



RE-ENERGIZE YOUR HOME

EFFICIENT HOME ELECTRONICS

PSE.COM/ReENERGIZE



RE-ENERGIZE

YOUR HOME, YOUR ELECTRONICS, YOUR SAVINGS

Did you know that consumer electronics account for 15 percent of the average household energy use? We expect that amount could triple over the next 20 years with all the new devices that constantly come into the marketplace.

As technology evolves for household electronics, the options for energy efficient models continue to improve, and many now come with features designed to save you energy and lower your carbon footprint. These super energy-efficient televisions and other electronics are on the cutting edge of technology and perform as well as or better than less efficient electronics.

This guide from Puget Sound Energy will help you understand more about home electronics and the options available to help you save energy, money and protect the environment.

About Puget Sound Energy

Washington state's oldest local energy utility, Puget Sound Energy serves more than 1 million electric customers and 750,000 natural gas customers in 11 counties. A subsidiary of Puget Energy, PSE meets the energy needs of its customers, in part, through cost-effective energy efficiency, procurement of sustainable energy resources, and far-sighted investment in the energy-delivery infrastructure. PSE employees are dedicated to providing great customer service that is safe, dependable and efficient. For more information, visit www.PSE.com.

In this guide

This guide contains the following topics to help you learn about the benefits of ENERGY STAR® qualified electronics and reduce energy waste within your home.

- 4** What's watt
- 5** Calculate your wattage
- 6** Energy vampires
- 7** Before you buy
- 8** "Smart" power strips
- 9** Save energy with your phone
- 10** More energy saving tips

KNOWING WHAT'S WATT IS RE-ENERGIZING

Energy Terms

Watt

A common measure of electrical energy usage. It is equivalent to amps times volts.

Kilowatt

A measure of electric energy equal to 1,000 watts. Put another way, it's the amount of electric energy required to light ten 100-watt light bulbs.

Kilowatt-hour (kWh)

The unit of measurement used for billing electricity. One kWh is equal to 1,000 watts used for one hour. Power company utility rates are typically expressed in cents per kilowatt-hour.

Understanding Power Modes

Mode	Definition	Examples
Active (In-use)	Appliance is performing its primary function.	TV displays picture and/or sound. VCR records or plays back tape. Printer prints document.
Active standby	Appliance ready for use, but not performing primary function. Appears on to consumer.	DVD player on but not playing. Cordless appliance charging.
Passive standby	Appliance is off/standby. Appears off to consumer, but can be activated by remote control OR is performing peripheral function.	Microwave not in use, but clock is on. CD player off, but can be turned on with remote control.
Off	Appliance is turned off and no function is being performed. Consumer cannot activate with remote control.	Computer speakers are off, but plugged in. TV is not functioning and cannot be turned on with remote.

RE-ENERGIZE BY CALCULATING YOUR WATTAGE

Time for a little math

You can calculate your daily watt usage by this formula:

$$\begin{aligned} & (\text{total wattage} \times \text{number of hours per day}) \div 1000 \\ & = \text{daily kilowatt-hour (kWh) usage} \end{aligned}$$

Finding wattage

Now that you have the formula for figuring out your usage, it is time to calculate the wattage of your individual devices and appliances.

First look at the information sticker for the voltage of your device, it usually is the number followed by a capital 'V'.

Next find the amperage number—it should be a smaller number than the volts, sometimes includes a decimal point and is usually followed with a capital 'A' or 'amps'.

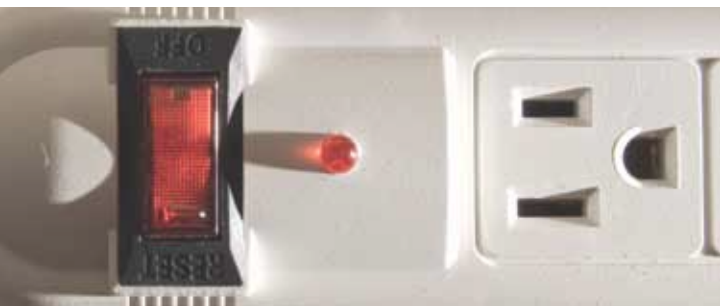
Now multiply the amperage and the voltage and you should have the wattage of your device. Put more simply:

$$\text{amps} \times \text{volts} = \text{watts}$$

Watt's the use?

By calculating your daily kWh usage it is possible to see which appliances might benefit from an energy-efficient upgrade, or whether upgrading to “smart” power strips would benefit in certain areas of your home.

By being mindful of your usage, you also can identify where even more energy savings could occur through proper use of device charging, turning off lights and shutting down electronics when not in use.



RE-ENERGIZE BY SLAYING THE ENERGY VAMPIRES

Standby Mode (AKA the Energy Vampire)

Page 4 breaks down the different power modes for most home electronic devices—both passive and active standby continue to ‘suck’ energy when the device is not in use, causing you to waste power and contributing to a higher energy bill while giving you no benefit.

How significant is the waste?

Very significant; the average U.S. household spends \$100 per year to power devices while they are off (or in standby mode).

On a national basis, standby power accounts for more than 100 billion kilowatt hours of annual U.S. electricity consumption and more than \$10 billion in annual energy costs.

