



CALIFORNIA STATE SCIENCE FAIR 2004 PROJECT SUMMARY

Name(s) Zach Mattingly; Carl Satterberg	Project Number J0716
Project Title Saving with Solar	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective is to find out how we can convert a standard 1500 sq.ft. home and a 4500 sq. ft. home to solar power, how much money it would cost, and how much money we would save over a period of 5, 10, and 20 years.</p> <p>Methods/Materials We found two suitable homes for the experiment, and gathered the electricity bills for both. We inspected the houses for the kinds of electric appliances and made a chart of these. We researched information about solar power and how it works. We met with a solar expert to find out how much a power was required for each home, how much the solar systems would cost. We subtracted the the amount of rebate from the California Energy Commission. Then we looked at our PG&E bills to find the cost per watt. With an estimated 3% inflation rate, we found the cost per watt up to 20 years. From the cost per watt, we calculated the amount saved for each of the years. Then we added up the savings for each year to find cumulative totals at 5, 10, and 20 years. We found the year where the savings exceeded the cost of the systems.</p> <p>Results The cost of solar system for the 1500 sq. ft home was \$13,256(after the rebate from CA Energy Commission). Excluding the cost of the system, the actual amount saved by not paying for electric power over 5 years was \$3,4844. Over 10 years, the amount saved was \$7,528, and over 20 years the money saved was a whopping \$17664! The cost of the solar system for the 4500 sq. ft. home was \$18,776(after rebate). Excluding the cost of the system, the actual amount saved in 5 years was \$9,844. \$21,254 was saved over 10 years, and in 20 years, a vast amount of \$49,815 was saved!</p> <p>Conclusions/Discussion We learned that solar power is quite expensive to pay the cost at first. The California Energy Commission cuts the cost in half, which is a BIG help. Over time, the solar system quickly pays for itself. Our inflation rate was a modest 3%, which has already increased to 6%. This would make our savings much greater, much quicker. Also, even if you sold your house, and you don't get the reap the financial benefits over time, the value of your house would be much higher. Solar power is infinite and is definitely the way to go in our sunshine state!</p>	
Summary Statement We learned how solar power works and how much money you can save by converting an existing home to solar power.	
Help Received A neighbor, who owns his own solar power company helped us to learn about solar power and showed us how to figure out the cost and savings. Mother typed this application, copying from the project display already completed by the students.	