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FINAL REPORT

Green Procurement of Electronics in the New England States: NERC's Outreach Campaign to Promote EPEAT™

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Any opinions, findings, and conclusions or recommendations expressed in this material are solely the responsibility of the authors and do not necessarily represent the official view of the EPA.

ACKNOWLEDGEMENTS

ADVISORY COMMITTEE

The following individuals, who served on the project Advisory Committee, contributed greatly to the success of this project:

- Peter Cooke, Maine Department of Environmental Protection
- Carolyn Grodinsky, Vermont Agency of Natural Resources
- Peggy Harlow, Massachusetts Department of Environmental Protection
- George MacDonald, Maine State Planning Office
- Beverly Migliore, Rhode Island Department of Environmental Management
- Don Maurer, New Hampshire Department of Environmental Services
- Dmitriy Nikolayev, Massachusetts Operational Services Division

KEY STAFF

Patricia Dillon, Program Manager, and Lynn Rubinstein, Executive Director staffed this project.

EPA GRANT ADMINISTRATOR

Robert Guillemin, Environmental Protection Specialist, was the Grant Administrator.

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I. Introduction

The goal of this project was to promote source reduction, pollution prevention, and increase the use of recycled materials through the environmentally preferable purchasing of computers by public and private sector institutional purchasers in Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont[1]. This project specifically promoted the use of the Electronic Product Environmental Assessment Tool (EPEAT™), a procurement tool launched in 2006 by the Green Electronics Council. This project was funded by a grant to the Northeast Recycling Council, Inc. (NERC) from the United States Environmental Protection Agency New England, Source Reduction Assistance Program. The project period was October 1, 2005 – March 31, 2008.

To accomplish the stated goal, NERC launched an outreach campaign targeting institutional purchasers that included teleconferences, direct contact, technical assistance, and presentations to target audiences. Resources were developed for purchasers and information technology staff about EPEAT™, including a Fact Sheet, PowerPoint presentations, model procurement language, and calculations of the environmental benefits of purchasing EPEAT™ -registered computer products.

NERC's outreach campaign reached over 1,400 individuals in state government, businesses, and colleges and universities nationwide, and almost 850 in New England alone. While it is difficult to measure the direct impact of this outreach on specific procurements, NERC is confident that its efforts raised the level of awareness about EPEAT™, and in some cases influenced purchasing decisions and the incorporation of EPEAT™ into procurement specifications. Maine and Massachusetts are highlighted in this report due to their commitment to EPEAT™ procurement. As indicated in Table 3, below, these states purchased almost 80,000 computer units in 2007, 75% of which were EPEAT™- qualified. Table 6 details the environmental impact of this procurement, which included greenhouse gas reductions equivalent to removing 1,037 passenger cars from the road.

This grant also provided a critical foundation for the State Electronics Challenge (SEC), an EPA-funded project launched by NERC in October 2007 that will continue to promote EPEAT™ in New England states after the completion of this grant. The goal of the SEC, which is currently being piloted in the Northeast, is to improve the life cycle management of electronics by state, regional, and local government. Purchasing is one of three focus areas of the SEC, in addition to operations and end-of-life management. Organizations that voluntarily sign-up as SEC Partners pledge to incorporate EPEAT™ into their procurement specifications and to meet a purchasing target of 95% EPEAT™ -registered products for products eligible for EPEAT™ designation.
This report outlines the efforts made and the results obtained during the course of the project, including the environmental outputs as measured by the EPA Electronics Environmental Benefits Calculator.

[1] Although Connecticut was not officially part of this project, all outreach efforts and documentation include Connecticut.

- Section II – Provides an overview of education and outreach efforts, including profiles of the use of EPEAT™ by the states of Maine and Massachusetts.

- Section III – Summarizes the environmental impact and outputs of EPEAT™ procurement.

- Section IV – Presents lessons learned and recommendations for expanding the use of EPEAT™ by public and private sector institutional purchasers.

- Section V – Appendices.

An Advisory Committee provided valuable guidance and support for this project. A list of Advisory Committee members is in Appendix 1.

II. Education & Outreach Campaign

Five principal mechanisms were used for education and outreach efforts under this grant. They were direct contact and technical assistance, teleconferences, listserv announcements, on-site presentations, and Web-based resources. In addition, NERC worked with its project Advisory Committee to distribute EPEAT™ informational flyers at regional events, create EPEAT™ Web links on state and business social responsibility Web sites, and to place articles about EPEAT™ in electronic and hard copy publications. Each of these, including the outreach documents, is discussed in detail below. An extensive database of contacts was developed at the onset of the project, and updated regularly, to guide outreach efforts.

As summarized in Table 1, it is estimated that NERC's campaign reached over 1,400 individuals nationwide and close to 850 in New England. The predominant audiences for NERC's outreach included state government, businesses, and colleges and universities. Section II (j) discusses the status of EPEAT™ procurements in the New England States.

a. Direct Contact and Technical Assistance

NERC contacted individuals and organizations by telephone and electronic mail to promote EPEAT™. Target audiences included state purchasing and information technology departments, colleges and universities, and private companies. Conversations and correspondence included introductory calls/emails to inform the organization about EPEAT™ and provide EPEAT™ summary information, such as the NERC EPEAT™ Fact Sheet, to invite them to teleconference presentations, and to offer technical assistance or presentations at their organization. Discussions most often included a review of resources available on the EPEAT™ Web site, including the Product Registry and model procurement language, and demonstrations of the availability of EPEAT™-registered products and specific models offered by the manufacturers from which the organization regularly buys.

NERC also provided more individualized technical assistance to organizations upon request. The type of technical assistance varied from providing environmental benefits calculations specific to the organization's EPEAT™ purchases, helping to incorporate EPEAT™ into an environmentally-preferable purchasing guide for cities and towns, customizing language for bids and RFPs, and drafting letters to vendors stating the organization's intention to purchase EPEAT™-registered products.

Table 1: Summary of Outreach Efforts by Mechanism, Type of Organization, and Number of Recipients/Participants

	Direct Contact & Technical Assistance (Individuals)	**Three Teleconferences** (Participants)	**Listserv** (Individuals on list)	**On-Site Presentations** (Events/Participants)
State Government	19	21	31	0
Regional & Local Government	4*	6	11	1/100
Colleges & Universities	22*	21	181	3/64
Businesses	16*	24	83	3/188
Hospitals	1	3	11	0
Other	0	4	32	0
Total New England States	**62**	**79**	**349**	**5 Events/ 352 Participants**
TOTAL RECIPIENT CONTACT EVENTS [1]- NEW ENGLAND STATES - 842				
Other States (includes Federal Government)	11	257	271	0
International	0	19	4	0
Total U.S. & International	**73**	**355**	**624**	**5 Events/ 352 Participants**
TOTAL RECIPIENT CONTACT EVENTS[1] - U.S. & International - 1,404				

*Includes associations working with these constituency groups.

[1] The total number of recipients does not represent unique individuals. Rather they are the number of individuals that participated in different outreach events. "Double counting" occurred, for example, if an individual attended all three teleconferences. In addition, most of the individuals receiving technical assistance also participated in a teleconference.

b. Teleconferences

NERC held three teleconferences over the 18-month project period. The first two teleconferences provided an overview of EPEAT™, while the third introduced participants to the Electronics Environmental Benefits Calculator for calculating the benefits of EPEAT™ purchases as well as recycling equipment at the end-of-life. A total of 355 people participated in the three teleconferences. A breakdown of EPA New England participants (total 79) is provided in Table 1.

The two EPEAT™ overview teleconferences, held in June and November 2006, were each 2-hours long and featured the Green Electronics Council, the organization that manages EPEAT™, an institutional purchaser, a manufacturer offering EPEAT™ -registered products, and a state procurement official. NERC staff moderated the call and provided information on EPEAT™ resources. PowerPoint presentations were developed for each teleconference and posted on the Web. The second teleconference presentation is available on the NERC Web site.

The third teleconference focused on calculating the environmental benefits of purchasing EPEAT™-registered products using the Electronics Environmental Benefits Calculator (EEBC), developed by the University of Tennessee Center for Clean Products and Technology. A PowerPoint was developed for this teleconference and posted on the NERC Web site.

EPA Region 10 generously provided the teleconference service for all three calls.

Evaluations were distributed by email to all teleconferences participants following the calls. A summary of each teleconference, including participants and evaluations are in Appendix 2.

c. Listserv Announcements

A dedicated listserv was created for this project and populated with individuals identified through teleconference registrations and the contact database development process. The listserv had 624 recipients and was an effective marketing tool for announcing teleconferences and providing periodic updates on EPEAT™. The EPEAT™ updates were intended to remind organizations about EPEAT™ and the availability of green computer products, and that EPEAT™ is a valuable tool and embraced by large institutional purchasers. Thirteen (13) listserv announcements, including six announcements about the NERC teleconferences (two per teleconference), were sent over an 18-month period. Appendix 3 contains copies of the listserv announcements. This listserv is expected to be retired at the end of 2008 when a companion EPA grant from Region 3 concludes.

In addition to using this listserv, several announcements about the project and its resources was posted on EPPnet, a listserv hosted by NERC that provides a communication vehicle for private and public procurement officials and advocates about environmentally preferable purchasing. Currently, there are 470 subscribers to that list.

d. On-Site Presentations

Presentations were made at regional meetings and conferences targeting information technology professionals and organizations interested in environmentally preferable products. NERC staff also presented at the headquarters of a major U.S. corporation with nationwide operations and a significant presence in the New England states.

