Public Procurement for Energy Efficient Product Workshop

UL Environment?

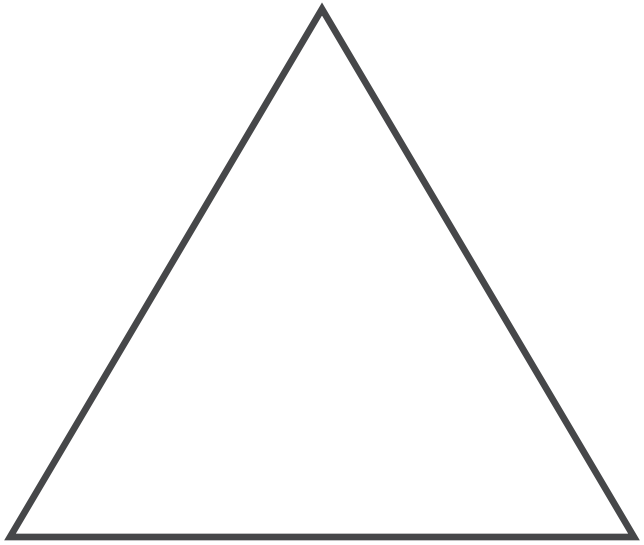
We work to advance global sustainability, environmental health, and safety by supporting the growth and development of environmentally-preferable products, services, and organizations.

This is done through:

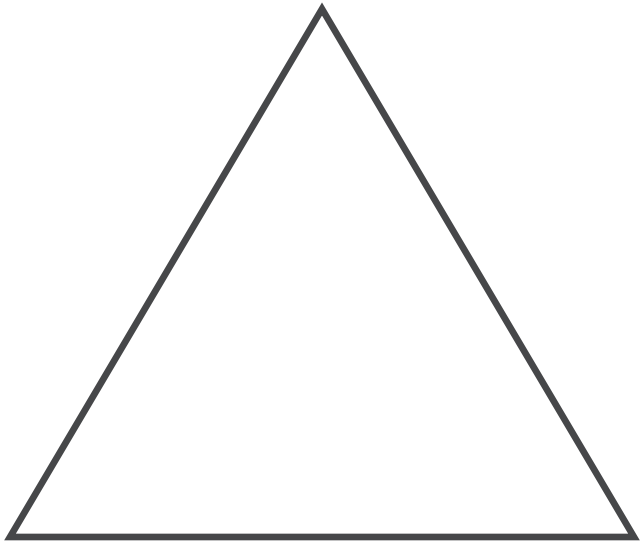
- **Certifications**
  - **GREENGUARD & EcoLogo**
- **Environmental Claims Validations**
- **Environmental Product Declarations**
- **Testing**
- **Auditing**
- **Ratings & Certification**
- **Training and Education**
- **Consulting**

Responsible Purchasing – defined

Responsible Purchasing



Responsible Purchasing



Price, Performance, & Availability

Responsible Purchasing

Definition Components

- Reduce the environmental impacts of purchasing decisions.
- Emphasize multiple environmental attributes.
- Examine entire lifecycle.

The “Real” Definition

Environmentally preferable purchasing means:

Buying better products and services from better companies.

Environmental Attributes

- Product-specific attributes
- Process-specific attributes
- Manufacturer-specific attributes
- Life cycle perspective

Product-Specific Attributes

- Recycled Content
- Energy and water efficiency
- Biobased
- Low toxicity
- Durability
- Low VOC
- Renewable resources
- Packaging
- Upgradeable
- Resource conservation
- PBT-free
- Others

Why Responsible Purchasing?

Cost Savings

- Lower compliance costs
- Lower disposal costs
- Lower liability costs
- Lower injury costs
- Higher productivity

Important Caveats

- A product must work well and be affordable to be considered environmentally preferable.

- "Affordable" does not necessarily mean "less expensive."

- "Affordable" can sometimes mean a higher initial cost.

Going Green Can Save Money

•Lee County, Florida, eliminated hazardous waste production in its fleet maintenance facilities and is saving $17,000 annually.

•Cape May, New Jersey, saved $45,000 over five years by adopting integrated pest management practices.

