

ENVIRONMENTALLY PREFERABLE PURCHASING



U.S. Department of Energy

WHAT IS IT?

- Purchase of Energy or Water Efficient Products, i.e., Energy Star or Federal Energy Management Program
- Purchase of Alternative Fuels and Re-refined Motor Vehicle Lubricants and Coolants
- Purchase of Bio-based Products, i.e. Buy Bio Program
- Purchase of Recycled Content Products, i.e., Affirmative Procurement Program
- Other Purchases that make sense environmentally

Environmentally Preferable Attributes

Environmentally preferable products or services do one or more of the following:

- **Minimize the consumption of resources, energy and water**
- **Prevent the creation of solid waste, air pollution or water pollution**
- **Minimize or eliminate the use of materials or processes which compromise the environment (global warming, ozone depletion and acid rain)**
- **Promote the use of non-toxic substances and avoid toxic materials or processes**

**ALSO KNOWN
AS
GREEN
PURCHASING?**



WHY BUY GREEN?

- **Conserve resources, including energy**
- **Improve our environmental footprint**
- **Market development**
- **Economic benefits**
- **Health and safety**
- **Reduced liabilities**

Positive Environmental Attributes

- **Recycled content**
- **Recyclability**
- **Durability**
- **Reusability**
- **Biobased**
- **Energy efficiency**
- **Water efficiency**
- **Reconditioned or remanufactured**
- **Other attributes with positive environmental effects**



WHY BUY GREEN?

It's the law!



TODAY'S PRESENTATIONS

- Energy and Water Efficient Purchasing and the Federal Energy Management Program by Donald Mauritz, Lawrence Berkley National Laboratory
- Alternate Fuels and Fuel Efficiency by Shabnam Fardanesh, EE-2G
- Bio-based Products by Mark Decot, EE-2E

TODAY'S PRESENTATIONS – CON'T

- Affirmative Procurement by Donald Lentzen, EH-41
- Environmentally Preferable Purchasing by Richard Langston, ME-61



U.S. Department of Energy
Energy Efficiency and Renewable Energy

federal energy management program

Buying Energy Efficient Products

Donald L. Mauritz

Lawrence Berkeley National Laboratory





Why Buy Energy Efficient Products?

- Policies
- Energy and Cost Savings
- Environmental Impacts
- Market Leadership





federal energy management program

Policies

- Energy Policy Act of 1992
- Executive Order 13123
- Federal Acquisition Regulations, Part 23
- Executive Order 13221
- Pending Energy Bill



Energy and Cost Savings

Example: Package Air Conditioner

- Capacity: 120,000 Btu/hour (10 ton)
- Standard EER/IPLV: 8.9/9.2
- Recommended EER/IPLV: 11.0/11.4
- Operated: 1,500 equivalent full-load hours per year
- Energy Cost: \$0.06/kWh
- Expected Life: 15 years



Energy and Cost Savings

- Energy Savings: 3,800 kWh/year
- Operating Cost Savings: \$230/year
- Lifetime Operating Cost Savings: \$2,600
 - Using NIST 2003 Discount rate of 3.0%
- Estimated Cost Increase: ~\$750



Environmental Impacts

- Emissions from Electricity
 - 1.64 pounds of CO₂ per kWh
 - 2.2 grams of NO_x per kWh
 - 4.9 grams of SO₂ per kWh
- Emissions from Natural Gas
 - 12 pounds of CO₂ per therm
 - 0.12 gram of NO_x per therm



Environmental Impacts

- Over its lifetime, the efficient air conditioner will reduce:
 - CO₂ emissions by 93,500 pounds
 - NO_x emissions by 125,400 grams
 - SO₂ emissions by 279,300 grams
- This is the same amount of CO₂ emitted by eight cars in one year

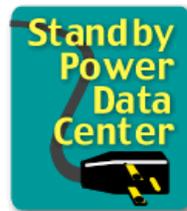


Market Leadership

- Federal government spends \$10 to 20 billion per year on energy using products
- Purchasing efficient products:
 - Increases market presence
 - Lowers prices
 - Leads by example
- Success Story: Computer Monitors

What Products Should You Buy?

- FEMP's *Product Recommendations*
 - Commercial and residential HVAC equipment, office technologies and construction products
- ENERGY STAR®
 - Residential HVAC equipment, appliances and consumer electronics
- Products that meet Low Standby Power requirements



How Can You Find Out More?

- Visit these web sites:
 - www.eere.energy.gov/femp/procurement
 - www.energystar.gov/products
 - www.eere.energy.gov/femp/resources/standby_power
 - www.gsaadvantage.gov
 - www.emall.dla.mil

- Call FEMP Hotline at 800-363-3732





U.S. Department of Energy
Energy Efficiency and Renewable Energy

freedomCAR & vehicle technologies program

DOE's Green Purchasing (Executive Order 13149)

Presented By:

Shab Fardanesh

Office of FreedomCAR and Vehicle
Technologies



freedomCAR & vehicle technologies program

E.O. 13149 Requirements

- Reduce petroleum consumption by 20%
 - Use alternative fuel in AFVs at least 51% of the time
 - Increase fuel economy of non-AF LDV acquisitions by 3mpg by FY 2005

- Reinforces compliance with EPA Act
 - 75% of covered LDV acquisitions must be AFVs
 - Allows for extra EPA Act credits from biodiesel fuel use and acquisitions of dedicated AFVs

DOE's P2/E2 Goals

- Reduce DOE fleet average annual petroleum consumption per vehicle by at least 20% by 2005 in comparison to 1999.
- Acquire each year at least 75% of light-duty vehicles as alternative fuel vehicles, in accordance with the requirements of the Energy Policy Act of 1992.
- Increase the usage rate of alternative fuel in Department alternative fuel vehicles to 75% by 2005 and 90% by 2010 in areas where alternative fuel infrastructure is available.

