

Making Common Cents of Going Green

**JFED, Agencies and Synagogues
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Carbon Footprint

Carbon
Neutral

Green Buildings

Best
Practices

EPA Energy Star

Sustainability

LEED

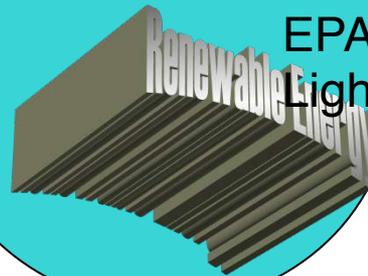
Green Practices

Sustainable Forestry Initiative (SFI)

EPA Green Power

Forest
Stewardship
Council (FSC)

EPA Green
Lights



First, a little primer:

- Carbon Footprint
- Carbon Neutral
- EPA Energy Star
- Green Power
- EPA WasteWise
- Forest Stewardship Council (FSC)
- Green Buildings
- Green Practices
- LEED (Leadership in Energy and Environmental Design)
- Renewable Energy
- Sustainability
- Sustainable Forestry Initiative (SFI)

Sustainability defined.....

- “*Sustainability* means meeting the “Triple Bottom Line” of economic, social and environmental responsibility. It is about fostering respect for people and other living things while at the same time wisely using and managing environmental and economic resources. Paraphrasing the United Nation’s Brundtland Commission (1987) definition.
- In English, finding ways to leave the world in as good or better shape for our kids resource-wise as we inherited it from our parents – L’Dor V’Dor.

Core Areas of Potential Sustainability

- Energy and Utility conservation
- Paper usage reduction
- Recycling
- Green building facility design and retrofitting
- Environmentally conscious purchases
- Sustainable operations and maintenance practices
- Support for environmental conservation where prudent

The Great Debate

- Global warming and Green House Gas (GHG)- What is it and why does it matter?
- Better policies:
 - What can we do to encourage better resource conservation and lower overall consumption
 - Better purchasing of more environmentally friendly products.
 - US has 305M people out of 6 Billion worldwide (ie: 5%) yet consumes 25% of the non-renewable energy produced worldwide.

What is a carbon footprint?



- Carbon footprint – usually measured in terms of Carbon Dioxide (CO₂) emissions. Probably the biggest contributors to your footprint are your travel needs and your electricity demands at home – energy that is typically produced by fossil fuel-burning power plants.
- Who Measures Carbon Footprint? Several organizations have taken the lead in calculating carbon footprints of products;^[3] The US Environmental Protection Agency has addressed paper, plastic (mainly candy wrappers), glass, cans, computers, carpet and tires. Australia has addressed lumber and other building materials. Academics in Australia, Korea and the US have addressed paved roads. Companies, nonprofits and academics have addressed manufacture and operation of cars, buses, trains, airplanes, ships and pipelines. The US Postal Service has addressed mailing letters and packages. Carnegie Mellon University has estimated the CO₂ footprints of 46 large sectors of the economy in each of eight countries. Carnegie Mellon, Sweden and the Carbon Trust have addressed foods at home and in restaurants.

What does it mean?

- How can I; and how can JFED, its agencies and our synagogues; make that much of a difference?
- Where can we get started?
 - Reduce usage
 - Reuse materials
 - Recycle

Why should I care?

- The Triple Bottom Line is typically the justification used to explain why.
 - Economics- we can save \$ and reduce customer/user costs- so why not do it?
 - Social Engagement- we can be better, more respectful citizens
 - Environmental responsibility- We can help make a difference- e.g. toilet paper core example regarding reducing waste.
- a/k/a, the 3 P's: People, Planet, Profits

Personal Impact on Sustainability?

- Home Trash- 4.39 pounds- average amount of trash an American produces daily
- Recycling-10% of solid garbage typically gets recycled in the US, the rest, 90% goes to landfills.
- Cups- 500 cups- average number of paper cups used by an office worker per year.
- Water Usage- Average US residence uses 100,000 gallons a year; individuals use 100 gallons a day; toilets – 5-7 gallons per flush; shower – 25 gallons for 5 min; dishwasher – 12 gallons; hand wash dishes – 12 gallons
- Think about what you can do if you want to reduce consumption.

(Source: Clean Air Council)

Business Impact?

- U.S. Buildings account for:
 - 40% of our overall energy use
 - 70% of our electricity
 - 40% of CO2 emissions
 - 15% of our water resource consumption
 - Office buildings are a big component of these statistics.
 - 5 million buildings in US- 70B square feet

What can we do quickly?

