



# RECYCLING ADVOCATES

May 2002

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*Involving people in creating a sustainable future through local efforts to reduce, reuse, and recycle*

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## Applying the First "R" (Reduce) to the Power Your Computer Uses

How often have you wondered whether it's worth turning off your computer when you leave the office for a while? How long should it be turned off to offset the start-up power surge and hardware wear? We asked these questions of the folks starting up a local business, which focuses on reducing power use by computers, and here's what we learned.

**Hibernating Computers:** Some newer computers have a hibernate state option in order to save power, while not completely shutting down. Computers with new BIOS's and newer hardware can hibernate, with the proper operating system. In general, if a computer is certified to run WindowsXP, or Windows 2000, it will support hibernate. Hibernate is essentially shutting down the computer (very little energy is being consumed - approximately 5 watts depending on the system). The computer first saves all of the information about what the user was last doing. Then when the user restarts the computer, it boots up very quickly and goes back to exactly where s/he left off (with documents open, or e-mail, etc.).

**Non-hibernating Computers:** Most electrical devices use a bit more energy when first starting up. This happens especially in those devices with motors, which need a bit more energy to get turning from a dead stop. Your computer is the same in this regard because it has at least two

motors - the hard drive and the fan. This first spike in the power consumption profile of a computer is fairly small (generally), and lasts for no more than 5 or 10 seconds. Once the computer is up and running the amount of power it consumes depends on the devices that are operating (i.e., hard drive, CD Rom drive, floppy drive, cooling fan, CPU, power supply, screen, etc.). The average computer (CPU and 15" monitor) consumes power at about 110 to 150 watts per hour, dropping to as low as 5 watts per hour in suspend mode, and rising to as high as 250 watts with all of the devices operating at the same time.

**Another consideration:** It's estimated that one workstation (computer and monitor), if left on after business hours and without automatic power management, produces nearly one ton of carbon dioxide per year. This is five times the amount produced if the workstation is switched off at night and engages power management during idle periods in the day.(1)

**Frequent on-off cycles vs. health of the computer hardware:** Studies on computer equipment sold after 1998 indicate that there is no appreciable 'wear and tear' from shutting computers off once or twice daily. Most experts state that if a computer is to be left unused for four or more hours, it can be shut down without affecting its lifespan.

The information EZConserve has reviewed indicates that the risk of  
*Continued, page 2, col. 1*

## Spotlight on Milk Jugs

– Julie Daniel

*Reprinted from BRING Recycling USED News (Fall 2001) with permission.*

Plastic milk jugs are by far the most frequently recycled plastic containers found in curbside bins. Do you know what happens to them next? Before I worked for BRING, I thought they were made back into new milk jugs. Wrong! Closed loop recycling is rarely possible when it comes to plastic. (A closed loop is when a material is used over and over. Glass containers are a good example.) That's one of the reasons we encourage you to seek alternatives to plastic packaging when possible. Most plastic, if recycled, is not made into things that are then recycled again. However, it is still far better to recycle all the plastic containers we can than toss them in the landfill.

Milk jugs are made from a type of high density polyethylene (HDPE) called #2 Natural. "Natural" means the plastic is not colored with dyes, making it easier to recycle and more valuable than #2 colored bottles. Natural HDPE is used to package many other products besides milk jugs: juice and shampoo for example. A recycler's tip: when you have a choice between "natural" or colored plastic, buy the product packaged in natural. Remember though, white is not natural, it's dyed, just like orange or blue. All HDPE bottles are marked #2 in the chasing arrows symbol on the base.

*Continued, page 2, col. 3*

**Computer Power, cont.**

reducing a computer's useful life by turning it off at night is not the issue that it once was. Lawrence Berkeley National Laboratory staff note that:

[T]he belief that frequent shutdowns are harmful persists from the days when hard disks did not automatically park their heads when shut off; frequent on-off cycling could damage such hard disks. Conventional wisdom, however, has not kept pace with the rapid technological change in the computer industry. Modern hard disks are not significantly affected by frequent shut-downs. Shutting down computers at night and on weekends saves significant energy without affecting the performance, and may increase (rather than decrease) the operating lifetime of the equipment.

Electric Power Research Institute (EPRI) states that:

It is important to inform users that turning computers off will have no significant effect on their useful lifetimes. This old rule is a remnant of the days when larger hard disks were degraded by the mechanical stress of spinning up and down rapidly. However, today's generation of disks are manufactured to operate normally with 15,000-20,000 on-off cycles in its lifetime; this translates to three on-off cycles every day for over 15 years. Thus, even several on-off cycles per business day will not decrease the useful lifetime of a computer.

