Greening the Lifecycle of Office Equipment:
The State Electronics Challenge
www.stateelectronicschallenge.net

Get Awarded for Your Success!

November 15, 2016

State Electronics Challenge

- Voluntary & *free* program for municipal, regional, state, & tribal governments plus schools, colleges & universities, & non-profits

- Promotes lifecycle stewardship of computers & imaging equipment
  - Buying green
  - Operating efficiently:
    - Reducing energy & paper usage
    - Extending product life
  - Managing responsibly at end-of-life
- Awarding organizations for success!

Background

- In its 9th full year

- Initiated with funding from EPA regions

- Funded by private sector sponsors
    - Samsung, Panasonic & R2/RIOS

- Managed & staffed by the Northeast Recycling Council (NERC)

Why Focus on Electronics?

Significant impact — mining through end-of-life

- Used electronics are 40-50x richer source of rare & precious metals than newly mined ore
  - Gold, silver, copper, rare earths, steel, aluminum, etc.
- Toxic constituents – e.g., lead, mercury, cadmium
- Valuable resources – e.g., Energy consumption – use & embodied energy
  - Production ~ 80% of lifecycle energy of computers
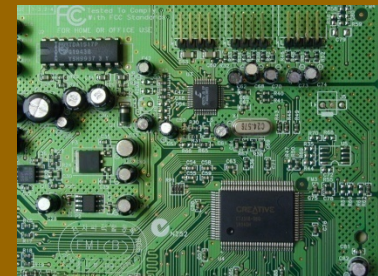
Greening lifecycle saves energy & resources & reduces toxics

Environmental Benefits

For every 1,000 "green" computer systems purchased, power managed, & recycled after 5 yrs.:

- ⬇ Energy use = to power 100 homes/year
- ⬇ Greenhouse gases = 177 fewer cars/year
- ⬇ Municipal solid waste by 49 tons = 24 households/year
- ⬇ Hazardous waste by 15 tons = 112 refrigerators
- ⬇ Toxic materials by 193 pounds, incl. lead & mercury (= 13 fever thermometers)
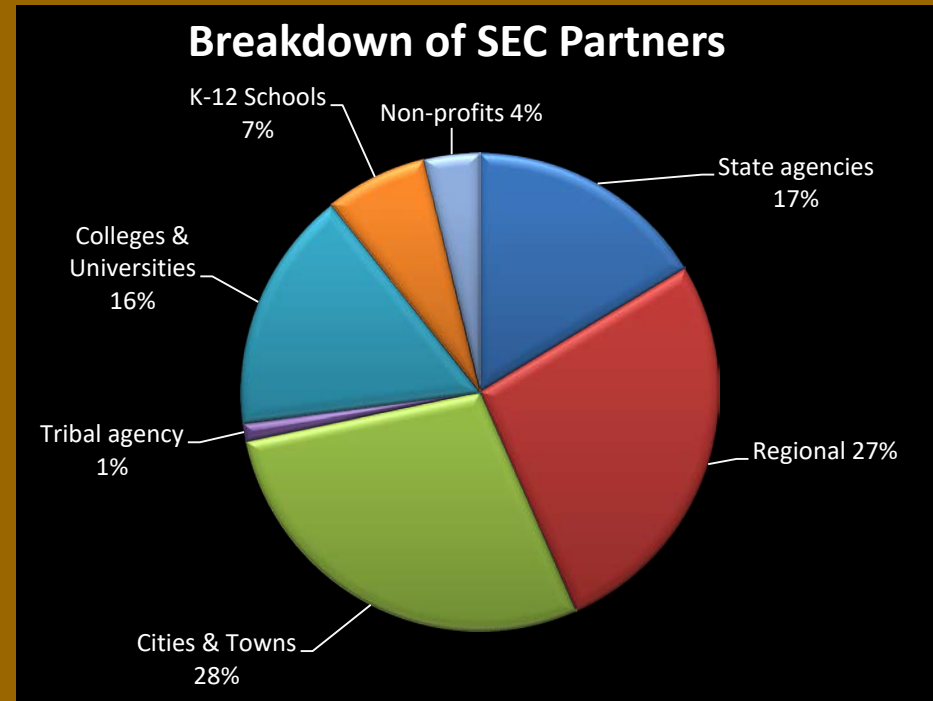
Why Challenge You?

