



# Greening the Lifecycle of Office Equipment: The State Electronics Challenge

Great Lakes Regional Pollution Prevention Roundtable

Presented by Lynn Rubinstein, Program Manager

November 18, 2014



## State Electronics Challenge

- Voluntary & **free** program for U.S. state, regional, local, and tribal governments, schools, colleges & universities, **plus** non-profits
- Promotes lifecycle stewardship of computers & imaging equipment
  - Buying green
  - Operating efficiently
    - Power management
    - Extending product life
    - Reducing paper usage
  - Managing responsibly
    - Maximizing reuse & using certified recyclers





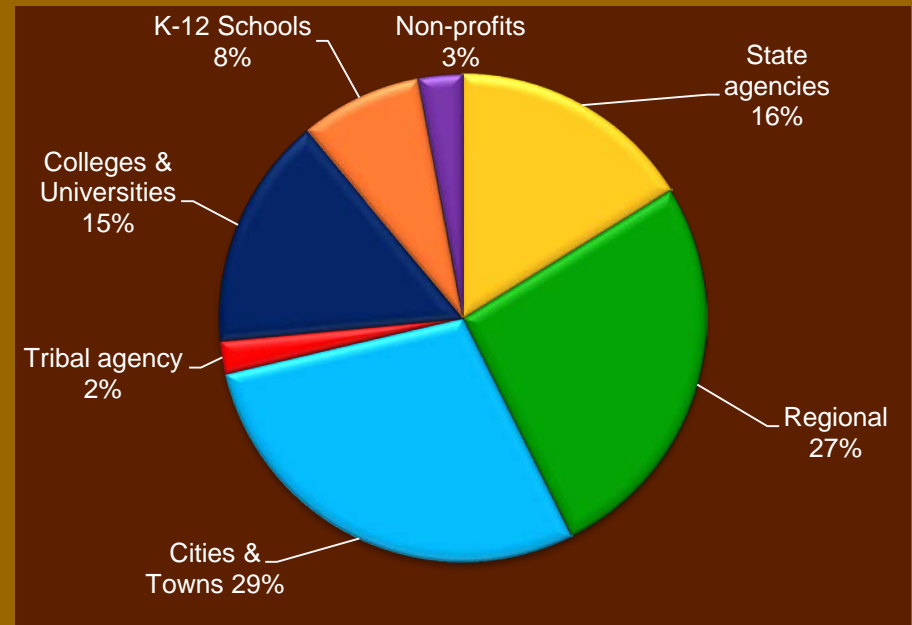
## Background

- Adapted from Federal Electronics Challenge
- Initiated with funding from EPA regions
- Now funded by private sector sponsors:
  - Samsung
  - Panasonic
  - The Consumer Electronics Association
  - ISRI R2/RIOS
- Managed & staffed by Northeast Recycling Council (NERC)



# Who Can Participate as a “Partner”?

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





## Current SEC Partners

140 Partners,  
36 states,  
173,100  
end users



*In the Great  
Lakes more  
than 50  
Partners!*



# What Does the Challenge Offer?

- **Resources**

- Free technical assistance & webinars
- Web-based resources

- **Results based on best practices**

- Action plan
- Tools to track progress & measure results
- Individualized sustainability reports

- **Recognition**

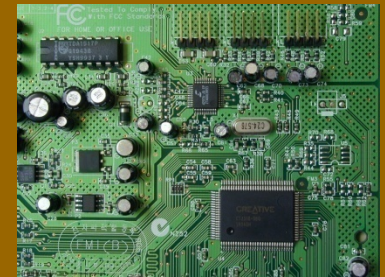
- For new & existing activities



# Why Focus on Electronics?

Significant environmental impact — mining through end-of-life

- Toxic constituents – e.g., lead, mercury, cadmium
- Valuable resources – e.g., copper, precious metals, rare earths, conflict minerals, steel, aluminum
- Rapidly growing waste stream
- Energy consumption – use & embodied energy
  - Production ~80% of lifecycle energy of computers due to complex components



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



## Program Goals

- Promote sustainability for office electronics within Partner organizations through best practices
  - Purchasing
  - Use
  - End-of-life management
- Provide assistance to Partners
- Document, recognize, & promote the successes of Partner organizations!



