



Toxics Reduction and Source Reduction in E-Scrap Procurement

We can't imagine life without computers, cell phones, and personal digital assistants (PDAs). But along with our email messages, contacts, and calendars, these electronic devices contain hazardous materials like lead, mercury, and cadmium. Energy-hungry electronics also waste electricity and increase air pollution. Disposal of old electronics can be expensive and risky.

It's time for organizations, institutions and agencies to look at the long-term liabilities of these hazardous materials and to make purchasing decisions to save money and reduce long term liability.

Section 7 was developed from information gathered for the Green Electronics Procurement Workshop held in August 2004. This workshop was designed to help purchasing agents find and procure greener electronic equipment -- equipment that is more durable and energy efficient, and contains fewer toxic materials.*

Purchasing greener electronics on the front-end means saving money, reducing hazards, and reducing your liability when it's time to get rid of them. This section provides an introduction to many of the issues that should be considered when purchasing electronic equipment. Section 7 is a compilation of information from resources across the country and offers a wealth of information as well as real-life examples of how others are buying greener electronics.

**The Green Electronics Procurement Workshop was funded in part by a grant from US Environmental Protection Agency, Region 5.*

The Center for the New American Dream worked with a group of public and private procurement agents and other stakeholders to develop the following Principles for Purchasing Environmentally Preferable Computers, Monitors and Peripherals.

Principles for Purchasing Environmentally Preferable Computers, Monitors, and Peripherals

As institutional purchasers, many in procurement are dedicated to reducing the negative environmental and health consequences of our purchasing decisions. Computers are a particular concern due to their high prevalence in the waste stream (over 500 million computers will become obsolete over the next few years), hazardous chemical constituents, and significant energy use. We are committed to purchasing computers, monitors, and peripherals (hereinafter referred to as “computers”) with a reduced effect on human health and the environment and minimal disposal liabilities and costs, which also meet price and performance requirements. We urge industry to support our request for environmentally preferable computers that meet the following principles:

1. Design for the Environment and Human Health

- A. Eliminate or reduce hazardous, carcinogenic, and mutagenic substances in computers including, but not limited to: cadmium, chlorinated plastics, halogenated flame retardants, hexavalent chromium, lead, and mercury (such as those included in RoHS¹¹).
- B. Reduce material use and utilize the greatest amount feasible of reused, remanufactured, and/or recycled materials/parts in computers.
- C. Facilitate the recycling of computer components including, but not limited to: avoiding glues and welded connections, clearly labeling plastics, using universal fasteners (screws, snaps, etc.), using single resin plastics, and ensuring toxic components are easily separable.
- D. Incorporate upgradeability features into computers including, but not limited to: modular design, expandable memory, owner transferability, and other features that extend the product life and simplify continued use beyond the original owner.
- E. Use packaging and shipping material that contains reused and/or recycled material; is reusable and/or recyclable in the geographic region where the product is sold; and is collected by the vendor for reuse and/or recycling. Efforts should also be made to minimize the use of packaging and shipping material.

2. Promote Energy Efficiency and Improve User Health

- A. Meet the most up-to-date Energy Star specifications for computers, ship computers with all specified power management features enabled, and

¹¹ The Restriction of Hazardous Substances in Electrical and Electronic Equipment (RoHS) is a European directive that states that as of July 1, 2006, no new electrical and electronic equipment in the UK and EU countries can contain lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, or polybrominated diphenyl ethers. The directive can be viewed at http://europa.eu.int/eur-lex/pri/en/oj/dat/2003/l_037/l_03720030213en00190023.pdf

include all necessary information and technical support to ensure that equipment users can easily and simply install and maintain power management features on their equipment.

- B. Minimize health risk to users including, but not limited to: ergonomic product design and reducing emissions during use (electrostatic fields, electric fields, magnetic fields, noise, etc.).

3. Ensure Safe and Environmentally-Sound End-of-Life Management

- A. Provide take-back and end-of-life management services that ensure computers are reused (preferable) and/or recycled to the greatest extent feasible in a way that minimizes harm to the environment and human health. Toxic elements should not be sent to municipal solid waste (non-hazardous waste) landfills or incinerators.
- B. Do not send hazardous waste to developing countries for disposal or recycling in accordance with the Basel Convention. This does not include working equipment, parts, or materials intended for reuse or resale. Equipment, parts, and materials may be sent to developing countries for repair only if assurances can be made that hazardous components will not be disposed of in developing countries as a result.²
- C. Disclose how taken-back computers are handled, reused, repaired, recycled, and/or disposed.
- D. Meet high standards of worker protection in both the United States and overseas. This includes employment practices that protect workers from hazardous exposures and that enable employees to take action to protect their own health.

4. Manufacture Responsibly

- A. Comply with all applicable environmental regulations (e.g. the Montreal Protocol on Substances that Deplete the Ozone Layer), practice pollution prevention techniques that reduce waste and conserve energy and water, and strive for continuous environmental improvement (e.g. ISO 14001 certification).
- B. Provide technical support/training to users including, but not limited to, information on energy management features.
- C. Encourage all companies involved in production, distribution, and management of computers (component manufacturers, recyclers, etc.) to observe environmental management practices such as having a green supply chain program, environmental management system, etc.
- D. Obtain credible eco-labels and third party certifications for products such as, but not limited to: TCO, Blue Angel, etc.
- E. Disclose the use of toxic materials in computers such as those on the OSPAR List of Chemicals for Priority Action³ and Proposition 65 List.⁴

² The Basel Convention and the Basel Ban Amendment provide a framework for the transboundary management and disposal of hazardous waste. More specifically, the Basel Ban Amendment prohibits the export of hazardous waste to countries that do not belong to the European Union, the Organization of Economic Cooperation and Development (OECD), or Liechtenstein. The convention can be viewed at <<http://www.basel.int/text/con-e.pdf>> and the amendment can be viewed at <<http://www.basel.int/pub/baselban.html>>

³ OSPAR (Convention for the Protection of the Marine Environment of the North-East Atlantic) List of Chemicals for Priority Action includes 1) Polychlorinated dibenzodioxins (PCDDs); 2) polychlorinated dibenzofurans (PCDFs); 3) short chained chlorinated

These principles have been developed in consultation with purchasers and other experts to assist institutional computer procurement. This effort was coordinated by the Center for a New American Dream with participation by the following:

City of Atlanta
City and County of Denver
City of Portland Bureau of Purchases
City of Seattle
Center for Environmental Health
Clean Production Action
Clever Name Here, Inc.
Consultant for Alameda County Waste Management Authority
Environment Canada
Full Circle Environmental, Inc.
Gracestone, Inc.
GrassRoots Recycling Network
Iowa Department of Natural Resources
Massachusetts Operational Services Division
National Wildlife Federation Campus Ecology Program
Nebraska State Recycling Association
New York City Alliance Against Sexual Assault
Northeast Recycling Council
Oregon Department of Administrative Services, State Procurement Office
Pacific NW Pollution Prevention Resource Center (PPRC)
Sandia National Lab Pollution Prevention
Silicon Valley Toxics Coalition
Snohomish County
TCO Development
Terra Choice Environmental Services
University of Tennessee Center for Clean Products and Clean Technologies
U.S. DOE Pacific Northwest National Laboratory
U.S. EPA Region 10
Virtual Scavengers Project, Inc.
Walla Walla County Resource Conservation Committee
Women's Health & Environmental Network (WHEN)

Contact Information

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paraffins (SCCP); 4) mercury and organic mercury compounds; 5) cadmium; 6) lead; 7) organic tin compounds; 8) brominated flame retardants; and 9) dibutylphthalate and diethylhexylphthalate. The list can be viewed at http://www.ospar.org/eng/doc/ANNEX05_updated%20priority%20list.doc

⁴ Proposition 65 (California's Safe Drinking Water and Toxic Enforcement Act of 1986) requires the Governor to publish a list of chemicals, at least once a year, known to the state to cause cancer or reproductive toxicity. The list can be viewed at http://www.oehha.ca.gov/prop65/prop65_list/Newlist.html

The state of Massachusetts has established a thorough green procurement policy. The following is a comprehensive overview of the program from equipment specifications to bid evaluation.

