

ABSTRACT

The goal of this project was to analyze the different ways to release energy from an energy storage device into the grid to save money. This project was worked in conjunction with a Master's of Science student. An entire year of Cal Poly's energy usage was examined and multiple trends were observed about when the maximum amount of energy was used. These trends looked at the time of day, the day of the week, and season to see what would be the best way to release energy into the grid to save money. There were two different batteries sizes examined and three different ways to release energy into the grid were also studied: releasing energy over a two hour window, a four hour window, and a six hour window. Ultimately, the system that released the energy over a six hour window saved the most money overall, because it was effectively able to reduce the demand charges the highest out of all the systems tested.