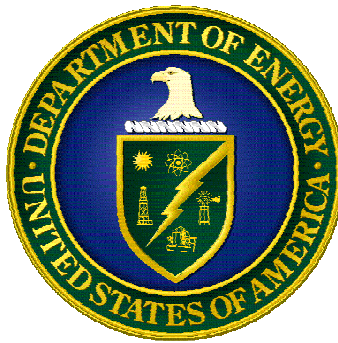


U.S. DEPARTMENT OF ENERGY

**Sustainable Acquisition, Recycling,
and Pollution Prevention Practices**

FISCAL YEAR 2008 REPORT



Pursuant to:

Resource Conservation and Recovery Act §6002,
Farm Security and Rural Investment Act §9002,
Energy Policy Acts, and
Executive Order 13423, *Strengthening Federal
Environmental, Energy, and Transportation Management*

February 2009

FORWARD

This report has been prepared in response to the October 20, 2008, letter from the Office of Federal Procurement Policy (OFPP) and the Office of the Federal Environmental Executive (OFEE) to designated Senior Agency Officials and Senior Procurement Officials. The letter transmitted a survey for reporting on agency purchases of recycled content products pursuant to Resource Conservation and Recovery Act, Section 6002; biobased content products pursuant to the Farm Security and Rural Investment Act, Section 9002; ENERGY STAR and WaterSense qualified products pursuant to Energy Policy Acts; and environmental preferable electronics pursuant to Executive Order 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*.

In response to the OFPP/OFEE letter, this report contains the following:

- An Executive Summary;
- Tables detailing the Department of Energy's Fiscal Year 2008 purchases of Environmental Protection Agency-designated recovered content products (i.e., products containing recycled materials), Department of Agriculture-designated biobased content products, and Electronic Product Environmental Assessment Tool (EPEAT)-registered products;
- Figures detailing the environmental benefits (i.e., reduction of greenhouse gases) associated with the Department's implementation of sustainable acquisition, recycling and other pollution prevention practices; and
- A completed survey on the Department's green purchasing, solid waste management and toxic chemical reduction policies, plans and sustainable practices for Fiscal Year 2008.

EXECUTIVE SUMMARY

This report summarizes the Department of Energy (DOE) Fiscal Year (FY) 2008 purchases of designated, qualified, or registered green (environmentally preferable, energy- and water-efficient) products, as well as Departmental activities related to electronics stewardship, environmental management systems, sustainable building design, solid waste diversion (recycling), toxic chemical reduction, and other sustainable acquisition and pollution prevention practices under Executive Order 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*. DOE's purchases from Federal sources, such as the General Services Administration, Government Printing Office, and the Defense Logistics Agency, are reported separately by those agencies

Table 1 summarizes DOE purchases of all Environmental Protection Agency (EPA)-designated products with recovered content (i.e., containing recycled materials) for FY2008. The purchase data are summarized in two ways:

- Purchases of EPA-designated items containing recycled materials are compared to total purchases of these items. This yields percentages that reflect the overall effect of DOE purchasing on the “recovered content” marketplace.
- A comparison of purchase data adjusted for allowable exceptions authorized by Federal Acquisition Regulation 23.405(c), where EPA-designated recovered content items could not be purchased due to cost, performance, or availability considerations. This yields percentages that reflect the overall performance of the Department's Sustainable Acquisition Program (also referred to as Green Purchasing).

In FY2008, 66% of all DOE purchases in EPA-designated product categories contained recycled material. When adjusted for virgin-content products purchased due to lack of product availability, cost, or product performance considerations, 90% of all DOE purchases of EPA-designated products qualified as green purchases (see Table 1). Figure 1 provides a breakdown of the EPA-designated purchasing categories.

The Department's purchasing power continues to play an important role in DOE's commitment to sustainable environmental stewardship. In FY2008, DOE purchases of products containing recycled material exceeded \$31.9 million, and avoided the release of more than 955 metric tons of greenhouse gases (carbon emissions) associated with the manufacture of virgin-content products (see Figure 2).

Figure 3 summarizes DOE's performance regarding the acquisition of United States Department of Agriculture (USDA)-designated biobased products. Both the variety of biobased products purchased and the number of DOE sites making these purchases increased in FY2008. Twenty-six (26) sites purchased 18 types of biobased products (excluding biobased-fuels), 5 of which the USDA-designated for purchase beginning FY2008, 7 of which are designated beginning FY2009, and 6 of which have yet to be officially designated.

Table 2 and Figure 4 provide information on purchases of environmentally preferable electronics, specifically, Electronic Product Environmental Assessment Tool (EPEAT)-registered desktop computers, laptops and monitors in FY2008. DOE electronics stewardship performance in FY2008 includes purchases of EPEAT-registered electronics, use of Energy Star power management features, and disposition of surplus and end-of-life electronics:

- 96% of DOE designated electronics purchases were EPEAT-registered;
- 92% of DOE sites employ power management practices; and
- 98% of surplus and end-of-life electronics were reused or recycled.

Lifecycle energy savings and greenhouse gas reductions (carbon emissions) associated with DOE purchases and use of EPEAT-registered electronics in FY2008 are calculated at greater than 421,000,000 kilowatt hours and 47,000 metric tons, respectively (see Figures 5 and 6).

In FY2008, the Department recycled 43% (101,588 metric tons) of the solid wastes (non-radioactive/non-hazardous) generated by its production, analytical, and research and development

activities across the country. Figures 7, 8 and 9 provide information on DOE solid waste diversion performance, including recycling rates and a breakdown of recycling categories. Recycling of post-consumer materials by DOE avoided the release of more than 59,000 metric tons of green house gases (carbon emissions) associated with the manufacture of new consumer products (see Table 3).

New in this year's report is information, requested by OFPP/OFEE, on green purchasing, toxic chemical reduction and other pollution prevention practices addressed in environmental management systems (EMS) at DOE sites.

- 73% of DOE sites reported having established EMS objectives and targets for green purchasing;
- 85% of DOE sites reported having established EMS objectives and targets for toxic chemical use and release reduction;
- 100% of DOE sites have active recycling programs; 73% reported having new or improved/expanded solid waste diversion and other pollution prevention practices established as EMS objectives and targets in FY2008.

DOE Order 450.1A, *Environmental Protection Program* (June 2008) establishes EMS as the management framework for implementing the sustainable practices and goals of E.O. 13423, including sustainable building design. The Order specifies a number of sustainable practices related to high performance sustainable building, including green purchasing, toxic chemical use reduction, and construction debris recycling.

Table 1: FY2008 DOE Purchases of EPA-Designated Products

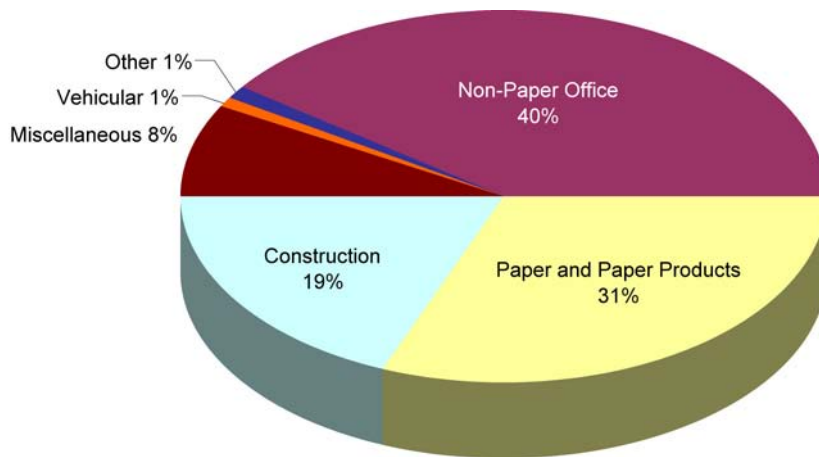
Product Category	Total Purchases	\$ with Recovered Content	% with Recovered Content	\$ Adjusted Total*	% Adjusted Performance**
Construction	\$7,137,078	\$5,943,802	83.2%	\$6,997,961	98%
Building Insulation Products	\$250,400	\$167,478	66.9%	\$184,159	73.5%
Carpet	\$490,530	\$471,207	96.1%	\$490,530	100.0%
Carpet Cushion	\$6,334	\$6,271	99.0%	\$6,334	100.0%
Cement and Concrete	\$5,362,248	\$4,827,420	90.0%	\$5,353,432	99.8%
Consolidated and Reprocessed Latex Paint	\$183,871	\$86,080	46.8%	\$183,843	99.9%
Floor Tiles	\$177,550	\$81,819	46.1%	\$129,707	73.1%
Flowable Fill	\$68,989	\$67,790	98.3%	\$68,989	100.0%
Laminated Paperboard	\$0	\$0	n/a	\$0	n/a
Modular Threshold Ramps	\$5,032	\$0	0.0%	\$5,032	100.0%
Nonpressure Pipe	\$190,518	\$155,518	81.6%	\$188,626	99.0%
Patio Blocks	\$5,873	\$5,873	100.0%	\$5,873	100.0%
Railroad Grade Crossing Surfaces	\$0	\$0	n/a	\$0	n/a
Roofing Materials	\$362,202	\$48,849	13.5%	\$351,944	97.2%
Shower and Restroom Dividers/Partitions	\$30,234	\$22,200	73.4%	\$26,195	86.6%
Structural Fiberboard	\$3,297	\$3,297	100.0%	\$3,297	100.0%
Landscaping	\$94,308	\$65,896	69.9%	\$86,200	91.4%
Compost	\$22,713	\$13,271	58.4%	\$20,157	88.7%
Garden and Soaker Hoses	\$4,385	\$2,727	62.2%	\$3,833	87.4%
Hydraulic Mulch	\$20,649	\$10,620	51.4%	\$20,649	100.0%
Landscaping Timbers	\$19,211	\$12,126	63.1%	\$14,211	74.0%
Lawn and Garden Edging	\$27,351	\$27,152	99.3%	\$27,351	100.0%
Non-Paper Office	\$22,027,566	\$12,882,766	58.5%	\$19,096,793	86.7%
Binders	\$555,984	\$313,372	56.4%	\$472,342	85.0%
Office Furniture	\$8,691,776	\$5,894,974	67.8%	\$7,224,530	83.1%
Office Recycling Containers	\$82,461	\$77,546	94.0%	\$80,116	97.2%
Office Waste Receptacles	\$54,994	\$36,617	66.6%	\$43,954	79.9%
Plastic Clip Portfolios	\$9,528	\$45,357	56.2%	\$5,936	62.3%
Plastic Clipboards	\$14,974	\$9,282	62.0%	\$13,321	89.0%
Plastic Desktop Accessories	\$202,443	\$112,672	55.7%	\$166,597	82.3%
Plastic Envelopes	\$21,579	\$17,540	81.3%	\$20,833	96.5%
Plastic File Folders	\$130,290	\$75,074	57.6%	\$122,971	94.4%
Plastic Presentation Folders	\$17,738	\$6,409	36.1%	\$16,054	90.5%
Plastic Trash Bags	1,960,342	\$1,781,046	90.9%	\$1,920,361	98.0%
Printer Ribbons	436,129	\$26,003	72.0%	\$32,402	89.7%
Solid Plastic Binders	\$65,026	\$61,644	94.8%	\$63,215	97.2%
Toner Cartridges	\$10,184,303	\$4,465,230	43.8%	\$8,914,164	87.5%

