



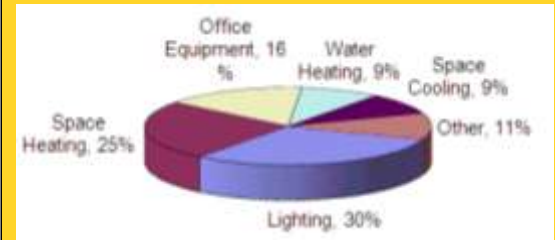
Power Down = Profits Up

EcoStar's guide to quick savings on your energy bill

Energy is a significant operating expense for most companies. This guide was designed to highlight easy to implement, no and low cost strategies to decrease that expense and improve the efficiency of lighting, office equipment and heating and cooling systems. We hope you find it helpful.

As part of its *Power Down* campaign EcoStar offers a range of free services including employee outreach, building benchmarking, and comprehensive facility assessments. Call 978-772-8831 x3304 to learn how we can help you start saving money today!

Sources of Energy Demand



Energy consumption in office buildings
<http://www.greenenergypayback.com/charts>

See the Lights

Since lighting accounts for 30-38% of the electricity consumed in commercial and office buildings, it is an ideal place to start to look for conservation opportunities.

Change Habits

Lighting retrofits can be expensive – Start saving for this investment now:

- Turn off lights in unoccupied areas
- Open blinds and take advantage of natural light
- Eliminate non-essential and decorative lighting
- Use task lights to directly illuminate work areas
- Clean fixtures and diffusers annually to increase efficiency

Sense the Need

Sensors that automatically turn lights on and off can pay for themselves in less than two years!

- *Occupancy Sensors* are most effective in spaces that are frequently unoccupied. (Newer versions are more sensitive)
- *Daylight Sensors* are best for spaces with large windows

Shine Bright

- Replace bulbs in lights used more than 4 hours a day with Compact Florescent Light (CFL) bulbs that last 10 times longer, use 75% less energy, and can save \$30+ over the bulb's lifetime.
- LED exit signs can last up to 25 years, compared to those lit by incandescent or florescent bulbs that last an average of a year or less. A basic upgrade kit can pay for itself in one year!



Energy-Savings Potential With Occupancy Sensors

Application	Energy Savings
Offices (private)	25–50%
Offices (open spaces)	20–25%
Rest rooms	30–75%
Corridors	30–40%
Storage areas	45–65%
Meeting rooms	45–65%
Conference rooms	45–65%
Warehouses	50–75%

Note: Figures listed represent maximum energy-savings potential under optimum circumstances. Figures are based on manufacturer estimates. Actual savings may vary.

Source: California Energy Commission/U.S. Department of Energy/
Electric Power Research Institute

Lamp-Up

Lighting retrofits can provide a simple payback within 3 years. When upgrading the existing system, be sure to choose the lighting solution appropriate for your facility.

- *Industrial warehouse:* T5 or T8 florescent fixtures would be most effective and could provide 25-45% savings over metal halide without restrike issues.
- *General office:* A high-performance T8 or Super T8 florescent lighting would provide a 15% or greater energy savings, better quality of light and longer lamp life compared to standard T8 florescent lights.

Office Etiquette

Office equipment consumes approximately 16% of the energy used in an office building. Easy-to-implement changes to the daily routine can provide immediate savings with no or low capital investment needed.

Be a Real Turn Off

Typically only 50% of employees who regularly use a computer at work activate the 'hibernation' mode on their machine; 49% rarely shut down the computer at the end of their day.

PC Check List

- Set monitors to sleep mode after 20 minutes of inactivity
- Set computers to standby or hibernation mode after 30 - 60 minutes of inactivity
- Set a policy that requires computers to be turned off at the end of the day

Save \$35-75 per PC annually!

Tips:

- The sooner the computer and monitor go into sleep mode the greater the savings
- Software can be installed to activate sleep settings across an entire network – see energystar.gov for options – some free
- Do not allow screen savers - they do not save energy and may prevent a computer to sleep or hibernate
- Use laptops when possible - they consume 90% less energy than desktops
- Be sure sleep settings on laptops are set on both battery and AC power modes
- Print double sided to save energy and paper too

Buy Wisely

- Purchase Energy Star models, which on average use half the energy of other products
- Replace CRT monitors with flat panel LCD monitors which use 1/3 the energy
- Consider ink-jet printers, which consume 90% less energy than laser-jet printers
- Look for printer/copier models with sleep/standby modes and double sided print capabilities



Watch Out for the Phantom

Plug loads from devices in constant "standby" mode such as cell phone chargers can account for as much as 9% of a commercial building's energy consumption. This waste can be eliminated by plugging computers, printers, chargers, etc., into a power strip that can be easily turned off when an employee leaves for the day.

- "Smart" surge protectors can "sense" when peripherals are not needed and automatically power them down and pay for themselves in just a couple of months



To Each Not His Own

Individual appliances can significantly increase the utility bill. Space heaters can consume \$125-150 in energy annually, fans can cost \$15-25 each. Multiply this times half the number of employees and these dollars add up! A perceived need for individual units could be a sign of HVAC system inefficiencies.