Rochester Institute of Technology reported that:

Contrary to myths of many years past, the lifetime of computers and monitors are not shortened when they are turned off at the end of each day. In fact, almost all new computer and monitor power supplies have surge suppression built in. Turning off your machine at night will lengthen the life of mechanical components such as disk drives and fans.

A FAQ from ZDNet (<http://www.zdnet.com/>) also notes

that your computer probably will be obsolete long before it wears out anyway, so don't worry about it.

**A short profile of EZConserve:** Our area has a new business, EZConserve, that is the fruit of several folks from the Metro area recycling field. Seven percent of the energy used in commercial businesses and public offices goes to power office equipment, and the majority of that figure is used by networked PCs and their monitors. EZConserve's Surveyor is a software tool that synchronizes and manages the Energy Star® capabilities of these PCs from a central location, which may immediately cut this consumption in half and end a nationwide status quo that finds power-saving features disabled or not in use in 75% of workplace PCs. This, in turn, means an end to computers being left on at night and on weekends, and an immediate reduction in an organization's electrical consumption. According to EZConserve, the new release of their Surveyor product extends the boundaries of this power management system by providing support to any PC that uses a current Windows-based operating system, including Windows NT 4.0, '98 SE, '2000, XP, and ME. Visit their Web site at [www.ezconserve.com](http://www.ezconserve.com).

(1)Guide to Reducing Energy Use in Office Equipment, March 20, 1999, Roger E. Picklum, Bureau of Energy Conservation, City & County of San Francisco, Bruce Nordman, Barbara Kresch, Energy Analysis Department, Lawrence Berkeley National Laboratory, <http://eetd.lbl.gov/BEA/SF/GuideR.pdf>

Information contributed by Cindy Tatham, Director of Sustainable Business Solutions, EZConserve, Inc., Tigard, Oregon, 503-52-5624, [cindyt@ezconserve.com](mailto:cindyt@ezconserve.com).

**Milk Jugs, cont.**

In 2000, BRING sent 179 tons of milk jugs to market. That's just under 40% of the plastic we sold. Each ton has around 16,000 individual containers, which means our plastic sorters handled close to three million bottles! After sorting, our milk jugs are baled and sent by truck to Merlin Plastics in British Columbia. BRING tries to sell as much plastic as possible to nearby West Coast markets to minimize the environmental impact associated with shipping long distances.

At Merlin, the bales are broken open, resorted to remove any remaining contaminants, ground into small flakes, washed to remove glue and paper, dried, melted and passed through an extruder to make pellets. The pellets are sold to manufacturers in the U.S and Canada and used to make new products. Merlin's biggest customers are non-food bottle manufacturers who make packaging for motor oil and cleaning products. They also sell to companies that produce garden pots, trays, plastic pipe and the film used to make the plastic bags you find in grocery stores. Though Merlin is located in Canada, about 65% of both their suppliers and buyers are in the U.S.

If you'd like to avoid disposable containers for milk altogether, here are some options. The "green" award goes to Norris dairy in Albany which sells organic milk in returnable glass containers (\$1 deposit). It's available at most natural food stores and Price Chopper markets. Darimart sells a line of non-organic milk in reusable plastic containers, again with a deposit. These are both good waste reduction choices. If you buy milk in plastic bottles, be sure to recycle them and please don't tie them on strings! We have to cut these or they jam up the baler.

## "Switch Out" Mercury

The trunk and hood light switches in many cars contain enough mercury to contaminate a 20-acre lake so the fish are unsafe to eat. By installing mercury-free switches, you can help prevent mercury pollution.

The Switch-Out project is a joint effort among the Oregon Environmental Council, the Northwest Automotive Trades Association (NATA), DEQ, Metro and the Port of Portland to replace 10,000 mercury switches in cars in the Portland metro area. For years, the automotive industry has been using a mercury lighting switch under the hood and trunk of cars. This project will eliminate approximately 20 pounds per year of mercury pollution that otherwise would occur when scrapped vehicles (and their switches) are incinerated by local steel mills that melt down the vehicles to reclaim steel.

Motorists can take their cars to a participating auto repair shop and have their mercury switch replaced with an environmentally friendly ball-bearing switch for free. Although not all cars use mercury switches (most Japanese and European auto manufacturers stopped using mercury switches in the early 1990s), the U.S. auto industry continues to use

mercury in cars routinely, even though practical alternatives are widely available.

For a list of automobiles with mercury switches and participating auto repair shops, visit NATA's Web site at <http://www.aboutnata.org/MERCURY/MercurySwitch-Out.htm> or call 503-253-9898.

