IT BEST PRACTICES: ASSET LIFE CYCLE

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ITMA XVI

"California IT – A Commitment to Green"

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BACKGROUND

Historically the State of California agencies and departments have not been mandated to purchase certified "green" computer equipment that meets the highest standards. This has limited the State's ability to fully realize improved energy efficiency, operational cost savings and reduced environmental impact. This is primarily due to the fact that until recently only limited models of computer equipment that meet high "green standards" have been available in the market place.

According to the California Department of General Service (DGS), State agencies purchase on an annual basis more than $90 million worth of personal computer (PC) goods, which includes $35 million in desktops and workstations, $16 million in notebooks, and $5 million in monitors. [1]

Purchasing computer equipment that meets the highest "green" standards will enable the State to realize cost savings through improved energy efficiency, and reduce its environmental impact. To meet those standards we should consider the following areas:

- Ensure equipment is Electronic Product Environmental Assessment Tool (EPEAT) Gold certified.
- Appropriately utilize, reuse, recycle or dispose of computer equipment once the equipment has reached its end of life.
- Leveraging lower power devices such as notebooks, thin client computers, and LCD monitors.

This direction is in alignment with the California 2009 IT Strategic Plan Concept 5: Economic And Sustainable Strategy 1: Promote practices that protect the environment and reduce energy usage. [2]

EPEAT certified computer equipment can reduce environmental impact and realize operational cost savings through energy efficiency of 82 to 85%, longer product life, and more effective end of life disposal and take back options. EPEAT evaluates electronic products in relation to 51 environmental criteria—23 required criteria and 28 optional criteria. Products that meet all 23 required criteria are ranked Bronze status. Products that meet all 23 required criteria plus at least 50% of the optional criteria are ranked Silver status. The products that meet all 23 required criteria plus 75% of optional criteria are ranked Gold status. These evaluation criteria conform to a public standard for environmental assessment of personal computer products named IEEE 1680. EPEAT also incorporates Energy Star certification, ensuring energy efficiency. [3]

State agencies and departments are mandated to purchase computer equipment, desktops/workstations (monitors are not included) and notebooks through the DGS strategically sourced Statewide Commodity Contracts (SCC) [4]. Any exemptions need to be approved by the Office of State Chief Information Officer (OCIO). At the present time, some computer equipment listed under the SCC is EPEAT certified. Effective July 2009, all computer equipment available under the new SCC is required to be EPEAT Silver or higher.

When Departments are presented with a choice of Silver or Gold status computer products, State agencies should choose Gold status in order to realize maximum operational cost savings through energy efficiency and reduced environmental impact. Furthermore, in future contracts, the State should strive to ensure the equipment available through DGS SCC is no less than Gold status.

BENEFITS

Purchasing EPEAT certified products can reduce environmental impact and realize operational cost savings through energy efficiency of 82 to 85%, longer product life, and more effective end of life disposal and take back options.

Statistics by the Green Electronics Council estimate that worldwide purchases of EPEAT registered laptops, desktops, and monitors over conventional products during 2007 would accomplish the following results [5]:

- Achieve savings of 42.2 billion kWh of electricity (due to Energy Star requirements) -- enough to power 3.7 million U.S. homes for a year. As of today, over 75% of State of California desktop and laptop machines are Energy Star compliant.
- Reduce use of primary materials by 75.5 million metric tons, equivalent to the weight of more than 585 million refrigerators.
- Reduce use of toxic materials, including mercury, by 3,220 metric tons.
- Avoid the disposal of 124,000 metric tons of hazardous waste.
- Elimination of the release of 174 million metric tons of air emissions (including greenhouse gas emissions) and almost 365 thousand metric tons of water pollutant emissions.
- Reduction of 3.31 million metric tons of carbon equivalent (MTCE) greenhouse gas emissions -- equivalent to removing 2,630,000 U.S. cars from the road for a year.

Electricity usage can also be reduced by shifting away from desktop computers and CRT monitors. LCD monitors use less than 50% of the electricity consumed by a CRT monitor. Notebook computers use approximately 35-50% electricity as compared to a desktop, and thin client computing can use as little as 10% of the electricity consumed by a desktop computer.

Additionally, appropriate recycling and disposal of electronic waste will further reduce negative impact on the environment.

RECOMMENDED STRATEGIES FOR IMPLEMENTATION

In order to realize energy efficiency and the related cost savings and environmental benefits stated above, the agencies and the departments must:

- Establish standards and processes to require/promote procurement of EPEAT certified computer equipment (desktop computers, workstations, monitors and notebook s/laptops) that meet the highest EPEAT standards—the Gold standards.

- State agencies using DGS strategically sourced SCC procurement process should procure EPEAT certified computer equipment that meets the highest certification level. For example if a choice exists between EPEAT Gold or EPEAT Silver certification, choose Gold. Also it is best to choose the option to receive equipment with minimal packaging and/or recycled packing and to choose the option which requires the supplier to take-back and dispose of equipment at end of life.

