



Smart Technology & Climate Change



Guiding question: What are the costs of home electrical usage and how should wireless technology reduce these costs?

High school students explore electricity use and smart meters to answer this guiding question. Students measure power and calculate electrical energy usage of a variety of small appliances and create connections between electrical usage, electrical generation and related carbon dioxide emissions. Students are then introduced to the newest technology in electrical metering and are given the opportunity to examine the applications and implications of this new technology.



The workshop begins with the probe: How does drying your clothes in Vermont affect a polar bear in the Arctic? Focusing on home consumption of electricity, students make predictions and test electrical usage of a variety of small home appliances. From there students calculate two associated costs for each appliance: money and carbon dioxide emissions. Inflated balloons are used as a visual representation of the average corresponding volume of carbon dioxide emitted by the use of each appliance tested.



The electrical consumption of each appliance tested in the previous activity is recorded in real time and graphed using a Watts Up meter and smart meter and then examined to introduce the concepts of metering, amounts and rates of electrical usage. This leads into a brief video introduction to smart meters, after which students explore their own ideas and opinions on the interface between society, the environment and new metering technology.

This presentation in its current format is designed for high school level learners and runs approximately 1.5 hours. It is aligned with both Next Generation Science Standards and Common Core Math standards, with the possibility for literacy and writing extensions provided.

Contact us at info@veep.org or 802-552-VNRG if you are interested in learning more or bringing this workshop into your class.