

What is “Green Computing?”

“Greening” your computing equipment is a low-risk way for your business to not only help the environment but also reduce costs. It’s also one of the largest growing trends in business today.

“Making a conscious decision to go green in the workplace, not only improves your bottom line, but also reduces your carbon footprint. It’s a win-win no matter how you look at it”, says Shawn Nesbitt, the founder of [Simple Network Consulting](#).

Reducing energy usage, which also reduces carbon dioxide emissions and your energy bill, is the most effective thing you can do. The average PC wastes about half the energy provided to it, according to the Climate Savers Computing Initiative, an industry group dedicated to reducing greenhouse-gas emissions. You should encourage employees to shut down their PCs or put them into sleep mode when not working on them. Nesbitt recommends implementing thin clients produced by Neoware to reduce the TCO of your company’s computing environment. (Neoware is a member of www.thegreengrid.org).

How Much Energy Does Your Computer System Use?

A typical desktop PC system is comprised of the computer itself (the CPU or the “box”), a monitor, and printer. A typical CPU may require approximately 200 watts of electrical power. Then, add 70-150 watts for a 17-19 inch monitor (proportionately more for larger monitors). The power requirements of conventional laser printers can be as much as 100 watts or more when printing though much less if idling in “sleep mode.” Ink jet printers use as little as 12 watts while printing and 5 watts while idling.

How a user operates the computer also factors into energy costs. First let’s take the worst case scenario of continuous operation. Assuming you operate 200 watt PC system day and night everyday, direct annual electrical costs would be over \$130.00 (at \$0.075/kWh). In contrast, if you operate your system just during normal business hours, say 40 hours per week, the direct annual energy cost would be about \$30. This is not taking into consideration the cost of additional ambient room cooling.

Considering the tremendous benefits of computer use, neither of the above cost figures may seem like much, but think of what happens when these costs are multiplied by the many hundreds or thousands of computers in use. The loss of revenue due to energy consumption and waste are astronomical.



Excerpt taken from an EPA Article by Enesta Jones:

(7/18/07) Numerous environmental benefits of buying high-performance, environmentally friendly computer equipment are highlighted in the first annual report issued by the Green Electronics Council this week. The report, called "*The Environmental Benefits of the Purchase or Sale of EPEAT Registered Products in 2006*," states that the purchase of more than 36 million EPA approved computer desktops, laptops and monitors has led to a significant reduction in greenhouse gas emissions.

Some highlights from the report show that the computer equipment has helped to:

- Save 13.7 billion kWh of electricity, enough to power 1.2 million U.S. homes for a year;
 - Save 24.4 million metric tons of primary materials, equivalent to the weight of 189 million refrigerators;
 - Prevent 56.5 million metric tons of air emissions (including greenhouse gas emissions);
 - Prevent 1.07 million metric tons of carbon equivalent greenhouse gas emissions, equivalent to removing 852,000 cars from the road for a year;
 - Prevent 118,000 metric tons of water pollutant emissions;
 - Reduce the amount of toxic materials used by 1,070 metric tons, equivalent to the weight of 534,000 bricks, including enough mercury to fill 157,000 household fever thermometers; and
 - Avoid the disposal of 41,100 metric tons of hazardous waste, equivalent to the weight of 20.5 million bricks.
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EPEAT (Electronic Products Environmental Assessment Tool) -registered computer products have reduced levels of cadmium, lead, and mercury to better protect human health, and are easier to upgrade and recycle, in addition to meeting the government's Energy Star guidelines for energy efficiency. By buying EPEAT registered products purchasers are significantly contributing to reducing the environmental impacts of their computers.

You can also buy other equipment that uses fewer toxic materials and more recycled components. Many new electronics sold in the United States already meet the European Restriction of Hazardous Substances Directive (RoHS), a standard banning the general use of six hazardous substances including lead and mercury, and many manufacturers are committed to further reducing use of toxic substances. Neoware is both [\(RoHS\)](#) and [\(WEEE\)](#) compliant as well.

Reusing and Recycling

Simple Network Consulting receives hundreds of spent printer toner and ink jet cartridges and batteries a year. Instead of tossing these in the garbage, they can be recycled, saving resources and reducing pollution and solid waste. To recycle spent toner or ink jet cartridges (printer and some fax), computers, printers, peripherals, radios, cell phones, networking equipment, and displays call Simple Network Consulting at 608.446.4464.

Improper disposal of computers and electronics is illegal! Consult with your local city/state officials to find out how you can help save the planet from harmful pollutants found in computers, and monitors.

Recycling your old equipment is another important action to take. Companies such as [Cascade Asset Management](#) recover the most value from your slightly used surplus equipment, provide the secure destruction of your electronic media, or haul away your old computers for environmentally responsible recycling.