Green Electronics Bidding and Procurement in

Massachusetts

Program Summary

The Environmentally Preferable Products Procurement Program at the Operational Services Division (OSD, central purchasing office for the Commonwealth of Massachusetts) is responsible for coordinating the Commonwealth's efforts to increase state purchases of environmentally preferable products (EPPs). Such products include goods that contain recycled materials, minimize waste, conserve energy and/or water, contain fewer toxic materials and/or have other environmental or public health benefits.

The Program, which is primarily funded by the Executive Office of Environmental Affairs and the Department of Environmental Protection, works to establish statewide contracts for EPPs, conduct outreach to the business and purchasing community and provide educational assistance and technical expertise to state agencies and political subdivisions (including municipalities). For more information please visit the Environmental Procurement Webpage at <www.mass.gov/epp>.

Program Contacts

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Current Computer Procurement

- **Document Number and Title**
 - Request for Response (RFR) #ITC16
 - IT Services, Computers and Servers
- **Procurement Scope**
 - Category 1 – Project Management/Integration (Public Schools & Libraries Only)
 - Category 2 – Desktops, Laptops, Tablets
 - Category 3 – Other Mobile Computing
 - Category 4 – Storage Technology
 - Category 5 – Servers
 - Category 6 – Maintenance, Integration and Incidental Hardware
- **Timeline**
 - September 2003** – RFR released for Category 1 only.
 - December 2003** – Awards made for Category 1 only.

March 2004 – RFR released for Categories 2-6. The RFR includes **Draft** Principles for Purchasing Environmentally Preferable Computers, Monitors, and Peripherals.

May 2004 – Response deadline for Categories 2-6.

June 2004 - Principles for Purchasing Environmentally Preferable Computers, Monitors, and Peripherals are finalized.

September 2004 (estimated) – Awards for Categories 2-6.

▪ **OSD Procurement Contact (for questions not related to the environmental specifications)**

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Summary of Materials Included

1. **Original Bid Language.** Excerpts from Request for Response (RFR) #ITC16 for IT Services, Computers and Servers. The RFR document outlines all specifications, terms and conditions for any contract that results from it.

Please note that since the RFR was released prior to the Principles being finalized, it contains a draft of the principles. The final version of the Principles may be obtained from the Center for a New American Dream (<<http://www.newdream.org>>).

2. **Original Bidder Response Form.** Excerpts from Attachment A to RFR #ITC16. All bidders were required to complete and include Attachment A in their responses.

Please note that although each of the questions on the form is marked OEM only, all bidders (manufacturers and resellers) were asked to submit a completed Attachment A. Through the response clarification process, resellers were asked to request answers to the Attachment A questions shown below from the manufacturers they intend to represent.

3. **Response Evaluation Methodology.** The table includes the framework that was developed for evaluating the information provided by bidders in completed Attachment A forms.

Please note that since the evaluation process is not complete, the number of points assigned for each criterion is not shown.

1. Request for Response (RFR) #ITC16, IT Services, Computers and Servers
(Excerpt from full MA OSD document)

4.4.1 Environmental Commitment

It is the policy of the Commonwealth of Massachusetts to encourage eligible contract users to procure products and services which help to minimize the environmental impact resulting from the use and disposal of these products. Computers and other electronics are a growing focus of environmentally preferable purchasing activities due to their high prominence in the waste stream, their numerous hazardous chemical constituents, and their significant energy use. The billions of dollars required to properly dispose of this electronic waste will almost entirely come from state and local governments' budgets. Moreover, when these products are improperly disposed of, they can release heavy metals and other hazardous substances that contaminate groundwater and pollute the air.

The primary environmental objective of this RFR is to procure equipment, which uses fewer resources including energy, over time, thus decreasing pollution and energy costs and represents a reduced negative effect on human health and the environment. Such equipment must also meet price and performance requirements of the Commonwealth.

4.4.2 Mandatory Environmental Requirements

4.4.2.1 Energy Star Technology Equipment and Guidelines

It is mandatory that Bidders offer IT Equipment which, where applicable, meets the most recent set of U.S. Environmental Protection Agency's and Department of Energy's ENERGY STAR guidelines and have the ENERGY STAR label or substitute affixed to any equipment covered by such guidelines (<<http://www.energystar.gov>>).

Installation, service and any other technical support performed under any contract resulting from this RFR must, where applicable, include the proper configuration of power management features according to the current ENERGY STAR specifications for that class of equipment at the time of installation, service or any other technical support.

Personnel involved in system integration, site customization, equipment maintenance and technical support must:

- Ensure that power management features on all equipment and duplexing features on all networked printing devices remain installed and functional at all times.
- Carry out their services so as to maximize the energy efficiency of the installed product.

- Treat the malfunction of power management or duplexing features as functional failures of the equipment, and must diagnose and repair those problems rather than disable the power management features.

For all equipment with ENERGY STAR power management features, all ENERGY STAR power management features must be fully activated upon delivery. In addition, Awarded Contractors must provide the following detailed set-up specifications to customers:

- Equipment shall be configured so it automatically enters a low-power mode after a period of inactivity.
- When a computer in a low-power mode is used again, it automatically returns to active mode.
- For computers that will be used in networked environments, provide CPU's and monitors that are set up to sleep on networks and respond to wake events.
- Provide training, assistance materials (if requested) and customer support on the power management features so that these features remain properly activated.

4.4.2.2 Training on ENERGY STAR Features and Recycling

Any equipment-related training performed under any contract resulting from this RFR (e.g. upon installation of new equipment) must include information on the use and benefits of ENERGY STAR power management features as well as information on the proper recycling and/or reuse of used equipment.

Awarded Contractors must submit samples of any such training materials to the PMT within ninety (90) days following the award.

4.4.2.3 Recycling of Packaging Materials

After equipment delivery, Contractors must agree to work with their customers wherever feasible, to recycle all corrugated cardboard packaging. To comply with this requirement OEMs and/or Contractors should examine one or more of the following:

- Utilize the Eligible Entity's existing recycling program,
- Make arrangements with the seller of the equipment for packaging recycling,
- Utilize the services of a recycling company.

The services of a recycling company can be obtained through the Statewide Contract #ST1J391 or its replacement. Such services can also be obtained by searching for and contacting a business listed in the Recycling Services Directory for Massachusetts (RSD) available at <<http://www.wastecap.org>>. RSD lists companies that accept, collect, or purchase materials for recycling and reuse from Massachusetts businesses, communities, or individuals. This

free resource is compiled and produced by WasteCap of Massachusetts and funded by the Massachusetts Department of Environmental Protection (DEP).

It is desirable that bidders develop a procedure or program for recycling packaging materials, which may utilize one or more of the options above. It is desirable that such procedure or program be offered to the Eligible Entity at no cost. If such no-cost procedure or program utilizes an Eligible Entity's existing recycling program, the ITC16 Contractor must reimburse the Eligible Entity for any cost associated with recycling the packaging.

Bidders must provide a description of the procedure or program for the recycling of packaging materials in their responses. Such description must include information on which of the options and/or specific service providers will be utilized and on any costs for the Eligible Entities associated with the use of such recycling procedure/program offered by Contractors. Points will be allocated in the RFR evaluation process based on the information about such procedure/program.