Presentations were made at:

- The Northeast Regional Computing Program (NERCOMP)[2] Green Computing Conference on November 14, 2005 at the University of Massachusetts, Amherst.
- Massachusetts EPP Vendor Fair and Conference, Worcester, MA, October 25, 2006.
- NERCOMP Annual Meeting, DCU Center, Worcester, MA, March 21, 2007.
- Upper Valley Computer Industry Association (serving New Hampshire and Vermont), West Lebanon, NH, April 19, 2007.
- Raytheon Corporation, Waltham, Massachusetts, February 8, 2008.
- University of Maine System Green Campus Consortium, August, Maine, March 19, 2008.

[2] NERCOMP is a professional organization for information technology professionals in educational institutions.

In addition, NERC's EPEAT™ summary document was distributed at *Greening Up Your Bottom Line*, a conference of the Vermont Business Environmental Partnership, Burlington, VT, September 19, 2006.

e. Web Site Resources

A dedicated Web page was created on the NERC Web site that provides resources for the green procurement of computers. Documents found on that site include:

- EPEAT™: A Purchasing Tool.
- Green Electronics Procurement Teleconference PowerPoint.
- EPEAT™ Overview Presentation.
- Calculating the Benefits of Purchasing, Reusing, & Recycling Computers - PowerPoint.
- Frequently Asked Questions.

Detail about these documents is found in Section II (h) below.

f. Other Outreach Mechanisms

As part of the promotion of EPEAT™, NERC worked with Advisory Committee members and other organizations to place articles about EPEAT™ in electronic and hard copy publications and to create Web links to the EPEAT™ Web site.

The following articles were published:

- NERC Email Bulletins:
  - October 2006, *Purchasing Green Computers – A Teleconference Opportunity*
  - October 2006, *EPEAT™ Product Registry Lists Over 180 Computer Products*
  - September 2006, *Procuring Green Electronics – New Resources Available*
  - July 2006, *Procuring Green Electronics Teleconference a Huge Success*
- IRNetworking, The Newsletter of the Institution Recycling Network, *How to Find & Buy Green computer Products,* Volume 3, Number 2, September 2006
- Quoted in New York Times (December 31, 2006), SUNDAY MONEY: SPENDING; When 'Refurbished' Takes On an Earth-Friendly Vibe.
- NERC September 2007 Email Bulletin
- Rutland Herald, April 20, 2007, Group Moves on Computer Waste.

Advisory Committee members and other organizations were encouraged to post links to the EPEAT™ Web site. The Massachusetts Department of Environmental Protection, New Hampshire Businesses for Social Responsibility, Rhode Island Department of Environmental Management, Vermont Agency of Natural Resources, as well as the Vermont Business Materials Exchange, and Vermont Business Environmental Partnership posted such links. Examples of such linkages are:

- Vermont Business Materials Exchange
- Vermont Business Environmental Partnership

g. Transfer to Other States and Regions

Through the teleconferences, listserv, and Web-based resources, this project routinely reached audiences nationwide. As shown in Table 1, 78 percent of the participants on the teleconferences resided outside of the New England states.

In addition, NERC provided support beyond the region to promote the green procurement of computers in a number of ways:

- Worked with the Green Electronics Council, the U.S. EPA, and state purchasers to reach consensus on model EPEAT™ procurement language, which is found on the EPEAT™ Web site.
- NERC co-sponsored an additional EPEAT™ teleconference on August 24, 2006, with EPA Region 10 and the Northwest Product Stewardship Council. NERC's June 20, 2006 teleconference presentation served as the template for the Region 10 teleconference, and Patty Dillon, NERC Program Manager, was one of four speakers on that teleconference.

1. Throughout the grant period, NERC participated in teleconferences convened by EPA headquarters and regions, and the Green Electronics Council to discuss EPEAT™ marketing issues, including sharing lessons learned, brainstorming about strategies to promote EPEAT™ in other regions, and exploring the potential benefits of creating an EPEAT™ pledge and recognition program.
2. NERC provided EPA Region 9 with technical assistance on quantifying the benefits of EPEAT™ purchases using the Electronics Environmental Benefits Calculator. The electronics benefits calculations were used in EPA Region 9's recognition of pioneers in the adoption of EPEAT™, and posted as part of the EPEAT™ Profiles available on the EPEAT™ Web site.
3. NERC provided the Green Electronics Council with slides on the environmental benefits of purchasing EPEAT™-registered products for integration into its presentations, and provided on-going assistance on request.

h. Resource Development

NERC developed several resources to assist in its promotion of EPEAT™, as described below, and created a dedicated section on its Web site, entitled "Green Procurement of Electronics," to house these documents. There were more than 1,000 downloads of these documents.

- NERC collaborated with the Green Electronics Council, the U.S. EPA, and state purchasers to reach consensus on model EPEAT™ procurement language. The Model Contract Language is posted on the EPEAT™ Web site.

- EPEAT™: A Purchasing Tool provides an overview of EPEAT™, its value for purchasers, and the environmental benefits of purchasing EPEAT™-registered products. NERC updated this document frequently to reflect the changing number of registered products and manufacturers represented in the EPEAT™ Product Registry.

- Three PowerPoint presentations were developed. The first presentation, Green Electronics Procurement Teleconference PowerPoint, was developed for the first teleconference in June 2006, and then updated for the November 2006 teleconference. The presentation provides an overview of EPEAT™ by the Green Electronics Council, followed by the testimonials by a manufacturer (Dell Computer) and an institutional purchaser (the State of Massachusetts) of the value of EPEAT™ from their vantage point.

  The second presentation, EPEAT™ Overview Presentation, provides a more concise summary of EPEAT™, the Product Registry, and the environmental benefits of purchasing EPEAT™-registered products. This presentation was posted for downloading

for general use for promoting EPEAT™. NERC continually updated this presentation to reflect changes in the EPEAT™ Product Registry.

The third presentation, Calculating the Benefits of Purchasing, Reusing, & Recycling Computers - PowerPoint, was developed for the third NERC teleconference. It provides an overview of the environmental benefits of purchasing EPEAT™-registered products and how to use the Electronics Environmental Benefits Calculator. The Calculator was developed by the University of Tennessee Center for Clean Products and Clean Technologies under a cooperative agreement with the U.S. EPA.

- A Frequently Asked Questions (FAQ) document was developed based on questions and answers brought up during the June 2006 EPEAT™ overview teleconference.

i. Purchaser Profile – Commonwealth of Massachusetts

NERC developed a Purchaser Profile on the Commonwealth of Massachusetts (see next page) that will be posted on the EPEAT™ Web site along side the profiles of organizations across the U.S. that also adopted EPEATTM. These profiles serve as models for organizations considering EPEATTM. The Massachusetts profile includes a brief history of environmentally preferable product (EPP) purchasing of IT products in Massachusetts, which provides the state with a unique perspective on the value of EPEATTM, and a summary of the environmental benefits of purchasing EPEATTM-registered products. The Massachusetts profile will be the first example of an organization from one of the New England states highlighted on the EPEATTM Web site.

Purchaser Profile

Commonwealth of Massachusetts

The Commonwealth of Massachusetts has been in the forefront of environmentally preferable purchasing (EPP) for years, and participated in the development of the EPEAT™ standard. It came as no surprise when they became the first state to reference EPEAT™ in a computer hardware contract, even before the standard was officially adopted.

EPEAT™ Simplifies EPP Procurement

As a leader in EPP, Massachusetts knows first-hand the value of EPEAT™ in simplifying the procurement of "green" computers. In 1999, Massachusetts issued an RFP for computer hardware that incorporated environmental criteria. This was not an easy task. Staff had to research and to define environmental attributes for this complex set of products, where experts can sometimes not agree on which attributes improve product environmental performance. Evaluating vendors' responses was an equally difficult and time-consuming process, given the quantity and disparity of information provided by vendors in response to the solicitation.

Staff in the Massachusetts Operational Services Division – the organization responsible for writing specifications for statewide contracts – finds EPEAT™ attractive for multiple reasons. Saving time is an obvious advantage. A nationally recognized standard that is widely accepted by industry ensures a competitive bid process and the availability of products that meet price and performance requirements. The EPEAT system also allows the state to easily identify and compare products across attributes.

Big Results for The Commonwealth

Over 75 percent of the computer desktops, monitors, and notebook computers purchased by Massachusetts in FY07 were EPEAT™-registered. The Massachusetts state contract allows state agencies, municipal government and local school districts to select products from five vendors – Apple, Dell, Gateway (now MCP Computers), HP, and Lenovo – all with EPEAT™ product offerings.

The majority (almost 97%) of Massachusetts EPEAT™ purchases by all entities were EPEAT™ Silver rated, including 34,733 desktop computers, 17,055 LCD monitors, and 3,811 notebook computers. Massachusetts also purchased 1,733 EPEAT™ Bronze products. The table summarizes the environmental benefits resulting from EPEAT™ purchases in FY07 under the Massachusetts state contract.

