

## Quick Start -- Power and Energy in the Home

When the applet opens, the dishwasher, ceiling fan, and personal computer are demanding a total of 1,341 watts of power. After one hour, the meter shows 1.34 kWh of energy used, and the bill is \$0.13. When you change the appliances, or open and close the blue switches by clicking on them, the demand for power changes and is shown in the **Current power consumed** tabulator.

The meter between the power pole and the circuit breaker box measures the energy being used as time passes. The meter continues to run for 99 hours and 59 minutes unless the **Pause Time** button is clicked.

**Elapsed time** and **Current power consumed** are shown near the bottom of the power pole.

Clicking **Start Time** causes the meter and the **Elapsed time** clock to begin tabulating again from the point at which they had been paused.

Clicking **Pause Time** pauses the **Elapsed time** clock. The meter stops measuring kWh and cost, because energy is only consumed as time passes.

Clicking **Reset Time** sets the meter and **Elapsed time** back to zero.

Clicking **Show cost selector** shows a slider that allows you to change the cost of a kilowatt hour of electricity. The average price of electricity in the U.S. is around 10¢ per kWh. Electricity in the Midwest and Plains states is less expensive than on the coasts. The New England area has the highest rates.

If you change the appliances, the power demand will increase or decrease, and the meter will adjust and spin faster or slower, just like the wheel that spins in the meter at your home. The meter shows the cost of the energy at a rate of 10¢ per kilowatt hour. If the only appliance you are using is a 100-watt light bulb, the cost of the energy is 1¢ per hour. Disconnecting the power pole stops energy usage and power demand. The meter stops but doesn't reset to zero. Time is still passing.

The **Print** button allows you to print the applet.

Clicking **Show plot** opens a new window showing a graph. The window can be resized or moved to a convenient place on the screen. It also has a button for printing the plot.