4.4.2.4 Reporting

If requested by the PMT or contract manager, Contractors **must** report on compliance with the environmental specifications as well as information on the proper recycling and/or reuse of used equipment. Reasonable notice will be given prior to the due date of such reports.

Contractors must also submit periodic reports (e.g. annual, other) concerning purchases of equipment from this contract for all contract users as may be requested by the PMT or other eligible entity.

4.4.2.5 Ongoing Environmental Initiatives

Awarded Contractors must agree to work with the PMT and interested environmental partners during the term of the contract to:

- Examine the feasibility of implementing environmental initiatives that minimize their environmental impacts at manufacturing, assembly, warehouse, distribution and/or other facilities, including, but not limited to:
 - toxic use reduction and/or waste prevention efforts
 - recycling and/or reuse (including the current recycling, reuse and/or remanufacture of computer equipment by or for Bidder)
 - energy efficiency
 - natural resource conservation
- Support future efforts aimed at improving the environmental design and performance of electronics in the marketplace. Such programs may include, but not be limited to, incorporating any upcoming Energy Star specifications into equipment design and meeting certification standards established by

the Electronic Products Environmental Assessment Tool (EPEAT), a current project underway with funding provided by the US EPA. See details at <<http://www.epeat.net>>.

4.4.3 Desirable Environmental Specifications (OEMs Only – Categories 2-5)

Awarded Contractors must read the desirables section below and provide the narrative requested on the environmental aspects of their equipment to the greatest extent possible. Points will be allocated in the RFR evaluation process based on the information outlined in the narrative.

4.4.3.1 Draft Principles - Background and Directions for Responding

The following are Draft Principles developed by a national coalition currently coordinated by the Center for a New America Dream (<<http://www.newdream.org>>) for the purpose of establishing common environmental specifications for the IT industry. We list the principles here in order to demonstrate the Commonwealth's commitment to these efforts and to encourage OEMs to work diligently toward compliance with these standards. The use of this Draft document does not constitute an endorsement by anyone other than the Commonwealth of Massachusetts at this time.

Bidders should read the Principles carefully, as well as the other environmental criteria indicated in the RFR, and provide a narrative (one or more page text) with their Response that outlines a description of how one or more of their models meet the criteria for equipment design and handling processes.

It is desirable that Bidders address as many details within Principles as possible in this narrative. Points will be allocated based on the extent to which Bidders can demonstrate their current compliance with these criteria or how these criteria will be met in the future. Bidders will be evaluated on the specific details included, the level of supporting documentation provided, and the overall comprehensiveness of the narrative. In situations where certifications and/or declarations have been obtained (e.g. third party certifications, ECO declaration and other) Bidders may just submit copies of such certifications and are not required to include an additional description in the narrative.

The PMT reserves the right to request clarification from Bidders concerning these criteria and information submitted.

Response Required: Use Attachment A, Response Form for all Categories. Include any attachments and/or certifications in the location specified in the Checklist found in Attachment A.

4.4.3.2 Draft Principles for Purchasing Environmentally Preferable Computers, Monitors and Peripherals

4.4.3.2.1 Design for Environment and Human Health

4.4.3.2.1.1 Elimination or reduction of harmful constituents

Eliminate or reduce hazardous, carcinogenic, mutagenic and ozone-depleting constituents in computers, monitors, and peripherals including, but not limited to, cadmium, chlorinated plastics, halogenated flame retardants, hexavalent chromium, lead, mercury, and ozone-depleting substances (such as those included in the A, B, and C annexes of the Montreal Protocol on Substances that Deplete the Ozone Layer - see <<http://www.unep.org/ozone/pdf/Montreal-Protocol2000.pdf>>).

Response Required: See Section 4.4.3.1 above.

4.4.3.2.1.2 Use of recycled and bio-based materials

Use the greatest amount feasible of recycled and bio-based materials, particularly in plastics in monitor and CPU housings, and/or remanufactured/reused parts.

Response Required: See Section 4.4.3.1 above.

4.4.3.2.1.3 Facilitate recycling

Facilitate the recycling of individual components and the full product including, but not limited to, avoiding glues and welded connections, using clearly labeled plastics, using universal fasteners (screws, snaps, etc.), using single resin plastics, and separating toxic components.

Response Required: See Section 4.4.3.1 above.

4.4.3.2.1.4 Facilitate Upgradeability

Facilitate upgradeability including, but not limited to, modular design, expandable memory, owner transferability, and other features that extend the product life and simplify continued use beyond the original owner.

Response Required: See Section 4.4.3.1 above.

4.4.3.2.1.5 Packaging and shipping material

Use packaging and shipping material that contains recycled and bio-based materials, are reusable or recyclable in the geographic region where the product is sold, have been reduced, and are collected by the vendor for reuse and/or recycling.

Response Required: See Section 4.4.3.1 above.

4.4.3.2.2 Promote Energy Efficiency and User Health

4.4.3.2.2.1 ENERGY STAR *compliance*

Meet the most up-to-date ENERGY STAR specifications, are shipped with all specified power management features enabled, and include all necessary information and technical support to ensure that equipment users can easily and simply install and maintain power management features on their equipment. (See ITC16 Mandatory Environmental Specifications)

Response Required: See Section 4.4.3.1 above.

4.4.3.2.2.2 *Minimize Health Risk*

Minimize health risks to users including, but not limited to, ergonomic design, reduced electromagnetic noise, and other emissions.

Response Required: See Section 4.4.3.1 above.

4.4.3.2.3 Ensure Safe and Environmentally-Sound End-of-Life Management

4.4.3.2.3.1 *Take-back and Management Services*

Provide take-back and management services that ensure that computers, monitors, and peripherals are reused (preferable) and/or recycled to the greatest extent feasible in a way that minimizes harm to the environment and human health. Toxic elements should be removed before any disposal or incineration takes place. Hazardous waste must not be sent to developing countries.

Response Required: See Section 4.4.3.1 above.

4.4.3.2.3.2 *Worker Protection*

Meet high standards of worker protection in both the United States and overseas. This includes employment practices that protect workers from hazardous exposures and that enable employees to take action to protect their own health.

Response Required: See Section 4.4.3.1 above.

4.4.3.2.4 *Manufacturer Responsibility*

Additionally, we believe that all those involved with the manufacture of computers, monitors, and peripherals should be working diligently to improve the environmental performance and protect public and worker health beyond the above criteria. As such, it is highly desirable that manufacturers meet the following corporate responsibility goals:

4.4.3.2.4.1 Compliance with regulations and practice pollution prevention techniques

Comply with all applicable environmental regulations and practice pollution prevention techniques that reduce waste and conserve energy and water.

Response Required: See Section 4.4.3.1 above.

4.4.3.2.4.2 ECO Labels and Third Party Certifications

Obtain credible eco-labels and third party certifications, such as (but not limited to) TCO (<<http://www.tcodevelopment.com/>>),

- Blue Angel (<<http://www.blueangeltech.com/>>)
- ISO 14001, and
- an ECO declaration published in accordance with IT ECO (<<http://www.svtc.org/cleancc/greendesign/index.html>>) or ECMA TR/70 (<<http://www.ecma-international.org/publications/techreports/E-TR-070.htm>>).

Response Required: See Section 4.4.3.1 above.

4.4.3.2.4.3 Toxic Materials

Disclose the use of toxic materials on the OSPAR List of Chemicals for Priority Action <<http://www.ospar.org/eng/html/welcome.html>> and/or the Proposition 65 List at <http://www.oehha.ca.gov/prop65/prop65_list/Newlist.html> in computers, monitors, and peripherals.

