



**A Collation and Review
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Sustainable Management for Computers and Related Electronics

Having reviewed and updated the NBIS knowledge base on this purchasing issue, I am pleased to report the advancements of the Electronic Environmental Assessment Tool (EPEAT) and how it has simplified the comparison and selection of these products.

The complex and multiple criteria for environmental comparisons and purchasing of Computers and Related Electronics have been efficiently codified for manufacturers and purchasers through the EPEAT tool. See <http://www.epeat.net/> for more complete information.

EPEAT systematically rates and certifies products on criteria that include:

- Environmentally Sensitive Materials
- Materials Selection
- Design for End of Life
- Product Longevity/Life Cycle Extension
- Energy Conservation
- End of Life Management
- Corporate Social Responsibility of Manufacturer
- Packaging

Criteria details are listed on the website.

The EPEAT website also includes a special resource section for purchasers:

<http://www.epeat.net/Procurement.aspx>

More than 600 products from over 20 manufactures have been systematically rated according to the above performance criteria. EPEAT has become the easiest way to specify affordable, high-performance, environmentally preferable computer desktops, laptops, and monitors. In addition to being scored for particular criteria, ratings are also aggregated for successive product achievement levels of bronze, silver and gold. EPEAT is a required specification for federal purchasers and is increasingly used by state and local government purchasers and private sector IT managers to 'green' their electronics purchasing.

EPEAT has constructed an Excel based Electronics Environmental Benefits Calculator (EEBC) that is intended to assist institutional purchasers in quantifying the benefits of environmentally sound management of electronic equipment. This tool was developed by The Center for Clean Products and Clean Technologies at the University of Tennessee.

The calculator features environmental performance metrics and quantitative tools that translate attributes and activities into environmental benefits, including:

- Savings in energy use;
- Savings in virgin material use (increase in recycled materials);
- Savings in CO₂/Greenhouse gas emissions;
- Savings in air emissions;
- Savings in water emissions;
- Savings in toxic materials;
- Savings in municipal solid waste generation;
- Savings in hazardous waste generation;
- Savings in cost, where feasible.

The purchaser webpage also includes sample RFPs, including the protocol that is used by the City of Seattle. Seattle's purchasing specifications include these provisions:

- All electronic hardware provided to the City by _____ under this Agreement shall meet or exceed the minimum criteria for Bronze environmental performance of the Electronic Products Environmental Assessment Tool (EPEAT™), a program of the Green Electronics Council. The City will not purchase any electronic hardware that is not listed as an EPEAT™ registered product.
- _____ shall make good faith efforts to meet or exceed the Silver EPEAT™ environmental performance criteria on or before May 31, 2008.
- All desktops, laptops and monitors shall meet the U. S. Environmental Protection Agency (EPA) and Department of Energy ENERGY STAR® GUIDELINES, and desktops shall meet or exceed the 80 Plus® Standards by July 31, 2007. All products shall have the Energy Star® label or an Energy Star® certification by an independent third party eco-labeling program.

Computers and associated electronics should not be allowed into your waste stream. Address End of Life Issues on the front end of purchasing contracts.

Computer equipment contains materials that can pose a threat to the environment if not managed carefully at the end of their useful life. Desktop color monitors typically contain about two or more pounds of lead, and lead can also be found inside in the circuit boards of the computer. Most desktop computers use some type of on-board battery that may contain lead, cadmium, or other heavy metals. As toxic materials, lead and other heavy metals should not be released into the environment. Additionally, laptop computers typically are powered by a rechargeable battery that must be specially disposed of or recycled.

By using leasing programs or purchase agreements that require the retailer, distributor, or manufacturer to take equipment back, you can avoid the need to manage it as a waste. This transfers the responsibility for the management of toxic materials to those who provide the equipment. Furthermore, depending upon the replacement schedule, your machines or their various components could have value for reuse.

In both leasing agreements and purchase contracts, use take-back clauses. These clauses should specify that any units - or lead-bearing components resulting from unit disassembly - are to be processed to recover and recycle the lead if the unit or components are determined to have no market value or are obsolete. This is particularly important with color monitors, which contain a significant amount of lead.

There should also be a clause specifying that any batteries containing heavy metals, such as lead, cadmium, lithium, or silver, are properly removed and either recycled or managed as a hazardous waste before the unit is disposed. Consider specifying that the vendor make every attempt to assure recycling of the plastic, metal, and glass resulting from processing obsolete machines.

Contracts should require a certification of final disposition that documents what happens to the units, particularly the lead from the monitor's cathode ray tube (CRT) and batteries. This is especially wise if your organization owned the equipment. (These end-of-life recommendations are informed by the New American Dream Foundation's sustainable purchasing guides.) http://www.responsiblepurchasing.org/purchasing_guides/all/index.php