- Institutional purchasers can impact marketplace

- Energy & cost savings
  - Office computers are "on" 76% of the time, even when used only 16% of the day!
  - Activating power management features
    - $10 - $100 per computer system/year, plus $3 - 30 in cooling loads
    - $35 - $60 for imaging equipment/year

- Demonstrate leadership in sustainability & stewardship

Who is Eligible?

- State & Tribal agencies
- Cities & towns
- Counties
- K-12 schools
- Colleges & universities
- Public utilities
- Public libraries
- Municipal solid waste authorities & districts
- Non-profit organizations

Breakdown of SEC Partners

- K-12 Schools 7%
- Non-profits 4%
- State agencies 17%
- Colleges & Universities 16%
- Tribal agency 1%
- Regional 27%
- Cities & Towns 28%

Current SEC Partners

163 Partners,
38 states,
215,500
end users

How Does the Challenge Work?

- **Best practices**
  - Purchasing, use & end-of-life phases
- **Resources**
  - Free technical assistance & webinars
  - Web-based resources
- **Results**
  - Tools to track progress & measure results
  - Individualized sustainability reports
- **Award success!**
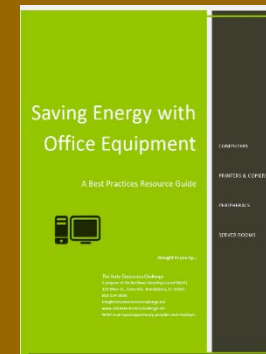 - For new & existing activities

Resources to Get the Job Done

- Online resources for each lifecycle phase

  www.StateElectronicsChallenge.net

- Free one-on-one technical assistance

- Partner-only webinars

Track Progress & Measure Results

SEC annually:

— Calculates environmental benefits of Partner's activities

— Prepares customized sustainability report

Based on Partner's Annual Reporting Form

Sustainability Report

ENVIRONMENTAL SUSTAINABILITY REPORT CY 2015
Partner: Vermont Agency of Natural Resources
Date: April 5, 2016

ENVIRONMENTAL BENEFITS

		PURCHASING	USE	REUSE & RECYCLING	TOTAL BENEFITS	
	Reduction in:	HOW MUCH			HOW MUCH	EQUIVALENT TO
	Energy use	32,500 kWh	763,546 million kWh	193,480 kWh	989,526 kWh	Electricity to power 77 homes/year
	Greenhouse gas emissions	6 metric tons of carbon equivalents	138 metric tons of carbon equivalents	9 metric tons of carbon equivalents	153 metric tons of carbon equivalents	Removing 110 cars from the road/year
	Toxic materials, including lead & mercury	<1 lb.	<1 lb.	<1 lb.	<1 lb.	Weight of <1 brick
	Municipal solid waste	317 lbs.	11,140 lbs.	4,611 lbs.	16,068 lbs.	Waste generated by 4 households/year
	Hazardous waste	216 lbs.	537 lbs.	2,034 lbs.	2,787 lbs.	Weight of 10 refrigerators

[1]Calculations made using the Electronic Environmental Benefits Calculator (EEBC), Computer Version 4.0 (2015), and Imaging Equipment Version 1.0 (2015) at: http://www.epa.gov/fec/publications-and-resources. [2]Paper reduction calculations were made using the WARM model conversion factors, v. March 2015, http://www.epa.gov/epawaste/conserve/tools/warm/pdfs/Paper_Products.pdf. [3]The EEBC calculator for Imaging Equipment does not include: a) copiers, so all copiers reported were considered multi-function devices for calculating environmental benefits, which may result in under-reporting of benefits for large copiers; and b) benefits calculations for power management of imaging equipment in service.

Partner Commitments to Green Electronics

EPAT® Purchasing:
Vermont Agency of Natural Resources included Electronic Product Environmental Assessment Tool (EPEAT®) registered computer products as a required or preferred standard in bids, contracts, and/or leases for IT

Certified Recyclers:
Vermont Agency of Natural Resources used a recycler that was certified to R2, R2/RIOS, or e-Stewards in this calendar year.

