



Greening the Computer Lifecycle: the State Electronics Challenge

Colorado Association for Recycling
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Background

- What is NERC?
 - Non-profit
 - Mission: Environmental sustainability through solid waste management
- EPA grants
 - Develop & pilot State Electronics Challenge
 - Rolling out in other regions



What is the State Electronics Challenge?

- Voluntary partnership program for state, regional, & local government
- Promotes lifecycle stewardship of computers
 - Purchasing green computers
 - Use
 - Power management
 - Extending product life
 - Paper usage
 - Reuse & responsible recycling



What is the State Electronics Challenge?

Provides Partners with:

- Action steps for change
- Free assistance & technical resources
- Tools to track progress & measure results
- Recognition
 - Including what you're already doing



Background

- Adapted Federal Electronics Challenge (FEC)
- Piloted in Northeast
 - First Partners joined Fall 2007
 - 44 Partners, June 2010
 - 2 states
 - State agencies
 - Cities, counties, Solid Waste Districts
 - Colleges, universities, school districts



. . . Including 10 in EPA Region 8

- Colorado State University
- Harrison School District 2, CO
- North Dakota Depart. of Health
- City of Vermillion, SD Solid Waste Department
- Montana Department of Environmental Quality
- Montana State University
- Salt Lake City Community College, UT
- Summit County, UT
- Weber State University, UT
- Natrona County, WY



Why Focus on Computers?

- Energy consumption
 - Office equipment **~1.5 %** annual U.S. energy consumption
- Of that**
- Use accounts for ~25% of PC lifecycle energy
 - Production ~75% of lifecycle energy



Why Focus on Computers? (cont.)

- Toxic constituents
 - Lead, mercury, cadmium, hexavalent chromium
 - Impact from mining through end-of-life
- Valuable resources
 - Copper, precious metals, rare earths
 - Plastic, steel, aluminum
 - Extending life, reuse, & recycling saves energy & natural resources



Why Challenge the Public Sector?

- State & local government purchasing -
 - \$35 billion + technology equipment annually
- Environmental benefits & sustainability goals
- Cost savings



Environmental Benefits of Computer Stewardship

For every 1,000 “green” computer systems purchased & units recycled:

- ↓ Energy use by 1.3 million kWh
= electricity to power 105 households annually

- ↓ Greenhouse gas emissions by 169 MTCE
= removing 113 cars from road/year

Environmental Benefits (cont.)

- ↓ Municipal solid wastes by 35.6 metric tons
= waste generated by 18 households
annually
- ↓ Hazardous waste by 17 metric tons
- ↓ Toxic materials, including lead & mercury
by 164 pounds



Cost Savings

\$25 - \$75 per computer system
annually by activating power
management features



How to Participate in the Challenge

- Sign up as a Partner - It's free!
- Open to any public entity in Colorado, Montana, South Dakota, North Dakota, Wyoming, & Utah
 - State agencies
 - Regional & local government
 - Universities
 - Public schools & school districts



SEC Partner Requirements

- Register
- Complete *Baseline Survey of Current Practices*
- Choose your focus - any or all lifecycle phases
 - Purchasing
 - Use & Operations
 - End-of-life
- Implement program requirements for lifecycle phase(s)
- Report annual progress
- Apply for recognition (optional)



Program Requirements

Procurement

- Modify procurement practices to require/give preference to “green” computers – defined by EPEAT[®] standard
- Ensure 95% of desktops, laptops, monitors EPEAT registered



Overview of EPEAT

- Voluntary environmental performance standard for computer desktops, monitors, & notebooks
 - Addresses multiple environmental attributes
 - Three-tier rating system: bronze, silver, & gold
- System for identifying products
 - Searchable product registry (www.epeat.net)
 - 1,600+ products & 34 manufacturers
- Verification process to ensure conformance



EPEAT Performance Categories

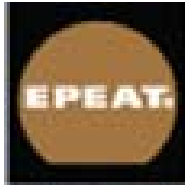

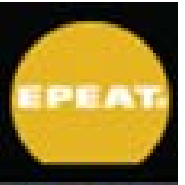
Total: 23 required & 28 optional criteria

