

Green Computing – It IS Easy Being Green

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Abstract:

Colleges and Universities are undertaking a recent trend toward becoming less wasteful of our natural resources. Unfortunately, computers often have a negative impact on our environment. Yet, there are many easy things we can do to reduce the carbon footprint of our technology. The ideas presented in this session will not only make your institution more ecologically responsible, but can also drastically reduce operating costs. The session will focus on specific examples of how Sweet Briar College is actively pursuing green computing techniques, such as: a CD/DVD recycling program; power management settings; energy conscious purchasing decisions; and much more! Time will be left at the end for questions/discussions.

Introduction:

Think Pink - Go Green! (SBC's school colors are pink and green)

Sweet Briar College is committed to play an active role in the fight against global warming. President Muhlenfeld signed the American College & University Presidents Climate Commitment on January 16th, 2007, which promises to take immediate steps to move toward becoming a carbon neutral institution as well as plan and implement changes in the future that work toward the same goal. It is important to keep in mind that you can make a difference when it comes to issues such as energy conservation and global warming. Technology is an important part of our life, but it is also a constant strain on our energy grid. However, there are ways to reduce the amount of burden our technology puts on our resources. Academic Computing is already implementing many of the suggestions below to reduce our dependence on energy. Why not see how many of these ideas you can follow to help your campus be as green as possible?

Enable Power Management on Your Computer

When a computer is turned on, it's draining power (whether you're using it or not). The operating systems of all modern computers have built-in energy saving settings that you can configure to manage your computers power consumption. Regardless of what operating system you are using, you want to make sure you have your computer set to do the following things:

- Have the energy saving settings active
- Have the display/monitor set to turn off after a specified period of inactivity (We recommend 15 minutes or less)

- Have your hard drive set to turn off after a specified period of inactivity (This should be a longer period than your display, and usually a good setting is 1 hour or less)

Here are the ways you access your energy settings for the 2 most common operating systems used on our campus:

Apple OSX - Access your system preferences by clicking on the Blue Apple in the upper left of your screen and choosing "System Preferences". Once there, choose the "Energy Saver" Preference, and adjust your settings following the guidelines described above.

Windows XP - Access your control panel by clicking on the Start Menu and choosing "Control Panel". Once there, click on the "Performance and Maintenance" category. Then, choose the "Power Options" control panel. At this point, adjust your settings following the guidelines described above.

Why is power management so important? Well... by making these simple adjustments, you can reduce your computer's energy usage by over 80%. That's a savings of almost \$50 a year. If all of our students on campus used power management settings on their computers, it could eliminate 250 tons of carbon a year from entering the atmosphere. It takes 66 acres of trees to process that much carbon dioxide.

Turn Off Your Screen Saver

Did you know that running a screen saver year round on a computer is about the same as leaving a 100-watt light bulb on all year long? It costs you about \$80 per year in electricity and releases over 1350 pounds of carbon dioxide into the atmosphere. We know that some of you really love to watch those fascinating Windows flying toasters... but is it really worth the cost? Besides... if you're following our suggestions above, your computer display should be turning off after 15 minutes of inactivity anyhow!

Turn Off Your Computer at Night and on Weekends

Even the most efficient settings with power management still consume some energy. So, the best thing to do is turn your computer off when you know you won't be using it for an extended period of time.

Myths:

Turning off your computer will shorten its life span. Although this may have been true in the early days of computers, this is no longer the case. Mechanical components, such as hard-disks, have been manufactured to high quality standards enabling them to easily endure the strains of starting and stopping. Your computer is much more likely to become obsolete before it experiences any sort of harm from being turned off during periods of inactivity.

Turning your computer off uses more energy than leaving it on. While it is true that there is a slight surge in power when a computer is turned on, it is a minimal drain of power. In fact, if

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your computer is left on for over 10 minutes... you've already used more power than that surge takes up. So... when you go to sleep, turn off your computer. You'll be saving energy.

My computer's safer being left on at night, because that's when I run automated updates. You certainly should be running automated updates for your operating system, anti-virus software and spyware detection software. However, when your computer is left on in the middle of the night... it also may be vulnerable to any hackers on the internet that want to use your computers idle processor for their own devious purposes. By turning off your computer, you remove it from the network for that period of time, reducing your exposure to unwanted attacks. It's best to run your automated updates at another time during the day when you expect that you will not be using your computer (such as lunch time, or while you're in class).

Turn off Printers, Copiers, Scanners & Peripherals When Not in Use

Just like your computer drains power... so do your peripherals. Think about everything that's connected to your computer. It all takes energy to run. Here's some suggestions for the most common peripherals:

Printers/Copiers - If you're using a laser printer in a shared office location, turn the printer off during the evenings and weekends. During the daytime, make sure it is using Power-save settings when it is idle. If you're using an inkjet printer that is connected only to your computer, turn it on only when you're planning to print something, and turn it off when you're finished.

Scanners - Most offices with scanners only use the scanner on an occasional basis. Keep it turned off until you are ready to use it. *Speakers* - A set of computer speakers with a subwoofer can use 10-15 watts of electricity an hour. Keep the speakers turned off when not in use.