Product Category	Total Purchases	\$ with Recovered Content	% with Recovered Content	Adjusted Total*	Adjusted Performance**
Paper and Paper Products	\$12,742,046	\$9,825,416	77.1%	\$11,473,301	90.0%
Bristols	\$1,875,153	\$1,262,757	67.3%	\$1,364,483	72.8%
Coated Printing Papers	\$441,762	\$326,721	74.0%	\$413,116	93.5%
Commercial / Industrial Sanitary Tissue	\$2,743,149	\$2,146,765	78.3%	\$2,522,615	92.0%
Miscellaneous Paper Products (Tray Liners)	\$312,132	\$266,987	85.5%	\$305,947	98.0%
Newsprint	\$1,244,158	\$1,241,658	99.8%	\$1,244,158	100.0%
Paperboard and Packaging Products	\$524,085	\$394,647	75.3%	\$431,966	82.4%
Uncoated Printing and Writing Papers	\$5,601,605	\$4,185,881	74.7%	\$5,191,014	92.7%
Park and Recreation	\$88,994	\$56,354	63.3%	\$86,488	97.2%
Park Benches and Picnic Tables Containing Recovered Aluminum, Steel, Concrete, or Plastic	\$40,139	\$33,900	84.5%	\$39,224	97.7%
Plastic Fencing	\$48,855	\$22,454	46.0%	\$47,264	96.7%
Playground Equipment Containing Recovered Plastic, Steel, or Aluminum	\$0	\$0	n/a	\$0	n/a
Playground Surfaces	\$0	\$0	n/a	\$0	n/a
Running Track	\$0	\$0	n/a	\$0	n/a
Transportation	\$125,992	\$115,255	91.5%	\$123,908	98.3%
Channelizers	\$576	0	0.0%	\$307	53.3%
Delineators	\$7,897	\$7,897	100.0%	\$7,897	100.0%
Flexible Delineators	\$3,639	\$3,5351	97.1%	\$3,639	100.0%
Parking Stops	\$2,072	\$257	12.4%	\$257	12.4%
Traffic Barriers	\$88,375	\$88,179	99.8%	\$88,375	100.0%
Traffic Cones	\$23,434	\$15,387	65.7%	\$23,434	100.0%
Vehicular	\$2,840,214	\$419,888	14.8%	\$2,529,503	89.1%
Re-Refined Lubricating Oil	\$292,589	\$121,650	41.6%	\$246,007	84.1%
Rebuilt Vehicular Parts	\$1,340,482	\$209,025	15.6%	\$1,318,496	98.4%
Reclaimed Engine Coolants	\$41,003	\$21,865	53.3%	\$38,887	94.8%
Retread Tires	\$1,166,142	\$67,348	5.8%	\$926,115	79.4%
Miscellaneous	\$3,563,258	\$2,650,162	74.4%	\$3,134,948	88.0%
Awards and Plaques	\$95,671	\$64,867	67.8%	\$92,654	96.8%
Bike Racks	\$51,874	\$30,940	59.6%	\$38,726	74.7%
Blasting Grit	\$200	\$200	100.0%	\$200	100.0%
Industrial Drums	\$2,424,308	\$2,126,322	87.7%	\$2,412,720	99.5%
Manual-Grade Strapping	\$65,106	\$3,717	5.7%	\$7,476	11.5%
Mats	\$143,217	\$52,572	36.7%	\$94,000	65.6%
Pallets	\$93,047	\$12,562	13.5%	\$61,297	65.9%
Signages	\$417,921	\$155,061	37.1%	\$313,288	75.0%
Sorbents	\$271,916	\$203,921	75.0%	\$237,184	87.2%
TOTALS:	\$48,619,456	\$31,959,539	65.7%	\$43,529,102	89.5%

* Adjusted total equals recovered content purchases plus justified exemptions (i.e., product availability, cost, and performance).

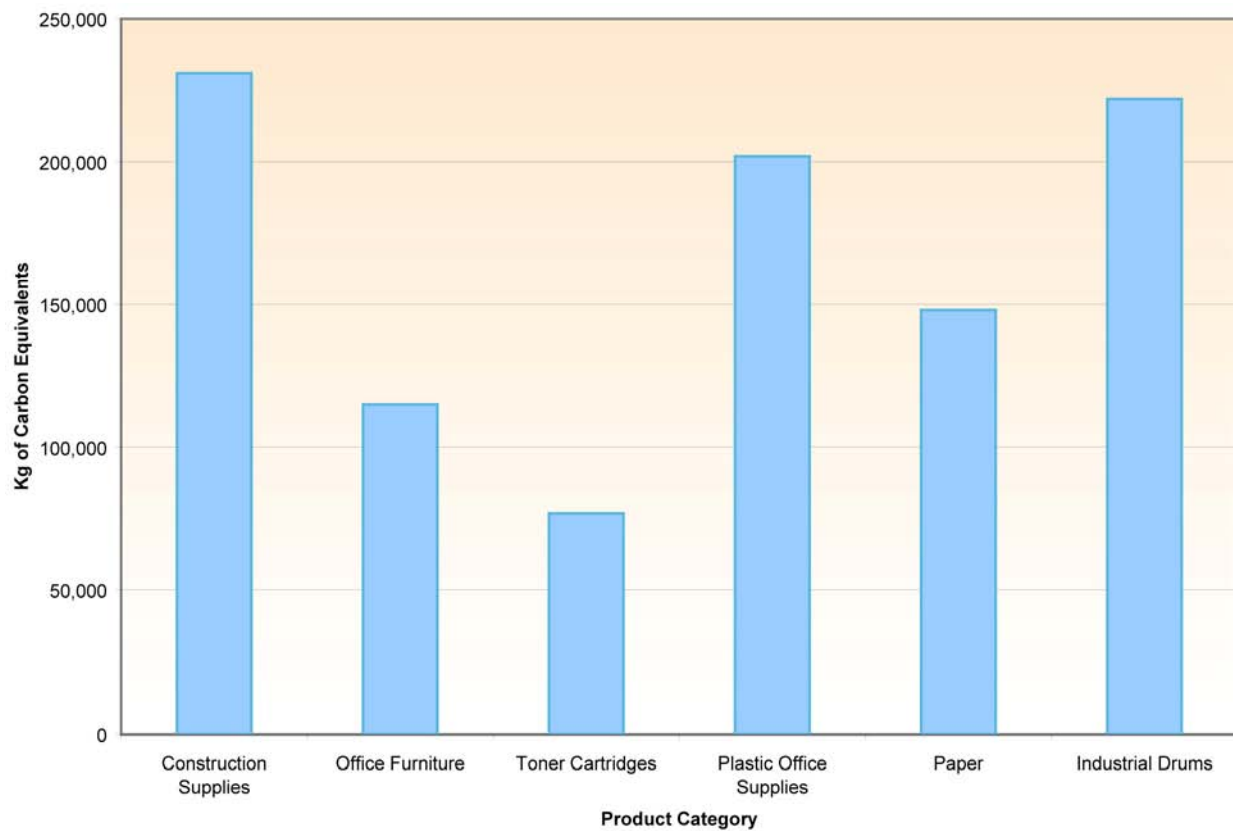
** Adjusted performance equals adjusted total divided by total purchases.

