

Measurement and Reporting of Electronics Stewardship Activities

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Federal Electronics Challenge

Partner Teleconference

Disclaimer



The information in this presentation is not official guidance of the Office of Management and Budget, the Office of the Federal Environmental Executive, the Environmental Protection Agency, or the Federal Electronics Stewardship Working Group



The guidance in this presentation **does not** supersede any federal agency's policies, procedures, guidance, or requirements with respect to tracking and reporting of electronic stewardship activities



FEC Partners should always follow the tracking and reporting requirements and guidelines of their federal agency

Required Electronics Stewardship



Executive Order 13514



Section 2(i)



Executive Order 13423, Implementing
Instructions



Section 2(h)



Agency Strategic Sustainability Performance
Plans (SSPP)



Agency Electronics Stewardship
Implementation Plans



Agency or Facility Environmental Management
Systems (EMS)

Reporting Your Electronics Stewardship Activities

Agency requirements

-  Strategic Sustainability Performance Plan
-  Electronics Stewardship Plan

Facility requirements

-  Environmental Management System (EMS)

FEC requirements

-  Annual Reporting Form (ARF)
-  Award applications

Executive Order 13514

Electronics Acquisition and Procurement

- Each agency shall promote electronics stewardship by:
 - Ensuring procurement preference for EPEAT-registered electronic products
 - Ensuring the procurement of Energy Star and FEMP designated electronic equipment

Agency SSPPs

Electronics Acquisition and Procurement



Ensure acquisition of EPEAT registered, ENERGY STAR qualified, and FEMP designated electronic office products when procuring electronics in eligible product categories



Measures:

- % of electronic product acquisition covered by current Energy Star specifications that must be Energy Star-qualified
- % of covered electronic product acquisitions that are EPEAT-registered
- % of covered electronic product acquisitions that are FEMP-designated

The EPEAT® Goal



Activity:

- Acquisition of electronic products



Goal:

- 95% of all applicable purchases, leases, and asset management provisions must be of Electronic Product Environmental Assessment Tool (EPEAT)-registered equipment



Applies to:

- All electronic equipment with an IEEE standard*
 - Desktops, notebooks, displays
 - Imaging equipment, television standards still under development



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Home

our resource for greener electronics

EPEAT® is a comprehensive environmental rating that helps identify greener computers and other electronic equipment.

Announcements

- » Clarification #10 Revision Published
- » 2012-01 Verification Round Plan Published
- » Cancellation of Amended Verification



EPEAT REGISTRY SEARCH OPTIONS

Quick Search

United States



Total

| | BRONZE | SILVER | GOLD | Total |
|-------------------------------------|-----------|-------------|-------------|-------------|
| Desktops | 1 | 72 | 127 | 200 |
| Displays | 0 | 358 | 377 | 735 |
| <u>Integrated Desktop Computers</u> | 1 | 50 | 59 | 110 |
| Notebooks | 34 | 562 | 1323 | 1919 |
| Tablet Notebooks | 0 | 0 | 0 | 0 |
| <u>Thin Clients</u> | 0 | 19 | 7 | 26 |
| Workstation Desktops | 0 | 0 | 20 | 20 |
| Workstation Notebooks | 0 | 1 | 4 | 5 |
| Totals | 36 | 1062 | 1917 | 3015 |

Search by Manufacturer/Country

Full Search

» FAQs

over their lifetime, compared to products that do not meet EPEAT criteria, EPEAT registered notebooks, desktops, and monitors purchased worldwide in 2010 will:

Reduce use of primary materials by 15.7 million metric tons, equivalent to the weight of 48 Empire State Buildings

Reduce use of toxic materials, including mercury, by 1,156 metric tons, equivalent to the weight of 192 elephants.

Eliminate use of enough mercury to fill 437,048 household mercury fever thermometers.

Avoid the disposal of 59,525 metric tons of hazardous waste, equivalent to the weight of 4 Eiffel Towers.

Eliminate the equivalent of more than 16,052 US households' annual solid waste—31,991 metric tons

Energy-Related Savings

EPEAT's requirement that registered products meet the latest ENERGY STAR specifications means these products will consume less energy throughout their useful life, resulting in:

Savings of over 9 billion kWh of electricity—enough to power 757,416 US homes for a year.

Avoidance of 36 million metric tons of air emissions (including greenhouse gas emissions) and over 77 thousand metric tons of water pollutant emissions.