•Santa Monica, California, switched to green cleaning products eliminating 3,200 pounds of hazardous materials and reducing cleaning costs five percent.

•Phoenix, Arizona, rated 5,800 chemical products based on their toxicity and potential for environmental harm.

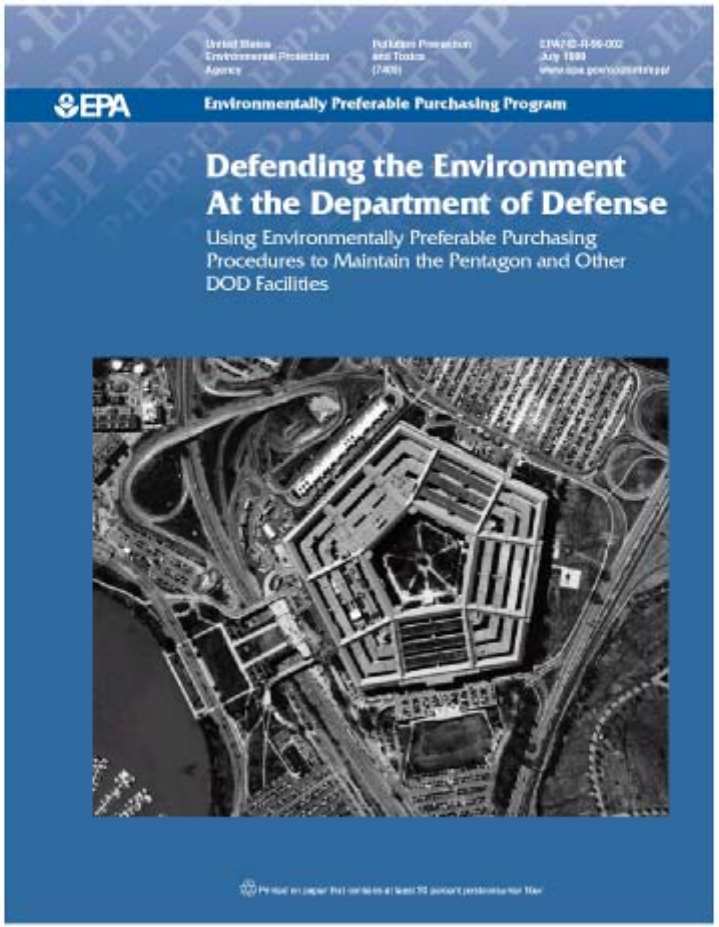
Case Study

The Pentagon

Pentagon Renovation

- Decrease energy consumption 55 to 60 percent.
- Reduce water consumption by 31 million gallons, a 25 percent savings.
- Double the recycling rate.
- Improve indoor air quality.
- Increase worker productivity 6 percent, a $72 million annual savings.

Pentagon Renovation



Find it in the resources section of:

www.newdream.org/procure

Responsible Purchasing

It’s more than just Energy - The Health Case

School Example

- Air Quality Sciences recorded TVOC (total volatile organic compounds) levels in the air of over 300 U.S. schools experiencing IAQ problems.