Response Required: See Section 4.4.3.1 above.

4.4.3.3 Additional Provisions for End-of-life Management

In addition to the End-of-Life management provisions which are part of the “Draft Principles” above, it is desirable that:

- Bidders provide take back programs that comply with the requirements established in the Electronic Recyclers Pledge <http://www.svtc.org/cleancc/recycle/recycler_pledge.htm>.
- Recycling will be handled by one of the statewide contractors awarded on Contract # FAC26, or its replacement, or by a responsible recycling operation with an environmental management system in place.
- Recycling also complies with the European Union’s WEEE Directive
- (<http://europa.eu.int/eur-lex/pri/en/oj/dat/2003/l_037/l_03720030213en00240038.pdf>), which requires manufacturers to recycle or reuse more than half of their old equipment on the market by 2006.

- Bidders propose methods that will allow for the return of used equipment to the original manufacturer or 3rd party entity for reuse or recycling, preferably at **no cost** to contract users. Any unreasonable costs for this service will result in no points for this section, even if take back methods are submitted. Such take-back methods may include but are not limited to:
 - one-for-one exchange of equipment offered by, or previously purchased from the Bidder, upon purchase of new equipment from said Bidder
 - collection of any used computer equipment by Bidder or sub-contractor for reuse or recycling, preferably including provisions to continue recycling operations should a sub-contractor no longer be able to perform such activities
 - coupon system for pre-paid take-back at permanent collection centers, such as, but not limited to, Goodwill Industries, Salvation Army, and Universities.

If take-back provisions are proposed, agencies must follow applicable laws, procedures and guidelines relating to disposing of equipment prior to invoking disposal procedures.

Response Required: Respond using Attachment A, Response Form for all Categories.

2. RFR # ITC16 Attachment A - Response Form for All Categories (Excerpt from full MA OSD document)

3. Draft IT Purchasing Principles (See RFR Sections 4.4.3.1 and 4.4.3.2) OEMs only [Items 1 and 2 omitted]

It is desirable that Bidders address as many points as possible in the narrative requested under Draft IT Purchasing Principles. Bidders should discuss the four sections outlined in the Draft. See 4.4.3.1 for instructions regarding the narrative to be provided below. The following elements summarize the Draft Principles; please see RFR Section 4.4.3.2 for specifications.

- Design for the Environment and Human Health
 - Eliminate hazardous constituents
 - Use recycled and/or bio-based materials in equipment manufacturing
 - Facilitate recycling of equipment and components
 - Use packaging that contains post-consumer recycled content
- Promote Energy Efficiency and User Health
- Ensure Safe and Environmentally Sound End-of-Life Management
 - Provide take-back and management services
 - Meet standards for worker protection
- Manufacturer Responsibility
 - Comply with environmental regulations
 - Obtain credible eco-labels
 - Disclose any use of toxic materials

Bidder's response to Draft IT Purchasing Principles:

**4. Additional Provisions for End-of-life Management (RFR Section 4.4.3.3)
OEMs only**

Does the Bidder provide take back programs that comply with the requirements established in the Electronic Recyclers Pledge

<http://www.svtc.org/cleancc/recycle/recycler_pledge.htm>? (Desirable)

Yes No Depends on product or RFR Category (explain below)

Describe any take back programs, including any costs incurred by the purchaser:

**5. Additional Provisions for End-of-life Management (RFR Section 4.4.3.3)
OEMs only**

Will recycling be handled by one of the statewide contractors awarded on Contract # FAC26, or its replacement, or by a responsible recycling operation with an environmental management system in place? (Desirable)

Yes No Depends on product or RFR Category (explain below)

Describe recycling practices, including any costs incurred by the purchaser:

**6. Additional Provisions for End-of-life Management (RFR Section 4.4.3.3)
OEMs only**

Do recycling practices also comply with the European Union's WEEE Directive? (Desirable)

Yes No Depends on product or RFR Category (explain below)

If "Depends on product..." explain which classes of products or RFR Categories are compliant:

**7. Additional Provisions for End-of-life Management (RFR Section 4.4.3.3)
OEMs only**

Does the Bidder propose methods that will allow for the return of used equipment to the original manufacturer or 3rd party entity for reuse or recycling, preferably at **no cost** to contract users? (Desirable)

Yes No Depends on product or RFR Category (explain below)

Describe such programs, including any costs incurred by the purchaser:

3. Response Evaluation Methodology (Excerpt from full MA OSD document)

Part 1 – Compliance with Draft Principles

Criterion	Question	Score
Design for the Environment and Human Health		
If all equipment to be offered by the manufacturer under ITC16 is compliant with a criterion the scoring is as listed. If some (but not all) of the equipment complies, the manufacturer is awarded <u> </u> of the score for the specific criterion.		
<i>Elimination or reduction of harmful constituents</i>	<p>To what extent does the manufacturer incorporate the following into equipment design? Reduction or elimination of hazardous, carcinogenic, mutagenic and ozone-depleting constituents including, but not limited to:</p> <ul style="list-style-type: none"> • cadmium [BA, EU, NS, TCO, RoHS], • chlorinated plastics [NS, TCO], • halogenated flame retardants [BA, EU, NS, TCO, RoHS], • hexavalent chromium [RoHS] • lead [BA, EU, NS, TCO, RoHS], • mercury [BA, EU, NS, TCO, RoHS], and • ozone-depleting substances [NS, TCO] 	<p>Based on the response:</p> <ul style="list-style-type: none"> • X points for addressing each of the seven items on the list <p>Maximum score – X pts</p>
<i>Use of recycled and bio-based materials</i>	<p>To what extent does the manufacturer use recycled and bio-based materials?</p>	<p>Response demonstrates that Bidder uses:</p> <ul style="list-style-type: none"> • Recycled and bio-based materials – X pts • Recycled or bio-based materials [BA – recycled] – X pts • None – 0 pts <p>Maximum score – X pts</p>
<i>Facilitate recycling</i>	<p>To what extent does the manufacturer incorporate the following into equipment design? Recycling of individual components and the full product including, but not limited to:</p> <ul style="list-style-type: none"> • avoiding glues and welded connections (for the purpose of evaluation equated to “no glues or welded connections”) [BA, TCO], • using clearly labeled plastics [BA, EU, NS, TCO], • using universal fasteners (screws, snaps, etc., for the purpose of evaluation equated to “no special tools to disassemble”) [EU, NS], • using single resin plastics, and • separating toxic components. 	<p>Based on the response:</p> <ul style="list-style-type: none"> • X points for addressing each of the items on the list up to a maximum of X points. • None – 0 pts <p>Maximum score – X pts</p>

Part 1 – Compliance with Draft Principles (Continued)

