

The Real Price of Going Green



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Choices

Ethics VS. Economics

Sustainability



Sustainable Development

"development that meets the needs of the present without compromising the ability of future generations to meet their own needs."



"Being green is an ongoing endeavor, not a one-shot exercise."

- Mark Wood, TIAA-CREF

Where to start

- Going green starts with Energy.
- Commercial buildings account for **18% of total energy consumption**.
- Energy costs represent 30% of a typical building's annual budget and is the **single largest operating cost**.

Sequenced Approach to Upgrades

1. Tune Up
2. Lighting
3. Load Reductions
4. Plant /building upgrades

Tune Ups

- Replace Air Filters
- Reduce phantom energy loads
- Check for heat and cooling loss
- Improvements to HVAC systems
 - Energy management & control

Tune Ups

- Heating
 - Turn down thermostat 1 degree
 - Save 3% of heating costs
- Cooling
 - Turn up the thermostat 1 degree
 - Save 3-4% of cooling costs

Lighting



Lighting

	CFL	Incandescent
Energy Input (watts)	13	60
Light Output (lumens)	810	830
Useful life (hours)	10,000	1,500
# Bulbs for 10,000 hours	1	6.7
Bulb Costs	1 @ \$4.00 = \$4.00	6.7 @ \$0.32 = \$2.14
Electricity Used (kilowatt hours)	130	600
Electricity Cost (@ \$.08 per kwh)	\$10.40	\$48.00
Total Cost (Electricity + Bulb)	\$14.40	\$50.14

Cost saving in using a CFL - \$35.74, or 71%!

Mercury and CFLs

A CFL bulb generally contains an average of 5 mg of mercury

- about 1/5 of that found in the average watch battery
- less than 1/100th of the mercury found in an amalgam dental filling

Mercury emissions at the power plant

- 10 mg – incandescent bulb
- 2.4 mg – CFL

Philips claims the bulbs have the lowest amount of mercury of any bulb on the market at less than 3.8 mg per bulb.

Load Reductions

- Buy Energy Star appliances
- Replace lights with energy efficient CFL's
- Change work schedules to reflect energy use
 - Block cleaning or shifting services to daytime hours can result in significant savings.
- Utilize natural light
- Switch from PC's to laptops
- Utilize motion sensors, watt stoppers and plug-load controls

Building Upgrades

- Replace windows
- Insulate
- Install solar or wind technologies
- Recycle / reuse water
- Install a green roof
- Take advantage of natural light
 - Install sky lights
 - Replace office furniture to incorporate natural light



The 3 R's

Reduce

- switch to electronic messages, mail and reports.

Reuse

- remove disposable items from the office
- remove water coolers

Recycle

- paper, newspapers, cardboard, aluminum
- glass, plastic, CFL's and electronics

Get Buy-In

Motivation spreads.

Get your teams excited about a cleaner and healthier working environment.

Marketing

Going Green is....

- *Good for business.*
- *Good for the planet.*
- *Good for the community.*
- *Good for the employees.*
- *Good for you.*

Resources

- Energy Star
 - http://www.energystar.gov/index.cfm?c=green_buildings.green_buildings_index
- Energy Efficiency and Renewable Energy
 - <http://www.eere.energy.gov/>