



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

Name(s) Anthony F. Alvarez	Project Number S0802
Project Title Wind Power in Ventura: A Future Worth Examining	
Abstract Objectives/Goals The goal of my project is to identify optimal sites for wind power generation for Ventura County. Objectives: to estimate (calculate) and compare the wind power potential for designated Ventura County sites. Since Ventura County can both benefit environmentally as well as economically, I think it would be a good thing to evaluate this information. Through geographic exploration, wind speed measuring and potential power calculations, I can conclude which area(s) would be most effective for wind turbine placement. Methods/Materials -First, select some locations around Ventura County that you think might have the greatest output of wind energy -After coming up with several geographical spots mark them on a county topographic map so that you know the exact location of your recording spot. - Next, over a short period of time, drive to all of the designated recording areas and measure the wind speed (with the anemometer attached to the long pole).- After that, calculate average wind speed, and wind power conversions and record the data.- Approximate and plot annual power output for all locations selected and compare sites for their future potential and usefulness.- At the end you should be left with one optimal area that would benefit Ventura both economically and environmentally. Materials:-An anemometer-Research Table-Computer-Map of Ventura County-Long attachment pole- Access to local wind recording areas Results Site 1: Max: 8.3mph-3.7m/s, Avg: 5.3mph-2.4m/s, Low:2.2mph Site 2:Max: 14.4mph-6.48m/s, Avg: 11.8mph-5.3m/s, Low:9.0mph Site 3: Max: 13.6mph-6.12m/s, Avg: 8.9mph-4.005m/s, Low:1.4mph Conclusions/Discussion It appears that Ventura has potential for having fairly ideal locations for a wind power turbine farms. These spots all demonstrate some consistently of winds and at some times close to optimal wind speeds for a good energy output.My hypothesis of the coastal hilltop area being the most ideal for the wind farm, actually proved to be the most constant of the sites and maxed out at high wind speed. Some of my experimental errors included, to not have big time gaps from traveling one site to another. Also, I could have test different times of the day to get a more overall perspective.I learned so much from this,like how such a simple thing like wind can be transformed into a green energy source.I have proved that in Ventura there are possibilities for wind farms.	
Summary Statement Evaluation of wind power potential for Ventura County.	
Help Received My dad helped drive me to the various site locations.	