Massachusetts Environmental Results from EPEAT™ Procurement		
Measure	**How Much?**	**Equivalent To**
Energy usage reduced	16,200,000 kWh	The electricity to power 1,426 households for a year
Greenhouse gases avoided	1,270 MTCE	Removing 1,007 cars from the road for a year
Hazardous wastes avoided	78.1 metric tons	
Toxic material use reduced	2.2 metric tons	

j. EPEAT™ Procurement in New England

One measure of the impact of NERC's outreach efforts is changes in purchasing behavior in the target community, in this case, institutional purchasers in the New England states. Behavior changes include actual EPEAT™ product purchases and changes in procurement vehicles (bids and contracts) that require or give preference to EPEAT™-registered products.

It is difficult to measure a direct correlation between outreach and behavior change when organizations may be receiving information from multiple sources and given the difficulties of identifying the individuals with the "answer". In addition, NERC repeatedly found that organizations were "accidentally" purchasing EPEAT™-registered products. That is, the products that they purchased based on their selection of vendors and product technical specifications, just happened to be EPEAT™-registered. While EPEAT™ product selection might not have been a deliberate decision, EPEAT™ status was a welcome, added benefit. NERC continually stressed the importance of formally specifying EPEAT™ in future procurements and to send a clear message to their vendors that the organization wanted to purchase environmentally preferable computer products. Due to the constraints described above, this project did not attempt to measure a direct impact on organizational purchasing in New England resulting from the NERC outreach campaign.

The following sections provide an update on the status of EPEAT™ purchasing in New England by state government and other institutions who were the recipients of NERC outreach and technical assistance efforts.

i. State Procurement

NERC staff provided information about EPEAT™ and additional assistance to all project partner states. At the onset of this project, some states were totally unaware of EPEAT™, while one state, Massachusetts, had been involved in the development of the EPEAT™ system and standard. In addition, several states not only received assistance under this grant, but also were involved in the development and implementation of the State Electronics Challenge (SEC), which promotes EPEAT™ purchasing.

As summarized in Table 2, all six New England states are currently purchasing EPEAT™-registered products to some extent. At least two states (Massachusetts and Maine) will require EPEAT™ in upcoming procurements. NERC will continue to promote EPEAT™ in the New England states through the SEC, and expects most if not all the New England states will commit to or specify EPEAT™ by the end of calendar 2008.

Data obtained from two states, Maine and Massachusetts, reveals that of the eligible products purchased in 2007 about 75 percent are EPEAT™-registered. These purchases are dominated by EPEAT™ Silver products, which account for 96.9 percent of the over 60,000 EPEAT™-registered products purchased. A summary of the state purchasing data is found in Table 3.

In Maine, 98 percent of the desktops (not including monitors) and notebooks purchased by the state executive agencies in 2007 were EPEAT™-registered, even though the state computer contract did not specify EPEAT™. By contrast, the purchase of EPEAT™-registered LCD monitors was less common. Only 23 percent of LCD monitors purchased in 2007 were EPEAT™–registered.

The data from Massachusetts, in comparison, documents the purchases of a broader purchasing constituency than the Maine data, which leads to some interesting variations in the results and conclusions about the availability of EPEAT™-registered products. Both the Massachusetts and Maine state contracts allow municipalities and public schools to purchase off the contract. The Maine data provided in this report, however, is limited to state agency purchases. The Massachusetts data includes purchases by state agencies as well as municipal government and public schools.

While the overall percentage of EPEAT™-registered products purchased in Massachusetts was similar to Maine, the percentage of EPEAT™-registered notebook computers purchased under the Massachusetts state contract was significantly less (42.2%) than in Maine (98.5%). EPEAT™ registration for integrated systems (a desktop processing unit and monitor combined into a single product), a product class not purchased by Maine state agencies, is even less, at a mere 1.3 percent of all purchases of this type.

The lower percentages of EPEAT™-registered product purchases can be attributed, at least in part, to the broader range of organizations included in the Massachusetts purchasing data and the resulting selection of a wider range of products. EPEAT™ was initially designed as a tool to assist institutional purchasers in the selection of products with improved environmental performance. As a result, manufacturers have designed and registered mostly business class products to EPEAT™ and their products lines marketed to institutions. Some organizations, such as municipal governments and school districts, are purchasing computer products designed and marketed to consumer markets rather than business and institutional markets. These purchasers may not need the performance features of business class computers, or may select less expensive products to lower the cost of purchasing new equipment.

Table 2: EPEAT™ Procurement Status in the New England States

State[3]	Purchasing EPEAT™ - Registered Products	Status of EPEAT™ in Purchasing Contracts
Connecticut	Yes	Not currently referenced, but under consideration
Maine	Yes	In process of issuing RFP that requires EPEAT™ Silver
Massachusetts	Yes	• References EPEAT™ in current computer specification as a future consideration • Upcoming procurement specification will require EPEAT™
New Hampshire	Yes	Planning to incorporate EPEAT™ into procurement language as part of State Electronics Challenge commitment
Rhode Island	Some	• Not currently specified • EPEAT™ research and education phase • Current contracts expires 10/08
Vermont	Some	Not currently referenced

Table 3: State Purchases of EPEAT™-Registered Products

		EPEAT™ Designation			
	Total Units Purchased	**Bronze**	**Silver**	**Gold**	**% EPEAT™-Registered**
Maine[1]					
Desktops	1,505	75	1,418	0	99.2%
Monitors	1,330	0	306	0	23.0%
Notebooks	1,232	60	1,153	0	98.5%
Subtotal	4,067	135	2,877	0	**74.1%**
Massachusetts[2]					
Desktops	40,907	883	34,733	0	87.1%
Monitors	18,607	94	17,055	0	92.2%
Notebooks	10,647	682	3,811	0	42.2%
Integrated Systems	5,542	74	0	0	1.3%
Subtotal	75,703	1,733	55,599	0	**75.7%**
TOTAL	**79,770**	**1,868**	**58,476**	**0**	**75.6%**

[1] Data submitted by the State of Maine in its State Electronics Challenge Baseline Reporting Form, dated March 19, 2008. Purchasing data covers state executive agencies only for January – December 2007.

[2] Purchasing data provided by Commonwealth of Massachusetts, Operational Services Division; analysis of EPEAT™ status executed by NERC staff. Data includes all purchases under the state contract, including municipal and public schools acquisitions from July 2006 to June 2007. If monitors were bundled with a desktop unit, only the desktop unit was included in the unit count because the EPEAT™ status of bundled monitors was not easily determined.

[3] Even though Connecticut was not officially part of this project, all efforts and documentation have included it.

ii. Other Institutional Purchasers

Throughout the project, NERC tried to gauge the interest of organizations in purchasing EPEAT™-registered products. The results are summarized in Table 4. In January 2007, the listserv was used to distribute a survey that requested information about EPEAT™ purchases to date and plans to incorporate EPEAT™ into procurement specifications. Sixteen (16) surveys, including nine from organizations located in EPA New England, were returned. Of the respondents, four currently referenced EPEAT™ in procurement specifications, while another six organizations were planning to. Six of the 16 organizations (two in New England) reported that they purchased EPEAT™-registered products in 2006. See Appendix 2 for the survey and a summary of responses.

NERC queried organizations that had participated in the teleconferences two additional times. In September 2007, NERC's teleconference evaluation asked participants whether they were currently purchasing EPEAT™-registered equipment. Of the 39 respondents, 17 (44%) said they were purchasing EPEAT™-registered products, while 12 responded "no," and 10 did not respond to the question or did not know the answer.

NERC's final attempt to measure EPEAT™ purchasing occurred towards the end of the grant. In December 2007 through early March 2008, NERC surveyed by telephone participants of the three teleconferences to see if they were purchasing EPEAT™-registered products, and if they had modified their purchasing specifications to require or give preference to EPEAT™. Twenty interviews of businesses and colleges and universities were completed. Of the respondents, 11 (55%) said they were purchasing EPEAT™-registered products, although most acknowledged that these purchases were unintentional. It just happened that the products that they purchased based on other purchasing decisions, for example, vendor selection and non-EPEAT™ technical specifications, were also EPEAT™-registered.

Table 4: Summary of Reported Institutional Purchasing of EPEAT™ in New England

	Number of Responses	Purchasing EPEAT™ - Registered Products	Reference EPEAT™ in Procurements
January 2007 Listserv Survey	9	2 (22%)	2 (+ 3 planning to)
September 2007 Teleconference Evaluation	39	17 (44%)	Did not ask
December 2007 – February 2008 Telephone Survey	20	11 (55%)	2 (+4 planning to)
TOTAL Responses	68	30 (44%)	4 (+7 planning to)

III. Environmental Benefits Calculations

The Electronics Environmental Benefits Calculator (EEBC), developed by the University of Tennessee Center for Clean Products and Clean Technologies, was used to calculate the environmental benefits of purchasing EPEAT™ -registered products.[4] Table 5 shows the benefits of purchasing 1,000 EPEAT™ Silver desktops[5] and LCD monitors, and recycling the units removed from service.