Go after the low to no cost items

- Review current building energy management techniques and adapt.
- EPA Energy Star
- How do we pay bills and track consumption
- Energy Profiling to uncover consumption tracking
- Review office practices
- Kitchen supplies
- Paper copying
- Toner content
- Printer/electricity reduction
- Cups/utensils



- Review Building Operational Practices
- Cleaning supplies
- Lighting
- Paper products
- Recycling and waste practices
- Water consumption
- Electricity/Utility purchasing/consumption
- Indoor air quality

Where do we begin?

- WasteWise -- recycling is just the tip of the iceberg, but it is one of the easiest place to start
- Focus on how we can modify behavior towards recycling to drive up our diversion rates (i.e. the rate trash is diverted from a landfill to recycling) from 20% to over 70%
- Educate our customers/ employees
- Paper Products
 - Best practices:
 - 90% of all paper could be at least 30% post-consumer (i.e. recycled or bio-degradable) content
 - Move to recycle at least 80% of all mixed paper

Where do we begin (cont'd)

- **Energy Star** – an international standard for energy efficient consumer products.
 - Are we/can we currently measuring our buildings vs. all US buildings.
- **Green Power**- should we produce it (via renewables) or buy it, and if so, how much?



Financial Impact - Upside

- Duplex printing and copying double sided
 - 30-40% reduction in paper utilization with \$ savings
- Lighting (per EPA statistics)
 - Compact Fluorescent Bulbs save over 60% vs. incandescent bulbs. How can we aggressively switch out T-12 for T-8?
 - How can we switch out switches to sensors in bathrooms, common areas and conference rooms?



Low-hanging fruit

- Lighting Defined
 - CFL bulbs- A compact fluorescent lamp (CFL), also known as a compact fluorescent light or energy saving light.
 - LED lighting- light-emitting diodes, produce more light per watt than incandescent bulbs. LED bulbs last more than 15 times longer than incandescent and use less energy (payback of less than 1.5 years)

Financial Impact - Upside

- Office equipment, computers, appliances
 - EPA Energy Star rated appliances and copiers save up to 50% in energy utilization, generally at no additional cost for Energy Star rated items
- Supplies
 - Water-Eliminating water bottles and using existing water coolers can save us thousands of dollars not even counting the recycling of the plastic bottles.

Financial Impact - Upside

- Vending machine power management/timers
 - saving 1,100 kWh per year, approximate savings of \$94 per machine
- Electronic Newsletters
 - saving 20 cases of paper, plus postage
 - indirect cost savings for landfill disposal fees and fuel savings (hard dollars and lower emissions)

Financial Impact - Downside

- Solutions are not always cheaper
 - Typically higher costs for:
 - recycled paper (+5% to 10%, although improving)
 - green power (+ \$25/month for an average home)
 - Compact Fluorescent Lights (+ 4x to 5x initial cost but life cycle cost is a no brainer)
 - Duplex printing trays (+ \$200-\$300)
 - Initial outlay for lighting retrofit (but pay back is normally < 1 year)

Impact????

- Informal Review and Analysts- e.g.; BDN's Corporate office uses 1.5 million sheets of paper per year (most of which are in Legal)
 - 1,500,000 sheets = 7 tons
 - 1 ton of paper (if recycled) yields 9 tons of CO₂ emissions; 11 tons if not recycled
 - If we don't recycle our corporate paper we will create 77 tons of CO₂ emissions.

Where can we begin?

- Convert most laser printers to duplex.
- “2-sided” reminders at all copiers.
- Periodic sustainability e-mail reminders of possible behavior modification (e.g. bring in batteries from home for recycling)
- Sustainability initiative updates with goals to be provided quarterly
- Vending machine power misers.
- Healthy snacks: buy fresh, buy local (seasonal).
- Use of more environmentally friendly vendors that can be measured and monitored
- Green Cleaning- explore and execute
- Track/monitor diversion rates in offices/ buildings
- Track and monitor consumption behaviors to look for reduction/savings opportunities
- Socialize incentive opportunities and drive capital to these opportunities.

Taking inventory

- What is in our kitchen or break room?
 - coffee cups- to ceramic mugs
 - Utensils- switch to compostable flatware
 - plates and glasses
 - plastic water bottles- switch to stainless steel water bottles
- Recycle through single streaming
 - Have one receptacle for dry waste ie: paper, cans, bottles that can be recycled
 - Have separate receptacle for wet trash only.
- Operations Initiative

Taking inventory (cont'd)

- Office supplies
 - legal pads
 - phone message pads
 - business cards
 - make outdated stationary into note pads
 - recycle toner cartridges
 - recycle CFLs and batteries
 - Recycle paperclips and ACCO Fasteners

Some (more or less) common practices

- Consider going **green and paperless** with:
 - newsletters
 - special alerts
 - holiday cards
 - internal office and client communications
 - scanning to PDF
 - what can go by e-mail instead of hard copy memo?
 - Look to move towards more Green vendors and suppliers

Common practices at work

- Use less kilowatts:
 - Turn off the lights at night (consider motion sensors)
 - Computer and monitor set for sleep mode which wastes energy or turn them off?
 - Compact Fluorescent's in table and desk lamps
 - Motion sensors in common areas and bathrooms
- Marketing materials, articles, handouts send via email; print double-sided as a default.