DOE Fleet Planned FY 2005 Petroleum Reduction by Strategy Approach

(September 2000)

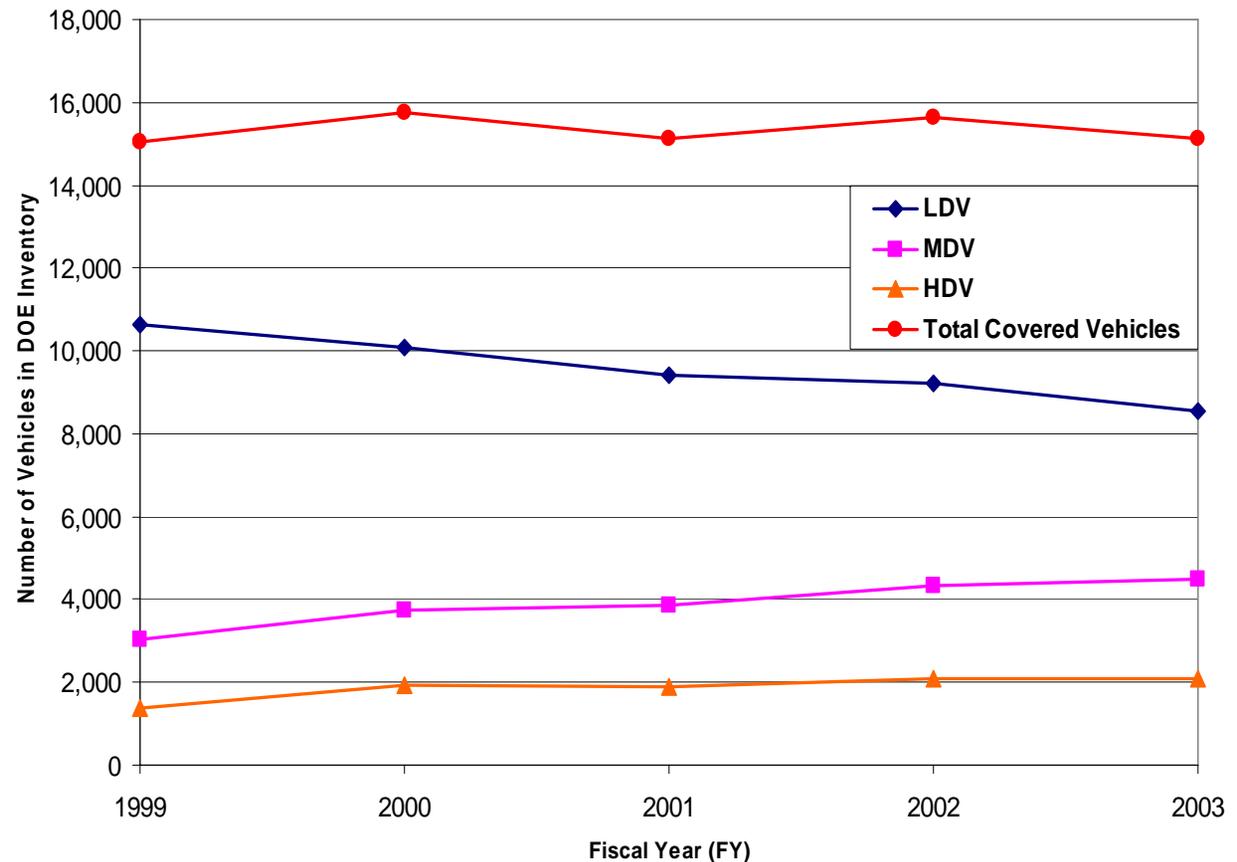
Petroleum Reduction by Strategy Component (GGE)			Planned Total Petroleum Reduction in FY 2005*	
Use of Biodiesel	Use of Alt Fuels	Fuel Economy/ Fleet Efficiency Improvements	Total Quantity (GGE)	Petroleum Reduction (%)
473,270	1,237,343	277,898	1,988,511	34.0