Criterion	Question	Score
<i>Facilitate Upgradeability</i>	<p>To what extent does the manufacturer incorporate the following into equipment design? Facilitate upgradeability including, but not limited to:</p> <ul style="list-style-type: none"> • modular design [BA, EU], • expandable memory [BA, NS], • owner transferability, and • other features that extend the product life and simplify continued use beyond the original owner. 	<p>Based on the response:</p> <ul style="list-style-type: none"> • X points for addressing each of the four items on the list. <p>Maximum score – X pts</p>
<i>Packaging and shipping material</i>	<p>To what extent does the manufacturer incorporate the following into equipment design? Use packaging and shipping materials that:</p> <ul style="list-style-type: none"> • contain recycled and bio-based materials, • are reusable or recyclable in the geographic region where the product is sold, • have been reduced, and • are collected by the vendor for reuse and/or recycling. 	<p>Based on the response:</p> <ul style="list-style-type: none"> • X points for addressing each of the four items on the list <p>Maximum score – X pts</p>
<p>Promote Energy Efficiency and User Health If all equipment to be offered by the manufacturer under ITC16 is compliant with a criterion the scoring is as listed. If some (but not all) of the equipment complies, the manufacturer is awarded <u> </u> of the score for the specific criterion.</p>		
<i>Energy Star Compliance</i>	<p>To what extent does the manufacturer’s equipment comply with the following criteria?</p> <ul style="list-style-type: none"> • Meet the most up-to-date Energy Star specifications, • Be shipped with all specified power management features enabled, • Include all necessary information and technical support to ensure that equipment users can easily and simply install and maintain power management features on their equipment. (See ITC16 Mandatory Environmental Specifications) 	<p>This is an RFR requirement.</p> <ul style="list-style-type: none"> • Points assigned – 0 pts <p>Maximum score – 0 pts</p>
<i>Minimize Health Risk</i>	<p>To what extent does the manufacturer’s equipment comply with the following criteria? Minimize health risks to users including, but not limited to:</p> <ul style="list-style-type: none"> • ergonomic design, • reduced electromagnetic noise, and • reduced other emissions. 	<p>Response demonstrates that the equipment complies with:</p> <ul style="list-style-type: none"> • All 3 items on the list [TCO] – X pts • 2 out of 3 items – X pts • 1 out of 3 items – X pts • None – 0 pts <p>Maximum score – X pts</p>
<p>Ensure Safe and Environmentally-Sound End-of-Life Management</p>		
<i>Take-back and Management Services</i>	<p>Does the manufacturer provide take-back and management services meeting the following criteria?</p> <ul style="list-style-type: none"> • Ensure that computers, monitors, and peripherals are reused (preferable) and/or recycled to the greatest extent feasible in a way that minimizes harm to the environment and human health. • Toxic elements should be removed before any disposal or incineration takes place. • Hazardous waste must not be sent to developing countries. 	<p>Response demonstrates that Bidder:</p> <ul style="list-style-type: none"> • Has a take-back and management program compliant with all 3 items on the list [ERP] – X pts • 2 out of 3 items – X pts • 1 out of 3 items – X pts • Has a take-back and management program – X pts • None – 0 pts <p>Maximum score – X pts</p>
<i>Worker Protection</i>	<p>Does the manufacturer’s end-of-life management program meet high standards of worker protection in both the United States and overseas? This includes employment practices that</p> <ul style="list-style-type: none"> • protect workers from hazardous exposures and that • enable employees to take action to protect their own health. 	<p>In the response:</p> <ul style="list-style-type: none"> • A statement of compliance is provided [NS, ERP] – X pts • No statement of compliance is provided – 0 pts <p>Maximum score – X pts</p>

Part 1 – Compliance with Draft Principles (Continued)

Criterion	Question	Score
Manufacturer Responsibility		
<i>Compliance with regulations and practice of pollution prevention techniques</i>	Does the manufacturer's comply with all applicable environmental regulations and practice pollution prevention techniques that reduce waste and conserve energy and water?	In the response: <ul style="list-style-type: none"> • A statement of compliance is provided [TCO] – X pts • No statement of compliance is provided – 0 pts Maximum score – X pts
<i>ECO Lables and Third Party Certifications</i>	Has the manufacturer obtained credible eco-labels and third party certifications, such as (but not limited to) the following? <ul style="list-style-type: none"> • TCO, • Blue Angel, • ISO 14001, and • an ECO declaration published in accordance with IT ECO or ECMA TR/70 	Response demonstrates that Bidder has obtained the following certifications: <ul style="list-style-type: none"> • ISO14001 [TCO]– X pts Additional points: <ul style="list-style-type: none"> • X points for each label or type of declaration up to a maximum of X pts Maximum score – X pts
<i>Toxic Materials Use Disclosure</i>	Does the manufacturer disclose the use of toxic materials on the OSPAR List of Chemicals for Priority Action and/or the Proposition 65 List at in computers, monitors, and peripherals?	Response demonstrates that Bidder discloses the use of toxic materials: <ul style="list-style-type: none"> • On both lists – X pts • On 1 list – X pts • Part of list [TCO] – X pts • None – 0 pts Maximum score – X pts

Part 2 – Additional Provisions for End-of-life Management

Criterion	Question	Score
<i>Compliance with the Electronic Recycler's Pledge</i>	Does the manufacturer provide take-back programs that comply with the requirements established in the Electronic Recycler's Pledge?	Response demonstrates that Bidder: <ul style="list-style-type: none"> • Fully complies – X pts • Partially complies – X pts • Does not comply – 0 pts Maximum score – X pts
<i>Recycling to be handled by a responsible recycling operation with an EMS in place</i>	Does the manufacturer's end-of-life management program meet the following criteria? Recycling will be handled by: <ul style="list-style-type: none"> • one of the statewide contractors awarded on Contract #FAC26, or its replacement, or by • a responsible recycling operation system with an environmental management system in place. 	Response demonstrates that Bidder's end-of-life management program will utilize: <ul style="list-style-type: none"> • FAC26 contractor, or replacement [ERP] – X pts • another business with an EMS – X pts • None – 0 pts Maximum score – X pts
<i>Recycling complies with the EU WEEE directive</i>	Has the manufacturer stated its intent to comply with the WEEE directive?	Response demonstrates that Bidder: <ul style="list-style-type: none"> • Intends to comply – X pts • Does not intend to comply – 0 pts Maximum score – X pts

Part 2 – Additional Provisions for End-of-life Management (Continued)

<p><i>Returning equipment to OEM or 3rd party for reuse or recycling</i></p>	<p>Has the Bidder proposed methods that will allow for the return of used equipment to the original manufacturer or 3rd party entity for reuse or recycling? Such methods may include but are not limited to:</p> <ul style="list-style-type: none"> • one-for-one exchange of equipment offered by, or previously purchased from the Bidder, upon purchase of new equipment from said Bidder • collection of any used computer equipment by Bidder or sub-contractor for reuse or recycling, preferably including provisions to continue recycling operations should a sub-contractor no longer be able to perform such activities • coupon system for pre-paid take-back at permanent collection centers, such as, but not limited to, Goodwill Industries, Salvation Army, and Universities. 	<p>In the response Bidder proposes:</p> <ul style="list-style-type: none"> • A no-cost return method – X pts each • A return method at cost – X pts each • No return method – 0 pts <p>If more than one method is offered the score is cumulative. Maximum score – X pts</p>
<p><i>Packaging recycling</i></p>	<p>Does the Bidder offer a procedure/program for recycling packaging materials?</p>	<p>In the response Bidder proposes:</p> <ul style="list-style-type: none"> • A no-cost recycling program – X pts • A recycling program at cost – X pts • No return method – 0 pts <p>Maximum score – X pts</p>

Scope of Evaluation and Compliance Equivalents

While evaluating a Bidder’s compliance with the environmental criteria, the PMT reserves the right to take into account relevant information provided in any part of Bidder’s response. The PMT also reserves the right to take into account information gleaned from other sources deemed credible by the PMT. However, it is the responsibility of the bidder to place all relevant information into appropriate attachment and narrative in order to be eligible for points in the evaluation process.

Compliance with the requirements of certain eco-labels, the Electronics Recyclers’ Pledge and the EU Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment implies compliance with certain evaluation criteria where specifically noted. Such equivalents for each evaluation criterion are displayed on the scoring sheets in brackets ([]). The following is a list of abbreviations used:

- BA** – Blue Angel
- EU** – EU Eco-Flower
- NS** – Nordic Swan
- TCO** – TCO Development
- ERP** – Electronic Recycler’s Pledge
- RoHS** – EU Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment

For the purpose of scoring, compliance with the requirements of an eco-label will count as compliance of “some (but not all)” equipment.

