

Making Ripples

Efficient Entertainment: Using a Kilowatt-Hour Meter

by Amanda Bancroft

If you already turn off the lights in a room that no one is using, then you're probably already aware of the value (both monetarily and environmentally) of conserving electricity. But exactly how much energy does it take to watch one movie, or to play three hours of a video game? To determine how many kilowatts our entertainment consumes, Ryan and I used a "kill-a-watt" meter to measure each device. I suppose it "kills watts" once you know how darned much electricity something uses, and don't want to use it as often?

When living off-grid in our earthbag home, we want to watch movies regularly. To do so, we need to purchase enough solar panels to have that opportunity, and we need to know which machines use the least energy. For video games, we need to know which gaming systems consume the most energy, so we can switch to more efficient ones.

If you've never used a kill-a-watt meter, never fear! It's fairly simple to use. Disclaimer: I am no expert electrician. I'd just like to share what I've learned from Ryan's healthy obsession with his kill-a-watt toy.

It measures amps, volts, watts, and more. Ours cost \$20. Just plug it into the outlet where you want to use the device you're measuring. Then, plug the device into the meter. It will show you the kilowatt hours consumed during the amount of time it's plugged in, such as 3 days, and also measure how many watts, amps or volts the device uses in any given moment. If an appliance consumes 1,000 watts per second over the course of 1 hour (assuming no fluctuations during that hour) it equals 1 kilowatt hour (kWh) of energy.

After we scampered around the apartment measuring our entertainment systems' electrical appetites, we discovered that nothing we currently own is the most efficient method of watching a movie. Our current movie setup (DVD player, VHS player, and an ancient 13-inch television set) uses 75 watts, so a two hour movie gobbles up 0.15 kWh. But the most efficient tablet we could find online, a Kindle Fire, uses 2.625 watts. For a two hour movie, this would be 0.00525 kWh.

For video games, the computer game consumed the most electricity, while the most efficient gaming systems we tested are handhelds. The best is the DS Lite which uses less than 1 watt per hour of gaming. An hour spent gaming on our computer takes 70 watts. That's 70 times as much!

If you're interested in measuring your own entertainment device, Ryan would be glad to share his toy with you! Or if you're curious about how much energy our refrigerator and other appliances use, check out our blog for those numbers.

Ripples is a blog connecting people to resources on sustainable living while chronicling their off-grid journey and supporting the work of non-profit organizations. Read more on this topic and others at www.RipplesBlog.org