*as compared to FY 1999 baseline

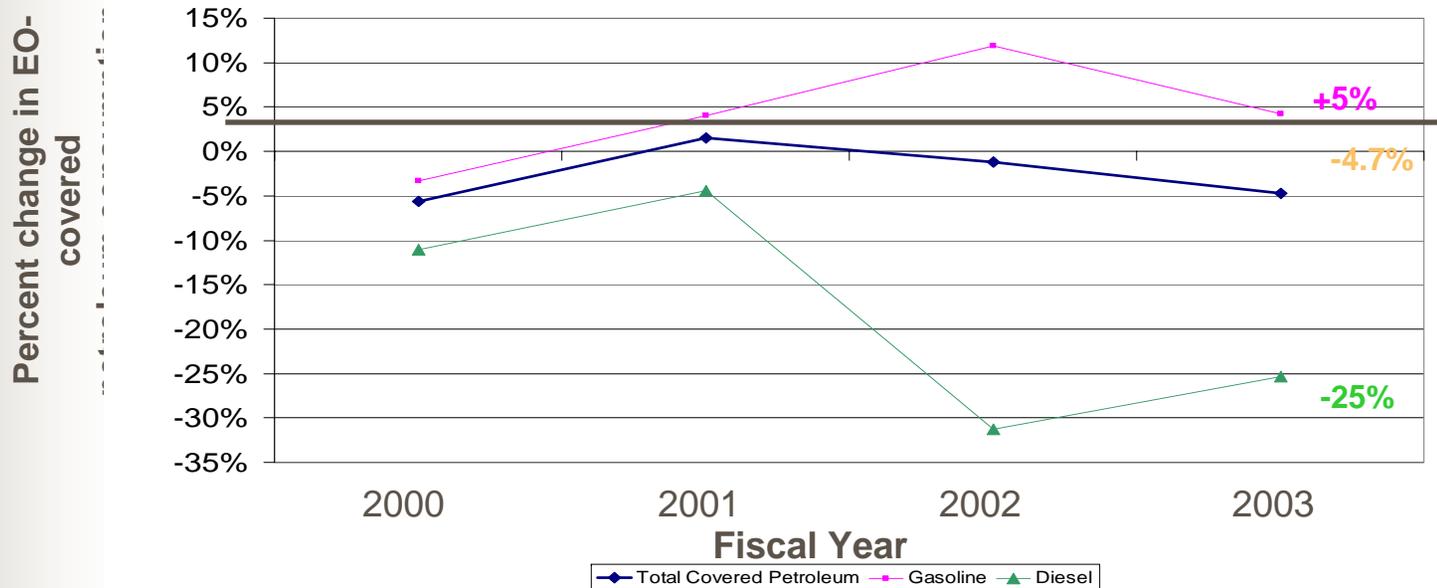
DOE Vehicle Inventory Trends

Trends from 1999 – 2003:

- LDV inventory decreased by 2,079 (-20%)
- MDV inventory increased by 1,430 (47%)
- HDV inventory increased by 730 (54%)