Multiple Answers

If a response provides two answers to the same evaluation question and two different scores can potentially be awarded, the larger number of points is awarded unless otherwise specified in the scoring methodology for the specific question.

Total Environmental Evaluation Score

The total environmental evaluation score for the Desktop and Storage categories will be the sum of all points received by a Bidder in the question-by-question evaluation (above). The total environmental evaluation score for the Other Mobile category will be calculated by using the following formula: [total for question-by-question evaluation] X100 / 60 and rounding the result off to the next higher whole point. The score will be reported as a percentage of maximum points.

Contact Information

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Indiana's Department of Administration has begun to evaluate how they could incorporate green procurement strategies into their bidding process for computer and electronics purchases. The following is an overview of that effort.

State of Indiana Green Computer Purchasing

Indiana's Greening the Government Program

The Indiana Greening the Government Program began on Earth Day 1999 by Governor O'Bannon under Executive Order 99-07. It was continued by Governor Kernan under Executive Order 03-27.

The goal of the Indiana Greening the Government Program is to improve the environmental performance of State of Indiana operations. In many cases, changes implemented also improve efficiency and save the state money. Environmentally preferable purchasing, energy efficiency, reuse and recycling are some of Greening Programs' foci.

Indiana Government Computer Purchases

In Fiscal Year 2003-04, the State of Indiana bought over 4,300 computers. In Fiscal Year 2003-04, the state spent \$5.78 million on computer equipment. As a result, Indiana state government ranks in the top 20 of information technology expenditures by all states nationally.

Indiana End-of-Life Computer Facts

- The typical life of a new state computer is 3 years
- Indiana State Surplus handled all old state computers

- Some computers go to “Computers to Schools” donation program
- Remainder are sold through Public Sealed Bid Auctions in bid lots

Purchasing – Threefold Impacts

End-of-life management issues, costs and liability are being addressed up front via strategies in a Quantity Purchase Agreements (QPA) In a QPA, a contract price is established with a specific vendor on a specific item. All who are eligible under the contract can purchase that item at the contract price for the duration of the contract.

Some state QPAs can also be used by local political subdivisions (i.e. local governments, schools, universities) and provide an added benefit to them. QPA pricing for home computers is also extended via State Employee Purchase Plan.

How Indiana’s Computer Purchasing Works

The state of Indiana develops specification for each product or service that they procure, spelling out precisely what is needed. Including environmental specifications in a Request For Proposals (RFP) spells out the state’s needs to prospective vendors. The green electronics RFP that Indiana recently used, “RFP-4-75 Attachment F,” is available from the Indiana Department of Administration (IDOA) Computer Procurement Specialist and models the principals developed by the Center for the New American Dream. The RFP provides for lease options to return used equipment to vendor at the end of its life. In addition, it requires that confidential data destruction be accomplished by the vendor without destroying usable equipment. In the bidding process, trade-in values are a plus. As a result of this new program, there will be no end-of-life equipment to manage in-house by the state.

Greening Makes \$ense

- Purchasing with end-of-life in mind reduces future cost and liabilities
- State purchasing can also benefit local political subdivisions and individual state employees
- Anyone can “green” their computer purchases!

Contact Information

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Energy efficiency is an important consideration when purchasing an electronic device or equipment. The Environmental Protection Agency has partnered with the Department of Energy's ENERGY STAR program to provide resources and tools to help purchasing agents consider and purchase greener electronic equipment. One example, monitors, is outlined below.

Monitor Power Management: Opportunities for State

Agencies

What is Monitor Power Management?

Monitor power management places inactive computer monitors into a low-power sleep mode. The monitor awakens in seconds upon touching the mouse or keyboard. Almost all monitors are capable of using power management, yet, on average, only 60% do. Enabling monitors, and encouraging others in your state do the same, saves energy, money, reduces "peak load" demand, and helps protect the environment.

Benefits of Monitor Power Management

- **Save Money Quickly and Easily.** With an investment of only a few hours, monitor power management can save an organization \$10 to \$50 per computer annually.⁵ To assist your efforts, ENERGY STAR provides *free* software and technical support.
- **Generate Positive Publicity.** Participate in the Million Monitor Drive (MMD)—the annual ENERGY STAR campaign to activate power management on 1 million monitors nationwide. Illinois, Connecticut, and Delaware (see case study) have activated monitor power management within state offices and joined the MMD. Also, some of most well-known organizations in the world have contributed to the MMD—General Electric, Nike, Harvard University, AOL, and Wal-Mart.

Case Study: Watt Watchers of Texas Watch Out for Energy Savings

A non-profit program designed to help Texas school districts save energy, Watt Watchers of Texas has worked to promote monitor power management. Working alongside energy managers at school districts in Texas, Watt Watchers has helped schools enable monitor power management features in 100,000 computer monitors at 16 different school districts.

In addition to working with energy managers, Watt Watchers of Texas initiated a student-led campaign with the Texas Energy Education Development (TEED) Project. Through this campaign, the free **ENERGY STAR** software was distributed to schools across Texas, helping them reduce energy usage by using power management features on their individual classrooms' monitors. The Watt Watchers staff delivered workshops to student councils throughout the school year to emphasize the importance and ease of implementing power management.

In all, over \$1 million in energy costs will be saved when the monitors switch into sleep mode. These dollars will go toward projects and activities that enhance the students' scholastic experience.

Results: Expected savings are 15,000,000 kWh or more than \$1 million a year.

⁵ Depending on electricity price, current use of power management, and night-time computer turn-off policy.

Activating Monitor Power Management is Easy

- **STEP 1:** Find out how much you can save with EPA's easy on-line calculator: <<http://www.energystar.gov/powermanagement>>
- **STEP 2:** Choose your best option to activate monitor power management. Contact ENERGY STAR for *free* technical support.
- **STEP 3:** Inform employees. ENERGY STAR can provide you with *free* educational materials to help you communicate the benefits of monitor power management to your employees.
- **STEP 4:** Activate monitor power management. ENERGY STAR provides *free* technical support for worry-free implementation.
- **STEP 5:** Take credit for your good efforts. ENERGY STAR recognizes you publicly for participating in its MMD campaign and offers *free* PR materials.

Take the Monitor Power Management Initiative to Others

States are promoting monitor power management to schools and municipal governments, including:

- **Texas State Energy Conservation Office** sponsors a program, called "Watt Watchers," which has addressed monitor power management on 100,000 computers in school districts using ENERGY STAR tools. (See case study)
- **New York State Energy and Research Development Authority (NYSERDA) Government Energy Efficiency Program** uses ENERGY STAR tools to activate monitor power management at county and local government offices in New York State.
- **The Alabama Department of Economic and Community Affairs** promotes the ENERGY STAR MMD to county commissions and municipalities. Nineteen municipalities and four county commissions have joined the MMD.

Case Study: Delaware Department of Natural Resources (DNR)

In 2004, the Delaware Energy Office worked with DNR staff to join the ENERGY STAR Million Monitor Drive and enable power management on about 750 monitors department-wide. The Energy Office and DNR's IT manager informed staff about the effort through a series of e-mails. The effort has been well received. "A lot of people are glad to hear we are doing this and want to do it at home, too," says Jenefer Russum of the Energy Office. "We are also looking to expand this effort to all state agencies and provide information and a link to the ENERGY STAR power management software on our new Web site (www.delaware-energy.com)."

Resources Required: 2 hours project manager's time; several hours IT staff person's time.

Results: Expected savings are 167,000 kWh or more than \$14,000 a year.