Laptop Power Adaptors - Did you know that your laptop power supply uses energy even when your laptop isn't connected? Unplug the power supply when your battery isn't charging (this goes for any type of charger, including those for PDA's, iPods, and cell-phones!)

Time-saving Tip - Plug all your peripherals into a single power strip. Then, turn the strip off when you are done working on your computer for the day.

Don't Turn Equipment on in the Morning until you Need it

Obviously, if your computer equipment isn't turned on, it isn't using energy. Do you really want to be reading your e-mail before you've had your first cup of coffee anyway? Wait until you actually have to use your computer before you turn it on in the morning.

Buying Equipment

- When you are looking to purchase new equipment, make energy conscious decisions. Things to keep in mind include:
- Make sure the products are Energy Star Compliant.
- When purchasing monitors, keep in mind that an LCD (flat-screen) monitor uses about 40% less energy than traditional CRT style monitors.

- Buy the smallest size monitor you need. Sure, a 21" computer monitor would be nice... but do you really need it for your work? Getting a 17" or 19" would save energy.
- Consider purchasing a laptop rather than a desktop. They consume considerably less energy than a desktop (as much as 50% less!).
- Research the company's environmental policies (Provided in the reference section are links to some of the most common manufactures of equipment used on our campus; Apple, Dell, Epson, Hewlett-Packard)

Reduce Paper Use

Did you know that every ream of paper takes about 6% of a tree to manufacture? Just our computer labs on campus go through at least one tree's worth of paper every week. We notice that half of the material printed just gets left unclaimed, and ends up in the recycle bin. You can help reduce this waste by following some of these simple steps:

- Use "Print Preview" to review your documents before printing them.
- When you're in the "print preview" mode, check to see if you really need ALL the pages of your document printed. If you only need the first 2 pages, rather than choosing print "all" for the page range, choose to print pages from 1 to 2.
- When writing papers, use the smallest size text font that you can comfortably read.
- Archive your email by saving it to a folder, rather than printing it.
- Think twice before printing something from the web... consider bookmarking the page instead and/or emailing yourself a link to the page.
- If you do need to print a website for the text content, consider copying and pasting the content to a word processor, where you can edit out unwanted content and reduce font size.
- If you're printing out Powerpoint presentations, choose "handouts" from the Print What menu of the print dialog box. Then, you can print multiple slides on a single page.
- Printing multiple copies of documents is more energy efficient at the duplicating center. If you need more than one copy of any material, take it to duplicating rather than printing multiple copies on a printer.

Reduce the number of CD's / DVD's you use

CD's and DVD's may seem like convenient ways to store data, but they also have a large impact on our environment. CD's/DVD's and their jewel cases are made primarily of a poly-carbonate plastic, which does not break down quickly in our landfills. They also both contain layers of Aluminum, which some experts believe may be toxic at certain levels. There are billions of CD's/DVD's produced every year. Do we really want this much waste to end up in our landfills?

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Ways to help reduce this problem include:

- If storing large amount of data... consider using a single DVD, rather than multiple CD's. A DVD can hold over 6 times the amount of Data than a CD can. Even better... for temporary storage, use a USB flash drive. These devices are great ways to share files from computer to computer. They're quicker than burning a CD, and are reusable.
- Or... consider saving your files to a shared-network space on campus
- Buy CD's on spindles if you don't need jewel cases for them
- Instead of buying music CD's... purchase music online from places like the iTunes music store, and transfer them directly to your iPod or other MP3 player.
- Did you know that CD's, DVD's and their cases are recyclable? Not many places in the country have the facilities to recycle these products... but we found a company called The CD Recycling Center of America, located in New Hampshire. We take any old CD's, DVD's that are collected on our campus and ship them to be recycled, preventing them from ending up in our landfills. We've set up collection points on our campus in all the computer labs, the library and the post office.

Recycle Ink Jet Printer Cartridges, Cell Phones, Rechargeable Batteries

Thanks to the efforts of Best Buy, it is extremely easy and convenient to recycle ink jet printer cartridges, cell phones and rechargeable batteries. Every Best Buy store in the United States has free recycling kiosks for these items. At SBC, we have set up a central collection point for these items, and our Director of Media Services brings the collected items with her during her purchasing trips to the store. There is absolutely no cost to our college, and the environment benefits.

Recycle Ideas...

If even one person on campus follows some of these suggestions, our world will be a better place. But imagine if everyone on campus was able to implement some of these changes. That's where you can help. Spread the word about this site to your friends, colleagues and families. If you see them wasting resources... talk to them, and explain the importance of computing in an ecologically conscious manner.

References:

Best Buy Recycling - <http://69.12.29.100/crnew/recycling.asp>

Apple Computer – <http://www.apple.com/environment>

Dell

Computer

<http://www.dell.com/content/topics/global.aspx/corp/environment/en/index?c=us&l=en&s=corp&~ck=anavml>

Epson – http://www.eea.epson.com/portal/page/portal/home/about_eea/Co-Existence

Hewlett-Packard – <http://www.hp.com/hpinfo/globalcitizenship/environment>

CD Recycling Center of America – <http://cdrecyclingcenter.org>

GreenDisk – <http://www.greendisk.com>