

Green Purchasing at Penn

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About the Purchasing Process

- Oracle - financial and purchasing system
 - 2100 system users; Delegated point-of-demand purchase order creation & approval for transactions <\$5,000
- The Penn Marketplace
 - 187 Marketplace Suppliers; 76% of all purchase transactions
- Purchasing Card
 - 1200 cardholders/transaction approvers; \$1,000 transaction limit
- Electronic Purchase Orders and majority of invoices
 - ~185,000 purchase orders issued electronically

Electronic transactions saves ~3 tons of paper

Wood Use:	10 tons	= 72 Trees
GH Gases:	17,071 lbs CO ₂	= 2 cars/year
Wastewater:	57,226 gallons	= 1 swimming pool
Solid Waste:	6,835 pounds	= ½ garbage truck

Collaborative Buying

- Utilize local, regional and national relationships
 - Philadelphia Area Collegiate Cooperative (PACC)
 - PACC Green Subcommittee with Princeton, Drexel, St. Joe's
 - Educational & Institutional Cooperative (E&I)
 - PA State contracts, US Communities , Novations
- Benchmark and leverage “green” best practices with other universities (Princeton, Rutgers, Drexel, etc...)
- Member of Responsible Purchasing Network
 - Buying guides, resources, best practices
 - <http://www.responsiblepurchasing.org>

Green Purchasing Initiatives

Three elements to success:

- Easy and convenient
- Comparable price, or less expensive
- Socially Responsible
 - Green/Environmentally Preferred, Local Suppliers, Diversity Suppliers

Primary Goal: Raise awareness and enable people to make responsible choices when ordering.

Consider the following:

- Can you consolidate multiple orders? (less packaging and/or reduce delivery vehicle traffic around campus)
- Is there alternative packaging without impacting quality/delivery?
- Is the Supplier socially responsible? Sustainable business practices?

What is a “green” product?

Various definitions of “green” products, often depending on the supplier’s definition, and varying “shades of green”:

- Easily reused (either whole or through disassembly)
- Made using natural and/or renewable resources
- Contains recycled content (post-consumer and/or post-industrial)
- Readily recycled (preferably in a closed-loop recycling system)
- Biodegradable
- Do not contain highly toxic compounds, and production does not result in highly toxic by-products
- Do not contain chlorofluorocarbons or other ozone depleting substances
- Promote good indoor air quality (typically through reduced emissions of volatile organic compounds and/or formaldehyde)
- More energy efficient
- Durable, low maintenance requirements
- Low "embodied energy" (energy required to produce/transport materials)

Buyer Beware: Don’t just accept what someone tells you!

Third Party Certification

EPEAT (Electronic Product Environmental Assessment Tool) is a system to help compare and



select desktop computers, notebooks and monitors based on their environmental attributes.

Provides a clear and consistent set of performance criteria - **23 required and 28 optional** in 8 categories. Three tiers of environmental performance – Bronze (23 required), Silver (+50% of the optional) and Gold (+75% of the optional.) www.epeat.net

FSC (Forest Stewardship Council) standards represent the world's strongest system for guiding



forest management, is based on a “**chain of custody**” that in starts with the forest in which the trees are grown and harvested and continues along the entire manufacturing path: to the mill at which the trees are made into paper, to the distributor that sells that paper to a manufacturer, and finally to the printer that turns that paper into a finished piece for a client. www.fsc.org

Green Seal is a non-profit organization that both develops environmental standards and carries out



the actual certification. Green Seal Certification requires that the product contain a minimum of **30% post-consumer recycled** content. Certification also requires that manufacturing operations be improved to reduce their use of energy and materials as well as reduce wastes and emissions associated with the process of making the product. Green Seal is also concerned with toxins in packaging. www.greenseal.org

Energy Star is a joint program of the U.S. Environmental Protection Agency and the U.S.



Department of Energy helping us save money and protect the environment through energy efficient products and practices. Americans, with the help of ENERGYSTAR, saved enough energy to avoid greenhouse gas emissions equivalent to those from **29 million cars** — all while saving **\$19 billion** on their utility bills. www.energystar.gov



IT responsible for data removal

**IT redeploys
within group**



For equipment with some residual value, items may be sold or traded-in to original equipment manufacturers.



For equipment that has some useful life, but not enough to trade-in, equipment can be donated to a charitable organization.