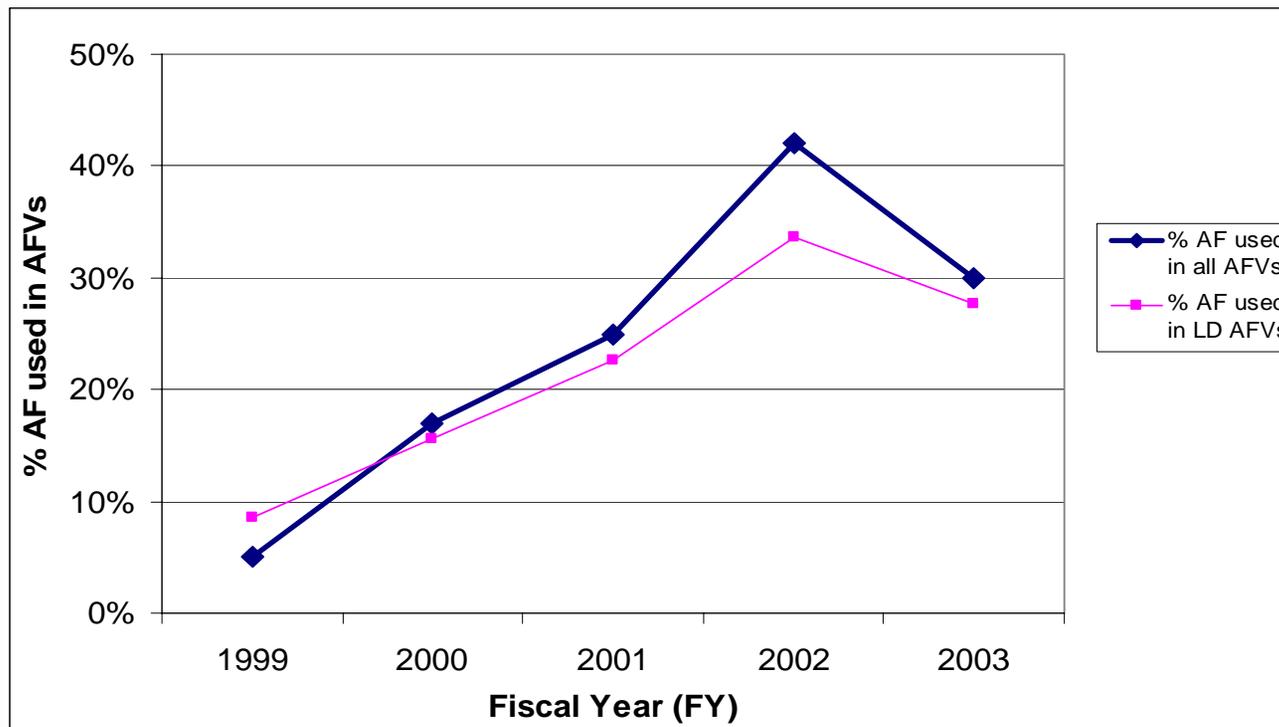


Percent Change in EO 13149 Covered Petroleum Consumption vs. Baseline Year



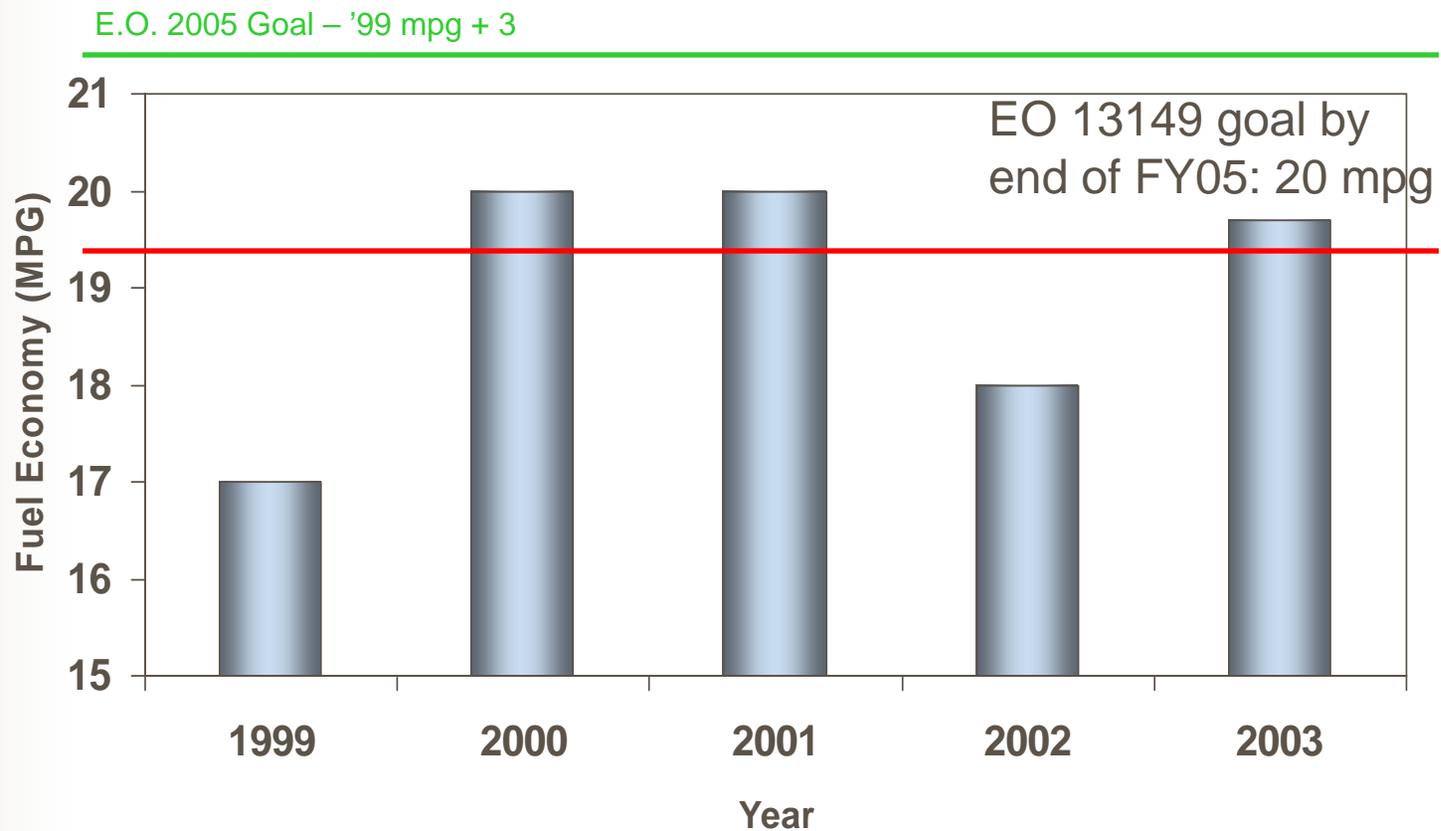
- Gasoline use dominates overall DOE petroleum consumption. As a result, DOE achieved only a 4.7% reduction in covered fuel use in spite of a significant diesel fuel use reduction.
- According to preliminary 2003 data, gasoline was 76% of total covered petroleum usage.

Percentage Alt Fuel Used in DOE AFVs



- 25 AF stations expected to be in place in various DOE locations by end of FY 2004.

Average Fuel Economy for E.O. 13149 Covered LDV Acquisitions*



*excluding AFVs

DOE Infrastructure Projects

DOE Facility	Fuel Infrastructure
National Energy Technology Laboratory – WV	1– E85 1- CNG
National Energy Technology Laboratory – PA	1 – E85 1- CNG
Sandia National Laboratory	1- CNG 1 – B20
Idaho National Engineering and Environmental Laboratory	2 –CNG 1 – B20
Oak Ridge National Laboratory	2 – E85 1 – B20
FERMILAB	1 – E85
Pantex Plant	1 – E85
Nevada Test Site	2 – E85
Los Alamos National Laboratory	2 – E85 1 – B20
Bonneville Power	2 – E85
Lawrence Livermore National Laboratory	2 – E85 1 – B20
Richland	1 – E85

Why is DOE's Compliance Important?