## AOR Spring Education Conference

This year's Association of Oregon Recyclers Spring Education Conference promises to be a hit – it's being held on Friday, May 17, at Willamette Valley Vineyards in Turner, Oregon (just south of Salem). Betty Roberts, former Oregon Supreme Court Justice and State Senator is delivering the keynote address, "Revisiting the Bottle Bill 30 Years Later."

For more information, contact the AOR office at 503-661-4475 or [mail@aorr.org](mailto:mail@aorr.org). Register by May 8 and save \$10.



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## Market Share Trumps the Environment

*Reprinted from the Waste Prevention Forum, submitted by Jerry Powell, Resource Recycling magazine.*

The Fibre Box Association estimates that returnable plastic containers have taken five percent of the produce market from corrugated containers, with most of the usage being from one firm - Wal-Mart - and much of the usage being for one product - sweet corn, where reusable plastic containers have 15 percent of the market. The study of 19 retailers was undertaken by the Walter Bishop consulting firm. As a result of the findings, the Corrugated Packaging Alliance has raised \$2 million from box makers to launch a multi-year campaign promoting the use of corrugated shipping containers over reusable ones.

### Got Projects?

Let your imagination run wild at SCRAP, the School & Community Reuse Action Project. SCRAP sells all manner of used items for your next creative endeavor. They're open Wednesday-Saturday, 12-6 p.m., and Sunday, 12-5 p.m. Call 503-294-0769 for a class schedule or visit them at 3625B N. Mississippi Ave., Portland, next to The ReBuilding Center.

### RECYCLING ADVOCATES

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### RECYCLING ADVOCATES

#### Membership Application

\$25 Regular \$10-24 Living Lightly \$50 Sustainer \$\_\_\_\_\_ Other  
Please enclose a check and mail to: PO Box 6736, Portland, OR 97228-6736

Name \_\_\_\_\_

Address \_\_\_\_\_

Phone Day \_\_\_\_\_ Evening \_\_\_\_\_

E-mail \_\_\_\_\_

*\*Your membership contribution to RA is tax-deductible to the full extent of the law.*

## Upcoming Events

May 9-10, Design for End-of-Life Management of Electronic Products, featuring Dr. Ab Stevels, world authority on environmental design. Capital Center, Room 1025, 18640 NW Walker Road, Suite 1010, Beaverton. Registration required. For more information, go to [www.zerowaste.org/events](http://www.zerowaste.org/events) or contact the Zero Waste Alliance at 503-279-9383 or [info@zerowaste.org](mailto:info@zerowaste.org).

May 10, 8:30 a.m.-noon, Clopyralid Informational Forum. 680 State Street, Suite 100, Salem. Join the Composting Council of Oregon and DEQ at a forum to discuss the potential implications of clopyralid-contaminated compost in Oregon. RSVP to Wendy Fisher, 503-846-3661 or [wendy\\_fisher@co.washington.or.us](mailto:wendy_fisher@co.washington.or.us).

May 13, 7:30 p.m. Recycling Advocates Board meeting. For location and information, call 503-777-0909.

May 14, 7:30-9 a.m. The Oregon Natural Step Breakfast, "Putting Sustainable Economies to Work for You: A New Way to Look at Our Economy," by Robert Gilman, Context Institute. Multnomah Athletic Club, Portland. For more information, contact Steve Radtke at 503-241-1140 or [steve@nwei.org](mailto:steve@nwei.org), or visit [www.ortns.org/events](http://www.ortns.org/events).

May 14, 9:30 a.m.-12 p.m. The Oregon Natural Step Workshop, "Recognizing Fresh Business Opportunities Through Sustainable Economics," by Robert Gilman. Multnomah Athletic Club, Portland. For more information, contact Steve Radtke at 503-241-1140 or [steve@nwei.org](mailto:steve@nwei.org), or visit [www.ortns.org/events](http://www.ortns.org/events).

May 17, Association of Oregon Recyclers Spring Education Conference. Willamette Valley Vineyards, Turner, Oregon. Details on page 3.

June 5, 7:30 p.m. Institute for the Northwest 2002 Evening Lecture Series, Dr. Allen Hammond, "Which World? Scenarios for the 21st Century." Lecture will be followed by a catered reception. First Congregational Church, 1126 SW Park Avenue, Portland. For more information, call 503-222-2537 or visit [www.inorthwest.org](http://www.inorthwest.org).

## Call for nominations!

The annual membership meeting is coming soon. The meeting will begin with members voting for the Recycling Advocates Board positions of Vice-President and Treasurer. We are now accepting nominations for the two-year-term positions; members may nominate themselves. Voting will be followed by a presentation on a current recycling issue.

Stay tuned for details regarding the annual meeting, scheduled for the week of July 22.

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