

# Creating Electricity through the Use of Natural Drafts Produced by Hot Water

Ray, Grace (School: Brandywine Heights Area High School)

Looking to create an electric current through the use of hot water and a natural draft, and with the use of compost, this would be a possible source of electricity. By using a hot water heater to run hot water through a heater core box, the air would rise up into a 10 ft or 20 ft chimney which had a fan motor that would conduct an electric current. Then, mathematically, I was able to take data of temperatures of a landfill and calculate the projected fan motor voltage using heat from compost inside of a hot water heater. I collected three parts of data, the first was the original data. Part 1, the 10 ft chimney the fan motor ranged from 4.1v- 6.2v. 20 ft chimney the fan motor ranged in voltage from 6.5v-8.2v. For part 2, I found data of landfill temperatures and I could extract 79% of the water temperature. The 10 ft chimney projected fan motor voltage ranged from 17.04v-20.42v. The 20, ft chimney the projected fan motor voltage ranges from 19.07v-22.88v. Finally, for part 3 was data collected on a cold, windy day, the 10 ft chimney with a water temperature of 105.3, the fan motor voltage of 6.8. At 114.2°, the fan motor voltage was 36.2 volts. For the 20 ft chimney, at 103.8°F the fan motor voltage at 14.1. The 122.9° the fan motor voltage of 213.5v.