Water Conservation

- Replace 2.2-gallons-per-minute **aerators** on faucets with .5-gallons-per-minute aerators - estimated savings:
 - 21 gallons per day for one faucet
 - 7,569 gallons per year for one faucet
 - Annual savings of \$24,400 in avoided water and sewer per building with an average of 224 faucets included.



Power management

- Stand-by or Phantom power – up to 40 watts consumed in stand-by mode by:
 - Computers
 - Monitors
 - Phone and PDA chargers
 - www.ecostrip.com
 - Think about the savings represented by every computer in every office across the company.
 - Work to modify this behavior; measure the consumption

Energy management

- Consider submetering for buildings and tenants to review and potentially affect behavior change.
- Review Energy Management System (EMS) and HVAC retrofit approaches in order to determine and train best practices on maintenance and replacements.
- Engage with a third party consultant to measure energy consumption and track and monitor via FREE tool provided by EPA – Portfolio Manager part of Energy Star

Exterior lighting

- Replace halide bulbs with induction lamp bulbs
 - Two types: 400 watts to 200 watts and 175 watts to 80 watts
 - CO2 emission reduction of 23.27 tons/year
 - \$17K retro-fit, \$8K/year savings (2.4 year payback)

LEED

- “Leadership in Energy and Environmental” Design; US Green Business Council; Delaware Valley Green Building Council
- Alphabet soup: NC (New Construction), EB (Existing Building), CI (Commercial Interiors)
- 4 levels of certification:
 - Certified 40-49- Silver 50-59
 - Gold 60-79 - Platinum 80-100

LEED certification

- LEED is the nationally accepted benchmark for the design, construction and operation of high performance green buildings. LEED gives building owners and operators the tools they need to have an immediate and measurable impact on their buildings' performance. LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality.

(Source: US Green Building Council)

Physical Plant – renovating or moving to new space?

- Working with our respective facilities teams – for replacements/modifications consider using:
 - wood harvested from sustainable forests
 - carpeting, floor tiles and wall covering from sustainable materials
 - lighting fixtures and sensor switches to reduce electric consumption
 - Energy Star-rated equipment and computers and building
 - More focused and sustainable HVAC upgrades

So, LEED, follow, or.....

- LEED Silver projects use:
 - 40% less water
 - 30% less energy
- LEED Silver can reduce:
 - Carbon emissions by 35%
 - Solid waste by 70%

LEED tax incentives?

- Check with state or local government
 - E.g., California offers tax rebates for LEED Silver or higher
 - Philadelphia- local tax credit for green roofs
 - Washington D.C. mandates LEED measurements and reporting for certain retro-fits

State rebate programs

- CFLs- cash rebates for retro-fits
- Energy Star-rated appliances (\$25-\$50 in VT)
- NJ Clean and Green (incentive \$ available for energy efficiency)
- www.dsireusa.org- incentives

Common practices at home

- Check your thermostat
- Convert to CFL and LED bulbs
- Unplug the television set(s) or turn off using power strips
- Recycle paper, bottles, cans, plastic bags
- Soaker hoses for the garden
- Consolidate errands

Resources

- www.abanet.org/environ/climatechallenge ABA-EPA Law Office Climate Challenge Program
- www.texasbar.com Sustainability Task Force
- www.usgbc.org US Green Building Council
- www.epa.gov Environmental Protection Agency
- www.epa.gov/epp/pubs/jwod_product.pdf (52-page guide)
- www.recycleamerica.com Waste Management Recycle America
- www.carbonrally.com Office and team challenges, competitions
- www.earthleaders.org Center for Earth Leadership; checklists for building managers, tenant improvements, best office practices
- www.vendingmiserstore.com Power management for vending machines
- www.41pounds.org Reduce junk mail
- www.envelopes.tyvek.com Recycle Tyvek envelopes

Resources (cont'd)

- www.energystar.gov/index.cfm?c=products.pr_podcasts
- www.michaelbluejay.com/electricity
- www.hes.lbl.gov home energy savings calculator