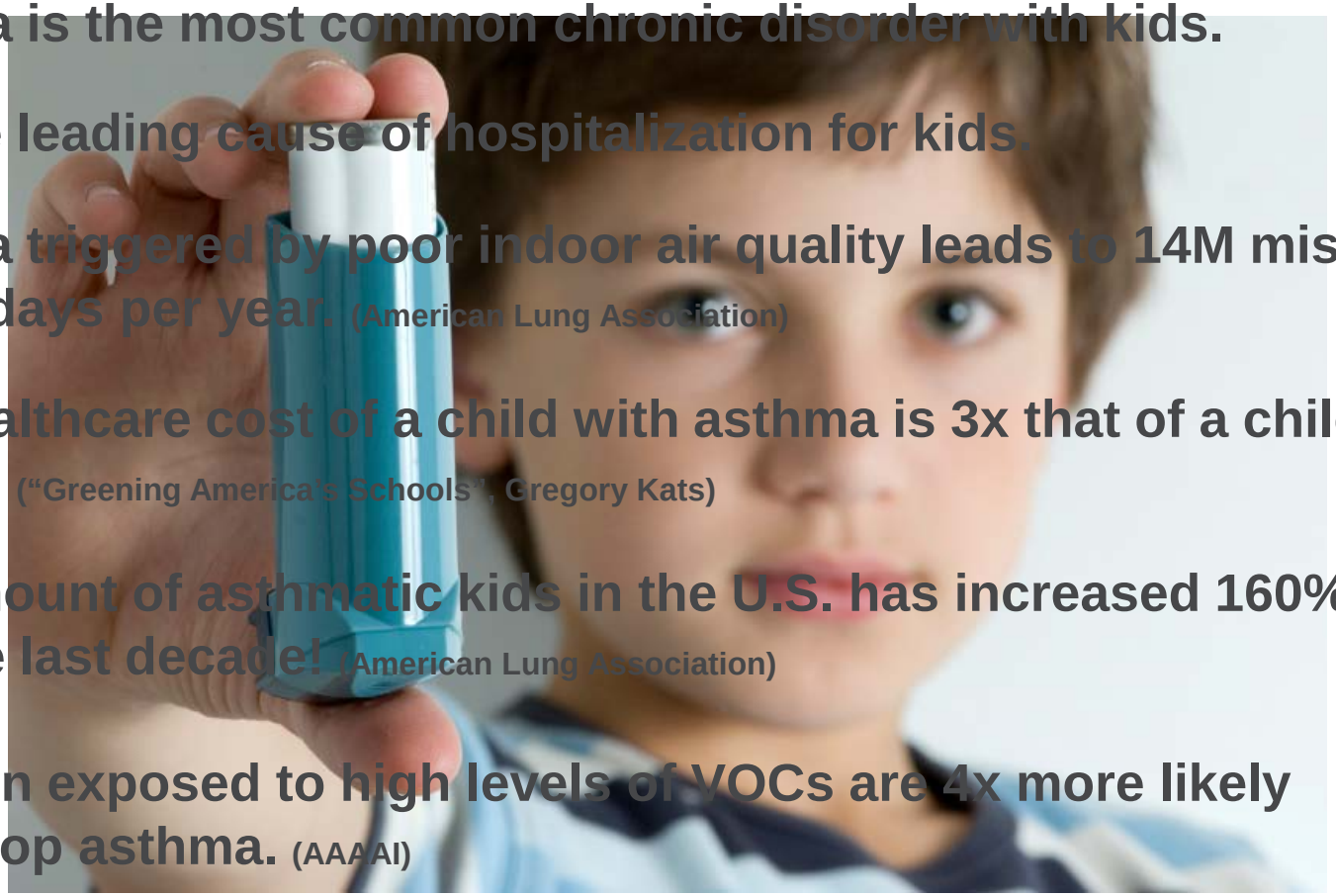
- 200-500 µg/m³ is considered the recommended level of TVOC for a habitable space.

- The average VOC level taken was at 4600 µg/m³; 23x higher than recommended levels for habitation.

Effects of poor IAQ:

- Eye, nose and throat irritation
- Headache
- Upper respiratory irritation
- Flu-like symptoms
- Nausea, dizziness
- Fatigue
- Lower test scores
- Lower student/teacher productivity

Children and asthma



- Asthma is the most common chronic disorder with kids.
- It is the leading cause of hospitalization for kids.
- Asthma triggered by poor indoor air quality leads to 14M missed school days per year. (American Lung Association)
- The healthcare cost of a child with asthma is 3x that of a child without. ("Greening America's Schools", Gregory Kats)
- The amount of asthmatic kids in the U.S. has increased 160% over the last decade! (American Lung Association)
- Children exposed to high levels of VOCs are 4x more likely to develop asthma. (AAAAI)

The ROI of enhanced IAQ

Based on Gregory Kats' study "Greening America's Schools"

Benefits associated with better IAQ	Average related return per square foot
Asthma reduction	$3
Cold and flu reduction	$5
Teacher retention	$4
Employment impact	$2

For 150,000 SF facility, this is a return of over $2 Million.