Employees are Key to Success

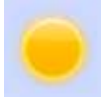


Educating and engaging employees are critical steps to maximize the savings that can be achieved from energy conservation and efficiency initiatives. Involve them today and start saving tomorrow!

- An energy conservation campaign can promote teamwork and increase morale as employees work together to help their company go "green"
- Establish the baseline, then regularly evaluate activities and promote progress

Keep the Temp Just Right

Install a 7-day programmable thermostat to control the temperature of a building efficiently. Cover and lock thermostats to prevent employees from changing settings.



Suggested thermostat settings:

78°F for cooling when occupied in the summer
85°F when building is unoccupied



68°F for heating when occupied in the winter
63°F when the building is unoccupied



Keep the HVAC Humming

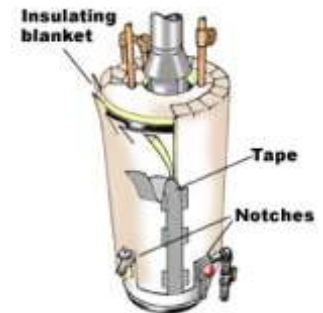
Heating, ventilation, and air conditioning (HVAC) systems account for nearly half a building's energy consumption! Establish operations and maintenance procedures to ensure that they are well maintained and running efficiently.

Maintenance Tips:

- Check cooling systems in the spring and heating systems in the fall before the next season begins
- Clean condenser coils, replace air filters, and check ducts and pipes regularly
- Consider replacing old HVAC systems with a new energy efficient system

Work the Windows

- Repair or replace caulking, weather stripping as needed to keep windows air tight
- Open blinds on sunny winter days for solar heat, close at night to prevent heat loss
- Keep blinds closed on sunny summer days to minimize cooling needs



Other Quick Wins

Install energy misers on vending machines and achieve savings in two years
Turn down the electric water heater at night and on weekends
Wrap water tanks and pipes with insulation to reduce energy loss

Resources

Alliant Energy Info on high-efficiency HVACs, variable speed drives, compressed air systems
www.alliantenergy.com/UtilityServices/ForYourBusiness/EnergyExpertise/EnergyEfficiency/index.htm

Building Operations + Maintenance Best Practices – A Guide to Achieving Operational Efficiency
www1.eere.energy.gov/femp/pdfs/omguide_complete.pdf

Cost Calculators for Energy-Efficient Products
http://www1.eere.energy.gov/femp/technologies/eep_eccalculators.html

Energy Saving Tips for Businesses www.nationalgridus.com/rigas/business/energyeff/3_tips.asp

PC Power Management www.energystar.gov/index.cfm?c=power_mgt.pr_power_management

Putting Energy into Profits: ENERGYSTAR Small Business Guide
www.energystar.gov/ia/business/small_business/sb_guidebook/smallbizguide.pdf



Want to decrease your monthly energy bills? EcoStar offers free services that can help!

Employee Outreach and Education

- √ Design and delivery of a conservation campaign that will work best for your corporate culture.
- √ Evaluate and report on potential savings from powering down office equipment.

“Power down” practices provide an immediate and significant savings, no investment required! For example, turning off a PC at the end of each day can save as much as \$75/year and add up to \$1875 for 25 employees.

Benchmark Building's Energy Consumption

- √ Provide reports that highlight potential savings to be gained from conservation, efficiency investments.
- √ Establish a baseline to track and measure progress in decreasing electric and natural gas usage.

We'll enter a year's worth of utility bills into Energy Star's Portfolio Manager tool to compare the energy used in your facility with others that are similar in size, age, location, and activity to gauge how efficient it is.

Comprehensive Building Energy Audit

- √ Assess boilers, furnaces, air conditioners, air compressors, lighting, motor drives, building loads, more.
- √ Available to entities that incur more than \$100,000 in annual energy costs and have less than 500 hires.

Our partners at the Industrial Assessment Center will conduct a comprehensive audit for manufacturing companies to identify efficiency investment opportunities that have a payback period of two years or less.

Reference Resources

√ Click the Power Down link on our website to access PowerPoint presentations on *Campaigning for Conservation, Building Operations and Management Best Practices*, a Conservation Checklist, and reference resources.

[Services provided free of charge to Devens businesses + EcoStar members](#)

Visit www.ecostardevens.com or contact Dona Neely at donaneely@ecostardevens.com or 978-878-1728 x3304 to learn more.



Save the Date: Feb. 25, 8:00-Noon – EcoStar hosts a Free Lean to Green Workshop
Learn strategies to improve production times, eliminate waste, and decrease costs from the experts with MassMEP. Watch for more details or call to reserve your seat!

EcoStar is a program of the Devens Eco-Efficiency Center. Our activities promote sustainable business practices that provide economic and ecological efficiencies. Visit www.ecostardevens.com to learn about our education and technical assistance services.

EcoStar thanks EPA New England for their support of the Power Down Devens campaign