- DOE has a “unique responsibility” to lead.
- BUT... DOE will not achieve 20% goal by FY2005 at the current pace.
- DOE fleet fuel use has increased since 1999
 - Increased by an average of 2% each year
 - 1.2% petroleum usage reduction in FY02 would have been 8.3% if fuel use had stayed at the 1999 level.
- Additional effort will be needed to achieve EO 13149 goal, but it is achievable (USMC)

It can be done! USMC Example:

- Over 180% compliance with EPA Act in FY2002
- Invested in AF infrastructure
- Coordinated location of AFVs with refueling sites
- Replaced conventional vehicles with 115 NEVs
- Increased fuel economy of conventional vehicles by 4 mpg
- Near-term plans include E85 infrastructure and acquisition of hybrids

**Reduced petroleum consumption by 24.5% in
FY2002 vs. FY1999**

Secretarial Directive (March 8, 2004)

- **Increase alternative fuel usage in AFVs beyond 75%**
- **Accelerate replacement of conventional vehicles with AFVs**
- **Reduce the size of all acquired conventional vehicles with hybrid and fuel efficient vehicles (for non-EPA Act covered vehicles)**
- **Implement a high-level program of recognition for individual DOE fleets' successes**
- **Incorporate an AFV/alternative fuel use measure into fleet manager performance evaluations**

Also...

A recent rulemaking published in the Federal Register Notice (68FR52129) entitled “Acquisition Regulations: Motor Vehicle Fleet Fuel Efficiency” on September 2, 2003, requires DOE-owned contractor operated fleets to comply with the goals and requirements of E.O. 13149.

Summary

- Continue aggressive acquisition of AFVs
- Use alternative fuel in AFVs more than 75% of the time
- Explore refueling infrastructure partnerships
- Use biodiesel
 - Contact DESC (Michelle Smith, 703-767-9533, michelle.m.smith@dla.mil)
- Reduce fleet vehicle-miles-traveled
- Evaluate fleet management practices

Information and Resources

- Shab Fardanesh

U.S. Department of Energy

shabnam.fardanesh@ee.doe.gov

- EPA Act Fleet Information and Regulations Website

<http://www.eere.energy.gov/vehiclesandfuels/epact/>

Other AFV Information Sources

- www.afdc.doe.gov – Information on alternative transportation and fuel efficiency, and refueling and recharging sites
- www.ccities.doe.gov – DOE Clean Cities program
- www.fss.gsa.gov/vehicles – Information on vehicle availability, including AFVs
- www.fastweb.inel.gov – Federal Automotive Statistical Tool (FAST) reporting database

DOE Buys Bio for Energy Security



Mark Decot
Office of the
Biomass Program

Overview - Buy Bio Initiative

- What Is Buy Bio?
- What Are Biobased Products?
- Why Is DOE Buying Bio?
- What Is the Legal Driver?
- What Are the Benefits?
- What Can DOE Sites Do?
- Some Early DOE Adopters and Explorers
- Websites
- Contacts



What Is Buy Bio?

- DOE is launching an initiative to “Buy Bio.”
- “Buy Bio” is the purchase of biobased products. Biobased products are any products made substantially from plant or animal matter instead of synthetically produced chemicals or petroleum based products.



What Are Biobased Products?

- adhesives
- cleaners and solvents
- construction materials
- fibers
- fuel additives
- inks
- landscaping materials
- lubricants
- papers
- packaging
- paints and coatings
- plastics

Why Is DOE Buying Bio?

- ❑ DOE mission is energy security**
- ❑ Buy Bio Initiative enhances energy security by substituting domestically produced biobased products for fossil fuel based products derived from imported oil and natural gas.**
- ❑ Buy Bio Initiative earns DOE sites recognition as early adopters of the Federal regulation soon to be implemented by the U.S. Department of Agriculture.**

What Is the Legal Driver?

Farm Security & Rural Investment Act Sect. 9002

- Federal agencies will purchase certain designated products with biobased content.
- USDA will begin to designate products before the end of FY2004
- The program will be similar to that for recycled products, allowing justified exceptions of the CAP (cost, availability, performance)
- Reporting will be required 1 year after a product has been designated.
- Should there be a conflict between a recycled content and a biobased content product, the recycled product takes precedence.

What Are the Benefits?

- Healthier for humans and the environment
- Biodegradable
- Lower disposal and cleanup costs than for oil based products
- Energy security
- New markets for farmers
- Rural redevelopment
- Industry partnership



What Can DOE Sites Do?

