Going Green Makes Sen\$e

Open House and Tour Department of Energy and Environmental Protection (DEEP) September 28, 2011





Today's Agenda

- Remarks by Commissioners
- CT DEEP's sustainability efforts
- Coffee Break
- •Panel discussion with Green Team
- Tour of 79 Elm St. office improvements and State Capitol Green Projects

Presentation Outline

We will cover:

- Why you should green your agency
- Real examples of what DEEP has done
- How to get started
- Resources

What do we mean by "greening" your office?

Making

© Changes that are Environmentally Beneficial

Changes that are Sustainable conducting business in a way that does
 not use up or degrade natural resources,
 allowing future generations to enjoy
 them.

Why go green?

- Reduces costs
 - energy, trash disposal fees, paper use and supply purchases
- Improve government image with the public
 - spend taxpayer \$ wisely and save them \$
- Conserve resources limited natural resources
- Reduce pollution impacts all of us
- Health benefits better indoor & outdoor air quality

How to Green Your Office

- Reduce Waste "reduce, reuse, recycle"
- Conserving Energy / Efficiency
- Purchasing Environmentally Friendly Products
- Improving Air Quality w/ Greener Commuting
- Provide education to staff

Recycling & Waste Reduction: The facts

- Paper is 3/4 of the waste stream; 1/2 is high grade white paper.
- Costs \$65 per ton for trash disposal in CT, so the more agencies can divert to recycling the lower the trash bill.

Practicing the 3Rs conserves natural resources;
 reduces pollutants emitted to our land, air, and water;
 saves energy; and reduces GHGs.

Recycling is the Law

- 1. Glass & metal food and beverage containers
- 2. Plastic containers PET & HDPE (#1 & #2 plastics)
- 3. Corrugated cardboard
- 4. Newspaper
- 5. White and Color office paper
- 6. Scrap Metal
- 7. Ni-Cd rechargeable batteries (from electronics)
- 8. Waste oil
- 9. Lead acid batteries (from vehicles)
- 10. Leaves
- 11. Grass Clippings
- 12. Residential Covered Electronic Devices
 Remember to "close the loop"!

Got This? Do you recycle the basics?



Other Paper -Newspaper, Magazines, Catalogues





Tyvek and Disk Recycling





Inkjet Cartridges



Battery Recycling



Electronic Waste

 Use DAS state contract to properly recycle "e-waste".



Food composting

- DEEP program started in 1997
- 500 lbs/month or 6,000 lbs/yr of Food Scraps Composted at DEEP





Other

• Wood pallets, scrap metal





Single Stream

- Recyclables collected in one bin
 - all paper (white and mixed),
 - all food/beverage containers (metal, plastic, glass)
 - cardboard
- State contract allows for this
- Some agencies doing it this way
- May be easier, but lowers quality of recyclables

Reduce What Gets Thrown Away as Trash

- Re-use office supplies & purchase reusable
- Reduce paper use through e-communication & double-siding
- Increase recycling through signage & education
- Promote STAR Sorting Trash and Recyclables:
 - replace individual trash cans with mini-trash bins

Cleaning Out Your Office

- 2009 DEEP clean-out resulted in :
 - 8 tons of paper & 80 lbs cardboard recycled
 - Boxes & boxes of paper clips, binders, file folders, pens and pencils