Be aware, remote controls do not fully power down a device, instead they place them in passive standby modes—energy is still being used!

Slaying the beast

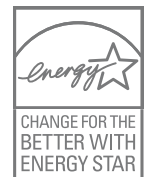
- To fully power down your electronics it is necessary to unplug them or switch off the associated power strip when devices are not in use. Special “smart” power strips do this automatically.
- You may wish to use a separate power strip for TVs, cable boxes, DVRs or satellite boxes. These electronics often require reprogramming or time to download information when powered back on—for the sake of convenience it may be desirable to only turn off these power strips when away for extended periods of time.
- Phone, camera and other electronic chargers can also be a source of wasted energy, and are often easy to miss as possible energy vampires. Even if the device is not connected, the adapter will still attempt to charge it by drawing power. Make sure to unplug everything, and not just the device.
- Enable ENERGY STAR® power management settings on your computer and monitor. Allowing monitors to power down when you are away from the keyboard for a bit can save a lot of energy.

RE-ENERGIZE BY KNOWING WHAT TO LOOK FOR BEFORE YOU BUY

Energy Forward

The “Energy Forward” label, created by the Northwest Energy Efficiency Alliance (NEEA) in partnership with Northwest utilities, ENERGY STAR® and select retailers, offers consumers a new way to find the most efficient electronics on the market today. Only the most efficient ENERGY STAR products qualify for an Energy Forward label.

Televisions with the Energy Forward label are at least 30 percent more efficient than what is required to meet ENERGY STAR standards. A TV labeled with the orange Energy Forward button is guaranteed to be the most efficient and technologically advanced TV available, engineered to use less energy, be better for the environment and save you money.



ENERGY STAR® is a label given to more than 60 categories of consumer and commercial products that meet certain energy-efficiency criteria set by the U.S. Environmental Protection Agency and the Department of Energy. The ENERGY STAR® logo is an assurance that the product requires less energy to operate, is better for the environment and can save you money on energy costs.

Follow the signs

Qualified home electronics products should have the ENERGY STAR® label prominently displayed for easy comparison. And to help you buy an energy-efficient TV, the Federal Trade Commission now requires that all televisions feature an EnergyGuide label marked with the set's estimated annual energy cost and a comparison with the annual energy cost of other televisions with similar screen sizes.

A list of ENERGY STAR® qualified electronics can also be found on the ENERGY STAR® products website, along with energy ratings, individual product power consumption and useful buying tips.



RE-ENERGIZE BY UPGRADING TO “SMART” POWER STRIPS



How they work

When you plug electronics into a “smart” power strip it will register when your devices are turned on, in standby mode, or turned off. The strip will then automatically switch off power to the devices that no longer require it. By installing smart strips in your home you can reduce the need to constantly unplug your devices, and save you time.

“Smart” strips often come with one or more “always on” outlets, which allow you to plug in electronics that require a constant source of energy. Therefore, smart strips can be perfect solutions for home theater or home office setups.

Other types of strips include motion sensitive outlets, which detect when someone has entered a room. While these strips are good for lights, they may not be the best choice for computers or devices you would like to manually control.

Speaking of manual control, yet another type of smart strip allows for all of its attached devices to be controlled through one master outlet. For example, turning off your television would also shut off your VCR, DVD player and speaker system.

They can pay for themselves

Smart strips can help to drastically lower your power consumption in your home, in turn helping the environment and you to save more on your energy bill. Some customers have reported cutting down their energy by more than 50 percent after installing smart strips in their home—easily saving them more than it cost to buy the strips in the first place.

SAVING ENERGY WITH YOUR PHONE IS RE-ENERGIZING

Charge and use

Different phone batteries require different methods of charging and use. For nickel batteries it is good practice to occasionally allow the battery to run all the way down before charging it fully. For lithium batteries you should allow it to run down to a 40 percent charge before charging. You can usually look at the phone's manual to see which type you have, or by looking at the manufacturer's website.

It also bears repeating, remember to disconnect your phone's charger from the wall when not charging. If it takes an hour to charge your phone, but you leave the charger plugged in all day, that's 23 hours of wasted electricity!

Slow down the drain

Try to limit the amount of time you spend browsing the internet, watching videos, playing games and taking pictures on your phone. Using your phone sparingly lets you go longer in between charges, and when combined with effective charging methods and lowering the screen's brightness settings, can lead to a much longer battery life.

Multi-task!

By using your phone as more than just a phone, you can eliminate the need for other devices. Alarm clocks, GPS, timers and media players can all be recycled in favor of a device that uses much less energy.

RE-ENERGIZE WITH MORE ENERGY SAVING TIPS

Electronics

- It is a common misconception that a computer in screensaver mode reduces energy use. Use automatic switching to sleep mode or turn it off.
- Consider buying a laptop for your next computer upgrade; laptops use much less energy than desktop computers.
- Use rechargeable batteries for products like cordless phones or digital cameras.
- Use smart power strips to save energy.
- Remember to always turn off the lights when leaving a room.



Learn more about Re-Energizing your home:

PSE Energy Advisors

1-800-562-1482

Monday through Friday, 8 a.m. to 5 p.m.

[PSE.com/ReEnergize](https://www.pse.com/ReEnergize)

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