For equipment at the end of its useful life, equipment is sent to supplier for environmentally responsible disposal/destruction.

Lab Supplies



Fisher Scientific is Penn's strategic supplier for lab supplies and equipment.

- Orders are placed online by end-users through Penn's Marketplace; electronic ordering/invoicing and payments.
 - Over 40K orders issued annually
- Nationwide distribution network, including local warehouse in NJ and chemical stockroom on campus.
- Through better management of the printed catalogs, Fisher eliminated over 2.4 million pieces of paper, equal to ~288 trees.

Eco-friendly Packaging

Fisher Scientific EcoSafPak:

- Constructed of recycled material
- 100% recyclable packaging
- Significantly reduces Styrofoam waste in landfills



Office Supplies

Telrose Corp/Office Depot is Penn's strategic partner for office supplies.

- Orders are placed online by end-users through Penn's Marketplace; electronic ordering/invoicing and payments.
 - Over 30K Purchase Orders issued annually
- Daily desktop delivery provided by Telrose, a West Phila. Company
- Currently evaluating options to consolidate deliveries, use reusable totes, or instituting an "minimum \$ amount" on orders.

In 2008, in support of Penn's sustainability initiatives, Office Depot switched from auto-ship to "upon-request" for new catalogs.

- In 2007, over 2000 catalogs automatically shipped to faculty/staff
- In 2008, 750 catalogs were delivered or "exchanged"
- In 2009, 580 catalogs delivered or "exchanged"

Office Supplies



The Office Depot “Green Book” catalog is a subset of the full product catalog with over 3500 “green” products.

In 2007, only **24%** of all office supplies purchased from Office Depot were “green” or contained recycled material.



In 2008, increased to **29%**

In 2009, increased to **44%**

Two largest categories: ink/toner cartridges and copy paper

Ink/Toner Cartridges - Remanufactured

Remanufactured ink cartridges were once “drilled and filled” and had quality issues. Now “compatible” cartridges undergo extensive testing, have a 100% quality guarantee and cost 10-15% less than original.

- In 2007, Penn purchased ~**18.4K** ink/toner cartridges:
 - **Only 11.8%** were remanufactured cartridges.
- In 2008, Penn purchased ~**22.6K** ink/toner cartridges:
 - **Only 10.5%** were remanufactured cartridges.
- In 2009, Penn purchased ~**20.9K** ink/toner cartridges:
 - **Only 12.2%** were remanufactured cartridges.

Ink/Toner Cartridges “Green” Options?

Are there other “green” options besides remanufactured?

- Dual-pack “A” cartridges: less packaging, less waste
- High capacity “X” cartridges: last longer, costs less per page
- **Print less? Duplex print? Automate processes?**

In 2008, HP began manufacturing original cartridges with 20-60% post-consumer recycled plastic, from the HP Planet Partners Program.



- 12.9 million pounds of recycled plastic (including plastic water bottles) used as raw material
- Equal to 320 tractor trailer loads of plastic

Copy/Printer Paper Purchases

In 2007, Penn purchased ~**24.3K** cases of white 8½” x 11” copy/printer paper (20 lb), of which:

■ **10.3%** cases contained >30% PCR content

In 2008, Penn purchased ~**23.3K** cases, of which:

■ **13.3%** cases contained >30% PCR content

In 2009, Penn purchased ~**21.3K** cases, of which:

■ **20.8%** cases contained >30% PCR content

Switching 10K cases of virgin paper to 30% PCR paper delivers these environmental benefits:

- Save 260 tons of wood, or **1800 trees**;
- Avoid 85K lbs. of waste, or **three** garbage trucks



Why don't we buy recycled paper?

Perception is reality for most people, even if it is misguided or wrong.

- Recycled paper is “much more expensive” or it is “dull and grainy” and it’s just not bright enough.
- Recycled paper “will jam my copier/printer”
- Habit – It’s easy to reorder the same paper that what was ordered last time.
- Landfills? – *“Can’t they just dig a deeper hole?”*
- **We have lots of trees.**

What is a “tree”?



Environmental statistics often state:

- *“By doing ____, you saves __ # of trees.”*

*What does that statement **really** mean?*

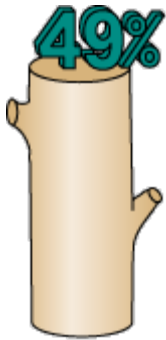
Question: **What is a “tree”?**

- Is it a tree that is 6-8” diameter x 40’ tall?
- Is it a tree that is 12” diameter x 60’ tall?