Create a Re-Supply Center

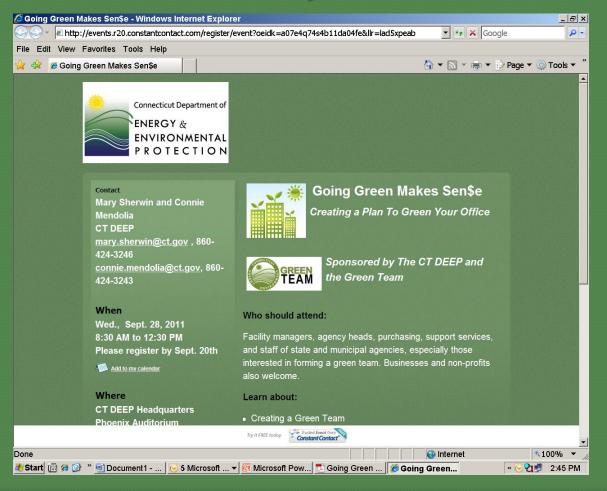


ReSupply Savings Data

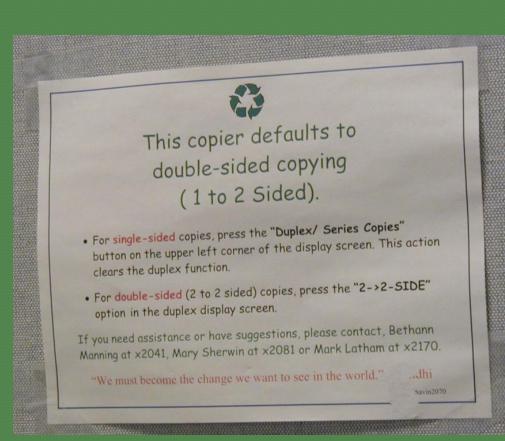
Between April 2009 and December 2010

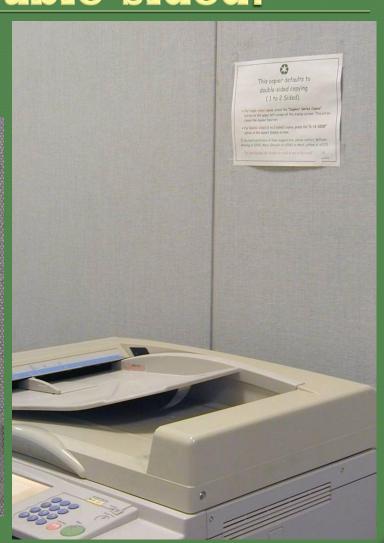
- Saved \$12,179.84 from costs avoided by using supplies from ReSupply
- Avoided 5 tons of CO2 emissions (EPA's WARM Model)

DON'T PRINT - Use electronic features, track changes, scan, e-mail, e-vite



Set Copiers & Computers To Default To Double-sided!





Use Signage To Change Culture



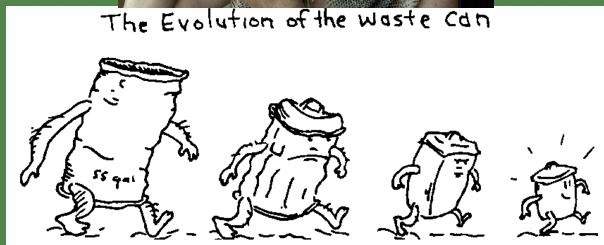


Display info for employees and visitors and utilize website.

One More Way to Reduce

"Say Goodbye to Your Oversized Trash Can and Hello to the New"





Energy Use: Just the Facts

- In 2010, CT state agencies paid over \$100
 million for energy in buildings
 - \$72 million in electricity alone
- Lighting alone accounts for almost 30% in US offices and commercial buildings
- Contributes to climate change, smog, and acid rain from electric power generation

Reducing Energy Use-Buildings

- Benchmark w/ EnergyStar Portfolio Manager
- DEP's 79 Elm Street building first awarded Energy Star certificate in 2005.
- DEP made energy improvements to 79 Elm using state & federal funding.
- DEEP received 2011 Energy Star certification for 79 Elm Street (100 points!).

Reducing Energy Use - Lighting

- Energy Efficient Lighting (T8s, CFLs, LEDs)
- Room Occupancy Sensors







Reducing Energy Use EnergySTAR Equipment

Buy EnergySTAR equipment –

 copiers, printers, fax, refrigerators, microwaves & EPEAT rated computers



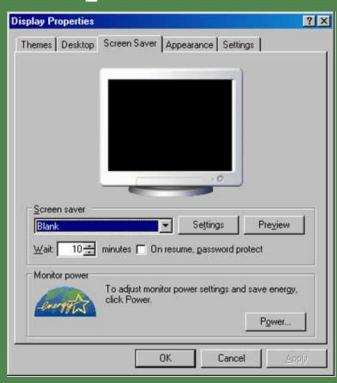






Reducing Energy Use Equipment

- Use Energy Saving Features (sleep)
- Develop policy on shutting down computers& copiers





IT improvements

- DEEP recently installed VMWare, a virtualization software and other hardware improvements to cut energy and costs.
 - DOIT approval necessary
- Using Thin Clients instead of PCs in Computer Training Room
 - 3 watts vs 14 watts for PC
 - Reduces energy costs
 - produces less desktop heat, reduces cooling needs

Printers, Copiers, Fax Machines

Before DEEP had
Over 175 different types of printers, copiers,
faxing machines including individual, specialty

After

- Purchased Multi-function Machines (MFM's)
- Eliminated # of individual printers saved on energy, service contracts, supplies
- Enabled the scanning, faxing functions on MFMs
- Trained Staff on using extra functions