Annual Awards

Eligible for:

- Gold: **All three** lifecycle phases
- Silver: **Two of three** lifecycle phases
- Bronze: **One of three** lifecycle phases

Recognition

- Award
- Media
- SEC website
- Build internal
  support for activities

Partner Awards Announced for 2015

The SEC recognized 12 Partners in 2015 for their outstanding work in electronics stewardship. SEC Partners were eligible for one of three recognition levels – Bronze, Silver, or Gold - based on completion of SEC program requirements.

2015 Environmental Benefits Results

2008 – 2015 Partner Recognition

SEC Partner	Recognition	Lifecycle Phases
Borough of State College, Pennsylvania	Gold	Purchasing, Use, & End-of-Life Management
Centre County Recycling & Refuse Authority, Pennsylvania	Gold	Purchasing, Use, & End-of-Life Management
City of Corvallis, Oregon	Gold	Purchasing, Use, & End-of-Life Management
City of Fort Collins, Colorado	Gold	Purchasing, Use, & End-of-Life Management
City of La Crosse, Wisconsin	Gold	Purchasing, Use, & End-of-Life Management
City of Providence, Rhode Island, School Department	Gold	Purchasing, Use, & End-of-Life Management
Illinois Sustainable Technology Center (ISTC)	Gold	Purchasing, Use, & End-of-Life Management
Vermont Agency of Natural Resources	Gold	Purchasing, Use, & End-of-Life Management
Chewonki Foundation, Maine	Silver	Use, & End-of-Life Management
City & County of Denver, Colorado	Silver	Purchasing, & End-of-Life Management
Ball State University	Bronze	End-of-Life Management
Upper Merion Township, Pennsylvania	Bronze	Purchasing

15

Best Practices
Purchasing

- Modify procurement practices to require/give preference to "green" equipment – defined by the Electronic Products Environmental Assessment Tool (EPEAT®) standard

- Ensure 95% of desktops, laptops, monitors, printers, copiers, & multifunction devices purchased are EPEAT registered

Overview of EPEAT

- Environmental performance standard for computers, imaging equipment & televisions
  – Addresses multiple environmental attributes
  – Three-tier rating system: bronze, silver, & gold

- System for identifying products
  – Searchable product registry - one stop shopping
  – 1,600 computer products (U.S.) & 29 manufacturers
  – 1,600+ imaging equipment products (U.S.) & 16 manufacturers

- Verification process to ensure conformance

www.epeat.net

Best Practices
Use

- Establish & promote policy/directive for power management & paper use reduction
- Ensure ENERGY STAR "sleep" function enabled on all computers & monitors
  - Power down features imaging equipment
- Extend life of equipment
- Ensure double-sided printing features used on 75% of printers, copiers, & multifunction devices

Best Practices
End-of-Life Management

- Establish policy/directive:

  — Promote reuse & donation

  — Require environmentally sound management

- Track units redeployed internally, donated for reuse, recycled

- Use recycler that has earned 3rd party certification: e-Stewards, R2, or R2/RIOS

Why it is Important to Use a 3rd Party Certified Electronics Recycler

- Standards address worker health & safety and environmentally responsible processing of electronics, as well as data destruction

- Auditing of recyclers by independent, 3rd party organizations that are qualified & accredited to issue certification to specific standard

Certified Facilities in the U.S.

600+ certified facilities in U.S. plus many more in process of certification

- e-Stewards: 90+

http://e-stewards.org/find-a-recycler/

- R2, R2/RIOS: 500+

https://sustainableelectronics.org/recyclers

How to Participate?

- Join
http://stateelectronicschallenge.net/join.aspx
- Complete *Benchmark Survey of Current Practices*
- Implement best practices
  - Purchasing
  - Use
  - End-of-life
- Report annual progress
- Apply for award (optional)

How Much will this Cost?

- "Nothing!" The program is free:
  - No cost to join
  - No cost for technical assistance & support
  - No obligation on your part

- *Does not* pay for the cost of implementation., e.g., paying for recycling

How Much Work will it Take?

It depends on:

- Goals - what you choose to work on

- Partner preparation - how much progress you've already made

- People
  - Who's on the team (or is there a team?)
  - Who you need to enlist to help out

It's up to you!

Contact Information

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Join: *http://www.stateelectronicschallenge.net/join.aspx*

www.stateelectronicschallenge.net

Prepared with support from
Samsung, Panasonic, & R2/RIOS

NERC is an equal opportunity provider & employer.