Reduction of over 1.6 million metric tons of greenhouse gas emissions— equivalent to taking nearly 1.1 million US passenger cars off the road for a year

Download [Full 2010 Report](#) or [Executive Summary](#).

Measuring the EPEAT Goal

- Require vendors to report registration status of all acquisitions
 - FEC and EPEAT recommend quarterly reports
- See recommended contract language
 - Desktops, notebooks, displays:
http://www.epa.gov/fec/resources/epeat_contract.pdf
 - Imaging equipment, televisions:
http://www.epa.gov/fec/resources/epeat_contract_ietv.pdf

Measuring the EPEAT Goal



Add and/or utilize an EPEAT registration data field in your facility's property and/or asset registration, tracking, or management system



Confirm EPEAT registration status at date of purchase

- Check the EPEAT registry:

<http://ww2.epeat.net/searchoptions.aspx>

Reporting the EPEAT Goal



Data on the EPEAT registration status of all acquisitions of eligible electronic products



Copies of policy and/or contract documents requiring the acquisition of EPEAT-registered electronic products

Reporting the EPEAT Goal

| | Number of Units | | | |
|---|-----------------|--------|--------|---------------|
| | Gold | Silver | Bronze | Unregistered* |
| Desktops (including Integrated Desktop Computers, Thin Clients, Workstation Desktops) | | | | |
| Notebooks (including Workstation Notebooks) | | | | |
| LCD Displays | | | | |
| CRT Displays | | | | |

Reporting the EPEAT Goal

| | Number of Units | | | |
|------------------------------------|-----------------|--------|--------|--------------|
| | Gold | Silver | Bronze | Unregistered |
| Printers | | | | |
| Multifunction devices (MFDs) | | | | |
| Televisions | | | | |
| Servers | | | | |
| Cellular/mobile telephones | | | | |
| Personal Digital Assistants (PDAs) | | | | |

The ENERGY STAR Goal

- Activity:
 - Acquisition of electronic products
- Goal:
 - 100% of all applicable purchases, leases, and seat management provisions must be of ENERGY STAR qualified products
- Applies to:
 - All electronic equipment with an ENERGY STAR specification under the “Computers and Electronics” section

The FEMP Goal

- Activity:
 - Acquisition of electronic products
- Goal:
 - 95% of all applicable purchases, leases, and seat management provisions must be of FEMP designated products
- Applies to:
 - All electronic equipment with a FEMP designation under the “Office Equipment” and “Low Standby Power” sections

Measuring the ENERGY STAR and FEMP Goals

- Similar to measuring the EPEAT goal
 - Vendor reporting
 - Property tracking systems
 - Contract requirements
- *Confirm ENERGY STAR and FEMP status at date of purchase*
 - ENERGY STAR:
http://www.energystar.gov/index.cfm?c=products.pr_find_es_products
 - FEMP:
http://www1.eere.energy.gov/femp/technologies/eep_purchasingspecs.html

Reporting the ENERGY STAR and FEMP Goals

- Data on the ENERGY STAR qualification and FEMP designation status of all acquisitions of eligible electronic products
- Copies of policy and/or contract documents requiring the acquisition of ENERGY STAR qualified and FEMP designated electronic products

Reporting the ENERGY STAR and FEMP Goals

| | Number of Units | | |
|---|-----------------------|------------------------|---------|
| | ENERGY STAR Qualified | FEMP Low Standby Power | Neither |
| Blu-ray, DVD, CD and Other Disc Players | | | |
| Home Theater Systems & Surround Sound | | | |
| Audio/Video Combination Units | | | |
| ... | | | |
| Set-top Boxes & Cable Boxes | | | |
| Televisions | | | |

ENERGY STAR and FEMP

- ENERGY STAR qualified products meet the FEMP requirements for energy efficiency
- ENERGY STAR qualified products **MAY NOT** meet FEMP requirements for low standby power
 - May need to specify products that are both ENERGY STAR qualified and meet FEMP low standby power requirements
 - See http://www1.eere.energy.gov/femp/technologies/buying_low_standby.html

EPEAT, ENERGY STAR and FEMP

- EPEAT registered products meet the ENERGY STAR requirements for energy efficiency
- EPEAT registered products MAY NOT meet FEMP requirements for low standby power
 - May need to specify products that are both EPEAT registered and meet FEMP low standby power requirements

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Electronics Operation and Maintenance

- Each agency shall promote electronics stewardship by:
 - establishing and implementing policies to enable power management, duplex printing, and other energy-efficient or environmentally preferable features on all eligible agency electronic products

