



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

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| Name(s) Kylie D. Freitas | Project Number J0207 |
| Project Title Wired Up for Powerful Results | |
| <p style="text-align: center;">Abstract</p> <p>Objectives/Goals My science project was to determine whether a solar panel or a wind generator would produce the most sustainable energy for Escondido, in Southern California, to daily charge a cell phone, computer, and Bluetooth device. My objective was to create an automatic, alternative generating and power storage system to deliver sufficient daily recharging. My hypothesis was that A solar panel will produce the most efficient energy to charge my daily electronic devices for Escondido, Southern California weather.</p> <p>Methods/Materials I setup and measured test results from my solar panel and wind generator at coordinates 33degrees N, 117degrees W. I measure both renewable sources of energy from 10:00 a.m. to 5:00 p.m. I used a 5 watt, 24 volt, solar panel facing 180degrees south. The solar panel produced an average of 5.24 watts. I also tested my wind generator, which I built, at the same location. The average power produced by the wind generator was 2.68 watts.</p> <p>Results The results of my project are that the solar panel did produce the most effective and stable energy to charge my daily technologies in Escondido weather. At the coordinates of 33degrees N, 117degrees W with the solar panel facing 180degrees south it was able to sustain a sufficient amount of power to charge all three technologies that I tested. The wind generator was not consistent or stable enough to charge all my daily electronic devices consistently throughout the day.</p> <p>Conclusions/Discussion My testing revealed that as an alternative source of energy, a solar panel is the most realistic solution to harness energy in Escondido to charge my electronic devices. My hypothesis was proven correct. The average wind speed in Escondido is not strong or consistent enough to rotate the wind generator during the time periods I tested, to produce the 36 watts needed to charge the technologies.</p> | |
| Summary Statement Which renewable power source could produce the most effective energy to charge my daily electronic devices? | |
| Help Received Dad gave me instructions so I could execute them, Technology teacher help me trouble-shoot my electronic controller, Neighbor helped me put together my controller, Friend donated motor for wind generator, Mom helped design board, Grandpa supplied tools. | |