Using data provided by two New England states (Massachusetts and Maine), Table 5 provides estimates of the aggregate environmental benefits for 2007 resulting from EPEAT™-qualified purchases.[6]

Table 5: Estimated Environmental Benefits of Purchasing 1,000 EPEAT™ Silver Registered Computers and Recycling Discarded Units

Reductions in:	1,000 EPEAT™-Silver Registered desktops with LCD monitor	Recycle discarded units (desktop + CRT monitor)	TOTAL Benefit of Purchase + Recycle 1,000 EPEAT™ Silver Desktops + monitors
Energy use	0.82 million kWh = electricity to power 72 U.S. households annually	0.33 million kWh	1.15 million kWh = electricity to power 101 U.S. households annually
Greenhouse gas emissions	64.4 MTCE = removing 51 passenger cars from the road	25.6 MTCE = removing 20 passenger cars from the road	90 MTCE = removing 71 passenger cars from the road
Toxic materials, including lead & mercury	164 lbs	176 lbs	340 lbs
Municipal solid waste	N/A	34.7 metric tons = waste generated by 18 U.S. households annually	34.7 metric tons = waste generated by 18 U.S. households annually
Hazardous waste	2.6 metric tons	14.4 metric tons	17.0 metric tons
Cost (attributed to life cycle energy use only)	$71,200	$2,830	$99,500

[4] Calculations were made using Version 1.1, dated April 18, 2007, available at http://eerc.ra.utk.edu/ccpct/eebc/eebc.html

[5] EPEAT™ includes three performance levels: Bronze, Silver, and Gold. EPEAT™ Silver products meet all required criteria and at least 50 percent of optional criteria.

[6] Massachusetts data was for fiscal year 2007 (July 1, 2006 – June 30, 2007), while Maine data was for the 2007 calendar year.

Table 6: Environmental Outputs - Environmental Benefits from EPEAT™ Purchases by Two New England States[1]

Reductions in:	Environmental Benefits from EPEAT™ Purchases in Maine & Massachusetts
Energy use	16.6 million kWh = electricity to power 1,468 U.S. households annually
Greenhouse gas emissions	68,779 MTCE = removing 1,037 passenger cars from the road
Toxic materials, including lead & mercury	5,083 lbs
Hazardous waste	81.7 metric tons
Cost (attributed to life cycle energy use only)	$1.44 million

[1] Calculations were made using the Electronics Environmental Benefits Calculator, Version 1.1, dated April 17, 2007, developed by the University of Tennessee Center for Clean Products. Data from Table 3 was entered into the calculator. The 74 EPEAT™- registered integrated systems were not included in these calculations because this product type is not included in the Electronics Environmental Benefits Calculator.

IV. Lessons Learned and Recommendations

a. Lessons learned

- Organizations often purchased EPEAT™ products unintentionally. While some purchasers felt that this was "good enough," others recognized the importance of incorporating a preference for EPEAT™ into purchasing bids or specifications.
- One of the greatest challenges in promoting EPEAT™ was determining how the procurement process worked in different organizations, and getting information on EPEAT™ to decision makers. The IT procurement process was often a mystery to environmental staff within the organization as well.
- Changing state procurement language can take years, and may require working with IT staff as well as purchasing staff. Depending on the state, IT staff may drive the process with procurement departments implementing the technical requirements (including EPEAT™) of IT staff. A champion within the institution is advantageous in keeping the issue alive and in ultimately incorporating EPEAT™ into procurement specifications.
- Tracking EPEAT™ purchases from the customer-side was not an easy task, even when the vendor provided standard purchasing reports. For this project, NERC analyzed the year-end vendor reports provided to the State of Massachusetts, and found that the nomenclature used for sales does not always easily match the EPEAT™ Product Registry. In addition, the desktop processing unit might be EPEAT™-registered, while the monitor sold in the package might not be EPEAT™ -registered.
- Purchasing EPEAT™ products is easy because the range of available products generally coincides with the equipment regularly purchased by large institutions and

there has not been a price difference. The availability of EPEAT™-registered products in lower-end product lines, typically marketed to consumers, however, is not readily available.

- The EPEAT™ Web site is a valuable resource, but purchasers are not taking advantage of it. As part of its outreach efforts, NERC routinely "walked" purchasers through the Web site and Product Registry. Even though they were interested and perhaps purchasing EPEAT™-registered products, purchasers were usually not aware of the information available on the EPEAT Web site or how user-friendly the Product Registry is.
- While there is a great desire to be able to measure the environmental impacts of EPEAT™ procurement there is a resistance to using the Electronics Environmental Benefits Calculator. It is intimidating for the uninformed to use and appears complex, resulting in resistance to attempting to use it. One of the greatest selling points NERC was able to offer was running the Calculator on behalf of organizations.
- Many institutional purchasers were interested in seeing servers added to the EPEAT™ product offerings.
- Two large retailer expressed resistance to promoting EPEAT™ products on the sales floor, but open to requiring them for their corporate offices.

b. Recommendations

- Major manufacturers should provide mechanisms for the easy identification of EPEAT™-registered products on their Web sites.
- NERC strongly recommends that purchasers require vendors to report on EPEAT™-registered product purchases in contracts to facilitate the identification of EPEAT™-registered products and to ensure that bundled purchases are fully EPEAT™ compliant.
- The EPEAT™ Web site needs to be promoted as an easy to use and valuable resource that will make procurement of EPEAT™ products simple.
- The Electronics Environmental Benefits Calculator should be more user friendly. A Web-based interface is recommended.

V. APPENDICES

Appendix 1: Project Advisory Committee

Appendix 2: Teleconference summaries and evaluations

- ♦ Procuring Green Electronics, June 20, 2006
- ♦ Procuring Green Electronics, November 2, 2006
- ♦ Calculating the Benefits of Purchasing, Reusing and Recycling Computers, September 6, 2007

Appendix 3: EPEAT™ Listserv Announcements (teleconference announcements not included)

- EPEAT™ Product Registry Now Available, July 25, 2006.
- EPEAT™ Product Registry rings in the New Year with over 300 products, January 3, 2007.
- President Bush Orders Federal Agencies to Buy EPEAT™-Registered Products. February 21, 2007.
- First Gold Products Registered to EPEAT™, June 23, 2007.
- Green Computers Measure Up, July 19, 2007. This Green Electronics Council Press Release about the Environmental Benefits of EPEAT™ registered products was forwarded to the NERC listserv.
- Calculating the Benefits of Purchasing, Reusing, and Recycling Computers, September 10, 2007. (This update provided a snapshot of the environmental benefits of purchasing and recycling 1000 EPEAT™ Silver-registered computers.
- EPEAT™ Cited in Top 50 Ways to Green Your Business, December 17, 2007.

Appendix 4: Model procurement language

Appendix 5: Survey and responses, January 2007

Appendix 6: Fact Sheet: EPEAT™: A Purchasing Tool

Appendix 7: Questions and Answers

Appendix 1: Project Advisory Committee

Maine
- Peter Cooke, Maine Department of Environmental Protection
- George MacDonald, Maine State Planning Office

Massachusetts
- Peggy Harlow, Massachusetts Department of Environmental Protection
- Dmitriy Nikolayev, Massachusetts Operational Services Division

New Hampshire
- Don Maurer, New Hampshire Department of Environmental Services

Rhode Island
- Beverly Migliore, Rhode Island Department of Environmental Management

Vermont
- Carolyn Grodinsky, Vermont Agency of Natural Resources

Appendix 2: Teleconference Summaries and Evaluations

Summary of June 20, 2006 Teleconference- "Procuring Green Electronics"

Hosted by the Northeast Recycling Council Inc.
Sponsored by EPA Regions 1, 3 and 10

Teleconference Overview

On June 20, 2006, NERC hosted a 2-hour teleconference, starting at 10 am (eastern). The goal of the teleconference was to introduce participants to**:**

- The Electronic Product Environmental Assessment Tool (EPEAT™);
- The environmental performance standards required for EPEAT™-registered products;
- The EPEAT™ products database and the Electronics Environmental Benefits Calculator for determining the benefits of purchasing EPEAT™-registered products;
- Product availability and cost expectations; and,
- Strategies for incorporating EPEAT™ requirements into purchasing specifications and contract language.

The teleconference agenda included presentations, followed by questions and answers. Lynn Rubinstein, NERC's Executive Director, moderated the call. Teleconference speakers included:

- Scot Case, EPEAT™ Program Customer Services Manager for the Green Electronics Council, the organization that manages EPEAT™.
- Mark Schaffer, Dell Computer, green purchasing initiatives.
- Dmitriy Nikolayev, Environmentally Preferable Product Procurement Program of Massachusetts Operational Services Division, the central purchasing organization for the state.
- Patty Dillon, NERC Program Manager and co-developer of the EPA-funded Electronics Environmental Benefits Calculator.

A PowerPoint presentation that combined all speaker remarks was available for viewing (and downloading) by participants on the NERC web site.

The presentations generated numerous questions. Indeed, the teleconference ended with participants still waiting in the queue to ask questions. A summary of the Questions and Answers from the teleconference are found in Appendix 7.

Participant Overview

- At least 132 participants, plus 5 speakers, attended the teleconference, using 118 conference lines.[7]
- 199 people pre-registered for the teleconference. There was a "no-show rate" of approximately 34 percent, assuming all participants pre-registered, even those

[7] On the evaluation form, participants were asked "how many people were on the conference line?" Since only 32% of participants returned the evaluation form, it is likely that the estimated number of participants is lower than the actual.

sharing conference lines. Several participants indicated that they missed the call due to with the time zone.

- The teleconference was open to participants from across the country, thanks to the generosity of EPA Region 10 who provided the teleconference service. Table 1 below provides a breakdown of participants by EPA region.