Figure 1: Category Breakdown of Recycled Content Purchasing



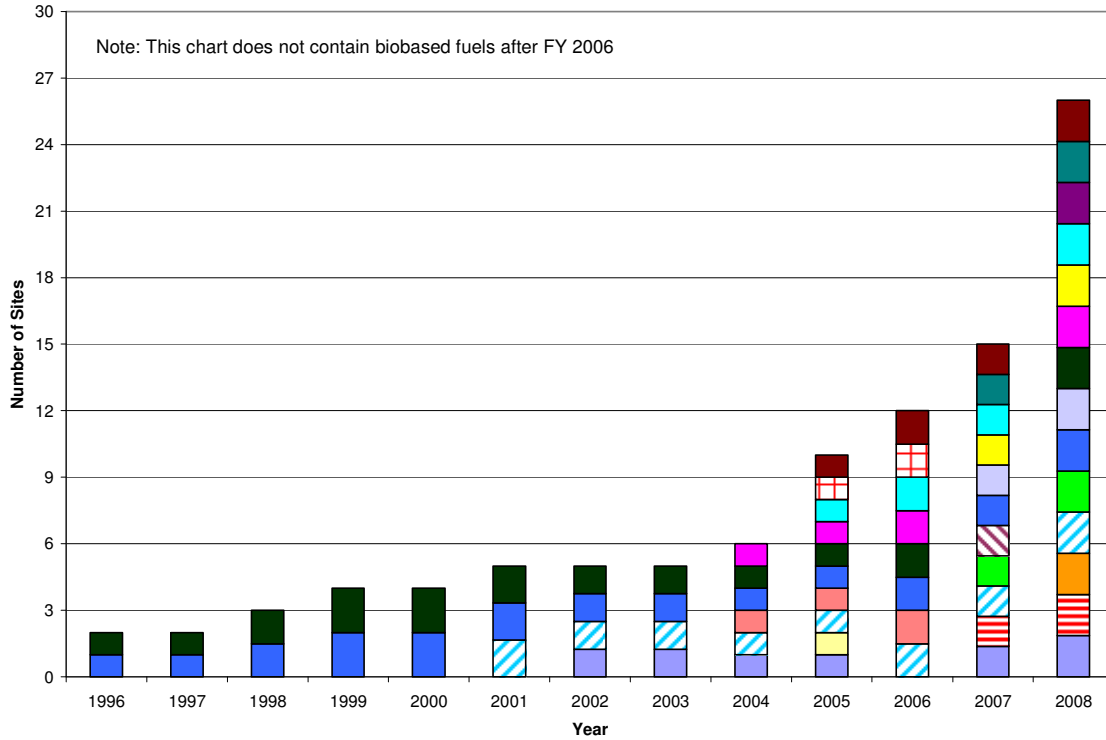
Note: "Other" category consists of Landscaping, Park and Recreation, and Transportation purchases

Figure 2: Greenhouse Gas Reductions for Selected Product Categories



Greenhouse gas reductions estimated using EPA's Recycled Content (ReCon) and Waste Reduction Model (WARM) Tools (<http://yosemite.epa.gov/OAR/globalwarming.nsf/content/ActionsWasteTools.html>) and the Environmental Defense Fund Paper Calculator (<http://www.papercalculator.org>).

Figure 3: U.S. Department of Energy Use of Biobased Products



- Legend**
- absorbent
 - adhesive
 - bedding
 - carpet
 - cleaner
 - construction material
 - fiber
 - floor care
 - hydraulic fluid
(includes mobile equip hydraulic fluids)
 - ink
 - insulation cellulose
 - insulation foam
 - landscape material
 - lubricant
(includes penetrating lubricants)
 - plastic
 - roofing
(includes sealers, coatings and materials)
 - solvent
(includes strippers)
 - biofuel
(includes fuels and additives)

FY 2008 Site Breakdown of Biobased Products

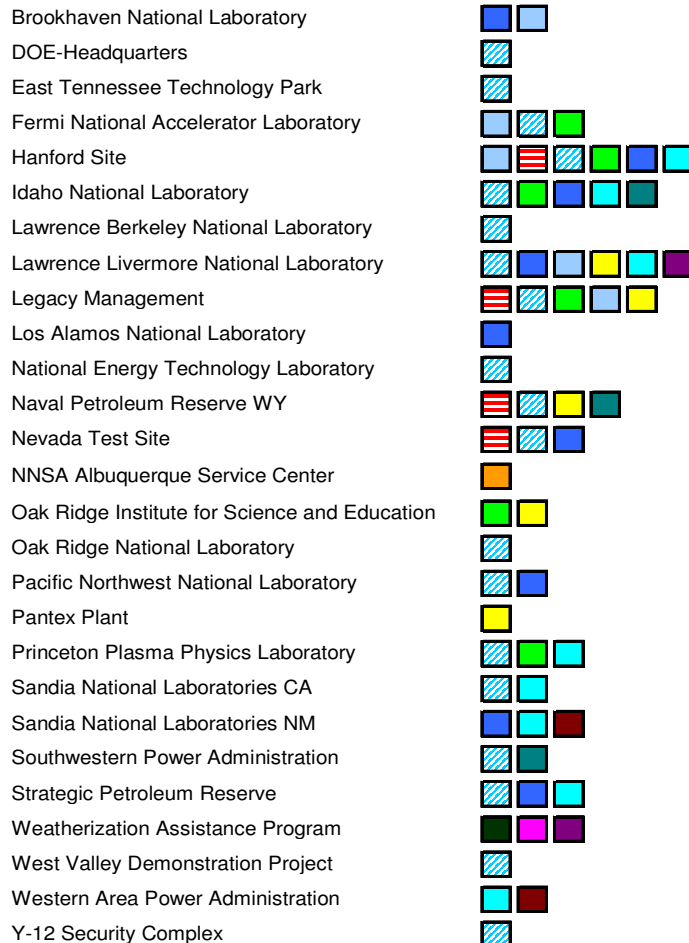


Table 2: FY2008 DOE Purchases of EPEAT Registered Products

EPEAT Level	Desktop	Monitor	Laptop	Totals
Bronze	852	27	183	1,062
Silver	5,010	14,229	4,119	23,358
Gold	19,285	2,600	3,674	25,559
Non-EPEAT	1,236	532	423	2,191
Total	26,383	17,388	8,399	52,170
% EPEAT	95%	97%	95%	96%

The Federal requirement is that 95% of purchases be at the bronze level. DOE is exceeding this with 96% EPEAT purchases and most at the silver or gold level.

Figure 4: Breakdown of Computer Purchases by Type

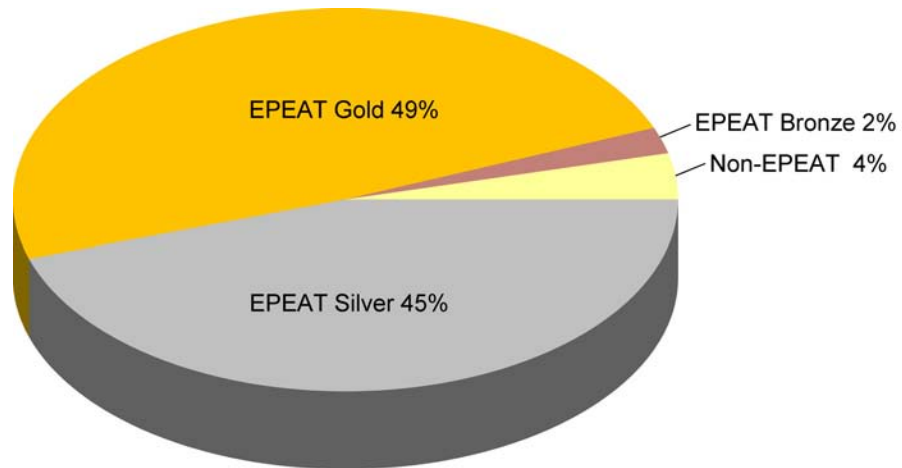


Figure 5: Energy Savings from DOE EPEAT Purchases, by Life-Cycle Phase

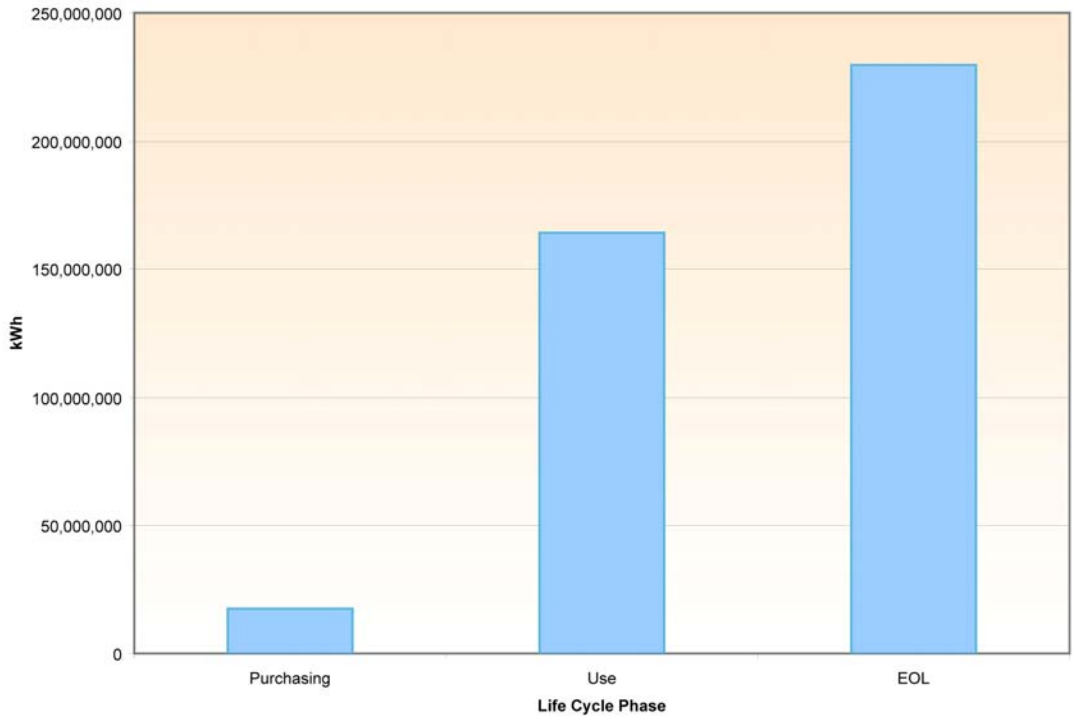


Figure 6: Greenhouse Gas Reductions from EPEAT Purchases by Life-cycle Phase

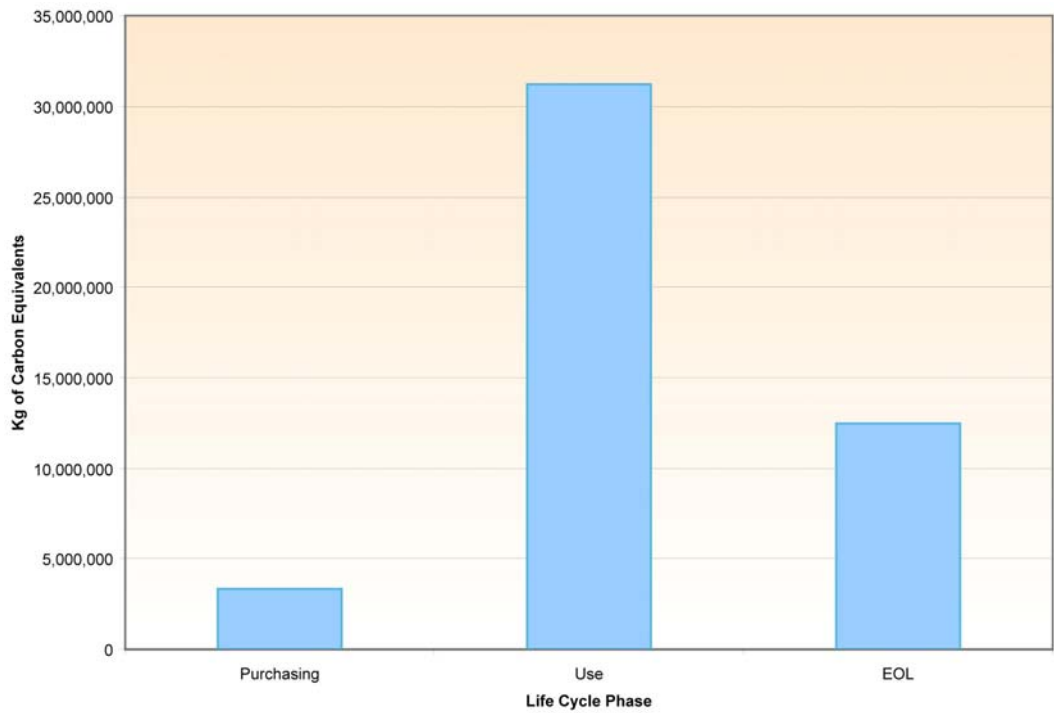


Figure 7: Total Greenhouse Gas Reductions Resulting from DOE's Solid Waste Diversion, Green Purchasing and Electronics Stewardship Programs

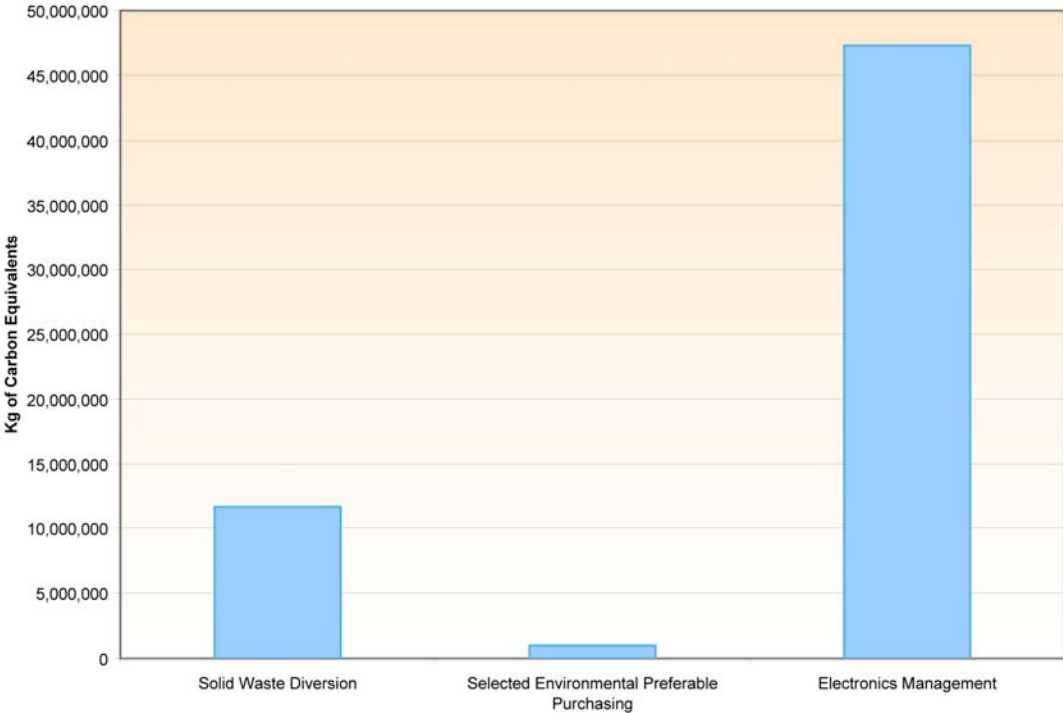


Figure 8: DOE Recycling Data Trends (2004–2008)

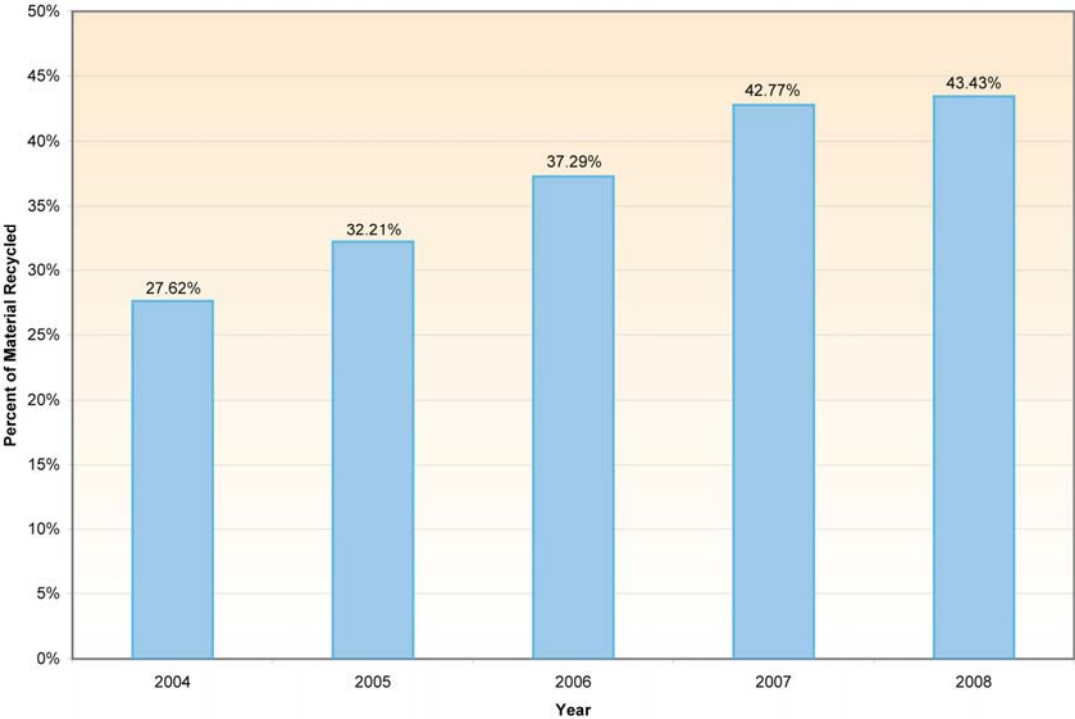


Figure 9: Breakdown of Materials Recycled for 2008

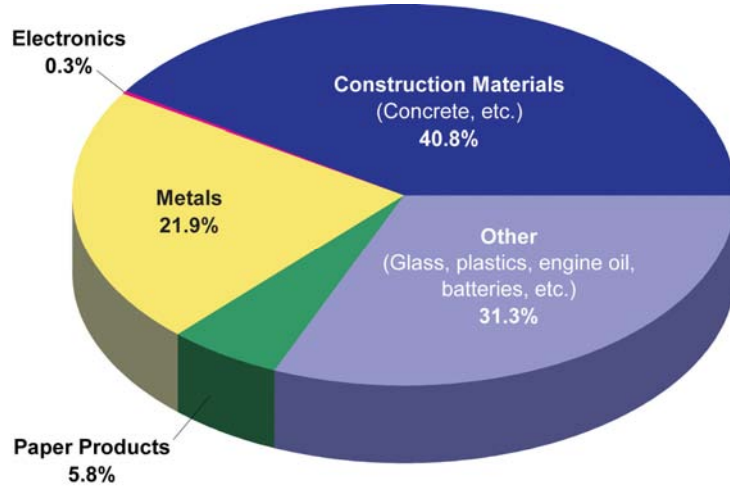


Table 3: Total Greenhouse Gas Reduction from DOE Sustainable Practices

Total Metric Tons Carbon Emissions (CE)	Equivalent Volumes	
<p style="text-align: center;">59,924 (59,924,000 Kg)</p>		<p>40,242 passenger vehicle annual emissions</p>
		<p>24,939,992 gallons of gasoline</p>
		<p>510,000 barrels of oil</p>
		<p>49,937 acres of pine forest needed to uptake this much CE</p>

The Department of Energy’s green purchasing and solid waste diversion efforts resulted in an overall reduction of 59,924 metric tons (59,924,000 Kg) of carbon emissions and the equivalent volumes are shown in Table 3 above.

