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How green is your computer?

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Reusable tote bag? Check. Prius? Check. Rooftop solar panels? Check. In the bid to secure your green bragging rights, you have the usual suspects covered.

But what about your personal computer?

After all, the object that, via the Internet, can provide you with more information on how to lead an environmentally sound life can also be one of the things that contributes to the very same problem.

Consider the following: A standard-issue PC, left on all the time (a not-uncommon situation) consumes 746 kilowatts per hour a year, according to estimates from the U.S. Environmental Protection Agency. By comparison, a refrigerator uses about 500 kilowatts a year. Surely there are things that users can do to reduce their computer's environmental footprint. Read on to learn ways to run your PC more efficiently, make environmentally-intelligent purchasing decisions and to dispose of an old computer properly.

Power corrupts

The first piece of advice is the simplest: Don't leave your computer on all the time. Shutting it down at night should reduce its power consumption by around 500 kilowatts annually. In addition, your computer should be set to go to sleep after periods of inactivity. Different parts of your system can be set to sleep at different times: Setting your energy-saving preferences to put your hard drive to sleep after 15 minutes of inactivity is a good benchmark; your entire computer (which takes more time to wake up) should be set to go to sleep after 30 minutes.

And ditch your screensaver. Screensavers can use your hard drive to power up and photo screensavers require the extra use of a graphics card, which means you'll have the hard drive, graphics card and monitor all in use.

Screensavers are "a throwback from the days of really old-school CRT monitors," Barbara Grimes, spokeswoman for the Climate Savers Computing Initiative, said of cathode-ray tubes. "It's never been an energy-saving feature."

There's also the issue of "phantom" or "vampire" power: Just because your computer or laptop is shut down doesn't mean it's not using energy. Almost every piece of electronics uses power even when it is turned off. For example, your television turns on instantly because it is actually a little bit on already. In the case of your desktop, your computer stays in standby mode so it can keep data in its memory, its clock accurate and other functions. This means the average desktop PC wastes half its power.

To combat the vampires, take your computer (and peripherals) and plug it into a master power strip like the Smart Strip Power Strip, which can sense which devices have been turned off and then cuts all power to them.

Finally, download a free power-management tool. These applications will show you how much energy you can save by adjusting various settings and will make those adjustments for you in one click. Google's Energy Saver will, in addition, show you the collective energy savings of all users of the product; it also integrates into the Google's own Desktop application. Verdiem's Edison software, released in August, shows users estimated annual savings in terms of money, energy and carbon dioxide emissions. Edison's power management tool lets users choose how aggressive they want their energy savings to be by letting them slide the bar towards or away from the "save more" or "save less" tabs.

Out with the old?

If you do decide to purchase a new computer, make sure that you choose both a computer and monitor that are Energy Star complaint. Energy Star computers must meet energy-use guidelines established by the environmental agency in three areas: standby, active, and sleep modes.

The Electronic Product Environmental Assessment Tool, or Epeat, is another environmental certification that evaluates electronic products according to 51 environmental criteria. To qualify for Epeat registration, the product must meet all 51.

In general, laptops are greener than desktops because they have been designed with power sensitivity in mind, so they tend to use less power when plugged in than desktops. But desktops are easier to upgrade, and therefore may last longer.

Newer computers tend to be more energy efficient than older models. For example, Energy Star-qualified computers starting from July 2007 come with power management pre-enabled.

As for whether Macs are greener than PCs? "It's system by system," said Grimes, the Climate Savers Computing Initiative spokeswoman. "Apple is one manufacturer and when you say PC, there are dozens. They're all using Intel processors or AMD processors. Apple is not using a proprietary processor anymore so they're getting a lot more similar at the hardware level."

One place where there is a difference is in how certain manufacturers' products are made. Apple, for example, has said it will "completely eliminate the use of polyvinyl chloride (PVC) and brominated flame retardants (BFRs) in its products, and arsenic in the glass of flat-panel displays by the end of 2008." Unfortunately, that effort has not spread as quickly across the industry as some would like.

"I wish I could say that a lot of companies have eliminated their chemicals or had made some significant improvements, but that's just not where the industry is," said Barbara Kyle, national coordinator of the Electronics Take Back Coalition.

Reduce, reuse, recycle

When it comes to recycling your computer, picking the right program is key. If done right, recyclers should reuse the parts they can and manage waste responsibly, which means making sure that parts don't go to countries with poor eco-track records, like China, and that items that do get exported (like circuit boards and leaded glass) go to green-friendly sites.

In 2005, used or unwanted electronics amounted to about 1.9 million to 2.2 million tons of waste. Of that number, about 1.7 million tons were disposed of in landfills, and only 345,000 to 379,000 tons were recycled, according to the environmental agency.

The problem is that it's hard to figure out who's dumping and who's not. "There's no such certification program," said Kyle, which would help promote responsible recycling and green design in the electronics industry. Her organization, Computer Take Back, conducts initial screenings. Will people know 100 percent? No, but it's a start. For Computer Take Back's list of recyclers, go to tinyurl.com/5yrb9k.

Computer manufacturers like Apple, Hewlett Packard and Sony offer recycling programs, but Dell goes even further: It will recycle any Dell brand product - no matter when it was bought - free (including pick up). Dell will also pick up other product brands for free if the consumer purchases a new Dell. Concerning manufacturer recycling programs, Kyle added that with a number of manufacturers, "you have to either pay them or you have to buy a new computer to get them to take your old PC back for free. There's a huge disconnect between what people want to do and what they can do, and that's where the manufacturers need to step up."

Correction:

Notes: