feature story 08 June 2006 08:00 AM (GMT -05:00)

New Standard Identifies Eco-friendly Computers and Monitors

BY ERICA VONDERHEID

It's not easy buying green, especially for those purchasing desktop and laptop computers and monitors for large organizations. Generally, purchasing agents who buy millions of dollars worth of electronic equipment do not have the technical knowledge to sift through complicated product specifications to determine which equipment is most easily recyclable or has the least amount of toxic materials. A new IEEE standard aims to simplify this search process by establishing three levels of eco-friendly criteria that computers and monitors must meet.

The IEEE 1680 "Standard for Environmental Assessment of Personal Computer Products"—also known as the Electronic Product Environmental Assessment Tool (EPEAT)—is the first U.S. standard that provides guidelines for identifying environmentally friendly desktop and laptop computers and monitors.

"This standard makes it easy to identify what makes a green computer," says Jeff Scott, waste division director of the U.S. Environmental Protection Agency (EPA). "You don't have to be an expert to know when you're getting a product that is better for the environment."

Some institutional purchasers already had added language to their specifications about the amount of toxic materials or recycled components that would be allowed or required in each piece of equipment, but manufacturers encountered difficulty when designing their products to conform to many varying specs. EPEAT provides a single set of specifications that, in principle, all buyers and manufacturers could use.

The EPEAT standard seeks to accomplish eight major tasks, and, in doing so, establish eight categories of equipment. It:

- Sets limits on the amount of environmentally sensitive materials such as cadmium, mercury, lead, hexavalent chromium, and certain flame-retardant chemicals found in a product.
- Declares the amount of recycled or reusable plastics in the equipment and set a minimum amount of biodegradable plastics to be included.
- Calls for a product that can be easily disassembled for recycling.
- Defines a computer that can be upgraded easily so it doesn't have to be replaced every three years, and allows consumers to purchase longer-term warranties.
- Specifies a computer or monitor that uses less energy than older models.
- Calls for programs to be established to take back equipment when the consumer no longer needs it or it is at the end of the product's life.
- Requires computer manufacturers to[is1] establish a corporate environmental policy for their products and processes and issue annual reports on the progress toward meeting their policy's goals.
- Eliminates toxic materials such as heavy metals from the boxes and crates computers and monitors are shipped in. Also, manufacturers must indicate the amount of recycled content used in the packaging.

The standard's working group appreciated that equipment makers could not produce computers and monitors to meet the same level of performance right away, and so they established three green-quality categories: gold, silver, and bronze. The standard lists 51 criteria, of which 23 are required. A product at the top, gold level meets all 23 required criteria plus 75 percent of the optional ones. For the silver level, the equipment must meet the required criteria plus at least 50 percent of the optional ones. At the bronze level, a product must adhere to all of the required criteria alone.

For example, computers at the bronze level would have a maximum amount of each specified toxic material, have a declared amount of recycled and recyclable plastic, and would operate efficiently and use low amounts of energy. Recycling a bronze-level computer would be easier than older units because now its outer housing would have to be snapped together and easy to disassemble, and it could not be built of components requiring special handling. Bronze computers also must be designed to be easily upgraded as technology improves.

For a product to qualify for the bronze level, the manufacturers must take back all old equipment and establish a corporate environmental policy. Finally, the packaging and boxes the green equipment comes must be made of nontoxic, recycled content

and be recyclable or reusable.

A computer or monitor that meets the gold or silver level must meet more stringent green conditions. For example, it might have a solar-powered battery or be made of more recycled plastic than products in the bronze category.

For some of the standard's criteria, the working group decided not to reinvent the wheel, according to Larry Chalfan, cochair of the IEEE Std.1680 working group and executive director of the Zero Waste Alliance. The standard draws on the European Union's four-year-old Reduction of Hazardous Substances Directive, which will go into effect this year and sets low limits on the amount of hazardous substances such as cadmium, mercury, lead, hexavalent chromium, and certain flame-retardant chemicals in equipment. Similarly, rather than write a new specification for computer and monitor energy efficiency, the working group incorporated the existing U.S. Energy Star program that measures the power consumption of household appliances.

STARTING WORK The EPA and the Zero Waste Alliance, environmentalists, recyclers, academic institutions, and electronics manufacturers such as Dell and Hewlett-Packard formed a loose coalition in 2000 to establish a common set of guidelines for green electronic equipment. Soon after, the EPA awarded a grant to the Zero Waste Alliance, a nonprofit organization based in Portland, Ore., to form a steering committee for a proposed standard for environmentally friendly computers and monitors. In time, the EPA and the Zero Waste Alliance, with works with universities, government agencies, and businesses to develop a zero-waste economy, turned to the IEEE Standards Association (IEEE-SA) to manage the standard development process.

"Getting the IEEE-SA involved was important because of the organization's credibility," says Holly Elwood, manager for the EPA's environmentally preferable purchasing program and cochair of the IEEE Std.1680 working group. "We wanted to work with people who were experts in the electronics field but who weren't all representing the industry perspective."

Like all IEEE standards, compliance with IEEE Std. 1680 is voluntary. But equipment makers that don't comply may be left out of the multibillion-dollar government market in the United States for computers and monitors.

An EPA grant of US $375 000 over three years also helped establish the Green Electronics Council (GEC), an independent nonprofit organization based in Portland, Ore. The GEC will maintain an online registry of computer products at http://www.epeat.net that its manufacturers assert meet the standard's criteria. The GEC Web site will have a partial list of such products by the end of June, with more coming in September.

The GEC will request information from manufacturers that demonstrates the products' conformance with the criteria of the standard. In addition, the council will randomly test products to ensure that they meet the manufacturer's claims. The final judgment regarding conformance will fall to an independent committee of experts. The council could also have a product tested if consumers or competitors complain that they believe it does not meet the criteria claimed by the manufacturer.

The EPA estimates that in the next five years, purchases of equipment that meet the IEEE Std.1680 standard will prevent more that 4 million pounds of hazardous waste and 1 million pounds of nonhazardous waste from ending up in landfills. Equipment meeting the Energy Star guidelines could also conserve more than 200 000 megawatts of electricity.

The IEEE standard and the GEC are aimed at large institutional purchasers, not consumers buying a home computer. But individuals can go to the GEC's Web site to view the list of eco-friendly computers. In time the GEC might reconvene the IEEE Std.1680 working group to develop criteria for other electronic products such as cellphones and printers.

For more detailed information on the EPEAT criteria, visit http://www.greenelectronicscouncil.org/epeat/criteria.htm.