Calculations made using EPA’s Greenhouse Gas Equivalencies Calculator (<http://www.epa.gov/cleanenergy/energy-resources/calculator.html>)

**EXECUTIVE ORDER 13423 SUSTAINABLE PRACTICES: GREEN PURCHASING,
WASTE MANAGEMENT, AND CHEMICALS MANAGEMENT**

Agency Report for Fiscal Year: 2008

Agency or Department: United States Department of Energy

Agency Contact: Don Lentzen HS-22/ Richard Langston MA-61

Contact Telephone Number: (202) 586-7428/ (202) 287-1339

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PART I: GREEN PURCHASING

A. Federal Procurement Data System (FPDS) Data

(1) Attach the Resource Conservation and Recovery Act (RCRA) Standard Report for FY2008 data from FPDS (“Recycled Content Product Purchasing Data Report”).

Category: Total Actions and Dollars		DOE RCRA Standard Report for FY2008		
Description	Total Actions	Dollars	% Total Actions	% Total Dollars
Total Actions and Dollars	3,949	\$623,800,769.55	100.0000%	100.0000%

Category: Recovered Material Clauses				
Description	Total Actions	Dollars	% Total Actions	% Total Dollars
FAR 52.223-4 Included	93	\$4,033,337.89	2.3550%	0.6466%
FAR 52.223-4 and FAR 52.223-9 Included	44	\$20,505,694.11	1.1142%	3.2872%
No Clauses Included	3,164	\$512,257,566.23	80.1215%	82.1188%

Category: EPA Designated Product(s)				
Description	Total Actions	Dollars	% Total Actions	% Total Dollars
Justification - Performance	15	\$443,506.04	0.3798%	0.0711%
Justification - Price	2	\$122,351.00	0.0506%	0.0196%
Justification - Time	1	\$41,565.00	0.0253%	0.0067%
Meets Requirements	171	\$36,825,414.46	4.3302%	5.9034%
Not Required	3,595	\$585,339,518.04	91.0357%	93.8344%

(2) Has your agency reviewed the FY2008 FPDS data for compliance assessment and/or trend analyses? Yes No

(3) Please describe the findings, changes, and/or actions that were a direct result of the assessments or analyses above.

As in previous years, some errors were found due to misunderstanding of the reporting procedures; and some entries that seemed erroneous were questioned until further explanation was provided. In FY2008, fewer FPDS data corrections were necessary than in past years. The reported decrease in the need to

correct data this year may be the result of training provided to contract specialists on green purchasing, and certification of data accuracy. In addition to the FPDS, DOE gathers data on contractor purchases of designated products through an on-line, web-based reporting system. The reports are reviewed annually, and DOE utilizes an established assistance network to work with those sites indicating any impediments to purchasing designated products. Additional information on this reporting system and related assistance network activities is available in DOE's FY2008 Progress Report for the OMB Environmental Stewardship Scorecard at: http://www.hss.energy.gov/nuclearsafety/env/reports/omb_scorecard_july_december_2008.pdf.

B. Indicator Items for Environmental Protection Agency (EPA)-Designated Recycled Content Products

NOTE: Section 6002 of RCRA, E.O. 13423, and Part 23 of the Federal Acquisition Regulation (FAR) require Federal agencies to purchase recycled content products designated by EPA. The General Services Administration (GSA) Stock and Special Order programs and the Defense Logistics Agency (DLA) will provide data for agency purchases made directly from them.

(1) Which of the following products does your agency purchase directly or as part of a support services contract, including purchases made from GSA's Multiple Award Schedule (MAS)¹ vendors? Please check all that apply.

For each product checked, provide the total dollar amount² of these products purchased³ by your agency from sources *other than* direct purchases from GSA's Stock and Special Order programs or DLA in FY2008. In addition, provide (1) the dollar amount of these products containing recovered materials⁴ purchased by your agency from sources *other than* direct purchases from GSA's Stock and Special Order programs or DLA in FY2008 OR (2) the percentage of your agency's facilities that purchased the item containing recovered materials OR, (3) for janitorial services only, the number of janitorial services contracts that required the supply of tissue products containing recovered materials:

Product Purchased (check all that are purchased or used in services contracts)	Total FY2008 \$ Amount Spent on Product Purchases	Total FY2008 \$ Amount Spent on Products Containing Recovered Materials OR	Percentage of Facilities Purchasing the Product Containing Recovered Materials OR	# of Janitorial Services Contracts that Require Products Containing Recovered Materials
<input checked="" type="checkbox"/> Tissue products	\$2,743,149	\$2,146,765	89%	See Footnote 5
<input checked="" type="checkbox"/> Toner cartridges	\$10,184,303	\$4,465,230	93%	
<input checked="" type="checkbox"/> Landscaping timbers	\$19,211	\$12,126	7%	
<input checked="" type="checkbox"/> Park benches or picnic tables	\$40,139	\$33,900	11%	
<input checked="" type="checkbox"/> Traffic barricades	\$88,375	\$88,179	13%	

¹ Also known as Federal Supply Schedule vendors

² "Total amount" equals the amount of product without recovered materials plus the amount of product with recovered materials.

³ Within this document, the term "purchased" includes both direct government purchases, as well as procurement of products through government contracts, including products supplied or used in the performance of contracts.

⁴ The products designated by EPA are commonly referred to as "CPG-items" or "recycled content products." RCRA refers to them as "products containing recovered materials," which is the term used in this reporting document unless a more specific term, such as re-refined oil or retread tires, is used.

⁵ DOE Order 450.1A, Environmental Protection Program (issued June 4, 2008) requires the integration of E.O. 13423 sustainable acquisition goals into EMS at DOE sites. The Order identifies a number of sustainable practices for achieving the goals, including the specification of environmentally preferable products in the acquisition of site supplies and services, and procurement of cleaning products certified by Green Seal and EPA's list of green cleaning resources.

<http://www.directives.doe.gov/pdfs/doe/doetext/neword/450/o4501a.pdf>

<input checked="" type="checkbox"/> Engine lubricating oil	\$292,589	\$121,650	24%	
<input checked="" type="checkbox"/> Signage	\$417,921	\$155,061	31%	

(2) If any of the products that you checked in section (1) above are purchased using an agency specification, does that specification require the use of recovered materials?

Yes No Not applicable

(3) For each product checked in section (1) above, describe any technical impediments to increasing the purchase of these products containing recovered materials by your agency. Identify the item and the impediment(s) reported for that item:

Toner Cartridges
Remanufactured toner cartridges with quality color capability were unavailable.
Continuing perception that printer manufacturers are modifying certain lines of printers to require the use of new replacement cartridges of their own manufacture (i.e., precludes the use of remanufactured cartridges from other suppliers).
Engine Lubricating Oil
Re-refined oil of specific grades and viscosity-weight were unavailable, or unavailable in small quantities needed.
Re-refined oil was not amenable to high temperature applications.
Signage
Commercial off the shelf signs were not readily available with the required recycled content and special ordering these signs with an increased level of recycled content was cost prohibitive.
Special order signs were needed to meet specific requirements, and the manufacturer would not guarantee the end products if the signs were constructed with recycled content plastic material.

(4) For construction products, demonstrate how your agency complies with the requirement to purchase EPA-designated construction products containing recovered materials or U.S. Department of Agriculture (USDA)-designated biobased construction products to the maximum extent practicable. Examples include integrating specific recycled content or biobased content product requirements with the use of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED)-NC or LEED-EB, incorporating recycled content or biobased content product requirements into design specifications, and inserting recycled content or biobased content product requirements in design/build contracts:

DOE Order 413.3A, *Program and Project Management for Capital Asset Acquisition (07/28/06)* established DOE policy to incorporate High Performance Sustainable Building (HPSB) principles, including the green purchasing principles in the design, construction, and commissioning of new facilities and major renovations of existing facilities. DOE Guide 413.3-6, *High Performance Sustainable Building (06/20/08)* focuses on incorporating HPSB principles in program and project management of capital assets, pursuant to the HPSB requirements of DOE Order 413.3A, and E.O. 13423, and includes recommendations to reduce the environmental impact of building construction by using designated recycled and biobased content materials and supplies.

DOE Order 430.2B, *Departmental Energy, Renewable Energy, and Transportation Management (02/29/08)* requires capital asset new construction, major renovations, and 15 percent of existing building inventory to incorporate HPSB principles, as specified in E.O. 13423. Pursuant to this Order, new construction and major renovation projects are required to obtain LEED certification, which stipulates the specification, procurement and use of recycled content, biobased content and other environmentally preferable, energy- and water-efficient building materials and products.

In FY2008, DOE sites and programs submitted 35 Executable Plans to Headquarters. These plans, required under DOE Order 430.2B, describe site-specific approaches for achieving environmental and

energy sustainability goals, including the HPSB goals of E.O. 13423, and call for assessing the current existing building inventory to determine the extent to which the HPSB principles are being applied. DOE developed an evaluation tool for use in evaluating how well each site's existing buildings meet the HPSB principles. This tool contains a section dedicated to assessing the extent of biobased and recycled content products and other environmentally preferable, energy- and water-efficient building materials and products (and related LEED credit) in DOE's existing building inventory.

DOE Order 450.1A, Environmental Protection Program (06/04/08) establishes Environmental Management Systems as the management framework for implementing the sustainable practices and goals of E.O. 13423, including HPSB. The Order specifies a number of sustainable practices related to HPSB, including green purchasing, toxic chemical use reduction, and recycling. The Order requires DOE sites to integrate green purchasing (e.g., biobased content and recycled content products, GreenGuard indoor air quality certified building materials) into new construction and major renovation projects. The Order applies to all elements responsible for the management and operation of the Department's facilities and activities, including management and operation, facility management, or other contracts under which a contractor manages Government facilities. The DOE elements are responsible for compliance with the requirements and flowing down the requirements into their subcontracts.