- For SCC exempt procurements, build in provisions in the contract to require use of EPEAT certified computer equipment. Include provisions to receive equipment with minimal packaging or recycled packaging and that requires supplier to take-back equipment at end of product life. See the EPA Tools in the references section for additional information and resources. [6] [7]

- Standardize notebook computers, thin client devices, and LCD monitors, and replace existing desktops and CRT monitors accordingly.

- If equipment is recyclable, choose the recycler carefully or make sure that the company that is receiving your equipment emphasizes environmentally sound procedures and will provide documentation for the materials handled. Leverage electronics waste recycling services available through the DGS Master Service Agreement (MSA) [8]. Ensure department security policies are followed regarding wiping of data from hard drives or other storage devices. See reference section for State Administrative Manual (SAM) IT disposal requirements; DGS Office of Surplus Property Reutilization process [9] [10]; and the recycler options available by electronic equipment recycling organizations [11] [12].

Additional references can be found in the National Institute of Standards & Technology (NIST) Guidelines for Media Sanitization. [13]

- Explore and determine if computer equipment at end of i life for one purpose/operation can be redeployed to other parts of the organization or to other organizations. Partner with programs that will put these products into the hands of individuals who are in need.

- Metrics: Agencies should track the percentage of their computers that are EPEAT certified, and demonstrate increasing percentages over time. Additionally, these metrics should be broken out by Silver and Gold levels. Agencies may also want to estimate the specific economic and environmental benefits through tools such as the Electronics Environmental Benefits Calculator [14], or vendor provided technical specifications. Additional related metrics may include calculating percentage of computing devices which are notebooks, thin clients, and LCD monitors.

- Agencies and departments should incorporate the above recommendations in the business and technology Strategic Planning, IT Capital Planning efforts and in development of Enterprise Architecture. [15] [16] [17]

REFERENCES

[1] Buy Green-Best Practices Manual-Office Machines:
http://www.green.ca.gov/EPP/OfficeMach/comp.htm

[2] California IT Strategic Plan: http://www.itsp.ca.gov/

[3] EPEAT - http://www.epeat.net

[4] Department of General Services strategically sourced Statewide Commodity Contracts (SCC)
http://www.pd.dgs.ca.gov/contracts/default.htm

[5] EPEAT Benefits: http://www.epeat.net/FastBenefits.aspx

[6] EPA Environmental Preferred Purchasing Tools:
http://www.epa.gov/opptintr/epp/tools/index.htm

[7] California Integrated Waste Management Board, California Greenin' Resources:
http://www.ciwmb.ca.gov/EPP/Procurement/Resources.htm

[8] DGS Master Service Agreement (MSA electronics waste recycling services:
http://www.pd.dgs.ca.gov/masters/E-Waste.htm

[9] DGS Office of Surplus Property Reutilization process for IT disposal
http://www.ofa.dgs.ca.gov/OSPR/default.htm

[10] State Administrative Manual for IT sale, exchange, transfer or disposal requirements
http://sam.dgs.ca.gov/TOC/5900/default.htm

[11] Electronic equipment recycling organizations:
http://www.ciwmb.ca.gov/Electronics/Collection/RecyclerSearch.aspx

[12] Industry sponsored recyclers: http://www.ciwmb.ca.gov/Electronics/Recovery/

[13] National Institute of Standards & Technology (NIST) Guidelines for Media Sanitization
http://csrc.nist.gov/publications/PubsSPs.html

[14] Electronics Environmental Benefits Calculator:
http://eerc.ra.utk.edu/ccpct/eebc/eebc.html

[15] State of California Administrative Manual Section 4900; 4900.1; 4900.2; 4904
http://sam.dgs.ca.gov/TOC/4800/default.htm

[16] Office of State CIO IT Policy Letter number 09-03, issued April 15, 2009.

[17] SIMM Section 58-Statewide Enterprise Architecture Guidelines:
http://www.cio.ca.gov/Government/IT_Policy/SIMM.html

Other References:

Buy Green Best Practices Manual: http://www.green.ca.gov/EPP/Introduction/default.htm

Department of General Services Procurements Website
http://www.pd.dgs.ca.gov/buy/default.htm

DGS Environmentally Preferable Purchasing Requirements:
http://www.pd.dgs.ca.gov/deleg/PAMchapter03.htm#t9

State Administrative Manual for IT procurement requirements
http://sam.dgs.ca.gov/TOC/5200/default.htm

NASCIO

Green IT in Enterprise Practices: The Essential Role of the State CIO, May 2008
http://www.nascio.org/publications/

Other States

State of Oregon Policy adopting EPEAT standards:
http://oregon.gov/DAS/OP/docs/policy/state/107-009-0050.pdf

State of New York Award of Excellence, included EPEAT standards:
http://www.ogs.state.ny.us/aboutOgs/pressReleases/2008/BestPracticeAward.htm