Agency SSPPs

Electronics Operation and Maintenance

- Establish and implement policy and guidance to ensure use of ***power management, duplex printing, and other energy efficient or environmentally preferred options and features*** on all eligible agency electronic products
- Measures:
 - ***% of agency, eligible PC, Laptops, and Monitors with power management actively implemented and in use***
 - ***% of agency, eligible electronic printing products with duplexing features in use***

The Power Management Goal

- Activity:
 - Enable power management features
- Goal:
 - 100% enabling of eligible electronic products
- Applies to:
 - Eligible electronic products
 - Desktops, notebooks, displays
 - Non-exempt products

Measuring the Power Management Goal

- ***Utilize software programs*** that enable and/or report on power management settings
 - Free and commercial software solutions
- ***Manually enable and/or check*** power management settings
 - Record activation and verification activities in a log

Reporting the Power Management Goal

- Data on number of eligible products and percentage that are enabled
- Data on number of products that are exempt, description of reasons for exemption(s)
- Copies of policy documents requiring the enabling of power management features on electronic products

Reporting the Power Management Goal

| | Number of Eligible Products | Number of Exempt Products* | Percentage or Number of Eligible, Enabled Products |
|--------------|-----------------------------|----------------------------|--|
| Desktops | | | |
| Notebooks | | | |
| LCD Monitors | | | |
| CRT Monitors | | | |

** Exemption from power management requirements are provided for equipment running mission critical applications (i.e., security monitoring, air traffic control, uninterruptable laboratory experiments).*

The Duplexing Goal

- Activity:
 - Enable duplex printing
- Goal:
 - 95% enabling in FY11 and 100% enabling in FY12 of eligible electronic products
- Applies to:
 - Eligible electronic equipment
 - Imaging equipment that prints and is capable of duplexing
 - Desktop and notebook computers that send print jobs to imaging equipment

Measuring the Duplexing Goal

- Manually enable duplex settings
 - Record activation and verification activities in a log
- Utilize software programs that enable and/or report on duplex settings
 - Free and commercial software solutions

Reporting the Duplexing Goal

- Data on number of eligible products and percentage that are enabled
- Data on number of products that are ineligible
- Copies of policy documents requiring the enabling of duplexing features on electronic products

Reporting the Duplexing Goal

| | Number of Eligible Products | Number of Ineligible Products* | Percentage or Number of Eligible, Enabled Products |
|--|-----------------------------|--------------------------------|--|
| Computers (including desktops and notebooks) | | | |
| Imaging Equipment (including printers, copiers, fax machines, scanners, and multi-function devices) | | | |

**Ineligible products include imaging equipment that can print but do not include duplexing capabilities.*

Executive Order 13423

Electronics Operation and Maintenance

- (Agency heads shall) ensure that the agency:
 - establishes and implements policies to extend the useful life of agency electronic equipment

The Lifecycle Extension Goal

- Activity:
 - Extend the useful life of electronic equipment
- Goal:
 - Four or more years
- Applies to:
 - All electronic equipment

Measuring the Lifecycle Extension Goal

- Add and/or utilize entry and exit dates in your facility's property and/or asset registration, tracking, or management system
- Estimate lifecycle based on total inventory and annual replacement rates
 - 30% replacement rate each year leads to a three-year lifecycle
- Require four-year technology refreshes

Reporting the Lifecycle Extension Goal

- Data on the lowest, highest, and average lifecycle of indicator electronic products
- Copies of policy documents that require the extension of the useful life of electronic products
- Copies of contract documents with specific technology refresh rates

Reporting the Lifecycle Extension Goal

| | Number of Months | | |
|-----------------------|-------------------|--------------------|-------------------|
| | Lowest Lifecycle* | Highest Lifecycle* | Average Lifecycle |
| Desktops | | | |
| Notebooks | | | |
| Displays | | | |
| Multifunction Devices | | | |
| Cellular Phones | | | |

** Information on lowest and highest lifecycle may not be available.*

Executive Order 13514

Electronics End-of-Life Management



Each agency shall promote electronics stewardship by:

- Employing environmentally sound practices with respect to the agency's disposition of all agency excess or surplus electronic products

Agency SSPPs

Electronics End-of-Life Management

- Update agency policy to reflect environmentally sound practices for disposition of all agency excess or surplus electronic products
- Measure:
 - % of electronic assets covered by sound disposition practices
- Discuss how the agency will increase the quantity of electronic assets disposed through sound disposition practices
 - Include in the discussion how your agency is using or plans to use programs such as disposal through GSA Xcess, recycling through Unicolor, donation through GSA's Computer for Learning (CFL) or other non-profit organizations, and/or recycling through a private recycler certified under the Responsible Recyclers (R2) guidance or equivalent certification

