

## Kill-A-Watt Meter Experiment:

We did this little experiment in the office but you can do it home just the same.

**Question:** How can I measure energy usage data with the Kill-A-Watt meter in a short amount of time?

**Device:** Convectair wall heater (120V, 1250w, 60Hz)



Convectair Wall Heater



Name plate on the back

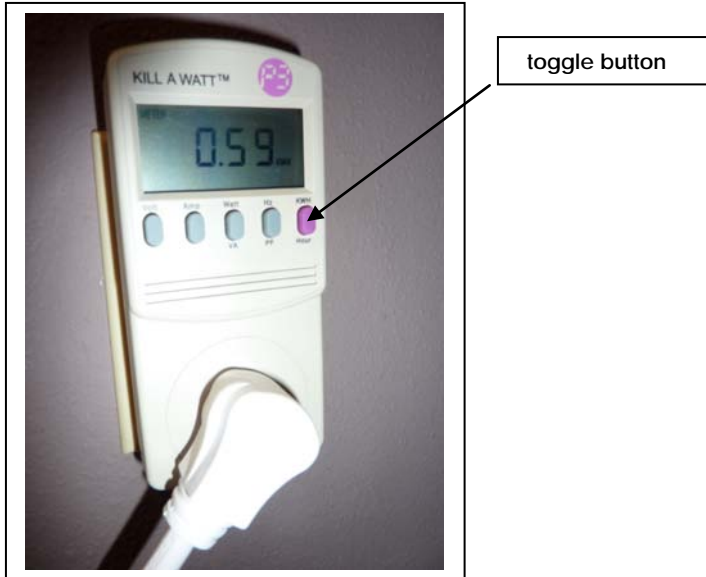
## Procedure:

I plugged in the Convectair heater to the Kill-A-Watt device.



Even though nameplate says 1250w,  
we are reading 1103w.

Using the toggle button on the far right, I set it to the amount of time operating. After thirty minutes, I pushed the same button to get the kWh read. As you can see the meter read .59kWh after thirty minutes.



Since I only operated it for thirty minutes, I would need to double the kWh number to get the usage for an hour.

$$\text{Hourly Usage} = .59\text{kWh} \times 2 = 1.18 \text{ kWh}$$

I can also look at it as this heater uses 1180 watts in one hour to heat my space.

So how much does this cost me?

The OPALCO residential rate is \$.0758 per kWh

So the cost to operate the heater for one hour is:

$$1.18\text{kWh} \times .0758 = \$0.089 \text{ cents or about 9 cents.}$$

Now I know that it costs me \$0.09 per hour to use the Convectair heater.

But, what does it cost me monthly?

First determine the number of hours the heater is on.

We will use 8 hours per day.

If it costs \$.09 per hour and I run it for 8 hours then it costs  $\$.09 \times 8 \text{ hours} = \$.72$  per day

If there are 30 days in the month then it costs  $\$.72 \times 30\text{days} = \$21.60$  per day.

**Answer:**

\$21.60 is the monthly cost to operate the Convectair Heater for 8 hours a day.