To Learn More

Contact Steve Ryan, U.S. EPA, at 202/343-9123, ryan.steven@epa.gov or go to <www.energystar.gov/powermanagement>

2003 Clean Computer Report Card

The Report Card is issued annually by the Silicon Valley Toxics Coalition's Computer TakeBack Campaign (CTBC) to document whether manufacturers are including environmental design concepts into their products and taking responsibility for the entire life cycle of those products. The Report Card encourages consumers to leverage their buying power to foster greater corporate responsibility for protecting public health, worker safety and the environment.

Executive Summary - Released May 19, 2004

An old Chinese adage says a thousand mile journey begins with a first step. In 2003 the Computer TakeBack Campaign (CTBC) witnessed positive signs of manufacturers beginning to incorporate principles of extended producer responsibility (EPR) into their environmental programs.

This year the Computer report card recognizes those manufacturers who are taking the first step on the road to manufacturers' responsibility by implementing phase-outs of hazardous chemicals and by developing effective and safe collection, reuse and recycling systems.

Although many of these programs are poorly advertised and charge customers high "waste end" recycling fees for services, some of these programs are substantial steps toward closing the gap between the types of programs and recycling services required by law in Europe, Japan, Taiwan and South Korea and those available to consumers in the U.S.

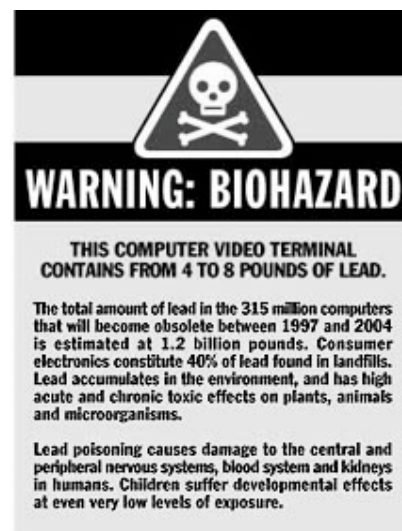
A thousand miles may have seemed like a long way to a Chinese monk a thousand years ago, but today a thousand mile journey can take only a few hours by plane or a few days by car. Innovations from the electronics industry continue to shrink our perception of time, space, and distance. The high-tech electronics industry - including the chip makers, and computer, telephone and device manufacturers who are making it easier to surf the Internet, to stand in the grocery store line and chat with grandma who lives a thousand miles away, or for scientists to dial up a robot on Mars -- is the optimal industry to lead the journey to global environmental sustainability.

The results of this year's Report Card indicate that while there have been measurable improvements by some companies, the progress is uneven and in most cases still at the beginning stages (some companies have barely even begun). Hewlett Packard and Dell, earned high scores by refining a "Statement of Principles for Producer Responsibility of Electronic Waste" drafted by CTBC. The Principles assert that "manufacturers and producers accept responsibility for continually improving the environmental aspects of the design of their products and for the end-of-life management of their products." Hewlett Packard earned additional recognition for taking their support for producer responsibility one step further and publicly supporting a new producer responsibility law in Maine.

Although Hewlett Packard and Dell earned the highest score for their bold leadership, these two companies barely managed to achieve a passing grade. Most manufacturers couldn't provide recycling data for their U.S. programs or their recycling rates were below 2 percent. There are clearly measurable differences between the companies that responded to the CTBC survey, however, all of the responses demonstrate that the industry has a long way to go. The rankings are as follows:

The Computer TakeBack Campaign Grades May 19, 2004

<u>Company Name</u>	<u>% Total</u>
The Beginners	
HP	54.5
Dell	52.5
NEC	49.5
Those Trailing the Beginners	
IBM	47.5
Sony	42.5
Toshiba	40
Apple	37
Philips	34.5
Lexmark	32
Still at the Starting Gate	
Emachines	0
Gateway	0
The Bench Warmers	
Acer	0
AST	0
Brother	0
Canon	0
Daewoo	0
Epson	0
Fujitsu	0
Hitachi	0
Lucky Goldstar	0
Oki	0
Seiko	0
Samsung	0
Sun Microsystems	0
Viewsonic	0
Wyse Technologies	0



While we are cautiously encouraged by improvement in reduction in hazardous materials, and the launch of corporate recycling programs, the fact remains that most of these changes are only at the early stages and are being driven by regulations and consumer pressure. Policies at the state and local levels are key to raising the rate of electronics recycling above the currently unacceptable 2 to 10% range. Policy must create a level playing field that sets goals and timetables and allows the companies to use their ingenuity to determine how they will meet those goals.

Key aspects of superior environmental performance include:

- Effective takeback programs that recover the fair share of historic e-waste and all future e-waste
- Robust design for the environment programs that design out the most toxic materials and design new products that are more easily re-used and recycled
- Transparency of information in the production and disposal supply chains
- Sustainable supply and disposal chain management in both manufacturing and recycling, and
- Rewards for companies that go beyond compliance and push the envelope in creating value for their customers in the environmental performance of their products.

This year's CTBC Report Card makes several major findings that challenge companies to improve in the following ways:

- **Take it Back.** We need to establish effective and sustainable producer takeback policies throughout the U.S. Since environmental gridlock and a climate of rollbacks currently exist in Washington D.C., these policy initiatives must be pioneered at the state level. Manufacturers must exercise their political muscle and work with environmental and public health advocates to accomplish this goal until eventually the Bush Administration or its successor embraces the producer responsibility approach.
- **End Double Standards.** We need to put an end to global double standards and offer effective takeback programs, worker health protections, and environmentally sustainable products to all consumers, regardless of regulations or the lack of them in particular regions of the world. The U.S. continues to be an international laggard but is beginning to show signs of closing the gap.
- **Pay a Fair Share for Hazardous Waste Clean-Up.** The most critical current challenge is the development of a fair and effective method of financing the collection and processing of both the historic ("legacy") e-waste as well as a system that will guarantee sustainable solutions to new products currently coming onto the market (future e-waste). The industry is currently divided into two camps:

- a. Those who favor individual producer responsibility - such as HP and Dell – who have agreed to take back all of their products and agree to internalize costs without a legislated consumer fee; and
- b. Those who favor a small consumer fee at the point of purchase, similar to the S.B. 20 bill that passed in California in 2003. IBM and much of the TV industry favor this approach, since it would significantly minimize liabilities from their older equipment. For instance, IBM was historically the market share leader for PCs and is responsible for a large share of the "legacy" personal computer e-waste. Since their market share has now dipped to below 5%, if they succeed in limiting their share of financial responsibility through a small consumer fee, they will reap a huge windfall financial bonanza - we calculate it at hundreds of millions of dollars - and these costs will have to be borne by their competitors and taxpayers.

The way that this conflict over funding mechanisms is resolved through current legislative battles at the state level and eventually at the national level will determine whether or not the U.S. will continue to be an e-waste laggard or will begin to catch up to the leadership of other countries.

- **Develop Tracking Systems** for Occupational Health and Safety Companies need to develop efficient tracking systems for occupational health and safety that differentiate between acute injuries (slips and falls), chronic injuries (ergonomic), acute illness (short-term exposure from a chemical accident), and chronic illness (due to long-term chemical exposure) and which document incidents of cancer, reproductive problems, high rates of miscarriages and birth defects, which have been linked to industrial practices.
- **Develop Standard Measurements** for Recycling and Toxics Reduction. We need to create a standard set of environmental measurements for recycling, toxic reduction, supply chain management and auditing so that companies can avoid the charge of green washing and the companies who are doing good work can be acknowledged and rewarded in the market place. While it is clear that there has been measurable progress during the past year in response to the significant pressures on the companies, the fact remains that even the companies that have started consumer take back programs are still only recycling about 2% of their products when compared to current sales. Until these rates increase dramatically, the volume of legacy e-waste will continue to increase rather than decrease.
- **Supply and Disposal Chain Management.** Likewise, there needs to be effective and transparent tracking systems and supply and disposal chain management for recycled materials. Supply chain management for recycled materials and tracking systems provide transparency and accountability that is currently not available.

