Harnessing Household Water Potential

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Running water has evolved into an aspect of life that is common for the majority of homes in this country. The process of running water is relatively inefficient, with great amounts of water not being used, while also possessing mechanical potential that is rarely utilized. The purpose of this project was to design a series of three water wheel-style generators that would turn due to the flow of water in household pipes. After the engineering process, I looked to study how the velocity of the water would affect the RPM of the generators as well as which style generator would be most efficient. The outcome of my experiments resulted in the 180-degree generator producing the most voltage and, in turn, the highest RPM. The straight generator was the second most efficient and the 90-degree the least efficient. The results also demonstrated that there is a direct relationship between the velocity of the water and RPMs of the generator. The practical application of this device is its usage for energy generation in any sort of running water environment. The piped water in houses or water flowing through a river could be used to recharge cell phones or run small appliances or heaters, which could significantly improve electricity availability in areas where it is otherwise scarce or being conserved.

Awards Won:

Edison International : Fourth Award of $750