- Integrate into Environmental Mgt. Systems
- Train staff
- Evaluate potential for transitioning your big \$\$\$\$ products to biobased counterparts
 - Credit card purchases?
 - Service contracts?
 - Electronic catalogs?
 - Statements of work?
 - Requests for proposal?
- Conduct pilot projects





Some DOE Early Adopters

Brookhaven National Laboratory
transitioned to biobased hydraulic fluid
in their garbage trucks - motor pool
hydraulic lift system - three large lawn
mowers

**Benefits - Former cost of spills \$2500-
\$3500 per spill vs. Present cost of spills
less than \$1000 per spill.**

- **<http://www.bnl.gov/bnlweb/pubaf/pr/2002/bnlpr071702.htm>**

Some DOE Early Adopters

Pacific Northwest National Laboratory switched to a general purpose biobased cleaner

Benefits

- **Helps protect custodians and environment**
- **Saves time**
 - **Reduces cleaning products from 33 to 7 per cart**
 - **Reduces chemical inventory**
 - **Waste handling, shipping, disposal costs**
- **Lowers purchasing costs, saving ca. \$1500/container of product/year times no./year**
- **<http://www.pnl.gov/esp/greenguide/custodialproducts/>**

Some DOE Early Adopters

- **Oak Ridge National Laboratory uses biobased lubricants and switched to biodiesel in vehicles**
- **Princeton Plasma Physics Laboratory issued request for proposals for elevators with biobased hydraulic fluid**
- **Sandia National Laboratory uses biobased hydraulic fluid in their garbage truck**
- **Western Power Administration uses biodiesel**

Some DOE FY2004 Explorers



- ❑ National Bioenergy Center Labs (whose research leads to biobased products) are exploring which biobased products they can transition to
- ❑ DOE Weatherization Program is exploring biobased insulation
- ❑ Los Alamos is exploring a biodiesel fuel station
- ❑ Pacific Northwest National Laboratory is exploring biobased detergent for parts washers and biodiesel for grounds equipment

Websites



- **Department of Agriculture**
<http://www.biobased.oce.usda.gov/public/index.cfm>
- **Department of Energy**
<http://www.bioproducts-bioenergy.gov>
- **Office of Federal Environmental Executive**
<http://www.ofee.gov>

Contacts For

- **DOE Buy Bio Initiative**

Mark Decot – Mark.Decot@EE.DOE.GOV

Tel. (202) 586-6501

- **Help DOE Sites with Pilot Projects**

Sandra Cannon – sandra.cannon@pnl.gov

Tel. (509) 529-1535

- **Help Biobased Vendors Find DOE Needs**

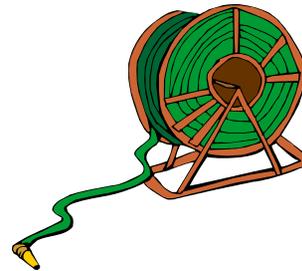
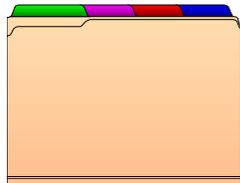
Linda Mesaros – Linmesaros@aol.com

Tel. (843) 768-3396



AFFIRMATIVE PROCUREMENT PROGRAM

Donald Lentzen, EH-41



RCRA Section 6002

- The Resource Conservation and Recovery Act (RCRA, 42 USC 6962) of 1976
 - In section 6002, Congress provided a mechanism to increase government purchasing of recycled products
 - Designed to help stimulate markets for materials recovered from solid waste by using the government's purchasing power

RCRA Requirements

Applies to all Federal agencies, and their contractors who use Federal appropriated funds to purchase the EPA-designated products.

APPLICABILITY to CONTRACTORS

- The Department of Energy Acquisition Regulation makes the Affirmative Procurement Program applicable to all management and operating contracts. This includes reporting accomplishments and limited flow down to subcontractors.

How Does It Work?

- EPA proposes products that can be made and purchased with recycled content.
- Industry and Government comments are solicited.
- EPA designates the product.
- Agencies must buy the product with recycled content unless waiver justified.

RCRA Requirements

- Procuring agencies must buy recycled unless the product:
 - Is only available at an unreasonable price
 - Will not meet reasonable performance standards
 - Is unavailable within a reasonable timeframe or at a sufficient level of competition

Reporting Requirements

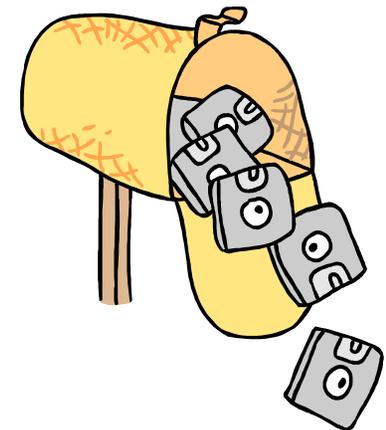
- RCRA section 6002 requires OFPP to report to Congress biennially on Federal agency implementation of the buy recycled requirements
- E.O. 13101 requires the FEE to report to the President on implementation of the E.O.