Contact Information

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Federal Electronics Challenge:

Electronic Stewardship One Byte @ A Time

The Federal Electronics Challenge (FEC) is a voluntary education and recognition partnership program, open to all federal agencies and facilities, that assists federal agencies to purchase greener products, reduce impacts of electronics products during use, and manage obsolete electronics in an environmentally friendly way. It is a flexible commitment as each facility determines its own level of commitment, its own goal(s), and the life cycle phase(s) on which to focus.

The Challenge is sponsored by the Environmental Protection Agency and the Office of the Federal Environmental Executive with assistance by the General Services Administration, the Department of Defense, and the Federal Network for Sustainability.

Partners will learn the importance of applying environmentally sound electronics management principles throughout a product's life cycle stages—from the acquisition and procurement of environmentally preferable products to the operations and maintenance phase to, end-of-life management of those products.

Why Worry About Electronics?

Used and obsolete electronics, such as computers, printers, mobile phones, and fax machines, are part of an increasing and complex waste stream that poses challenging environmental management problems for federal facilities. Electronic products contain a variety of hazardous constituents. Cathode ray tubes, circuit boards, batteries, and other electronic components often contain toxic materials such as lead, mercury, and cadmium. This growing and changing waste stream presents new challenges and responsibilities in designing and managing products to reduce the environmental impacts associated with each phase of the electronics life cycle—acquisition and procurement, operation and maintenance, and end-of-life management.

Why Should the Federal Government Get Involved?

The federal government, which purchases more than \$38 billion worth of electronic equipment and services annually, has the opportunity to provide leadership in the environmentally sound and cost effective management of electronic assets. FEC will help federal facilities and agencies become leaders and face the new challenges posed by this waste stream.

Benefits in Joining the Challenge?

Partners receive a variety of benefits as they participate in the Challenge, including:

- Educational training and feedback.
- Networking opportunities.
- Cost-effective tools for managing electronic assets.

- Cost savings through resource efficiency, energy savings, and new equipment maintenance practices.
- Strategies to ensure data security.
- National recognition from the Office of the Federal Environmental Executive.

Federal Electronics Challenge Goals

The vision behind the Federal Electronics Challenge is for the Federal government to lead by example. The goals of the FEC are to achieve cost-effective, environmentally responsible electronics management. This goal will be achieved in part by:

- Promoting ENERGY STAR® features
- Extend product life in facility
- Increasing recovery rate and expand the recycling infrastructure
- Utilizing the concept of supply and demand to promote environmentally preferable electronic equipment
- Reducing the volume and toxicity of electronic equipment waste

What roles can stakeholders play in the Federal Electronics Challenge?

The Federal Electronics Challenge is being rolled out as a national program in Fall 2004. Throughout the process, we are asking nonprofits, industry and academic stakeholders involved in purchasing and recycling of electronic assets to assist us in developing necessary tools and information for our federal partners. Potential stakeholder actions include:

- Providing information on environmentally preferable products to federal government purchasers.
- Identifying best management practices for the use and end-of-life management of electronic products.
- Providing information on organizations that provide end-of-life services to the Federal government.

The Federal Electronics Challenge Steering Committee is developing the tools you need to change acquisition and procurement, operation and maintenance, and end-of-life management practices. Here are some examples of the tools developed for the Federal Electronics Challenge Partners.

Acquisition and Planning Phase

- **FEC Guidelines for Procurement of Environmentally Preferable Products** - This document provides general guidance on the acquisition of environmentally preferable products and services. It explains how to increase purchasing of electronic products that minimize harmful effects on human health and the environment and meet the environmental goals associated with the Federal Electronics Challenge.
- **Product Environmental Information Sheet** - This document should be sent by a federal facility to a manufacturer. The manufacturer should fill out the document with information about the specific product a federal facility is considering purchasing. The product information sheet includes a disclaimer

that explains the intent of the document to the manufacturer. If a manufacturer refuses to fill this out or has specific problems please have them contact the Federal Electronics Challenge.

- **Using Environmental Attributes to Determine Best Value** - When evaluating products or services, purchasing staff usually consider factors such as technical approach, key personnel, technical capability, corporate experience, past performance, and price. They should also consider environmental factors. This document identifies environmental attributes and elements that can serve as evaluation criteria during best value procurement analyses.
- **Ecolabels** - Ecolabels define a product as adhering to predetermined criteria. This fact sheet identifies three broad types of ecolabels currently available and provides information and links to key international ecolabels and environmental standards that relate to electronics products.

Operations and Maintenance Phase

- **Energy Conservation with ENERGY STAR®** - This document provides guidance on implementing ENERGY STAR® and energy conservation programs at your facility. It also includes detailed instructions for using EZ Wizard and EZ Save programs, which are free from the ENERGY STAR® Web site. This document applies to information technology staff, equipment/software managers, and environmental program managers.
- **Information Technology Asset Management** - Information technology (IT) asset management can help your agency reduce the life-cycle costs of its electronic equipment. Most asset management software is incomplete. This document can help agencies identify gaps in the software. It can also help agencies that do not have software to develop an asset management system. Good IT asset management guides planning, purchasing, and disposition.

End-of-Life Management Phase

- **Instructions to Recipients of Donated Electronics** - The "Computers for Learning" executive order requires the federal government to donate a lot of used electronic equipment to schools and other entities. This fact sheet should be given to the recipient of the donated equipment along with the equipment. It outlines, in broad terms, what the recipient should do with the equipment at the end of its useful life.
- **Checklist for Selection of Electronics Reuse and Recycling Services** - This checklist was designed to guide federal generators of electronic waste in the selection of a recycler. It can help procurers of electronics recycling services make informed decisions. The document can also help providers of electronics recycling services to better understand the different issues facing the electronics recycling industry.
- **Electronics Recycling Facility Audit Checklist** - This audit tool will allow you to determine if the recycling vendor you have selected to collect your electronics is reputable and in compliance with all federal, state, and local regulations. It will help you to ask appropriate questions.

- **Packaging Instructions for Electronics Recycling** - This document provides step-by-step guidance on packaging equipment prior to transfer for recycling. It includes instructions for electronic peripherals, CPUs, and computer monitors, and lists specific packaging materials that can be used to prevent breakage and contamination. This document targets facilities and/or equipment managers.
- **Teleconferences** - Each month, the Federal Electronics Challenge hosts free, informative interactive teleconferences for partners. The topics of these presentations cover the many environmental challenges faced by today's federal facilities. Recent teleconferences have focused on:
 - End-of-Life Management
 - Goal Setting as a Federal Electronics Challenge partner
 - Donating Electronics
 - Green Purchasing
 - Toxics and Electronics
 - Data Security
 - Liability
 - Choosing Your Recycler
 - Auditing Your Recycler

Federal Electronics Challenge Website: <www.federalelectronicchallenge.net>

The Federal Electronics Challenge website is a comprehensive tool that federal facilities can use to learn how to improve the purchasing, use and end-of-life environmental aspects and save resources. The website contains information on why electronics are a major issue for federal facilities, tools and resources to purchase greener electronics products and manage their electronic assets in an environmentally sound manner.

Contact Information

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Other Green Electronics Procurement Resources

Hospitals for a Healthy Environment and Health Care Without Harm

<www.noharm.org/electronics/resources>

Product Stewardship Institute, Purchasing Environmentally Preferable Computers: A Guide for Government Procurement Officials

<www.productstewardship.us/procurementguidelines.html>