Table 1: Summary of Participants

	Federal	State	County/ City/ Schools	Businesses	Hospitals	Colleges & Universities	Other	Total	% of Total
Connecticut	1	1	1					3	
Maine		4				2		6	
Massachusetts	3	4	1	5	1	3	0	17	
New Hampshire		1		3				4	
Rhode Island						4	1	5	
Vermont		1	1			1	1	4	
Subtotal EPA Region 1	4	11	3	8	1	10	2	**39**	**29.5%**
Delaware								0	
Pennsylvania	1	1		1	1		1	5	
Washington DC	5							5	
Other EPA Region 3 (MD, VA, WV)	4	2				2	1	9	
Subtotal EPA Region 3	10	3	0	1	1	2	2	**19**	**14.4%**
EPA Region 2 (NY, NJ, VI)	1	3		2		2	1	9	
EPA Region 4 (NC, SC, FL, KY)	1	2	6			1		10	
EPA Region 5 (MI, WI, MN, OH, IN, IL)	2	1		2		5		10	
EPA Region 6 (AR, LA, OK, TX, NM)	4	4		4		2	2	16	
EPA Region 7 (IA, KS, MO NE)	1	1						2	
EPA Region 8 (CO, MT ND, SD, UT)	6					2		8	
EPA Region 9 (CA, AZ NV, HI)	2	1	1	2		1	3	10	
EPA Region 10 (OR, WA, AL, ID)	6	1		1			1	9	
Subtotal Other Regions	23	13	7	11	0	13	7	74	**56.1%**
TOTAL	37	27	10	20	2	25	11	132	
% of Total	**28.0%**	**20.5%**	**7.6%**	**15.2%**	**1.5%**	**18.9%**	**8.3%**		

Teleconference Evaluations
Following the teleconference, NERC sent an evaluation form to all registered participants. Forty-three evaluation forms (33 percent) were returned. The teleconference and speakers received high ratings. The average ratings for the teleconference and participants are summarized in Table 2.

Table 2: Summary of Evaluations (total received: 43)

Question	Average Rating Scale = 1 (low) and 5 (high)
Overall, how would you rate the value of the teleconference to your organization?	4.6
Was the teleconference format an effective way to deliver information to your organization?	4.7
How would you rate the individual speakers and the value of the information they provided? • Scot Case • Mark Schaffer • Dmitriy Nikolayev • Patty Dillon	 • 4.8 • 4.4 • 4.7 • 4.5
Do you think your organization will consider purchasing EPEAT™-registered products?	72% Yes 28% Maybe 0% No

Lessons Learned
- In retrospect would have been ideal for Patty to be able to communicate with Lynn to let her know how many people were in the queue so Lynn knew if she needed to be asking questions – used the excuse of "while the operator is queuing up questions".
- Patty was on two lines at once – the regular speaker's line and another sideline with an operator who was keeping her informed on participants on the call as well as queuing for questions. This gave Patty the opportunity to re-order the queue, which she did to ensure a balance of constituencies having an opportunity to ask questions.
- Send emails in plain text rather than html (rich text).
- Do not have text boxes in email messages
- Have the operator ask how many people are on a line/in the room as part of the data set collected
- Request that the operator introduce participants (for Q&A) with name *and organization* (note: following first Q&A, Patty requested this change)
- Should have numbered PowerPoint slides
- Figure out someway to make it clear to west coast people what time the call is – maybe a different text for them? Saying "eastern" did not solve it for several people.

Summary of Teleconference Evaluations - *Calculating the Benefits of Purchasing, Reusing, & Recycling Computers* - September 6, 2007

With funding from EPA New England

39 Responses Received (32 % of respondents)

1. On a scale of 1 to 5, how would you rate the value of the teleconference to your organization? (1= low value, 5 = high value)

Average rating: 3.9
74% of respondents gave a rating of 4 or above.

2. Did you learn what you had hoped from the Teleconference?

	No. of Responses	% of Respondents
Yes	32	82%
No	1	
In part	6	

3. What are you interested in using the Electronics Environmental Benefits Calculator for: (check all that apply)

	No. of Responses	% of Respondents
EPEAT© purchases	25	64%
Product reuse	15	38%
Product recycling	26	67%
Power management	15	38%
Not interested/Not yet	6	15%

4. Are you already purchasing EPEAT™ products?

	No. of Responses	% of Respondents
Yes	17	44%
No	12	31%
Don't Know	7	18%
No Answer	3	7%

Summary November 2, 2006 Teleconference -"Procuring Green Electronics"

HOSTED BY THE NORTHEAST RECYCLING COUNCIL INC.
SPONSORED BY EPA REGIONS 1, 3, AND 10

TELECONFERENCE OVERVIEW

On November 2, 2006, NERC hosted its 2nd teleconference to promote the Electronic Product Environmental Assessment Tool (EPEAT™). This teleconference covered similar information to the first teleconference, updated to include snapshots of the EPEAT™ product registry and currently available products.

The teleconference agenda included presentations, followed by questions and answers. Lynn Rubinstein, NERC's Executive Director, moderated the call, which ran 1 hour and 40 minutes. Teleconference speakers included:

- Scot Case, EPEAT™ Program Customer Services Manager for the Green Electronics Council. Mr. Case provided an overview of EPEAT™, including the environmental performance standards, the EPEAT™ product registry, organizations currently using EPEAT™, and sample purchasing specifications.
- Kumi Takasumi, Product Marketing Manager, Dell Inc. Ms. Takasumi gave participants a manufacturer's perspective on the value of EPEAT™ and the development process as well as cost expectations and availability of EPEAT™-registered products.
- Dmitriy Nikolayev, Environmentally Preferable Product Procurement Program of Massachusetts Operational Services Division. Mr. Nikolayev shared strategies for incorporating EPEAT™ into purchasing and the value to purchasers of this easy to use purchasing tool.
- Patty Dillon, NERC Program Manager. Ms. Dillon provided an overview of the EPA-funded Electronics Environmental Benefits Calculator, which will allow purchasers to calculate the benefits of purchasing EPEAT™-registered products

A PowerPoint presentation that combined all speaker remarks was available for viewing (and downloading) by participants on the NERC web site.

PARTICIPANT OVERVIEW

One hundred fourteen (114) people, plus five speakers, participated in the teleconference. The teleconference was open to participants from across the country. Table 1 provides a breakdown of participants by EPA region. This teleconference also drew eight participants from Canada, including representatives of four provincial governments.

One hundred fifty four (154) people pre-registered for the teleconference (not including speakers and cancellations). There was a "no-show rate" of approximately 26 percent, assuming all participants pre-registered, even those sharing conference lines.

Table 1: Summary of Participants

	Federal	State	County/City /Schools	Business	Hospitals	Colleges & Universities	Other	Total	% of Total
Connecticut					1	1		2	
Maine		1		1		1		3	
Massachusetts				3	1	2		6	
New Hampshire				1		2		3	
Rhode Island		1						1	
Vermont		1		2				3	
Subtotal EPA Region 1	0	3	0	7	2	6	0	**18**	**15.8%**
Delaware	2	1				2		5	
Pennsylvania			3					3	
Washington DC	3			1				4	
Other EPA Region 3 (MD, VA, WV)	4	1		1	2	2		10	
Subtotal EPA Region 3	9	2	3	2	2	4	0	**22**	**19.3%**
EPA Region 2 (NY, NJ, VI)	3	3		3				9	
Region 4 (NC, SC, GA, FL, KY, TN)	3		4	1			1	9	
Region 5 (MI, WI, MN, OH, IN, IL)	4	1		1			2	8	
Region 6 (AR, LA, OK, TX, NM)				3				3	
Region 7 (IA, KS, MO NE)	1	1		4		1		7	
Region 8 (CO, MT ND, SD, UT)				2	1			3	
Region 9 (CA, AZ NV, HI)	3			2			2	7	
Region 10 (OR, WA, AL, ID)	9			5		4	1	19	
Subtotal Other EPA Regions	23	5	4	21	1	5	6	65	**57.0%**
International (Canada)		6	1	1			1	9	**7.9%**
TOTAL	32	16	8	31	5	15	7	114	
% of Total	**28.1%**	**14.0%**	**7.0%**	**27.2%**	**4.4%**	**13.2%**	**6.1%**		**100.0%**

TELECONFERENCE EVALUATIONS

Following the teleconference, NERC sent an evaluation form to all registered participants. Forty-four (44) evaluation forms (39 percent) were returned. The teleconference received an overall above average rating (4.0/5.0). Over 70 percent of participants returning the evaluation form said they plan to purchase EPEAT™-

registered products, which was consistent with NERC's first teleconference. The evaluations are summarized in Table 2 below.

Table 2: Summary of Evaluations (total received: 44)

Question	Average Rating Scale = 1 (low) and 5 (high)
Overall, how would you rate the value of the teleconference to your organization?	4.0
Was the teleconference format an effective way to deliver information to your organization?	4.2
Do you think your organization will consider purchasing EPEAT™-registered products?	71.4% Yes 28.6% Maybe 0% No
What other information or assistance would you like to better evaluate the procurement of EPEAT™-registered products?	Environmental Benefits Calculator & Timeline for Adding More Product Categories

OBSERVATIONS AND LESSONS LEARNED

Participants on this teleconference call appeared more familiar with EPEAT™ than on the June teleconference, based on the types of questions asked. In addition, several participants noted on the teleconference or in the evaluations that they were already purchasing or in the process of adding EPEAT™ specifications to procurement language.