C. ENERGY STAR, Energy-Efficient, EPEAT-Registered, and Water Conserving Products

(1) The Energy Policy Act of 2005 (EPA 2005), E.O. 13423, and Part 23 of the FAR require Federal agencies to purchase ENERGY STAR and Federal Energy Management Program (FEMP)-designated energy efficient products unless the head of the agency determines that the products are not life cycle cost effective or are not reasonably available.

(a) Describe what your agency has done to eliminate the purchase of non-ENERGY STAR or non-FEMP-designated products in purchases of products and services related to Materials and Equipment Used in Building Construction, Renovation, and Maintenance. An example might be when the head of acquisition issued a policy directive requiring the purchase of energy efficient products.

EPA Energy Star and FEMP Designated Products

DOE Order 430.2B directs DOE sites to develop sustainable building plans that include procurement of ENERGY STAR-labeled and FEMP-designated products when purchasing energy consuming building systems and products. This includes incorporation into the specifications for all procurements involving energy consuming products and systems, including guide specifications, project specifications, and construction, renovation, and services contracts that include provision of energy consuming products and systems, and into the factors for the evaluation of offers received for the procurement, criteria for energy efficiency that are consistent with the criteria used for rating ENERGY STAR labeled products and FEMP designated products.

DOE Order 450.1A establishes EMS as the management framework for implementing the sustainable environmental and energy goals of E.O. 13423, including sustainable acquisition (green purchasing). The Order specifies a number of sustainable practices related to green purchasing, including procurement of EPA ENERGY STAR labeled and FEMP designated products. The Order requires DOE sites to integrate green purchasing (e.g., ENERGY STAR labeled and FEMP designated products) into new construction and major renovation projects. The Order applies to all elements responsible for the management and operation of the Department's facilities and activities, including management and operation, facility management, or other contracts under which a contractor manages Government facilities. The DOE elements are responsible for compliance with the requirements and flowing down the requirements in subcontracts.

EPEAT-Registered Products (Electronics Stewardship)

DOE Order 430.2B stipulates reducing the energy consumption of data center and server operations by specifying the acquisition of energy efficient electronic equipment.

DOE Order 450.1A requires the integration of E.O. 13423 electronics stewardship goals into EMS at DOE sites. The Order specifies a number of sustainable practices for achieving the electronics stewardship goals, including procurement of EPEAT-registered products in the solicitation and acquisition of desktop computers, notebooks, monitors, and other electronics for which there are EPEAT standards. In FY2008, 96% of the desktop and laptop computers and monitors purchased at DOE sites were EPEAT-registered, exceeding the E.O. 13423 goal of 95% by 2010 (see Table 2).

Lighting

DOE Order 430.2B directs DOE sites to implement distributed generation systems in new construction or retrofit projects, including renewable systems, such as solar lighting. The Secretary of Energy issued a memorandum entitled *DOE Federal Leadership in High Performance and Sustainable Buildings* (02/29/08) that re-affirms DOE's commitment to meeting or exceeding the E.O. 13423 HPSB goals, including having all new building construction and major renovation projects implement the HPSB principles and be certified as LEED Gold or better. It further instructs all DOE real property owning and leasing programs to ensure that 15% of enduring buildings are compliant with the HPSB principles by 2015. (https://www.hss.energy.gov/pp/hpsb/S-1_DOEFederalLeadershipinHighPerformanceandSustainableBuildings2008-02%202029.pdf)

(b) Describe your agency's plans to revise policies, procedures, specifications, contract writing systems, and education materials to ensure that the EAct 2005 and FAR requirements are met.

In FY2008, DOE updated the directive specifically applicable to EAct 2005: DOE Order 430.2B. In addition, DOE Acquisition Guide, Chapter 23, *Strengthening Federal Environmental, Energy, and Transportation Management in Acquisition*, has been renamed and updated to implement the sustainable acquisition requirements of E.O. 13423, and includes new items such as EPEAT, Energy Star, WaterSense, Plug-In Hybrid Vehicles, and Sustainable Design. This Guide addresses the role of the Green Acquisition Advocates in promoting and implementing green purchasing (product procurement preference programs) in DOE contracting activities. (<http://management.energy.gov/documents/AcqGuide23pt0Rev1.pdf>)

Outreach and education activities on DOE green purchasing continued in FY2008, including quarterly conference calls with site green acquisition advocates (procurement personnel) and pollution prevention coordinators. Educational/instructional materials issued in FY2008 include:

- Updated the *U.S. Department of Energy Environmentally Preferable Purchasing* website to reflect E.O. 13423, DOE Orders 450.1A (Environment) and 430.2B (Energy) sustainable acquisition practices and goals. <http://www.hss.doe.gov/pp/epp/>
- Updated the *U.S. Department of Energy Environmentally Preferable Purchasing Handbook* to reflect E.O. 13423, DOE Orders 450.1A (Environment) and 430.2B (Energy) sustainable acquisition practices and goals. <http://www.hss.doe.gov/pp/epp/EPP-DOE-Handbook-rev12.pdf>
- Updated the *Environmentally Preferable Purchasing at the U.S. Department of Energy* training slides to reflect E.O. 13423, DOE Orders 450.1A (Environment) and 430.2B (Energy) sustainable acquisition practices and goals, and information on the USDA's newly designated biobased products.
- DOE Guide 413.3-6 focuses on incorporating HPSB principles in program and project management of capital assets, pursuant to the HPSB requirements of DOE Order 413.3A, and E.O. 13423, and includes recommendations to reduce the environmental impact of building

construction by using designated recycled and biobased content materials and other green products and supplies.

(2) E.O. 13423 and the FAR require that 95 percent of purchases of products covered by an Electronic Product Environmental Assessment Tool (EPEAT) standard be EPEAT-registered products.

(a) Which mechanisms does your agency use to purchase personal computers, monitors, and laptops? Check all that apply.

- Direct purchases of equipment via electronics supplies contract
- Direct purchases via blanket purchase agreement
- Direct purchases of equipment via purchase card
- Leases or seat management contracts
- Purchases from government wide acquisition contracts.
- Other.

(b) Does your agency include requirements to supply EPEAT-registered computer products in solicitations, contracts, and leases for IT equipment? Yes No

(c) If the answer to (b) is yes, did it do so in FY2008? Yes No

(d) If the answer to (b) is no, what are your agency's plans to revise existing contracts to incorporate the EPEAT requirements? N/A

(3) E.O. 13423 requires agencies to reduce water consumption intensity, and the EO Implementing Instructions recommend that agencies purchase WaterSense-labeled products.

(a) In FY2008, did your agency purchase WaterSense-labeled water conserving products or other water efficient products? Yes No If yes, please specify what types of products were purchased.

DOE purchased water efficient/WaterSense toilets, urinals, and water faucets. DOE sites are incorporating increased water efficiency into sustainable building plans to include specifying water efficient fixtures. For example, the Sandia National Laboratories-New Mexico plan is to contribute to the agency goal to reduce water consumption intensity by 2% annually or 16% through 2015, relative to a 2007 baseline by purchasing WaterSense labeled products. The Pantex Plant specifies water efficient fixtures and where available EPA designated WaterSense products. Brookhaven National Laboratory's efforts include expanded use of low-flow restroom fixtures, a pilot test of waterless urinals, and continued sustainable management of process water systems.

(b) What steps has your agency taken to ensure that WaterSense-labeled products or other water-efficient products will be specified in future solicitations?

DOE issued DOE Order 430.2B which specifies that where available, DOE sites are to purchase WaterSense labeled products and other water efficient products, and choose irrigation contractors who are certified through a WaterSense labeled program.

D. USDA-Designated Biobased Products

The Farm Security and Rural Investment Act (FSRIA) of 2002, E.O. 13423, and Part 23 of the FAR require Federal agencies to purchase USDA-designated biobased products.

(1) Indicate which of the following products your agency purchased directly or as part of a support services contract, including purchases made from GSA MAS vendors. Of the products checked, indicate which ones your agency purchased containing biobased materials in FY2008. Please check all that apply in both columns.

Product	Purchased in FY2008	Purchased in FY2008 Containing Biobased Materials
Mobile equip. hydraulic fluid	√	√
Diesel fuel additives	√	√
Penetrating lubricants	√	√
Roof coatings	√	√
Water tank coatings		
Bedding/bed linens/towels	√	√

(2) For each biobased product checked above, describe any technical impediments to increasing the purchase by your agency of these products containing biobased materials. Identify the item and the impediment(s) reported for that item:

Hydraulic Fluids
Perceived warranty issues have precluded sites from transitioning to biobased hydraulic fluids.
Penetrating Lubricants
Local availability and price of biobased equivalents have been impediments.
General
Cost and availability of several currently designated biobased products is an impediment.

(3) FSRIA section 9002(d) requires procuring agencies that have responsibility for drafting or reviewing specifications to ensure that such specifications require the use of biobased products consistent with the requirements of section 9002.

(a) Does your agency have responsibility for drafting or reviewing specifications?

Yes No

(b) If yes, in FY2008 did your agency review specifications for the biobased products designated by the USDA in March 2006? Yes No N/A

(c) If yes, list products for which specification review was completed in FY2008. N/A

(d) If yes, list product specifications currently under review. N/A

(e) If yes, identify applicable product specifications not yet under review. N/A

(4) In FY2008, did your agency purchase or test any biobased products, other than biobased fuels or the products designated by the USDA? Yes No Please provide details for your response.

Biobased bags were tested at one site and found to be cost prohibitive. Biobased adhesives, cleaners/solvents, construction materials, inks, landscaping materials, machine cutting fluids, mastic remover, plastics, sorbents, and transformer oil were purchased at several sites (see Figure 3).

E. Environmentally Preferable Products and Services

E.O. 13423 and Part 23 of the FAR require Federal agencies to purchase environmentally preferable products and services.