- Reduction of toxic constituents
- Materials selection
- Product longevity/lifecycle extension
- Design for end-of-life
- Energy conservation
- End-of-life management
- Corporate performance
- Packaging

EPEAT Quick Search Tool

For Products Registered in

United States

	 BRONZE	 SILVER	 GOLD	Totals
Desktops	<u>1</u>	<u>53</u>	<u>83</u>	<u>137</u>
Displays	0	<u>186</u>	<u>106</u>	<u>292</u>
Integrated Desktop Computers	<u>1</u>	<u>37</u>	<u>11</u>	<u>49</u>
Notebooks	<u>40</u>	<u>590</u>	<u>471</u>	<u>1101</u>
Thin Clients	0	<u>9</u>	0	<u>9</u>
Workstation Desktops	<u>1</u>	0	<u>13</u>	<u>14</u>
Workstation Notebooks	0	<u>1</u>	<u>6</u>	<u>7</u>
Total:	<u>43</u>	<u>876</u>	<u>690</u>	<u>1609</u>

As of 5/25/10. See www.epeat.net for current list.



Program Requirements *Operations & Maintenance*

- Establish & promote policy/directive for:
 - IT asset management
 - Power management
 - Reducing paper consumption
- Ensure ENERGY STAR® “Sleep” function enabled
- Promote power management through education - policy makers, IT staff, & users



Program Requirements

End-of-Life Management

- Establish policy/directive:
 - Require environmentally sound management (ESM)
 - Promote reuse & donation
- Track units reused internally, donated, sent for reuse/recycling
- Use recycler that adheres to ESM practices *or* conduct on-site reviews or other due diligence assessments of recycling facilities



SEC Tools to Get the Job Done

- Online resources for developing, implementing, & improving lifecycle practices

www.StateElectronicsChallenge.net

- Free one-on-one technical assistance
- Partner-only teleconferences
- Partner-only Listserv



SEC is administered by the Northeast Recycling Council, Inc.

► Home

► About SEC

Why Join?

Becoming a Partner

Current Partners

2008-2009 Combined Results

2009 Environmental Results

2008 Environmental Results

► Join SEC

► Program Requirements

Program Requirements

Checklist

Baseline & Annual Reporting Form

State Electronics Challenge

Collectively, state and local government purchase more than \$35 billion worth of technology equipment annually*, and has the opportunity to provide leadership in the environmentally sound and cost effective management of electronic assets.

The State Electronics Challenge (SEC) is a voluntary program that encourages state, regional, and local governments, including schools and other public entities, to:

- Purchase greener electronic products.
- Reduce the impacts of electronic products during use.
- Manage obsolete electronics in an environmentally safe way.

The SEC provides resources to help state, local, and regional government and agencies to become leaders and face the new challenges posed by the electronics waste stream.

Quick Links/News

The SEC now has 44 Partners in 16 states! To see the full list of SEC Partners, [click here](#).

Newly Posted:

[SEC Introductory Teleconference](#)

[2009 Environmental](#)



Track Progress & Measure Results

- Partners submit:
 - Baseline Survey of Current Practices
 - Annual Reporting Form
- NERC commits to:
 - Calculate environmental benefits of Partner activities
 - Prepare environmental benefits report



Sample Benefits Report

Measure	How Much	Equivalent To
Energy usage reduced	9.5 million kWh	Electricity to power 794 households per year
Greenhouse gases avoided	1,798 metric tons carbon equivalents	Removing 1,207 cars from the road per year
Municipal solid waste avoided	7,460 lbs	Waste generated by 1.7 household per year
Toxics reduced	183 lbs	
Hazardous wastes avoided	8,577 lbs	



Recognition

- Eligible for:
 - Gold: **All three** lifecycle phases
 - Silver: **Two of three** lifecycle phases
 - Bronze: **One of three** lifecycle phases
- Achievements recognized
 - The media
 - SEC Website



Partner Accomplishments

Reduction In	How Much?	Equivalent To
Energy use	44.19 million kWh	Electricity to power 3,700 households/year
Greenhouse gas emissions	7,946 metric tons carbon equivalents	Removing 3,751 cars from the road/year
Toxic materials, including lead & mercury	1,355 pounds	
Municipal solid waste	386 tons	Waste generated by 184 households/year
Hazardous waste	139 tons	



Contact Information

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