As for call logistics, NERC implemented many of the "lessons learned" from the first conference call, which proved useful, including:

- Send emails in plain text rather than html (rich text).
- Do not have text boxes in email messages
- Have the operator ask how many people are on a line/in the room as part of the data set collected
- Request that the operator introduce participants (for Q&A) with name **and organization** (note: following first Q&A, Patty requested this change)
- Have numbered PowerPoint slides
- Make it clear to west coast people what time the call is – maybe a different text for them? Saying "eastern" didn't solve it for several people.

A few improvements to call logistics are still possible, according to participants.

- Two participants noted that entering the call took longer than expected, and suggested that participants be asked to call in earlier.
- There seemed to be fewer questions asked at the end of this conference call. If NERC convenes additional calls in the future make sure that the operator repeats the instructions for asking a question. One participant noted that he joined the call late, and was frustrated by his inability to ask a question.

Appendix 3: EPEAT™ Listserv Announcements[8]

July 25, 2006

The EPEAT Product Registry is now available!!!!

Over 60 desktop computers, notebooks and monitors offered by three manufacturers, including HP and Dell, meet the new EPEAT "green" performance standard for computer products. Compared to traditional computer equipment, all EPEAT-registered computers have reduced levels of cadmium, lead and mercury, are more energy efficient, and are easier to upgrade and recycle.

Please visit www.epeat.net for a complete list of EPEAT-registered products, and the searchable database.

January 3, 2007

The EPEAT© Product Registry rang in the New Year with over 300 registered products!

Eleven manufacturers now offer products that meet the environmental performance requirements of EPEAT, including Apple, Dell, Gateway, HP, Lenovo, NEC Display Solutions, Panasonic, Sony and Toshiba. Compared to traditional computer equipment, all EPEAT©-registered computers meet current ENERGY STAR(r) requirements, have reduced levels of cadmium, lead and mercury, and are easier to upgrade and recycle.

For a complete list of EPEAT-registered products, visit www.epeat.net. Try using the searchable product database to identify products offered by your preferred vendor or to see if you're already purchasing EPEAT©-registered products!

For a brief, downloadable summary of EPEAT© and its benefits, visit http://www.nerc.org/adobe/EPEATAPurchasingTool.pdf. If you're located in the Northeastern U.S. and would like assistance or more information on purchasing EPEAT©-registered products, please contact NERC at the address below.

February 21, 2007

President Bush Orders Federal Agencies to Buy EPEAT©-Registered Products

On January 24, President Bush signed Executive Order 13423 that mandates federal agencies to buy EPEAT© registered products. The full text of the Executive Order, which includes multiple environmental and energy mandates, is available on the White House website (http://www.whitehouse.gov/news/releases/2007/01/20070124-2.html). See Section 2h for the EPEAT© requirement.

Join the Federal government today and specify EPEAT©-registered products! There are many products to choose from. Fourteen manufacturers, including the seven largest by

[8] Teleconference announcements not included.

U.S. market share, have registered over 350 products to EPEAT©. Dell, Hewlett Packard, Lenovo, NEC, and Sony have registered over 40 products each. EPEAT©-registered products are also available from Apple, Gateway, Panasonic, Philips, and Toshiba.

EPEAT© was developed over a 3-year period with funding from the U.S. Environmental Protection Agency. It consists of a set of environmental performance criteria, and a free, searchable product registry (www.epeat.net) that allows purchasers to rapidly identify products that meet the EPEAT© standard. A verification process, administered by the Green Electronics Council, provides assurances that EPEAT©-registered products meet the "green" rating requirements.

For more information, visit www.epeat.net. The Northeast Recycling Council, Inc. is also available to provide technical assistance and presentations on EPEAT© to businesses, government agencies, and other organizations in the Northeast to assist with the purchase of EPEAT©-registered products through its grants from U.S. EPA New England and Region 3. For more information, contact Patty Dillon at patty@nerc.org.

June 22, 2007

EPEAT© Update - First Gold Products Registered to EPEAT©

The first EPEAT© Gold-registered products hit the marketplace in June 2007, just under a year since EPEAT© was launched. Four products offered by Dell and HP, including three desktop PCs and one notebook, have achieved this rating, awarded to the most environmentally preferable computer products.

These new EPEAT© Gold products all meet the new ENERGY STAR 4.0 product specification in advance of the effective date for the new energy use performance standard. They also offer purchasers choices in environmental performance.

For institutions concerned about packaging wastes, the three Gold-rated Dell products, the Latitude 630 notebook computer and the OptiPlex 740 and 745 Energy Smart desktop PCs, offer a free take-back program for packaging. In addition, Dell offers reusable packaging on sales of 400 units or more.

The Gold-rated HP rp5700 business desktop PC is one of a handful of EPEAT©-registered products (at any level) with post consumer recycled content. The HP desktop goes beyond the 10 percent post consumer recycled content criteria with its declaration of 15 percent post consumer recycled content.

For purchasers interested in alternative energy, the HP rp5700 also offers an accessory for powering the product using renewable energy.

For more information on these EPEAT© Gold products, as well as the more than 500 EPEAT©-registered Bronze and Silver products, visit the free, searchable EPEAT©

product registry at www.epeat.net. EPEAT-registered products are now offered by 19 manufacturers.

The Northeast Recycling Council, Inc. (NERC) is available to provide technical assistance and presentations on EPEAT© to businesses, government agencies, and other organizations in the Northeast to assist with the purchase of EPEAT©-registered products through its grants from U.S. EPA New England and Region 3. For more information, contact Patty Dillon.

Background on EPEAT©

EPEAT© evaluates desktop, monitors, and notebook computers based on 51 environmental criteria. All EPEAT©-registered products must meet 23 required criteria. An additional 28 optional criteria are used to determine whether a product achieves Bronze, Silver, or Gold status. To achieve an EPEAT© Gold rating, products must meet at least 75 percent of the optional criteria.

EPEAT©-registered computer products provide business class performance at no additional cost. Compared to conventional computer products, all EPEAT©-registered products have reduced levels of lead, mercury, and cadmium to better protect human health and the environment. They are more energy efficient, resulting in energy and cost savings, as well as greenhouse gas reductions. EPEAT© products are also easier to upgrade and recycle. A verification process, administered by the Green Electronics Council, provides assurances that EPEAT©-registered products meet the "green" rating requirements.

July 19, 2007

Green Computers Measure Up

Green Electronics Council Measures Environmental Benefits of EPEAT Registered "Green" Computers

PORTLAND, Ore., July 17, 2007 – The Green Electronics Council (GEC) today released a report measuring the environmental benefits from the sales of EPEAT registered "green" computers.

"Everyone wanted to know if buying 'green' computers really mattered," explained Jeff Omelchuck, Director of the Green Electronics Council, which manages the EPEAT green computer program. "Well, we did the math and the numbers blew us away. We didn't believe the initial results so we did the math again using more conservative assumptions, but the environmental benefits of just six months of EPEAT registered computer sales are still astounding."

According to the Environmental Benefits Calculator, developed by the University of Tennessee under a Cooperative Agreement with the U.S. Environmental Protection Agency, the first six months of sales for EPEAT registered green computers when compared with traditional computers produces the following environmental benefits:

- Saves 13.7 billion kWh of electricity, enough to power 1.2 million U.S. homes for a year;
- Saves 24.4 million metric tons of materials, equivalent to the weight of 189 million refrigerators;
- Prevents 56.5 million metric tons of air pollution, including 1.07 million metric tons of global warming gases (the equivalent of removing 852,000 cars from the road for a year);
- Prevents 118,000 metric tons of water pollution;
- Reduces toxic material use by 1,070 metric tons, equivalent to the weight of 534,000 bricks, including enough mercury to fill 157,000 household fever thermometers; and
- Avoids the disposal of 41,100 metric tons of hazardous waste, equivalent to the weight of 20.5 million bricks.

"And those numbers are based on products sold during the last half of 2006," explained Omelchuck. "There are now more than 575 EPEAT registered green products from 21 different manufacturers. We predict the benefits next year will be even bigger."

A copy of the environmental benefits report and links to the Electronics Environmental Benefits Calculator are available on the EPEAT website at www.epeat.net/benefits.aspx.

About EPEAT Registered Products
The EPEAT program, partially funded by the U.S. Environmental Protection Agency, evaluates computer desktops, laptops, and monitors based on 51 environmental criteria. All EPEAT registered products must meet 23 mandatory environmental criteria. An additional 28 optional criteria are used to determine whether products earn EPEAT Bronze, Silver, or Gold recognition.

EPEAT registered products are high-performance business class computers that cost no more than conventional products. Compared to traditional computer equipment, however, all EPEAT-registered computers have reduced levels of cadmium, lead, and mercury to better protect human health and the environment. They are more energy efficient, which reduces emissions of global warming greenhouse gases, and they are also easier to upgrade and recycle.

For full details on the EPEAT criteria met by the more than 575 products from 21 manufacturers, visit the EPEAT website at www.epeat.net.

