The average American household uses 1.45 kilowatt hours of phantom loads per day, wasting enough electricity to completely power the countries of Greece and Vietnam with enough left over for Peru. That's approximately 43 billion kilowatt hours per year of approximately two billion tons of carbon, costing an average of $37 per family per year.

Kill A Watt: A Tool for Saving Energy and Money

Why measure the electricity draw of your small appliances? Most of us don't know how many kilowatt hours of electricity we draw, much less, the electrical draw of our individual appliances. Also, we are unaware of the "phantom load" that many of the appliances we leave plugged in such as computers, coffee-makers, stereos and televisions draw—basically anything with a light and or digital readout. Getting immediate feedback from a device like the Kill A Watt is helpful in changing our energy behavior. At least 5% of electricity in the US is used for the standby function in electronic equipment. Kill A Watt also allows you to determine the energy efficiency of your equipment.

The summary below is adapted from the Kill A Watt directions manual as well as from http://www.getrichslowly.org

What does Kill A Watt do? By connecting your appliances to the Kill A Watt™, and it will assess how efficient they really are and tell you how much of a "phantom load" it draws when not in use. The large LCD display will count consumption by the Kilowatt-hour, same as your local utility. You can calculate your kilowatt usage or electrical expenses by the day, week, month, even an entire year. Now you´ll know if it is time for a new refrigerator or if that old air conditioner is still saving you money. With the amazing Kill A Watt™ you´ll know "Watts" killing you.

How do you use Kill A Watt? Here is an easy guide to using the Kill A Watt**:**

1. Chose an appliance whose energy efficiency you want to measure. (**Note: Use Watts-Up for large appliances like a washer, dryer or range**)

2. Plug the Kill A Watt into a wall socket and then plug the appliance into the Kill A Watt.

3. The LED screen will now display one of 8 things depending on the button you push

    a. If you push the **Volt** button, the screen will display how many volts the appliance plugged into the Kill A Watt draws during operation.

    b. If you push the **Amps** button, the screen will display the current going through your appliance

    c. If you push the **Watt** button, the screen will display how many watts your appliance is using during operation

    d. If you push the **Watt** button again, the screen will show the apparent power

    e. If you push the **Hz (hertz)** button, the screen will display the frequency of output voltage

    f. If you push the **Hz (hertz)** button again, the screen will display the power factor

    g. If you push the **KWH (Kilowatt hours)** button, the screen will display the KWH used since your appliance was plugged into the Kill A Watt.

    h. If you push the **KWH** button again, the screen will display the time since your appliance was plugged into the Kill A Watt. The hour display looks like this when you first plug the Kill A Watt in, (00:00) which is (hours:minutes). Once the Kill A Watt reaches 99 hours since it was plugged in, the display will change and only list hours (up to 9999 hours). Once it reaches 9999 hours the hour will reset to (00:00).

4. By leaving an appliance plugged in for 1 hour, and then recording the KWH used by that appliance during the hour, you can then calculate approximately how much the appliance is costing you per hour. By calling your energy provider and finding out the cost per KWH and then multiplying the cost per KWH your appliance uses, you can figure out how much the appliance costs to operate per hour. You can then calculate how much the appliance costs per day, week, month, or year, by multiplying the cost per hour by the average daily, weekly, monthly, or yearly use.

5. Saving money!!!

   a. Once you have calculated how many KWH the appliance uses you can then compare your appliance to other similar appliances to see if there are more energy efficient models or brands available. If you can get a more efficient model then you will be saving money continuously.

   b. After using the Kill A Watt, you can also try to limit your use of the appliance in an effort to conserve electricity and save money as well.

Example 1. Kill A-Watt in Action

At 1:30 today, my KWH said 0.00, since I had just plugged in the TV. When you press this toggle button once, the "cumulative energy consumption since power was applied to the unit" will be displayed. If you press the button again, the display will show the "cumulative time since power was applied to the unit." Since I am doing a two hour test, leaving the TV on all the while, I will be able to figure out approximately what this TV is costing me to run - either by the hour (by dividing my total in two), by the day (the two hour total), by the week (two hour total multiplied by seven), month (two hour total multiplied by 365 then divided by 12), or the year (two hour total multiplied by 365).

At 3:30pm, my KWH read 0.06 and the cumulative time displayed was 2:00 hours.

So what did I learn today? By cross referencing my results with my latest online electric bill, I found out the following:

Through my energy provider (TXU), I pay an average of 9.17 cents per KWH (excluding taxes and non-recurring charges or credits). At the end of my test period, I found that I had used 0.06 KWH for two hours. At this rate, it costs me 0.002751 dollars an hour, or 0.005502 dollars to run this TV for two hours a day (my average usage). Per week, I pay 0.038514 dollars, per month 0.1673525 dollars, and per year, the total would be $2.01 - at the rate of two hours usage per day. Obviously, some days may be a little less usage and some a little more, but I now have a good idea of the average cost to use the kitchen television: peanuts or maybe I should say sunflower seeds. ;0) (A full review can be found at http://thegadgeteer.com/review/kill_a_watt_electric_usage_monitor_review).

Example 2: One Kill A Watt user went through and measured the power consumption of random devices:

Microwave (while dormant, simply displaying time): 2 watts — It costs us roughly $2/year to leave the microwave plugged in all the time. While heating a bowl of homemade bean soup for dinner): 2020 watts . **Nintendo Wii** (while playing *Trauma Center: Second Opinion*): 16 watts — Far less power than I would have guessed. Strand of **Christmas lights**: 39 watts — More than I would have guessed. It will cost us roughly $3 to have this strand of lights plugged in during the Christmas season. **MacBook Pro** (recharging with battery at 66%): 58 watts. **Desk Lamp**: 5 watts. **Nighlight**: 1 watt — Assuming the nightlight is on 12 hours/day, it costs about 50 cents to run for an entire year.

He found that cable boxes are hidden power hogs and can cost up to $100 a year just from being plugged in 24/7. Usually devices that use a fan for cooling or have a read-out light display tend to use more energy when solely plugged into the wall. Unplugging these devices when not in use or replacing them with more energy efficient models could help to save money and electricity. (Above info from http://www.getrichslowly.org/blog/2006/12/04/review-kill-a-watt-electricity-usage-monitor/)

Borrow Kill-A-Watt: or Watt's Up? Congregations that have signed the Oregon Interfaith Power and Light Energy Stewardship Covenant can borrow Kill A Watt or Watt's Up? for free for one week. Check out how much appliances in your religious facility or in member household really cost in terms of dollars and kwh. Others may rent these devices for $10 per week. Call 503-221-1054 for information or e-mail oipl@emoregon.org.