Annual Reporting Requirements

- OFPP and OFEE jointly prepare the biennial Report to Congress and collaborate on the report to the President
- Only the 6 largest procuring agencies are currently required to report annually on their purchases of EPA-designated products
- Beginning in FY 2004, all Federal agencies will be required to report

Reporting Tools

- Federal Procurement Data System data from SF 279 and DD 350
- EH's Web Based Reporting System
- GSA and DLA data from their stock programs
- Agency data on 8 indicator items



Eight Indicator Items

- Paper: Commercial sanitary tissue
- Non-paper Office: Toner cartridges
- Construction: Concrete
- Landscaping: Landscaping timbers
- Park and Recreation: Park benches, picnic tables
- Transportation: Traffic barricades
- Vehicular: Re-refined oil
- Miscellaneous: Signage

Status of EPA Buy-Recycled Program

To date, the EPA has designated
61 items in **8** categories.

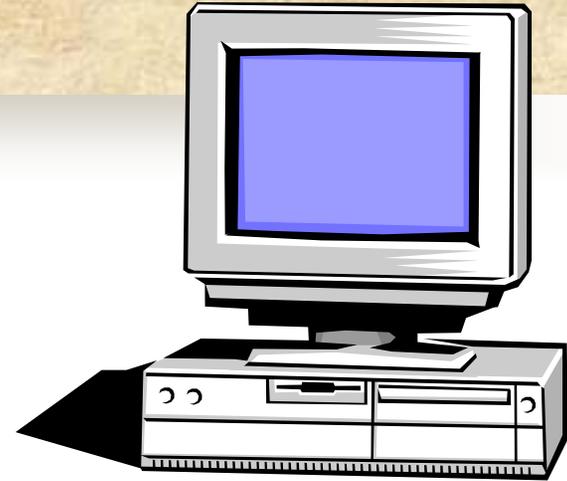


CPG Product Categories

- Paper and Paper Products
- Vehicles
- Construction
- Transportation
- Parks and Recreation
- Landscaping
- Non-Paper Office Products
- Miscellaneous



CPG Web Site



<http://www.epa.gov/cpg>

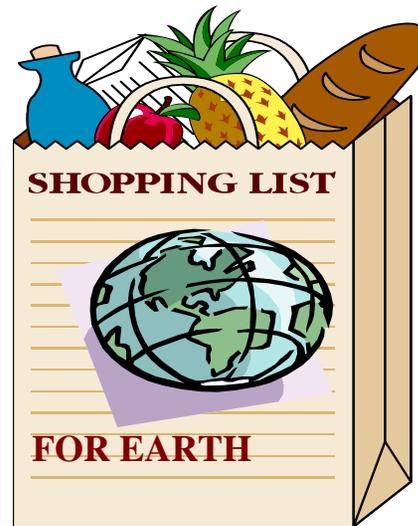
- ❑ Click on “Products”
- ❑ Scroll down to the specific product

<http://www.eh.doe.gov/p2/ap/default.htm>

- ❑ Our own EH Home Page

ENVIRONMENTALLY PREFERABLE PURCHASING

Richard Langston ME-61



Environmentally Preferable

Products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose.



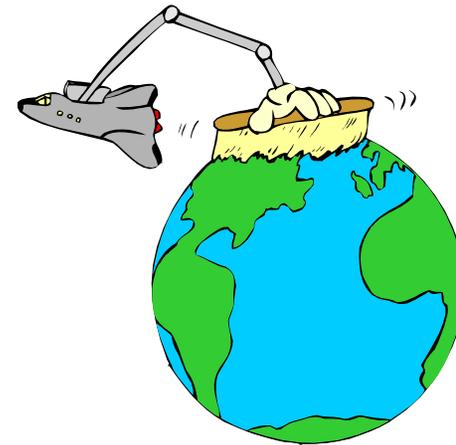


EPA's Five Guiding Principles

- Environment + Price + Performance = EPP
- Pollution Prevention
- Life Cycle/Multiple Attributes
- Comparison of Environmental Impacts
- Environmental Performance Information

Environmental Attributes

- Recycled content
- Energy or water efficiency
- Reduced toxicity or hazardousness
- Reduced packaging
- Recyclability
- Low or no VOCs



Finding Environmentally Preferable Products

- GSA Advantage
- DLA
- JWOD
- UNICOR
- EPA EPP web site: www.epa.gov/oppt/epp
- Retail Stores (Staples, Office Depot)

SPECIFY EPP IN YOUR SERVICE CONTRACTS

- Janitorial services
- Landscaping services
- Administration
- Material/Waste Management
- Copier/Office Equipment
- Construction
- Renovation
- Maintenance
- Facility Management
- Fleet Maintenance
- Printing

Sample Language

Recycled Content

All non-chemical products proposed for use under this contract must conform to the Environmental Protection Agency (EPA) Comprehensive Procurement Guidelines (CPG) if the products are EPA-designated. It is desirable for products that meet the desired objective (e.g., ability to clean effectively) and are not CPG-designated items also contain the highest possible amounts (by percentage) of recovered material(s) and postconsumer content.

Sample Language

Environmentally Preferable Attributes

Prior to contract award, the successful bidder must identify all janitorial products intended to be used in providing janitorial services by product name, manufacturer name, and product type. (Examples of product type include glass cleaner, toilet bowl cleaner, tub/tile cleaner, air freshener, furniture polish, spot remover, floor finish, disinfectant, and graffiti remover.) In addition, the successful bidder must submit documentation that provides proof that all ingredients, both active and inert, in each of the janitorial products identified for use in execution of the contract, adhere to the criteria specified as mandatory product attributes below.