Contact: Scot Case, Green Electronics Council, 610-781-1684
scot.case@greenelectronicscouncil.org

September 10, 2007

Calculating the Benefits of Purchasing, Reusing, & Recycling Computers Teleconference - Digital Recording of Presentation Now Available

Did you know that for every 1,000 EPEAT©-registered computers purchased & discarded units recycled[1]:

- Energy use is decreased by 1.2 million kWh = electricity to power 101 households annually
- Greenhouse gas emissions are reduced by 90 MTCE = removing 71 passenger cars from the road per year
- Municipal solid waste is decreased by 17 metric tons = waste generated by 18 households annually
- Hazardous waste generation is decreased by 8.5 metric tons, and
- Toxic material generation, including lead and mercury, are decreased by 340 pounds.

Learn how to generate calculations like this on your own.

The Teleconference that was presented by the Northeast Recycling Council on September 6, 2007 is now available by digital recording at any time.

Just call 973-341-3080, conference code 9192865, and at the same time visit the companion PowerPoint.

This project is made possible with funding from the U.S. Environmental Protection Agency.

[1]Based on the purchase of 1,000 EPEAT© Silver registered CPUs with LCD monitors, and the recycling of 1,000 CPUs with CRT monitors; estimates were calculated using the U.S. EPA-funded Electronics Environmental Benefits Calculator (version 1.1, dated 4-18-07).

December 17, 2007

EPEAT Cited in Top 50 Ways to Green Your Business

Fast Company.Com, an on-line magazine, cited the Electronic Product Environmental Assessment Tool (EPEAT) on its list of top 50 Ways to Green Your Business, referring to EPEAT as the computer-industry equivalent of LEED certification for green buildings. EPEAT evaluates desktop, monitors, and notebook computers based on 51 environmental criteria. All EPEAT-registered products must meet 23 required criteria, including ENERGY STAR. An additional 28 optional criteria are used to determine whether a product achieves Bronze, Silver, or Gold status.

As of December 15, over 700 desktops, LCD monitors, and notebook computers were EPEAT-registered. Twenty-three manufacturers participate in EPEAT, including Apple, Dell, Gateway, HP, Lenovo, Panasonic, Philips, Sony, and Toshiba. Products registered to EPEAT are easy to identify using a free searchable database available at www.epeat.net.

EPEAT-registered computer products provide business class performance at no additional cost. Compared to conventional computer products, all EPEAT-registered products have reduced levels of lead, mercury, and cadmium. They are more energy efficient, resulting in energy, greenhouse gas, and cost savings. EPEAT products are also easier to recycle. A verification process, administered by the Green Electronics Council, provides assurances that EPEAT-registered products meet the "green" rating requirements. Join leading businesses and the Federal government in making EPEAT-registered products the computer products of choice! For more information, visit www.epeat.net.

The Northeast Recycling Council is available to answer questions, provide technical assistance, and even come to you and make presentations about EPEAT - as long as you're in the Northeast states - to assist with the purchase of EPEAT-registered products. There is no cost for this support, due to grants from U.S. EPA New England and Region 3.For more information, contact Lynn Rubinstein at lynn@nerc.org or Patty Dillon at patty@nerc.org.

Appendix 4: Model Procurement Language

All other purchasers are encouraged to use the following contract language to ensure the products they buy meet the EPEAT standard:

All desktops, laptops, and computer monitors provided under this contract are required to have achieved Bronze registration or higher under the Electronic Products Environmental Assessment Tool (EPEAT). EPEAT is a procurement tool designed to help large volume purchasers evaluate, compare, and select desktop computers, laptops, and monitors based upon their environmental attributes as specified in the consensus-based IEEE Standard for the Environmental Assessment of Personal Computer Products (1680).

Additional consideration will be provided for products that have achieved EPEAT Silver or EPEAT Gold registration. The registration criteria and a list of all registered equipment are provided at http://www.epeat.net .

In addition to requiring EPEAT registration, purchasers are also encouraged to track their EPEAT purchases. The information requested in the contract language below can then be used to calculate the environmental benefits of an organization's EPEAT purchases using a calculator being developed under an EPA grant.

Suppliers are required to provide quarterly reports quantifying the number of EPEAT registered products purchased under this contract. The information must be reported in a matrix providing the following data for the current quarter, the fiscal year, and the duration of the contract.

	Unregistered		EPEAT Bronze		EPEAT Silver		EPEAT Gold		Total	
	No. of products	$ Spent	No. of products	$ Spent	No. of products	$ Spent	No. of products	$ Spent	No. of products	$ Spent
Desktop Computer Units										
Laptops /notebooks										
Monitors (LCD)										
Monitors (CRT)										
Total										

"Computer monitor" means a video display unit used with a computer.

"Desktop computer" means a computer designed for use on a desk or table.

"Notebook computer" means a portable-style or laptop-style computer system.

"Personal computer product" means a notebook computer, a desktop computer, or a computer monitor, and any peripheral equipment that is integral to the operation of such

items. For example, the desktop computer together with the keyboard, the mouse, and the power cord would be a personal computer product. Printers, copiers, and fax machines are not included in peripheral equipment, as used in this definition.

Appendix 5: Survey and Responses, January 2007

Organization	State	# of Employees	Reference EPEAT™ in Procurement			Value of Contract	FY2006 EPEAT™ Registered Products Purchased			Notes
			Yes	No	Planning		CPUs	LCDs	Laptops	
Region 1										
State		14,000			x	$6,000,000	unknown	unknown	unknown	
Town	CT	300		x		-	-	-	-	
Town	ME				x	no contract	0	0	0	
College	New England	7	x			$90,000,000	hundreds	hundreds	hundreds	
College	MA	200		x		$125,000	0	0	0	
College	MA	611		x		unknown	n/a	n/a	n/a	
College	NH	304			x	$150,000	0	0	0	
High School	NH	125	1			$380,000	18	-	-	plus 200 students
Company	VT, NH, NY	130		x			0	0	0	
Subtotal		1,377	2	4	3	$96,655,000				
Other Regions										
State		450			x	$1,500,000	150	150	30	
State		6,900			x	$20,570,000	1781	1309	323	
State		3,000			x	unknown	unknown	unknown	unknown	
College	OH			x		$0	0	0	0	
Subtotal		10,350		1	3	$22,070,000				
International										
Province	Canada	800		x		unknown	unknown	unknown	unknown	
Subtotal		800		1						
TOTAL		12,527				$118,725,000				

Appendix 6: Fact Sheet: EPEAT™: A Purchasing Tool

Did you know that finding a green computer is just a click away? The EPEAT™ product registry (www.epeat.net) contains more than 500 computer desktops, monitors and notebook computer models that meet minimum environmental performance criteria for toxicity, energy use, recycled content, design for recycling, and more. EPEAT™-registered products also meet the latest ENERGY STAR® 4.0 performance requirements for energy efficiency. The EPEAT™ product registry is simple to use, and currently includes product offerings from more than 25 major manufacturers - such as Apple, Dell, HP, Lenovo, NEC, Panasonic, Samsung, Sony, and Toshiba.

The U.S. EPA sponsored the development of EPEAT™, also known as the Electronic Product Environmental Assessment Tool. As of January 2007, EPEAT™ is a requirement for federal computer and monitor purchases as the result of an Executive Order issued by President Bush.

Purchasing EPEAT™-Registered Computer Products

EPEAT™ simplifies the process of purchasing environmentally preferable computer products by:

- Defining **specific environmental attributes** for computer systems. For purchasers, this eliminates the complex and time-consuming process of deciding what constitutes a "green" computer and how to evaluate bid responses.

- Providing a **searchable database of EPEAT™-registered products** that purchasers can use to survey the market to determine product availability.

- Establishing an **evaluation and verification system** to assure purchasers that the product meets the EPEAT™ standard. Purchasers only need to verify that a product is in the EPEAT™ database of registered products, and leave the evaluation and verification process to the EPEAT™ organization, the Green Electronics Council.

- Offering a **three-tier rating system** that allows organizations to select equipment that meets minimum performance criteria or to give preference to models with additional environmental attributes by specifying a higher EPEAT™ qualification level.

How EPEAT™ Works

The EPEAT™ system evaluates computer products according to three tiers of environmental performance – Bronze, Silver, and Gold. The complete set of criteria includes 23 required and 28 optional criteria in eight (8) performance categories:

- Reduction of Toxic Materials
- Materials Selection
- Design for End of Life
- Life Cycle Extension
- Energy Conservation
- End of Life Management
- Corporate Performance
- Packaging

To qualify for EPEAT™ registration, a product must conform to all the required criteria. A manufacturer can choose among the optional criteria to boost its EPEAT™ total "score" to achieve a higher-ranking level as follows.

Product meets
All required criteria.

Product meets all required
Criteria plus at least
50% of the optional criteria.

Product meets all required
Criteria plus at least
75% of the optional criteria.

A complete list of EPEAT™ performance criteria is available on the EPEAT™ web site (www.epeat.net). EPEAT™ was accepted as an American National Standard in April 2006 as IEEE 1680, Standard for Environmental Assessment of Personal Computer Products, including Notebook Personal Computers, Desktop Personal Computers, and Personal Computer Monitors. EPEAT™ is now the required method of product environmental assessment for computers products for federal agencies.

The EPEAT™ product database allows purchasers to search for EPEAT™-registered products by manufacturer, model, and EPEAT™ qualification level (that is, Bronze, Silver, or Gold.)