Answer: Could be either one – It actually depends on which “paper calculator” you use!

Again, Buyer Beware when reading or quoting statistics

Buy Recycled Paper - Save a Tree?



Lumber and plywood
(for building/construction)



Pulpwood
(most of it for paper)



Wood for fuel, cleaning agents, turpentine, etc.

- **Almost ALL of the tree is used after it is harvested.**
 - Often, a tree is cut down for making boards/planks used for buildings.
 - Paper is then made from the leftover scraps at those sawmills.
 - Bark is used for fuel, and wood chemicals are used to make solvents/turpentine
- **Trees are a renewable resource.** On average, when **one** tree is harvested, **five** more are planted in its place, due to success of managed timberlands.
- **More trees are destroyed by fire, disease and insects** than are cut down to make paper or lumber.

Why should we recycle paper?



- **We recycle paper primarily to save landfill space.**
 - Paper is one of the few consumer products that is fairly easy and inexpensive to recycle.

- Each of us uses ~700 pounds of paper products each year.
 - In the US, more paper is recycled than is sent to landfills, yet paper still makes up 1/3 of the material which goes into landfills.

- The recycling process produces **recycled fiber**, a valuable product.
 - New products including corrugated boxes, packaging, newsprint, tissue, and paper in the US and around the world.
 - Example: Newspapers recycled in the U.S. may be part of a box made in Africa.

Copy/Printer Paper

Various shades of “green” paper



- 30% post consumer recycled content is the minimum in order to be labeled “Recycled” by government standards (“light green”)
- 100% post consumer recycled content is really paper from paper (“dark green”)

Perception or Reality?

- Is recycled paper that much more expensive than virgin paper?
- Is recycled paper is dull and grainy?

Paper Samples

Which one is A, B, or C?

Description	Green Seal Certified	FSC Certified	Chlorine Free	Acid Free	% PCR content	Brightness	weight
Xerox multipurpose copy paper					0%	92	20 lb.
Office Depot® Brand White Copy Paper (green-top box)	X			X	30%	104	20 lb.
Hammermill® Great White MultiUse 20 Recycled Paper				X	30%	92	20 lb.
Wausau Exact® Eco 100™ Recycled Multipurpose Paper	X	X	X	X	100%	92	20 lb.

Paper Samples

Sample B contains 0% PCR content (100% virgin paper)

Sample C contains 100% PCR content (paper from paper)

Description	% PCR content	Acid Free	Brightness	weight	Sample
Office Depot Envirocopy Recycled Copy Paper (green-top box)	30%	X	104	20 lb.	A
Xerox 8-1/2 X 11 White, Virgin White	0%	X	92	20 lb.	B
Wausau Exact® Eco 100™ Recycled Multipurpose Paper	100%	X	92	20 lb.	C

What else are we doing?

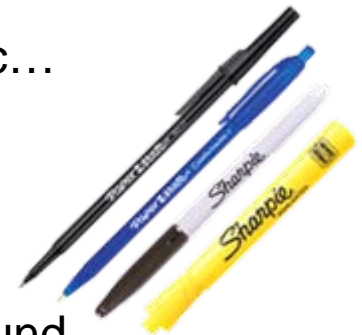


- Ink/Toner Recycling through Telrose/Office Depot
 - Cartridges picked up on regular delivery route.
 - **9 pallets** of cartridges collected last year.

- Document and hard drive shredding
 - **~230K pounds** recycled annually and reported

- eWaste recycling
 - PCs, monitors, printers, cables/mice, TVs, AV equip, etc...
 - **~123K pounds** recycled annually and reported

- Pen/Marker Recycling through TerraCycle:
 - Upcycling, and \$.02/pen will be donated to the Green Fund



What else?

Quench: Point-of-Use water filtration systems, an alternative to 5-gallon bottled water coolers.

- >85 units in departments on campus



UPS: Fully integrated online system for creating shipping labels, allocating billing costs;



- Street-level address validation greatly reduces the number of misdirected packages and multiple delivery attempts;
- Next-day delivery via ground shipping within 250 miles of campus

InterfaceFLOR: Carpet tiles vs. broadloom

- Carpet repurposing and recycling; close-loop process

Thank You!

- Questions?