Reducing Paper Waste

Rather than creating a paperless office, computer use has vastly increased paper consumption and paper waste. Here are some suggestions for reducing waste:

- Print as little as possible. Review and modify documents on the screen and use print preview. Minimize the number of hard copies and paper drafts you make.
- Instead of printing, save information to disk.
- Recycle waste paper.
- Buy and use recycled paper in your printers and copiers. From an environmental point of view, the best recycled paper is 100 percent post consumer recycled content. For more information about obtaining recycled paper, contact Simple Network Consulting for more information.
- Do not print out un-necessary e-mail messages.
- Use e-mail instead of faxes or send faxes directly from your computer to eliminate the need for a paper copy.
- Before recycling paper, which has print on only one side, set it aside for use as scrap paper or for printing drafts.
- When general information-type documents must be shared within an office, try circulating them instead of making an individual copy for each person. This can also be done easily by e-mail.

While you're waiting to replace your more expensive equipment, you can reduce paper use by printing double-sided pages, and you can purchase refillable printer-ink cartridges. Small steps, but taken in large measure, can lead to a cleaner planet.



Total Cost of Ownership

LCD monitor prices have been decreasing in recent years. When the total cost of ownership is considered - including savings in power consumption and lifespan-LCDs are now less expensive than many CRTs.

Description	17" CRT	17" LCD	19" CRT	19" LCD	21" CRT
Power Consumption (Watts)	70W	35W	100W	45W	115W
Energy Cost (kw/hr)	\$0.157	\$0.157	\$0.157	\$0.157	\$0.157
Hours/Day	8	8	8	8	8
Days/Week	5	5	5	5	5
Annual Energy Cost (per unit)	\$22.80	\$11.43	\$32.66	\$14.70	\$37.46
Years of Operation	4	4	4	4	4
TOTAL Energy Cost (per unit)	\$91.20	\$45.72	\$130.64	\$58.80	\$149.83

Figures are in U.S. Dollars

* NOTE: Does not include cost associated with air conditioning, which may add another 50% to the TOTAL.

“Utilizing thin client computing alternatives such as Neoware, thin client devices afford you a multi tiered approach on saving both money on the initial hardware, energy savings, and longer lasting hardware since there are no moving parts.”, states Nesbitt referring to the thin client computing devices provided by Neoware.

Neoware Thin Clients Deliver Energy Savings as “Green” Alternatives to Desktop PCs

Company's Thin Clients Save up to 90 Percent of the Power of a Desktop PC,

Becoming Critical Component of Corporate and Government Sustainability Programs

KING OF PRUSSIA, Pa. — May 16, 2007 — Neoware, Inc. (Nasdaq:NWRE), a leading provider of thin client computing solutions, today announced that its thin client devices, which are growing in popularity as cost-effective alternatives to desktop and laptop PCs, can help companies reduce computing-related energy costs by up to 90 percent. Traditional desktop PCs consume a maximum of 280 watts of power as compared to certain Neoware thin clients which consume approximately 30 watts of power in the same time frame – an energy savings of nearly 90 percent. For example, if a company replaced 35,000 PCs with Neoware e90 thin client devices, its energy cost savings could be up to \$1.9 million per year, a figure based on the national KWH rate of \$0.0849.

The chart below illustrates the cost and potential annual savings of operating 1,000 Neoware thin clients vs. 1,000 traditional desktop PCs.

Brand	Maximum power per Device (in Watts)	Annual Power Cost for 1,000 Devices	Approximate annual energy savings using Neoware thin clients (for 1,000 devices)
PC	280	\$61,807	N/A
Neoware e140	48	\$10,596	\$51,211
Neoware e90	30	\$6,623	\$55,185
Neoware c50	24	\$5,298	\$56,509



Based on: Maximum power supply wattage, a KWH national average (Dec 06) of \$0.0849, average usage time of 50 hours per week for one year, with 1,000 units in use. The PC used for comparison was the Dell Optiplex 740.

Faced with rising energy costs, impending energy-reduction legislation and a drive to become more environmentally-friendly, many companies such as CVS, Bed Bath & Beyond, Goodyear, AutoZone, Kroger Co., and other global retailers are leveraging the energy savings benefits of Neoware thin clients.

In addition to saving companies in ongoing power consumption costs, thin client devices have a number of additional energy saving benefits when compared to traditional PCs. Because they have no moving parts, such as disc drives or fans, and emit very little heat, organizations also save in cooling costs; actual savings vary based on facility.

Producing thin clients also requires significantly less energy and resources, as they contain fewer parts; are cheaper to transport because they are approximately 40 percent lighter; and last 50 percent longer, greatly reducing computer disposal costs.

“We have seen an increase in companies of all sizes turning to thin client technology to achieve greater energy and cost savings,” said Klaus Besier, president and CEO of Neoware. “Without moving parts, such as a fan or disk drive, Neoware’s thin clients help companies meet their sustainability targets by eliminating much of the overhead associated with computing. We look forward to helping companies ‘go green’ and achieve their environmental initiatives.”

About Neoware

Neoware, hc. (Nasdaq:NWRE), is global provider of thin client computing solutions that allow organizations to cut costs by centralizing desktop management, alleviating threats of security breaches and reducing energy consumption. Forward thinking companies enable their desktop virtualization strategies with Neoware’s desktop, laptop and software offerings.

Simple Network Consulting is a value-add partner of Neoware based in Madison WI. Nesbitt notes “During the past year, we have helped clients save tens of thousands of dollars by utilizing the Neoware platform of computing.” Nesbitt adds “We believe firmly in the Neoware product, enough to use it in our corporate offices.”

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