graduate student Joe Prudell at OSU helped answer my questions via e-mail