Quantifying the Environmental Benefits of EPEAT™ Purchases

A free calculator tool is available to assist purchasers in estimating the environmental benefits of purchasing EPEAT™-registered products. For example, purchasing 1,000 EPEAT™-Silver registered computer desktop systems (CPU + LCD) saves:

- 821,000 kWh of energy, enough to power 72 households for a year;
- 64 MTCE of greenhouse gas emissions, equivalent to removing 51 cars from the road per year; and
- 164 pounds of toxic materials, including lead and mercury.

Model Procurement Specification

Sample language for use in procurement specifications is available on www.epeat.net to facilitate the adoption of EPEAT™ as the preferred standard for purchasing computer products.

Through a grant from EPA Region 3, the Northeast Recycling Council, Inc. (NERC) can help businesses, institutions, and government agencies to purchase green computers and monitors by providing technical assistance and outreach to support the use of EPEAT™.

For more information about using EPEAT™ contact Patty Dillon, NERC.

Appendix 7: Questions and Answers

Questions & Answers
Procuring Green Computers Teleconference
June 20, 2006
Northeast Recycling Council, Inc. ©

During the teleconference held on June 20, 2006 to introduce the Electronic Product Environmental Assessment Tool (EPEAT©), there were many important questions and answers shared by the participants. Following is a summary of that discussion. NERC also received some follow up questions from participants that are included below.

PRICING

Question: Will there be a cost differential for EPEAT© products?
Answer (Mark Schaffer, Dell): For bronze level products, the plan is for cost parity with existing products. Dell is still researching whether there would be price differentials for silver and gold level products; this would depend on the design changes or service offerings that would need to be incorporated into the product to achieve those higher levels.

PRODUCT LINES

Question: Will Dell offer EPEAT and non- EPEAT© versions of the same product?
Answer (Mark Schaffer, Dell): No. Products will either be EPEAT© eligible or not. We will not manufacture different versions of the same product line. For example, Dell will offer EPEAT© and non-EPEAT© products, but not within same product line. The Latitude line is geared towards business purchasers and this business line is working towards EPEAT© registration. The Inspiron line, which is more focused on the consumer side, has chosen not to register to EPEAT© at this time. There are different market drivers for different product lines.

Question: What if Dell is building custom systems for a University that is not one of its standard EPEAT© -registered product offerings, will EPEAT© -registration be available?
Answer (Mark Schaffer, Dell): I would expect so, or the sales representative would offer alternative systems that meet the operating requirements and are EPEAT© -registered.

RELATIONSHIP OF EPEAT© TO OTHER NATIONAL PROGRAMS: NEPSI, F.A.R.

Question: Can you provide a brief synopsis of how EPEAT© relates to NEPSI?
Answer (Scot Case, Green Electronics Council): NEPSI was an attempt to develop a national electronics recycling program. By contrast, EPEAT is an environmentally preferably *purchasing* program.

Question: Can you provide some more detail about the use of EPEAT© in the F.A.R.?
Answer (Scot Case, Green Electronics Council): The Federal Acquisition Regulation (F.A.R.) Subpart 23.703 requires federal agencies to buy environmentally preferable products and services based on EPA-issued guidance. EPEAT© certainly fits this criteria, since EPA sponsored its development.

MANUFACTURER INVOLVEMENT

Question: Does the list of participating manufacturers include the big names?
Answer (Mark Schaffer, Dell & Scot Case, Green Electronics Council):
Yes. In addition to Dell, Hewlett Packard (HP), Sharp, Panasonic, and Apple participated in the development of EPEAT© and are expected to be registering products.

Question: Dmitriy Nikolayev stated that EPEAT© requirements should not be a surprise to manufacturers. Do you think manufacturers have been undertaking efforts to communicate about EPEAT© with their vendors?
Answer (Mark Schaffer, Dell): Dell has been in communication with its direct suppliers for at least two years in anticipation of EPEAT©. Because HP, Apple, IBM, Sharp, and Panasonic were involved in EPEAT© from the beginning, they have also been aware. In addition, the trade association, Electronics Industry Alliance (EIA), participated in the development of EPEAT© and has kept its members informed about its evolution. Recently, EIA has undertaken a more specific outreach effort to ensure that manufacturers are aware of EPEAT© and positioned to use it to their advantage. So, the message is getting out there.

END-OF-LIFE MANAGEMENT

Question: Do you have to specify a take-back option when you purchase a product or can you request it after the fact?
Answer (Scot Case, Green Electronics Council): It should be built into the specification at the time of procurement. EPEAT© requires that manufacturers *offer* take-back, but it does not require that it be free nor does it define the details of the system. So, as part of the procurement you should detail what you want. Or, if you have a separate procurement process for end-of-life management of electronics, manufacturers of EPEAT©-registered products could submit separate responses.

Question: Is end-of-life management limited to a take-back requirement or are there additional requirements such as adherence to the Basel Convention that raise a product to silver or gold level?
Answer (Scot Case, Green Electronics Council): This was discussed in the development of EPEAT©**.** The EPEAT© take-back provision (4.6.1.1) requires that the service provided by the manufacturer meet US EPA's Plug-In to E-Cycling Guidelines for Materials Management. There is also an optional point (4.6.1.2.) available to manufacturers for conducting annual audits of recycling vendors to ensure that the

recycler complies with the Plug-In Guidelines and with all applicable regulations and laws. The audit provision applies to first, second and third tier recyclers.

SCOPE OF EPEAT©

Question: Will EPEAT© move beyond computers to other products?
Answer (Scot Case, Green Electronics Council): It is very likely. There will be a process similar to the one engaged in for developing the standards for desktop computers, laptop computers, and monitors for any additions to the program. Every product type has unique environmental attributes and so has to be considered separately. No timeline has yet been established for adding additional products.

Question: How would you suggest that purchasers incorporate social responsibility concerns into EPEAT© specifications?
Answer (Dmitriy Nikolayev, MA OSD): The Center for the New American Dream has developed supplemental procurement language that can be used in conjunction with EPEAT© to address these issues.
Answer (Scot Case, Green Electronics Council): This is an issue of concern to many people. EPEAT© has a built-in review process in which attributes and environmental criteria are re-examined and I would expect this issue to be one of the ones that will be addressed in that review. Keep in mind, however, that EPEAT© was funded and developed by EPA, so environmental attributes are the focus of EPEAT©

Question: We already require some environmental performance criteria (e.g., limiting or eliminating the use of PVC in computer cases) that are optional criteria under EPEAT©. How can an organization move optional criteria to mandatory requirements? Is it counterproductive for a cooperative purchasing organization to move optional criteria into the mandatory category?
Answer (Mark Schaffer, Dell): One of the reasons that manufacturers were involved in the development of EPEAT© was the belief that consistent and clear environmental standards will make environmental advancements in computer products more timely and cost effective. So, it is our advice and hope that purchasers use EPEAT© as it stands without modifying its requirements.
Answer (Scot Case, Green Electronics Council): One of the strengths of the EPEAT© database is that you can focus on specific criteria. For example, eliminating the use of PVC in large parts is one of the optional criteria. You can do a search that looks for silver level products that meet this criteria and determine how many products are available that meet your needs. You can then limit your procurement to these products. By using the EPEAT© database you will be able to assess the viability and competitiveness of the marketplace, and the ability of the marketplace to provide the environmental criteria that you have prioritized.

Question: Does EPEAT© address open architecture (i.e., modular upgrade/replacement) of equipment?

Answer (Mark Schaffer, Dell): Yes it does. EPEAT© criteria address for ease of disassembly, ability to extend product life through upgrades, and material consistency for example.

Question: Does EPEAT also address computer packaging?
Answer (Patty Dillon, NERC): Yes, EPEAT addresses packaging, including the following criteria. A list of all EPEAT criteria can be found at http://www.epeat.net/Criteria.aspx

4.8 Packaging
- 4.8.1 Toxics in packaging
  - R 4.8.1.1 Reduction/elimination of intentionally added toxics in packaging
- 4.8.2 Recyclable packaging materials
  - 4.8.2.1 Separable packing materials
  - 4.8.2.2 Packaging 90% recyclable and plastics labeled
- 4.8.3 Recycled content
  - 4.8.3.1 Declaration of recycled content
  - 4.8.3.2 Minimum post consumer content guidelines
- 4.8.4 Take-back option
  - 4.8.4.1 Provision of take-back program for packaging
- 4.8.5 Reuse option
  - 4.8.5.1 Documentation of reusable packaging

SAMPLE PROCUREMENT LANGUAGE

Question: Is there sample bid language on reporting so when we ask vendors for reports we get the specific data needed to plug into the calculator?
Answer: Recommended Reporting Requirement: Suppliers are required to provide quarterly reports quantifying the number of EPEAT registered products purchased under this contract. The information must be reported in a matrix providing the following data for the current quarter, the fiscal year, and the duration of the contract.

	Unregistered		**EPEAT Bronze**		**EPEAT Silver**		**EPEAT Gold**		**Total**	
	No. of products	$ Spent	No. of products	$ Spent	No. of products	$ Spent	No. of products	$ Spent	No. of products	$ Spent
Computer Processing Units (CPUs)										
Laptops /notebooks										
Monitors (LCD)										
Monitors (CRT)										
Total										