

Elevation Equals Energy Abstract

The purpose of this experiment was to see if elevation affects the amount of energy produced by a solar panel. The hypothesis was if the elevation of a solar panel changes, then it will produce more energy at a higher elevation.

The experimental procedure consisted of taking the solar panel to the backyard twice, a higher elevation, and a lower elevation- leaving it outside and checking the voltage every ten minutes- and then calculating the wattage. The manipulated variable was the elevation of the solar panel. The responding variable was the amount of watts the solar panel produces. To measure the responding variable, read the voltmeter attached to the solar panel and write down the solar panel's voltage every ten minutes, average the voltages, and multiply the voltage by the solar panel's amps to calculate the watts.

The results of the experiment were that the solar panel produced more energy at a higher elevation compared to lower ones. Some errors were that there was different weather at the lower elevation and the control group during the third trial, causing the lower elevation to produce more energy than the control group. The hypothesis was supported.

These findings could be useful for reducing carbon emissions. In the future, the measurements would be changed to the elevations being the top, middle, and bottom of Mount Lemmon on the same day.