Buying Green: Environmentally Preferable Products

- Many everyday products contain toxic substances or are made of non-renewable resources, so choose products
 - Containing less harmful components
 - Made from recycled materials
- Use DAS Webpage to find state contracts with EPPs

DEEP's Green Purchasing Program

- Developed POLICY for office supplies
- Held TRAINING
- EPP info on internal purchasing webpage
 - Created CATALOG reference guide
- In 2010 DEEP purchased 152 product categories

Environmental Purchasing: Quick and Easy Ways to Start





» RESOURCE DIRECTORY



Environmental Purchasing: Bigger items

- Carpets and floor tiles
 - Recycled content, low VOCs
 - Modular carpet
- Furniture sustainable materials

Paint - low VOCs, recycled content

Environmental Purchasing: Green (EPP) Cleaning Products

- Required by CT State law for schools & state agencies (offices, restrooms, desks)
- GreenSeal & Ecologo certified

Routine checks with cleaning vendor



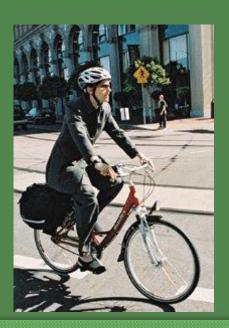
Air Quality: Just the Facts

 Indoor air quality impacted by cleaning products, off-gassing, office machine emissions

- In Connecticut, ground level ozone is our worst OUTDOOR air quality problem
- Major sources include:
 - Vehicles and maintenance equipment

Greening Commuting & Improving Air Quality

- Encourage staff to carpool, take public transportation,
 bike or walk when possible.
- Provide bus schedules, map of local bus routes, bike racks
- Earn rewards, track environmental benefits with **NuRide**
 - DEEP reduced 950,000 VMTs and 412 tons CO2





Join the State Electronics Challenge

- Join the State Electronic Challenge a program for state and local governments and agencies to:
 - Purchase greener electronics
 - Reduce operational impacts of electronics
 - Surplus or dispose of electronics in environmentally safe, healthy way.

DOIT contract requires purchasing most energy efficient computers.

DEEP SEC Results

- In 2008, DEEP purchased almost 2,000 ENERGY
 STAR computer products, resulting in:
 - Energy savings = to powering 71 homes annually.
 - GHG reductions = to removing 89 cars off the road.
- Proper Disposal of old computers resulted in:
 - 15 metric tons diverted from the trash = to waste from 8 households.
 - 142 pounds of toxic materials, like lead and mercury, prevented from entering the environment.

Green Meetings and Events

- Minimize printed materials go electronic, double side
- Encourage public transportation, carpools
- Make recycling bins easily accessible



"Green" Landscaping

- Towns eliminating pesticides on pre K-8 school grounds
- Other towns are promoting organic land care and freedom lawns
- DEEP promotes native species and avoiding invasives in landscaping, e.g. Native Garden



How do YOU get started?

- Form a Green Team
 - provides legitimacy, continuity
- Create a Mission Statement and Plan
- Develop Projects and Implement them
- Provide Education and Communication
- Measure Progress

If you don't have a team the tasks won't get accomplished

Forming a Green Team (What DEEP Did)

- •Recruit members from your agency
 - Include staff from a variety of departments & job titles
- Include other Partners
 - other agencies (DEEP, DPW, DAS)
 - building manager, cleaning staff
- Meet Regularly

DEEP Green Team Mission Statement

- Implement DEEP's Energy Conservation Plan to reduce energy, waste, and GHG emissions
- Measure progress
- Make DEEP a model for other state agencies

DEEP Green Team is organized into project committees:

green purchasing, building improvements, communication and education

Create a Plan

- Create a Roadmap
- Conduct facility walkthrough
 - Lights on in unused rooms?
 - Trash in recycling bins?
 - Computers on at the end of work day?
 - How is your copier being used?
- Talk with staff



Developing projects

- Get suggestions from staff
- Conduct research use DEEP website and other green office guides
- Review achievements of other offices, towns, businesses
- Do the easy, low/no cost stuff first

Implementing Projects

- Some projects may need funding initially, but result in cost savings
- Find out who owns and/or manages your building(s)
- Utilize state contracts may need to incorporate changes
- Any energy efficiency funds available? state, federal, utility based
- Make use of state surplusing