The Environmentally Sound Disposition Goal

Activity:

-  Electronic product disposition

Goal:

-  Using environmentally sound management practices for all electronics reuse, donation, sale, and recycling

Applies to:

-  All electronic equipment

Measuring the Environmentally Sound Disposition Goal

- Add and/or utilize a disposition data field in your facility's property and/or asset registration, tracking, or management system
 - Consider adding or utilizing an internal user count
- Utilize other property disposition reports:
 - General Services Administration (GSA)
 - Defense Logistics Agency (DLA)
 - Computers for Learning (CFL)
- Keep records of due diligence activities

Reporting the Environmentally Sound Disposition Goal

-  Data on the disposition of indicator electronic products
-  Copies of policy and/or contract documents requiring the environmentally sound disposition of electronic products at end-of-life
-  List of recyclers used
-  Copies of due diligence documentation

Reporting the Environmentally Sound Disposition Goal

| | Number of Units | | | |
|--|-----------------------|----------|--------------------------|---------|
| | Reused | Recycled | Landfill/ Incinerator | Unknown |
| Desktops (including Integrated Desktop Computers, Thin Clients, Workstation Desktops) | | | | |
| Notebooks (including Workstation Notebooks) | | | | |
| LCD Displays | | | | |
| CRT Displays | | | | |
| | Weight of mixed loads | | | |
| Mixed electronic products | | | | |

Reporting the Environmentally Sound Disposition Goal

| | Number of Units | | | |
|------------------------------------|-----------------|----------|--------------------------|---------|
| | Reused | Recycled | Landfill/ Incinerator | Unknown |
| Printers | | | | |
| Multifunction devices | | | | |
| Televisions | | | | |
| Servers | | | | |
| Cellular Phones | | | | |
| Personal Digital Assistants (PDAs) | | | | |

Executive Order 13514

Servers and Data Centers

- Each agency shall promote electronics stewardship by:
 - Implementing best management practices for ***energy-efficient management of servers and Federal data centers***

Agency SSPPs

Servers and Data Centers

- Update agency policy to ensure implementation of best management practices for energy efficient management of servers and Federal data centers, including how the agency will meet data center reduction goals included in the Federal Data Center Consolidation Initiative
- Measures:
 - % of agency data centers independently metered, advanced metered, or sub-metered to determine monthly (or more frequently) Power Utilization Effectiveness (PUE)
 - Reduction in the number of agency data centers
 - % of agency data centers operating with an average CPU utilization greater than 65%
 - Maximum annual weighted average Power Utilization Effectiveness (PUE) for agency

The Server and Data Center Goal

- Activity:
 - Improve data center efficiency
- Goals:
 - Reduce number of data centers
 - Improve data center Power Utilization Effectiveness (PUE)
 - Improve central processing unit (CPU) utilization in data centers
- Applies to:
 - Data centers

Measuring the Server and Data Center Goal

- Add or utilize existing metering to obtain data, or utilize utility reports to estimate data, needed for calculating PUE
- Acquire or utilize existing software to measure CPU utilization within servers in the data center
- Work with agency to determine if your data center is involved in consolidation initiatives, this may involve:
 - Consolidating existing equipment
 - Adding equipment to handle work loads from other data centers
 - Shutting down the data center and moving work loads to other agency data centers

Reporting the Server and Data Center Goal

- Records from meters or utility bills
 - PUE calculations
- Utilization reports
 - CPU utilization calculations
- Audit results

Reporting the Server and Data Center Goal

| | Monthly | Quarterly | Annually |
|--------------------------------------|---------|-----------|----------|
| Total Data Center Energy Consumption | | | |
| Total IT Energy Consumption | | | |
| Data Center PUE | | | |
| Server 1 CPU Utilization Rate | | | |
| Server 2 CPU Utilization Rate | | | |
| ... | | | |
| Server X CPU Utilization Rate | | | |
| Average CPU Utilization Rate | | | |

Converting Data into Environmental Benefits

- Electronic Environmental Benefits Calculator
 - <http://www.epa.gov/fec/publications.html#calculator>
- Using FEC Annual Reporting Form Data to Calculate Environmental Benefits:
 - http://www.epa.gov/fec/resources/arf_eebc.pdf

Questions?



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