The Effect Of Elevation On Pumped Hydroelectric Energy

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This study is related to an environmentally friendly way to store electricity. Storing electricity is becoming more and more relevant because of the increased use of renewable energy sources such as solar. It's important to store energy from renewable sources because they are not reliable (ex. When the sun is not shining). If you were able to store that energy for the time when the sun is not shining that would improve reliability. Pumped hydroelectric energy is a good clean way to store electricity. It does not contribute to global warming and it is super safe and at a reasonable price point. The potential energy of an object is increased when any object is higher off the ground. With pumped hydroelectric energy, water is pumped to a higher elevation. The objective of this study was to test the effect on the amount of energy stored when the height was increased. My hypothesis is the higher the elevation the more potential energy is stored. This was researched by having a 40 gallon water barrel on a higher elevation come down to a 40 gallon lower bucket running through a turbine. The turbine was connected to a voltmeter that I would collect data from every 5 minutes. My data confirms that with a higher elevation more energy will be stored than the lower elevation.

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1. As a part of this research project, the student directly handled, manipulated, or interacted with (check all that apply):
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2. This abstract describes only procedures performed by me/us, reflects my/our own independent research, and represents one year's work only.
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