Strategies to Keep Green Affordable

Price Is ALWAYS An Important Concern

Keeping Green Affordable

- Price Preferences
- Lifecycle Costing
- Best Value Purchasing
- Cooperative Purchasing

Price Preference

- Express a willingness to pay more for products or services with desired environmental attributes.
- Being used by a number of U.S. communities, including:
  - Chatham County, North Carolina (up to 15%)
  - Cincinnati, Ohio (up to 3%)
  - Jackson County, Missouri (up to 15%)
  - Kalamazoo County, Michigan (up to 10%)
  - Kansas City, Missouri (up to 15%)
  - San Diego County, California (up to 5%)
  - Vermont – 5% for recycled-content products.
  - Washington – 10% for EPA-designated recycled-content products

Price Preferences

Product A	Product B
$1,734	$1,873

Price Preferences

Adding a 10% Price Preference

Product A	Product B
$1,734	$1,873 x .90
$1,734	$1,686

Lifecycle Costing

•When comparing costs, examine the total financial cost of the product throughout its useful life.

•Costs to consider:

- •Initial cost
- •Operating costs
- •Maintenance costs
- •Depreciation costs
- •Upgrade costs
- •Disposal costs

WARNING:

Sales people refer to the initial cost as the sucker cost.

Alternative HVAC Systems

Base Case HVAC Technology				
	Base Date Cost	Year	Discount Factor (3%)	Present Value
Investment Cost	$103,000	Base	1.00	$103,000
Fan Replacement	$12,000	12	0.70	$8,417
Residual Value	<-$3,500>	20	0.55	<-$1,938>
Electricity	$20,000	Annual	14.88	$297,549
O&M	$7,000	Annual	14.88	$104,142
Total				$511,171
Alternative – "Green" HVAC Technology				
Investment Cost	$110,000	Base	1.00	$110,000
Fan Replacement	$12,500	12	0.70	$8,767
Residual Value	<-$3,700>	20	0.55	<-$2,049>
Electricity	$13,000	Annual	14.88	$193,407
O&M	$8,000	Annual	14.88	$119,020
Total				$429,146

Cost Savings

- Lower compliance costs
- Lower disposal costs
- Lower liability costs
- Lower injury costs
- Higher productivity

Best Value

- Assign relative weights to price, performance, and environmental criteria.
- Score all competing products.
- Compare the results.

Best Value

	Product A	Product B	Product C
Price			
Performance			
Environmental			
Total			

Best Value

	Product A	Product B	Product C
Price (60 points)			
Performance (25 points)			
Environmental (15 points)			
Total (100 points)			

Best Value

	Product A	Product B	Product C
Price (60 points)	$1,000	$1,050	$1,100
Performance (25 points)			
Environmental (15 points)			
Total (100 points)			

Best Value

	Product A	Product B	Product C
Price (60 points)	$1,000 60 points	$1,050 57 points	$1,100 54 points
Performance (25 points)			
Environmental (15 points)			
Total (100 points)			

Best Value

	Product A	Product B	Product C
Price (60 points)	$1,000 60 points	$1,050 57 points	$1,100 54 points
Performance (25 points)	20 points	22 points	24 points
Environmental (15 points)			
Total (100 points)			

Best Value

	Product A	Product B	Product C
Price (60 points)	$1,000 60 points	$1,050 57 points	$1,100 54 points
Performance (25 points)	20 points	22 points	24 points
Environmental (15 points)	11 points	15 points	13 points
Total (100 points)	91 points	94 points	91 points

Best Value

	Product A	Product B	Product C
Price (60 points)	$1,000 60 points	$1,050 57 points	$1,100 54 points
Performance (25 points)	20 points	22 points	24 points
Environmental (15 points)	11 points	15 points	13 points
Total (100 points)	91 points	94 points	91 points

Cooperative Efforts

- Pool resources
- Avoid duplicating efforts
- Larger buying power means cost savings

Cooperative Efforts

- Check out:
  - WSCA – www.aboutwsca.org
  - U.S. Communities – www.uscommunities.org
  - RPN – www.responsiblepurchasing.org
  - NIGP Knowledge Community – www.nigp.org

THANK YOU.

Mark Rossolo
Mark.t.rossolo@ul.com
503.957.8516