



**CALIFORNIA STATE SCIENCE FAIR  
2007 PROJECT SUMMARY**

<b>Name(s)</b> <b>Salvador Eligio; Lily Leighton</b>	<b>Project Number</b> <b>J1609</b>
<b>Project Title</b> <b>A Bright Future</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> Our project relates to Global Warming. We wanted to find out how much energy is wasted in the process of making heat in an incandescent light bulb and how much is saved by using a compact fluorescent light bulb.</p> <p><b>Methods/Materials</b> One 3 cu. ft. wooden box with two light fixtures inside, three 15 watt compact fluorescent light bulbs, three 60 watt incandescent (normal) light bulbs. One Pyrex glass tank, one regular Fahrenheit air thermometer and one Celsius liquid thermometer. A timer to time the check intervals and a Plexiglas top for the wooden box. A single composition lab book as a journal. We tested at different time intervals and recorded along the way. Each light bulb#s experiment lasted for eight hours.</p> <p><b>Results</b> The incandescent light bulbs wasted 163,307 joules. The compact fluorescent light bulbs only used 54,439 joules in heat. Therefore, by using two compact fluorescent light bulbs in 3 cu. ft. of space, you are saving 108,864 joules. The air temperature using the incandescent light bulb went up by 48°F and the water temperature rose by 41.2 °F. With the compact fluorescent light bulbs, the air temperature rose by 16°F and the water temperature rose by 18°F</p> <p><b>Conclusions/Discussion</b> Our hypothesis was not correct but we were close. We thought that the incandescent light bulbs would generate an exceptional amount of heat therefore wasting lots of energy. This was correct but we also thought that the compact fluorescent light bulbs would not waste any energy in the form of heat at all. That is the part where we were wrong, because the compact fluorescent light bulbs did generate some heat. We also did a calculation that showed that if every home in the United States had ten incandescent light bulbs burning for eight hours every day of the year, that an amount of energy equivalent to 64,500,000 barrels of gasoline is wasted every year. Moreover, since fossil fuels are one source of creating electricity, if everyone started using compact fluorescent light bulbs instead of incandescent bulbs, it would greatly cut back on the quantity of green house gases going up in to the atmosphere.</p>	
<b>Summary Statement</b> We compared how much energy is wasted in the production of heat in the incandescent light bulb vs. the compact fluorescent bulb and related this to global warming.	
<b>Help Received</b> Lily#s father helped construct the wooden box and Ms. Kamitsis, our science teacher edited some of the writing and taught us how to make graphs in Excel.	