# What Does It Mean to Be a “Partner”?

- Join

<http://stateelectronicschallenge.net/join.aspx>

- Choose your focus – one, two or all lifecycle phases
  - Purchasing
  - Use
  - End-of-life
- Complete *Benchmark Survey of Current Practices*
- Implement best practices in selected lifecycle areas
- Report annual progress
- Apply for recognition (optional)



## Best Practices *Purchasing*

- Modify procurement practices to require/give preference to “green” equipment – defined by the Electronic Products Environmental Assessment Tool (EPEAT<sup>®</sup>) standard
- Ensure 95% of desktops, laptops, monitors, printers, copiers, & multifunction devices purchased are EPEAT registered



## Overview of EPEAT

- Voluntary environmental performance standard for computer desktops, monitors, notebooks & imaging equipment
  - Addresses multiple environmental attributes
  - Three-tier rating system: bronze, silver, & gold
- System for identifying products
  - Searchable product registry - one stop shopping
  - 1,500 + computer products (U.S.) & 26 manufacturers
  - ~1,000 imaging equipment products (U.S.) & 14 manufacturers
- Verification process to ensure conformance

[www.epeat.net](http://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 3<sup>rd</sup> party certification:
  - R2, R2/RIOS, or e-Stewards



## Why it is Important to Use a 3<sup>rd</sup> Party Certified Electronics Recycler

- Standards address the environmentally responsible processing of electronics, ensuring safe & responsible handling of hazardous components
- Auditing of recyclers by independent, 3rd party organizations that are qualified & accredited to issue certification to specific standard
- Purchasers just need to specify recycler certification (R2, R2/RIOS, or e-Stewards) & leave the rest to the experts!





## Resources to Get the Job Done

- Online resources for each lifecycle phase  
[www.StateElectronicsChallenge.net](http://www.StateElectronicsChallenge.net)
- Free one-on-one technical assistance
- Partner-only webinars
- Partner-only listserv



## Track Progress & Measure Results

- Partners submit:
  - Benchmark Survey of Current Practices
  - Annual Reporting Form
- SEC commits to:
  - Calculate environmental benefits of Partner's activities
  - Prepare customized sustainability report



# Sustainability Reports



ENVIRONMENTAL SUSTAINABILITY REPORT CY2013  
 Partner: DuPage County, Illinois  
 Date: March 20, 2013



ENVIRONMENTAL BENEFITS								
		PURCHASING	USE	REUSE & RECYCLING	TOTAL BENEFITS			
	Reduction in:	HOW MUCH			HOW MUCH	EQUIVALENT TO		
	Energy use	66,949 kWh	4.47 million kWh	1.01 million kWh	5.5 million kWh	Electricity to power 434 homes/year		
	Greenhouse gas emissions	11 metric tons of carbon equivalents	<div style="background-color: yellow; padding: 10px; text-align: center;"> <h2>394 metric tons of carbon</h2> </div>			Removing 758 cars from the road/year		
	Toxic materials, including lead & mercury	14 lbs.						
	Municipal solid waste	2,168 lbs.						Waste generated by 15 households/year
	Hazardous waste	396 lbs.	5,905 lbs.	879 lbs.	7,180 lbs.			

Calculations for office equipment were made using the Electronic Environmental Benefits Calculator, Version 3.1, dated July 2012, available at [www.epa.gov/fec/publications.html#calculator](http://www.epa.gov/fec/publications.html#calculator). Calculations for paper reduction were made using the WARM model conversion factors, [www.epa.gov/climatechange/wywed/waste/downloads/paper%20products.pdf](http://www.epa.gov/climatechange/wywed/waste/downloads/paper%20products.pdf), February 2012.

### Partner Commitments to Green Electronics

**EPEAT® PURCHASING:**  
 DuPage County included Electronic Product Environmental Assessment Tool (EPEAT®) registered computer products as a required or preferred standard in bids, contracts, and/or leases for IT equipment in calendar 2012.

**Certified Recyclers:**  
 DuPage County used a recycler that was certified to R2, Re/RIOS, or e-Stewards in this calendar year.



## Annual Recognition

- Eligible for:
  - Gold: **All three** lifecycle phases
  - Silver: **Two of three** lifecycle phases
  - Bronze: **One of three** lifecycle phases
- Achievements recognized
  - Award
  - The media
  - SEC website
  - Build internal support for activities



## How Much will this Cost?

- “Nothing!” The SEC is free:
  - No cost to join
  - No cost for technical assistance & support
  - No obligation on your part
- SEC *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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Prepared with support from Samsung, Panasonic,  
the Consumer Electronics Association & R2/RIOS

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