



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

Name(s) Ashley M. McCullough	Project Number 34979
Project Title Did You Know Your House Has "Phantoms"? Not Ghosts, but Energy Phantoms?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of my project was to find out if the appliances and electronic devices in our home use enough energy when plugged in but turned off to be a concern when trying to cut our energy consumption. I also wanted to find ways to cut that consumption if possible.</p> <p>Methods/Materials Materials: Kill A Watt meter, paper and pencil, power strip, 15 various appliances or electronic devices Method: I will remove each device and plug them into the Kill A Watt meter, turn them off, then plug the meter in and read if there is any energy usage. I will record the watts used by any of the items and create a cost analysis for various tier rates after computing the annual Kilowatt usage.</p> <p>Results The results showed, indeed, many household devices or electronics do use energy when turned off because of remote controls, timers, lights, clocks, using enough energy to cost the average household more than \$100 per year. Even cell phone chargers plugged in but not charging a phone use energy.</p> <p>Conclusions/Discussion I feel that this topic is important enough that I want to educate my friends and family about how much energy can be used from phantom loads. Turning off devices isn't enough and unplugging them, while this will work to save the energy, is not always possible and is time consuming. For example, a coffee maker with a timer set for morning. Turning off multiple devices quickly can occur by using power strips but if you need some devices to remain using that minimal load. I found that there are energy conscious power strips that can help with this consumption. More and more households are adding more of these kinds of devices so I think it's important that we educate everyone about this power usage.</p>	
Summary Statement My project is about phantom loads, energy use while devices are turned off, and how costly this can be.	
Help Received	