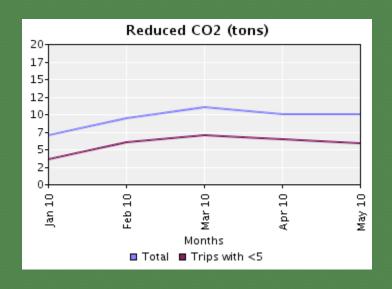
Education & Communication

- Signage
 - Eye catching, fun
 - Place here, there, everywhere
 - Change it up, it gets stale
- Continuously show off what's being done
- Electronic Announcements e-mail, intranet
- Develop Webpage for Green Team
- Make Green Team meetings open to all
- Hold kick-offs and celebrations for new actions

Measure Progress

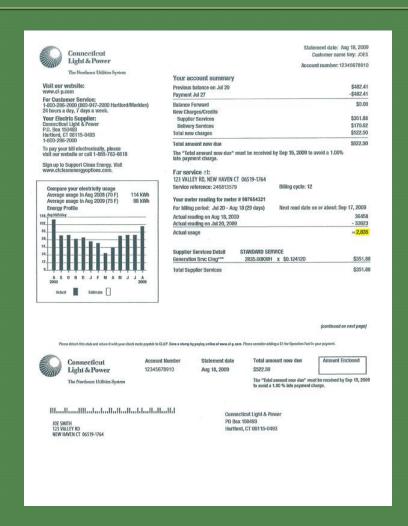
- Anecdotal
- Calculators
- EPA voluntary programs
- Utility Bills
- Waste Disposal Bills
- DAS for EPP
- Other

DEEP NuRide Reductions, 2010





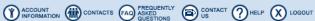
Measure Progress – use bills



Measure Energy - Use Calculators (EPA's Portfolio Manager)











Edit Previous 24 Entries



Home > My Portfolio > DEP > Edit Energy Use

Edit Energy Use: 86670922

Please enter the energy use for each meter entry below. Portfolio Manager requires that entries are for consecutive time periods; only one day of overlap or one day of gap can exist between meter entries to be eligible to generate an Energy Performance Rating.

Meter Information Edit

Fuel Type: Electricity, Grid Purchase (kWh (thousand Watt-hours))

Space(s): Entire Facility

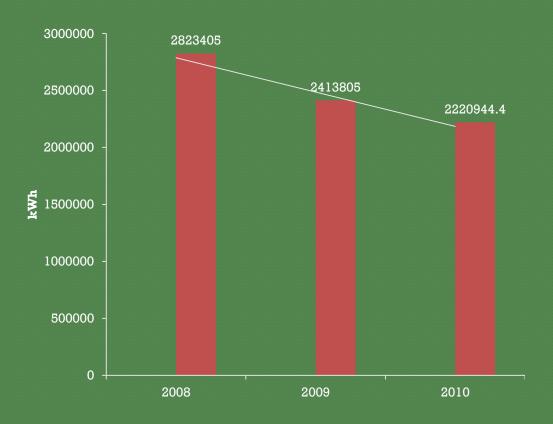
Download Meter Data in Excel

Edit Energy Use:

