

December: Cut Phantom Electricity Loads



Task: Implement strategies to reduce energy used by electronics, especially in standby modes, by half.

Turning a piece of equipment off or unplugging it when it's not in use is the easiest way to save energy and money.

- Rock Mountain Institute, [Cool Citizens: Electronics brief](#)

Tips for reducing energy use with electronic equipment:

- Enable power management features on all computers (see US EPA Energy Star website for instructions)
- Turn your computer completely off when not in use.
- Plug entertainment system components into a power strip that can be switched off when not in use (eliminating the need to unplug individual components).
- When not in use, unplug items with internal power supplies (portable stereos, bread and coffee makers and other items) and those with external DC power (cordless phones, dust busters, and electric toothbrushes, etc.).

What you should know:

(excerpted from [Rocky Mountain Institute's Home Energy Briefs #7: ELECTRONICS](#))

- Home office equipment, audio and video systems, and miscellaneous electronics consume almost 20 percent of all electricity used inside the average home and can cost as much as \$175 per year. While buying more efficient electronic devices can save some of this energy and money, changing how you use the equipment is more effective. For example, most devices consume electricity even when they are turned "off." By changing your patterns of use with the equipment (e.g., unplugging instead of just turning off the equipment when it's not in use), you can often save more energy than if you replaced the item with a more efficient one. Moreover, saving energy does not compromise the quality and performance of the equipment, or your experience with it. You can easily have the best of both worlds: great product performance and low energy use.
- Contrary to popular belief, turning a computer on and off frequently is not harmful. In fact letting the unit cool down is beneficial to the durability of the components.
- Screen savers are not a form of sleep mode and do not save any energy.
- Just enabling power management on your desktop computer and monitor could save you about 900 kilowatt-hours per year in electricity and 1,500 pounds in carbon dioxide emissions, assuming the energy saved displaces coal generated electricity. That's equivalent to the carbon dioxide emitted from driving a medium sized car over 2,000 miles.
- Laptops draw 14-25 watts while on, and most go down to 1 or 2 watts during sleep mode. Using a laptop could save anywhere from 40 to 100 watts, depending on the desktop unit it would replace.
- Although they also produce higher quality prints in less time, laser printers consume much more power than inkjet printers. If high quality prints are needed, you can still reduce energy consumption by using low-speed laser printers. Such printers average 43 watts whereas high-speed color laser printers use over 100 watts. Inkjet printers use roughly 60 percent less energy than laser printers. When power management is enabled, an Energy Star low-speed black and white laser printer and both black and white and color inkjet printers use 10 watts or less, while a color laser printer uses 35 watts.

- If you have an older printer that does not have a power management system, there are external control devices that can, for example, switch the printer off after a preset time and then switch the unit back on when a print signal is received. Energy Star has a comprehensive list of such controls on its website (www.energystar.gov).
- Copy machines can be the largest energy consumer of all your home office devices. Currently, low-speed copiers, which are the type commonly used in homes, pull an average of 115 watts. That can use more than twice as much energy as your desktop computer. Home copiers over eight years old can require up to 400 watts, while some Energy Star copiers use less than 60 watts in low power modes.
- Multi-function machines that can print, scan, fax, and copy are popular today, and the quality of these integrated machines continues to improve. The standby energy of these integrated systems is substantially lower than the sum of several separate units. An Energy Star multi-functional device producing ten images per minute or fewer will use less than 25 watts in sleep mode. The active power for multi-functional devices averages about 82 watts. In addition, the total amount of material and energy consumed in manufacturing is greatly reduced by incorporating up to four devices into one.
- Standby mode. The American Council for an Energy Efficient Economy (ACEEE) calculates that “the average U.S. household consumes 50 watts of standby and off-mode power constantly, amounting to about 440 kilowatt-hours per year [per household].” Nationwide, this amounts to about 44 billion kilowatt-hours per year, or the electricity production of five nuclear power plants. And for what? Often it’s merely to power little light displays and “instant-on” features! The only way to completely cut power to most electronic devices is to unplug the item or switch off the external power strip. If completely switching off the device is not an option, there are many electronic devices being manufactured today with low standby power requirements. A list of these products can be found on the Energy Star website (www.energystar.gov).
- Large home appliances other than computers, such as cable TV boxes, VHS and DVD players, portable stereos, bread and coffee makers are equipped with internal power supplies. These and external DC power supplies of other appliances such as cordless phones, dust busters, and electric toothbrushes can consume 2–6 watts even when the appliance is not in use or fully charged. Although power supplies drawing 1 watt are on the market, there is currently no active labeling program such as Energy Star to tell consumers which ones are most efficient. Efficient power supplies do not affect equipment performance or quality. These devices should be unplugged when not in use.
- Since more energy goes into manufacturing the typical computer than into operating it, along with power consumption while in use at home, it is important to weigh such considerations as recycled/recyclable material content, upgradability, and end-of-life disposal.
- **Paper use.** Manufacturing a piece of paper requires 10–70 times as much energy as the electricity it takes to print on it. The following are some suggestions that can help reduce your paper use by as much as 75 percent:
 - Use narrower margins and smaller (but still readable) typefaces;
 - When possible, edit drafts of documents on-screen and print only final versions;
 - Print or copy on both sides of the paper. Most printers and copiers are available with duplex (two-sided printing) options;
 - Use the flipside of scrap paper for printing draft documents; and
 - Consider using recycled paper.
- **To save additional electricity, unplug the extra refrigerator in your garage or basement!**