(1) In FY2008, did your agency purchase any of the following environmentally preferable products and/or services, including those used at facilities managed by GSA and leased facilities? Check all that apply.

- Green janitorial products or services
- Green conference or meeting services
- Carpet
- Low volatile organic compound (VOC) paints
- Other, please elaborate.

(2) In FY2008, did your agency initiate or participate in an agency or multi-agency pilot for purchasing any of the products or services falling within the Federal green purchasing program? Yes No If yes, please elaborate.

(3) Would your agency be willing to serve as the lead agency for a multi-agency pilot during FY 2010? Yes No If yes, what type of pilot project are you considering?

To be determined; DOE is interested in discussing possible pilot projects of interest.

F. Management Controls

(1) Green Purchasing Plans, Policies, and Procedures

(a) All agencies must have formal, written, documented green purchasing plans, policies and/or procedures for the implementation of the statutory and executive order requirements to purchase green products and services. Indicate which components of the Federal green purchasing requirements your plans, policies, or procedures address, understanding that some of the requirements will be addressed in your agency's Sustainable Buildings Implementation Plans, Electronics Stewardship Plans, or other documents, policies, and procedures:

- EPA-designated recycled content products
- ENERGY STAR and energy efficient products, and low standby devices
- Biobased and USDA-designated BioPreferred products
- Environmentally preferable products and services
- Renewable energy
- WaterSense and other water-efficient products
- EPEAT-registered products
- Non-ozone depleting substances (ODSs) and/or those covered by EPA's Significant New Alternatives Policy (SNAP) program (chemicals and/or equipment)
- Alternative fuel vehicles and alternative fuels

(b) Does the agency policy or green purchasing plan define responsibility for:

Conducting awareness training? Yes No

Incorporating green purchasing requirements into specification and contracts⁶?

Yes No

Establishing and measuring progress toward green purchasing objectives?

Yes No

Reporting progress? Yes No

Management review? Yes No

If the answer to any question is no, please explain. N/A

(c) Does your agency have a requirement to routinely update the green purchasing plan, policies, or procedure? Yes No What is the date of your current green purchasing plan? 2008

(d) Please attach a copy of, or provide the URL(s) for, the website(s) for your agency green purchasing plan, policies, or procedure if any of them have changed since the FY 2007 report.

<http://www.hss.energy.gov/pp/epp/>

(2) Implementation

(a) Is your agency using its formal facility or organizational environmental management systems (EMS) to meet the statutory and executive order requirements to purchase green products and services? Yes No N/A If yes, please elaborate and provide at least one example.

DOE Order 450.1A stipulates that DOE sites EMS include environmental, energy, and transportation objectives and measurable targets that are reviewed annually, updated as appropriate, and contribute to achieving the DOE sustainable environmental stewardship goals, one of which is a green purchasing goal. The Order also provides a comprehensive list of sustainable practices for achieving the green purchasing goal through inclusion in the site EMS. In FY2008, 73% (33 of 45) of DOE sites reported they have established EMS objectives and targets for meeting the green purchasing goal.

(b) Does your agency formally promote incorporating green purchasing into EMSs?

Yes No N/A **If yes, how is this accomplished?**

DOE promotes incorporating green purchasing into EMS through its DOE *Environmental Preferable Purchasing (EPP) Handbook*, DOE EPP website, DOE EPP training templates, DOE EPP training sessions, EPP network quarterly teleconferences, on-site sustainable acquisition assistance visits, and through its annual performance data collection and analysis process. Additional information on education and outreach promoting green purchasing into EMS is available in DOE's FY2008 Progress Report for the OMB Environmental Stewardship Scorecard at http://www.hss.energy.gov/nuclearsafety/env/reports/omb_scorecard_july_december_2008.pdf.

(c) Has your agency contract writing system or enterprise asset management system been revised to incorporate the supply and use of green products? Yes No N/A

⁶ "Contracts" includes concession contracts, referring to non-FAR regulated business contracts authorized through applicable agency legislation.

DOE procurement and program offices are working on enhanced model contract terms and specification to facilitate green purchasing at DOE sites.

(d) Is your agency using, or planning to use, acquisition forecasts to promote its preference for green products? Yes No N/A

(e) Is your agency using, or planning to use, model solicitation and/or contract language to promote its preference for green products? Yes No N/A

(f) If applicable, what other policies, procedures, or tools is your agency using or planning to use to promote its preference for green products?

Policies, procedures and tools DOE is using to promote its preference for green products are identified in DOE's FY2008 Progress Report for the OMB Environmental Stewardship Scorecard available at:

http://www.hss.energy.gov/nuclearsafety/env/reports/omb_scorecard_july_december_2008.pdf.

(3) Training

(a) Who is responsible for conducting training of agency personnel with respect to the green purchasing requirements?

Pursuant to DOE 450.1A, the Office of Management, Program Secretarial Officers and Administrators, in coordination with other DOE elements (including the Office of Health, Safety, and Security, and the Office of Energy Efficiency and Renewable Energy), are responsible for including training on sustainable environmental, energy, and transportation practices and goals of E.O. 13423 and environmental management systems in training programs for program managers, contracting personnel, procurement and acquisition personnel and facility managers. The Office of Procurement and Assistance Management through its Acquisition Career Management Program trains staff on procurement policies and procedures that give preference to acquisition of environmentally preferable products.

(b) Has green purchasing training been added to all appropriate training, including training provided by contractors? Yes No N/A

(c) What percentage of acquisition personnel received documented⁷ green purchasing training (new or refresher) within the past fiscal year?⁸

One hundred percent of the procurement work force (450 employees) received documented training.

(d) Is training provided by agency personnel, an outside source (e.g. Defense Acquisition University's contracting officer training courses, GSA SmartPay), or both?

All of these training sources are utilized. Federal personnel have presented Green Acquisition Advocate training at both Federal and contractor-operated facilities. In addition, Acquisition Career Development Certification requirements for DOE's contracting employees include a module on Green Purchasing.

⁷ Documented training other than the Green Purchasing course available through the Office of Personnel Management's USALearning web site. OPM will provide data on use of this course to OMB and OFEE.

⁸ Contracting officials and contracting officer technical representatives are required to earn continuous learning points each year, which can include green purchasing training.

(e) What percentage of purchase cardholders received documented green purchasing training (new or refresher) within the past fiscal year?⁹

Of 2,000 cardholders, 100% received documented training.

(f) Who provides the training to purchase cardholders?

DOE provides web-based training for its purchase card holders. Green purchasing training is continually updated and offered by environmental and procurement personnel.

(g) How is training of purchase cardholders documented?

A Certificate of Completion is provided to cardholders, and copies of the certificates are on file with the local Program Coordinator. A Letter of Delegation for contracting authority for a cardholder is not issued until the proposed cardholder completes required training.

(h) Indicate whether the green purchasing program components listed in the table below are covered in training for acquisition personnel and purchase cardholders, respectively:

Component	Acquisition Training (Y/N)	Purchase Card Holders (Y/N)
EPA-designated recycled content products	Y	Y
ENERGY STAR, energy efficient products, and low standby power products	Y	Y
Biobased and USDA-designated BioPreferred products	Y	Y
Environmentally preferable products and services	Y	Y
Renewable energy	Y	
WaterSense and other water-efficient products	Y	Y
EPEAT-registered products	Y	Y
Non-ODSs and/or those covered by EPA's SNAP program (chemicals and/or equipment)	Y	Y
Alternative fuel vehicles/alternative fuels	Y	

(4) Program Management Review¹⁰

(a) What approach does your agency use for reviewing facility and agency-wide compliance with the green purchasing requirements? Examples include reviewing a representative sample of contracting actions, on-site audits, and the use of the TEAM Guide or CP Track.

DOE sites conduct and document contracting and/or environmental reviews for green purchasing compliance. In addition, DOE Headquarters staff review site reports for consistency and trending prior to data compilation for the Department's annual performance reports. All flagged entries are brought to the site's attention for confirmation or correction. DOE meets with sites to review their individual performance to help overcome impediments to green purchasing and assist with continued improvement in the current year's performance data.

(b) What percentage of agency facilities conducted and documented contracting and/or environmental reviews for green purchasing compliance during this reporting period?

⁹ According to OMB Circular A-123, Appendix B, "Improving the Management of Government-Issued Charge Card Programs," issued August 2005 and updated April 2006, purchase cardholders, charge card managers, and approving officials must receive training, and they must receive refresher training, at a minimum, every 3 years. Training "must familiarize the cardholders with Federal procurement laws and regulations, agency policies, and proper card use."

¹⁰ Agencies may also refer to these activities as compliance monitoring, auditing, and compliance assessments.

33% of DOE contracting activities are required to complete a procurement self-assessment every three years, which includes a Sustainable Acquisition review.

(c) Are findings reported to senior facility or agency management, as appropriate?

Yes No

(d) Does your agency conduct trend analysis of program management reviews, training, and FPDS data to assess green purchasing program effectiveness? Yes No

(e) What types of trends are realized as a result of findings from these audits?

DOE has tracked trends in environmentally preferable purchasing through its annual reports for years. The trends vary by contracting activity but generally reveal greatest success in areas such as paper products, non-paper office products, and construction products. Impediments to greater EPP compliance continue to be related to the non-availability or non-suitability of products for their required use. The trend analysis allows the DOE Green Acquisition Advocates to focus on product areas that are not as successful.

(f) Are trends analyses reported to senior facility or agency management, as appropriate?

Yes No

(g) Does senior facility management track corrective actions from these findings?

Yes No

PART II: SOLID WASTE MANAGEMENT

A. Solid Waste Prevention

(1) Did your agency institute new substantially improved, or updated solid waste prevention practices in FY2008? Yes No Please provide an explanation of your response.