Sample Language

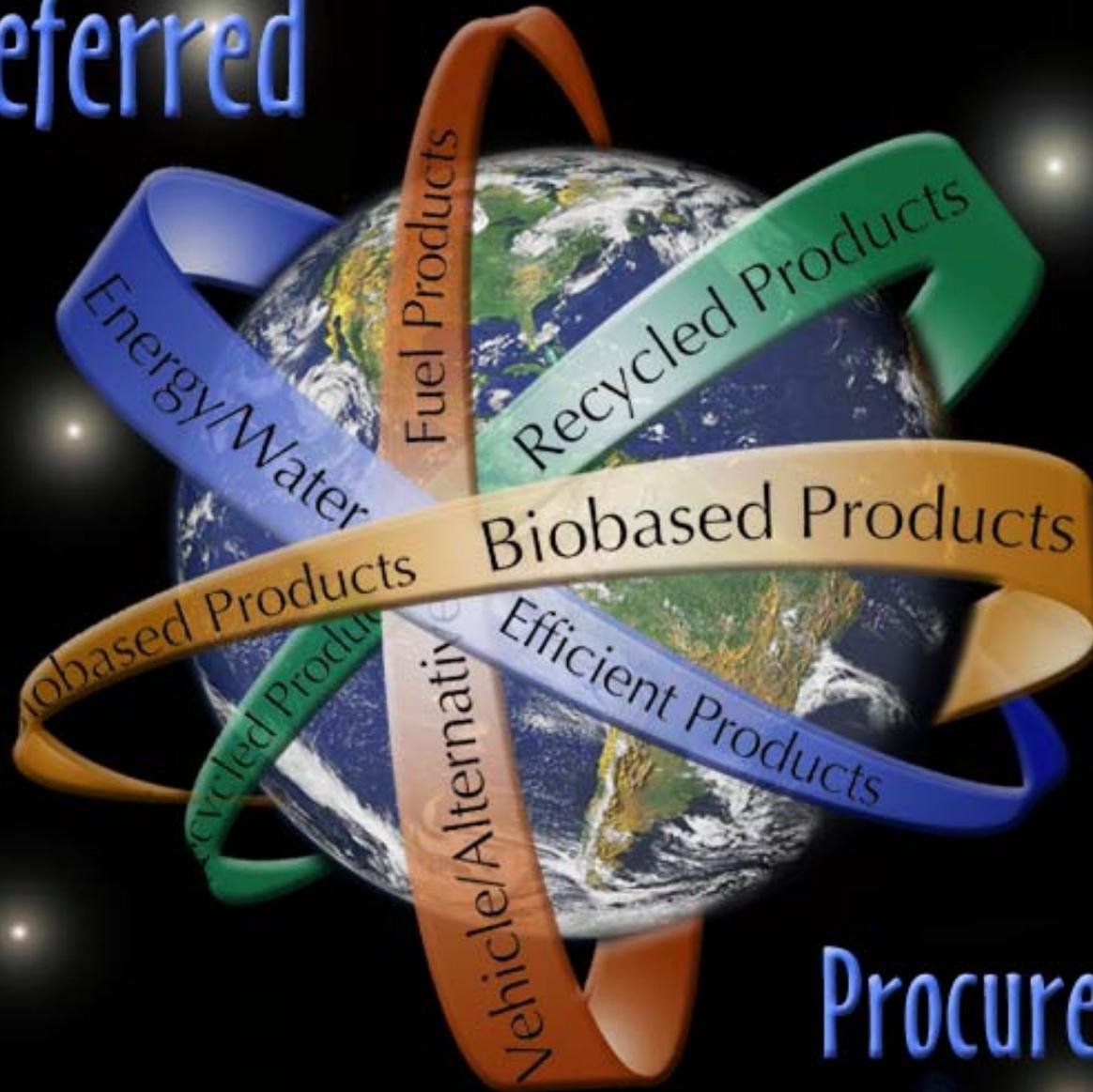
- EPA's EPP web site provides examples and references to standards, specifications, and example contract language.

www.epa.gov/oppt/epp

Finding Environmentally Preferable Products

- **DOE: Recycled Content** - <http://tis.eh.doe.gov/p2/>
- **DOE: FEMP** - <http://www.eren.doe.gov/femp/procurement/>
- **EPA: Energy Star** - <http://www.energystar.gov/>
- **EPA: EPP** - www.epa.gov/oppt/epp
- **EPA: Recycled** - <http://www.epa.gov/epaoswer/non-hw/procure/index.htm>
- **USDA: Biobased** - <http://www.ars.usda.gov/bbcc/>
- **Green Seal: Certifier** - www.greenseal.org
- **Requests for Proposals – Specify Your Own Pilot!**

Preferred



Procurement

THANK YOU!

- Richard Langston (202) 586-8247 ME-61
- Donald Mauritz (202) 646-7958 LBNL
- Shab Fardanesh (202) 586-7011 EE-2G
- Mark Decot (202) 586-6501 EE-2E
- Donald Lentzen (202) 586-7428 EH-41