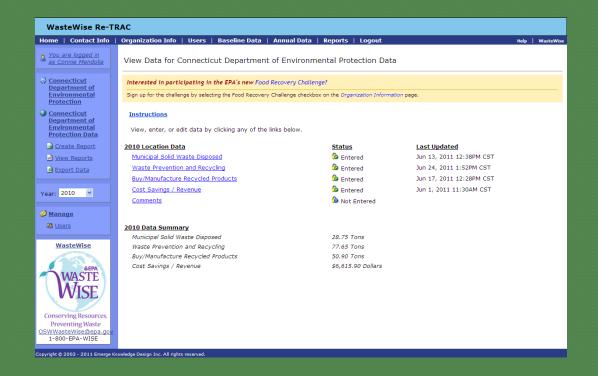
Add Meter Entries

Remove Entry	Start Date (MM/DD/YYYY)	End Date (MM/DD/YYYY)	Energy Use (kWh (thousand Watt-hours))	Cost - US Dollars (optional)	Last Updated
	03/14/2011	04/12/2011	192960.00	S	06/23/2011 by CTOFFICEBUILDINGS
	02/11/2011	03/14/2011	201600.00	S	06/23/2011 by CTOFFICEBUILDINGS
	01/13/2011	02/11/2011	183600.00	S	06/23/2011 by CTOFFICEBUILDINGS
	12/13/2010	01/13/2011	107024.40	S	06/23/2011 by CTOFFICEBUILDINGS
	11/10/2010	12/13/2010	185040.00	S	06/23/2011 by CTOFFICEBUILDINGS
	10/13/2010	11/10/2010	162720.00	S	06/23/2011 by CTOFFICEBUILDINGS
	09/14/2010	10/13/2010	169200.00	S	06/23/2011 by CTOFFICEBUILDINGS
	08/13/2010	09/14/2010	192240.00	S	06/23/2011 by CTOFFICEBUILDINGS
	07/15/2010	08/13/2010	191520.00	S	06/23/2011 by CTOFFICEBUILDINGS
	06/14/2010	07/15/2010	199440.00	S	06/23/2011 by CTOFFICEBUILDINGS
	05/13/2010	06/14/2010	205200.00	S	06/23/2011 by CTOFFICEBUILDINGS
	04/14/2010	05/13/2010	187200.00	S	06/23/2011 by CTOFFICEBUILDINGS
	03/15/2010	04/14/2010	210960.00	S	06/23/2011 by CTOFFICEBUILDINGS
	02/11/2010	03/15/2010	216000.00	S	06/23/2011 by CTOFFICEBUILDINGS

DEEP Electricity Usage Data 79 Elm Street - 20+% Reduction

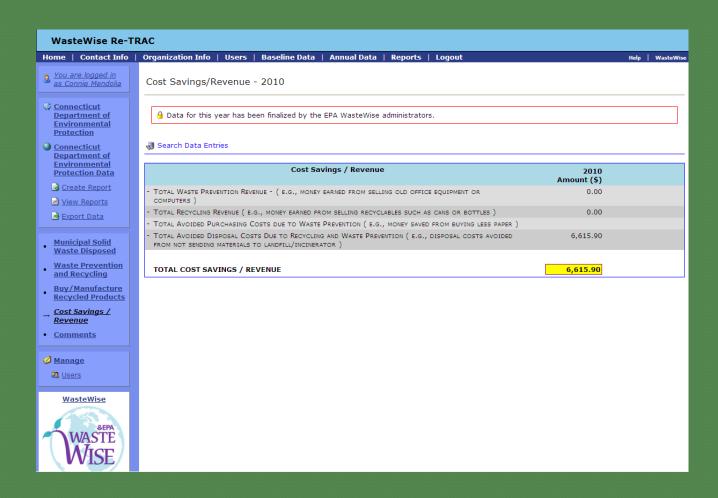


Measure Waste - EPA's WasteWise Re-Trac



Summary of Entered Data

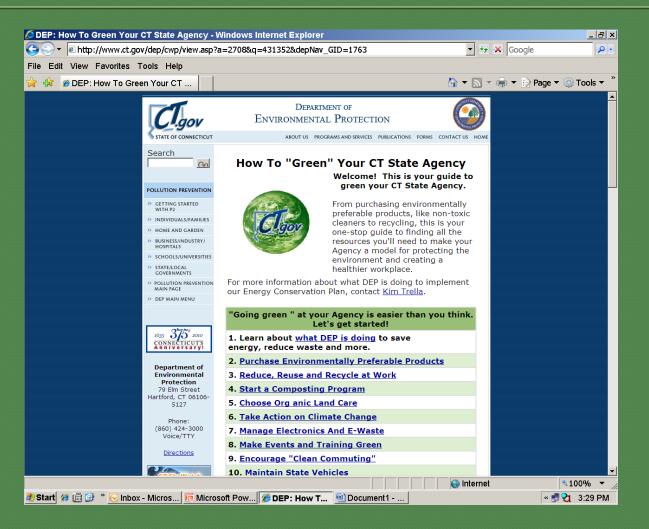
Cost Savings - \$6,415 in 2010 GHGs avoided



"Rap" up: Things to Remember About Greening Your Office

- One Step at a Time
- There's a whole lot of truth to the familiar saying, "What gets measured gets managed."
- Carrots work better than sticks
- Find champions for recycling, energy, etc.
- Collaborate with peers in other agencies
- Make projects fun; celebrate your successes
- Greening is here to stay not just a fad or trend

Check out the DEEP website for more ideas on greening your agency



Resources

- Factsheets provided today
- DAS, Environmental Purchasing 860-713-5181
- CT DEEP Contacts

Pollution Prevention Office: 860-424-3297

mary.sherwin@ct.gov

connie.mendolia@ct.gov

Recycling & Source Reduction: 860-424-3022