DOE Order 450.1A stipulates that DOE sites EMS include environmental, energy, and transportation objectives and measurable targets that are reviewed annually, updated as appropriate, and contribute to achieving the DOE sustainable environmental stewardship goals, one of which is recycling of post consumer materials. The Order also provides a comprehensive list of sustainable practices for achieving the recycling goal of avoiding pollution control and waste disposal costs by eliminating or minimizing the generation of wastes and other pollutants through source reduction, including segregation, substitution, reuse, and recycling. Thirty-three (33) of 45 reporting sites (73%) implemented new or substantially improved/updated solid waste prevention practices in FY2008.

(2)(a) Does your agency have sites or facilities with composting programs? Yes No

(b) If yes, how many facilities or sites?

Five sites reported an estimated total weight diverted to composting to be 59 metric tons.

B. Recycling

(1) What percentage of offices/sites operated by your agency has an active recycling program?

45 of 45 reporting sites (100%) have active recycling programs.

(2) If applicable, what percentage of residential housing operated by your agency has an active household products recycling program?

Of the 4 DOE sites with housing units totaling 484 residential houses, 100% have active household products recycling programs.

(3)(a) What percentage of total solid waste¹¹ generated by your agency was diverted in FY2008?

Of 233,896 metric tons of solid waste, 43% (101,588 metric tons) were diverted. For purposes of DPE reporting, solid waste includes sanitary waste and construction and demolition debris.

(b) For agencies with offices in multi-tenant buildings, approximately what percentage of those buildings has a recycling program? 100%

C. Electronics Management

(1) What is your agency doing to increase electronics life span to four years or greater and to decrease life spans shorter than 4 years?

DOE Order 450.1A establishes sustainable environmental stewardship goals, including an electronics stewardship goal, to be achieved Department-wide, and requires incorporation of the goals into DOE sites EMS. The Order specifies sustainable practices for achieving the goals, including procurement of environmentally preferable electronics, enabling electronics power management capabilities, reusing surplus electronics, and recycling of end-of-life electronics. The Order also provides a sustainable practice to extend the useful life span of computer systems and other electronic products through software upgrades and use of EPA's *Guidance to Improve the Operation of Electronic Products* (www.federalelectronicchallenge.net/docs/oamdm.pdf), and to strive to extend the useful life of electronic equipment to 4 or more years. In FY2008, 43 of 45 reporting sites (96%) had extended computer life spans to 4 years or more.

(2) Describe how your agency addresses computer equipment power management, including enabling the ENERGY STAR features on computers and monitors.

DOE Order 450.1A specifies a sustainable practice for enabling ENERGY STAR features (power management capabilities) on all computers, monitors, printers, copiers, and other electronic equipment, or to the maximum degree based on mission needs. In FY2008, 41 of 45 reporting sites (92%) had implemented power management operations.

(3)(a) Describe your agency's management of electronics equipment in an environmentally responsible manner at the end of the equipment's useful life.

In FY2008, DOE sites reported more than 98% of end of life and surplus electronics were reused or recycled, exceeding the E.O. 13423 requirements 2 years in advance of the deadline. DOE Order 450.1A specifies the following sustainable practices when electronic equipment has reached the end of its useful life for DOE:

- Reuse surplus and recycle end-of-life electronics
- Use the recycling services available through the following sources as an environmentally compliant means for disposition of end-of-life electronics

¹¹ "Solid waste" refers to municipal solid waste as defined by EPA. Please indicate if your agency is including other materials, such as construction and demolition debris.

- EPA Recycling Electronics and Asset Disposition (READ) Services Government Wide Acquisition Contract (www.epa.gov/oam/read/index.htm)
- Department of Justice UNICOR Electronic Recycling Program (www.unicor.gov/recycling)
- General Services Administration Federal Supply Service Multiple Award Schedule 899, Reclamation, Recycling and Disposal Services
- Recyclers who meet or exceed EPA's guidelines for materials management; safe electronics recycling (www.epa.gov/plugin)
- Recyclers who are members, in good standing, of one or more of the following professional associations
 - International Association of Electronic Recyclers
 - Institute of Scrap Recycling Industries National Recycling Coalition
 - Electronic Industries Alliance
- Use GSA's Computers for Learning Program (GSAXcess) for transferring surplus computer systems and other surplus electronics to eligible schools (gsaccess.gov)
- Specify in IT contracts for leased electronic equipment "take-back" provisions where, at the end of the lease period, the equipment is reused, refurbished, donated, or recycled using environmentally sound management practices.

(b) What is your agency doing to eliminate unsound disposal practices?

The DOE reporting system tracks annual site performance in environmentally safe disposition of end-of-life electronics. DOE analyzes the reports and assists sites continually improve performance in achieving the electronic stewardship goal in DOE Order 450.1A.

DOE also promotes the benefits of eliminating unsound disposal practices as well as purchase of EPEAT-registered electronics using the Federal Electronics Challenge Environmental Benefits Calculator (see Figures 5 and 6).

PART III: TOXICS AND HAZARDOUS CHEMICALS MANAGEMENT

Briefly describe what your agency has done to implement its toxic and hazardous chemical management plan during FY2008, specifically addressing any FY2008 milestones identified in the plan. Do not report quantitative information (volume or dollars) on chemicals or chemical-containing products purchased or reduced.

DOE is taking a comprehensive approach towards addressing the toxic and hazardous chemical reduction requirements of E.O. 13423. In FY2008, DOE developed a robust plan to implement the EO requirements, modified Departmental directives and requirements to support implementation of the plan, and tracked site-specific actions and accomplishments in reducing toxic and hazardous chemicals and materials to see that the plan is being implemented. Highlights include the following:

- Departmental Plan: On January 21, 2008, the Department submitted its "Plan for Meeting Toxic Chemical Reduction Provisions of Executive Order 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*" to OFEE. The plan (http://www.hss.energy.gov/pp/library/Chemical_Reduction_Plan_FINAL.pdf) details the Department's toxic chemical reduction actions and requirements to ensure compliance with E.O. 13423. DOE outlined a site-specific, EMS-focused approach to integrating toxic chemical reduction into its operations, consistent with the Departmental approach to chemical safety and lifecycle management previously adopted by the Department (http://www.hss.energy.gov/HealthSafety/WSHP/chem_safety/doe-hdbk-1139-2-2006Aug2006.pdf). Each DOE site establishes performance-based goals for toxic chemical reduction within the framework of its EMS and Integrated Safety Management System, with sites determining specific

chemicals, reduction goals, and actions based on the operating conditions, costs, mission requirements, and environment, safety, and health features of the site.

- Directives and Requirements: DOE Order 450.1A, supported by DOE's toxic chemical reduction plan, includes goals to implement the E.O. 13423 toxic chemical reduction requirements. They require each site's EMS to address toxic chemical reduction, identifies a set of sustainable practices for each site to consider, and requires annual reporting of toxic chemical reduction progress.
- Tracking and Reporting: On October 1, 2008, DOE issued its FY2008 environmental data call, which included the initial reporting of toxic chemical reduction metrics and progress. The data call included several new questions developed to track site-specific actions related to the toxic chemical reduction goal. Analysis and review of the data is ongoing, but initial key observations include the following:
 - Over 85% of DOE sites reported having established objectives and targets in their EMS for toxic chemical use and release reduction.
 - Many sites reported having identified specific toxic chemicals and materials for which the reduction goals are being established and have identified actions to be taken to meet reduction goals or specified a process to be followed to comply with the reduction requirements. Materials targeted by DOE sites include mercury, PCBs, lead, beryllium, sulfur hexafluoride, alcohols, solvents, glycols, heavy metals, and hydrochloric, hydrofluoric, and nitric acids.
 - Many sites use chemical inventory and tracking systems to manage materials and identify excess or unneeded items, which are identified for reuse.
 - Most DOE sites encourage employees to order smaller quantities of material or substitute safer chemicals as a practical way of reducing cost and risk.
 - Most sites use management tools to minimize the procurement of toxic chemicals, including the Green Chemical Purchasing Wizard, site qualified product lists, and safety and environmental specialist pre-approval of chemical purchases.

Noteworthy practices reported by DOE sites include the following:

- The Lawrence Livermore National Laboratory has identified a list of 15 priority chemicals based on toxicity, EPA guidelines, and volume. The Lab developed an environmental management plan that tracks annual reviews to the chemical priority list and ensures that usage data is regularly provided to each principal directorate to facilitate reduction. An additional environmental management plan has been developed to provide guidance and resources on alternatives and reduction planning.
- The toxic reduction plan at the Stanford Linear Accelerator Center includes a building-by-building inventory reduction effort, development of a chemical redistribution program, and use of a screening process for approval of requests for items to be added to our available chemical catalog. The building-by-building inventory reduction involves reviewing the chemical inventory, removing expired chemicals, and removing chemicals no longer needed by the operation. Chemicals in good condition are available for redistribution. In 2008, five buildings were reviewed and approximately 1200 chemical containers were removed.
- The Waste Isolation Pilot Plant (WIPP) has made its chemical inventory tracking system available to employees on the WIPP intranet so that unused and partially used containers of chemicals can be located before purchasing new chemicals. WIPP's affirmative procurement plan requires the approval of safety and environmental compliance personnel before chemicals and hazardous materials are purchased.
- At the Pacific Northwest National Laboratory, the Chemical Management System was modified to require chemical owners to identify the project, laboratory capability, facility, or service center that each chemical container supports. In the first phase of this activity, chemical inventories in the 300 Area were reviewed and associated with a need. Chemicals that were inventories and not associated

with a need were offered for redistribution for a period of approximately 1 year to others who may have a need of the material. A total of 762 containers were redistributed in FY2008, with identified lifecycle costs avoided of almost \$784K.