GETTING STARTED

Virtually any small business can improve its energy efficiency easily and cost-effectively, using the numerous resources that are available both from ENERGY STAR, as well as a wide variety of other organizations. These resources are available to help you through the process of completing an upgrade. This process can be broken into major activities that are involved in carrying out an energy improvement project.

Major activities

Identifying Projects

Finding Funds

Selecting Contractors

Prioritizing Projects

Managing Projects

GETTING STARTED: IDENTIFYING PROJECTS

As the saying goes, "time is money" and that can be particularly true for small businesses. However, not taking time (to save energy) can mean big money – lost.

Reduction in daily energy costs and monthly utility bills for the lifetime of your business can make it well worth the time needed to pursue effective-efficiency upgrades. Here are some strategies to jump-start your energy savings:

- Ask your utility if they offer free or inexpensive energy audits and/or rebates for energy-efficiency upgrades. A good place to start is the Energy Crossroads Web site **(EXIT>)** - a consolidated listing, by state, of many of the utility energy-efficiency programs available for small businesses. Small manufacturers who are interested in a facility audit may also want to check out the following:

  DOE's Industrial Assessment Centers (IAC) **(EXIT>)**

  Department of Commerce's National Institute of Standards and Technology's (NIST) **(EXIT>)**

  Manufacturing Extension Partnership (MEP) **(EXIT>)**
- Invite contractors to your facility to suggest upgrades and provide free estimates.
- Contract with an energy professional to coordinate and manage your project.
- Leverage your time by drawing on the expertise of ENERGY STAR by visiting its Small Business Web site.

GETTING STARTED: FINDING FUNDS

Access to capital for an energy-efficiency upgrade need not be an issue. Some upgrades require little funding. For those that do require investment, don't worry; there are many traditional and non-traditional financial resources available. A well-designed upgrade can provide your business a positive cash flow from energy savings while paying off the capital investment for new equipment.

For small, inexpensive projects, you may want to use your own internal funds to pay for the upgrade in order to keep your payback period low and return on investment high. For larger jobs, financing might be the only way to pay for the upgrade. Fortunately, a variety of sources and mechanisms exist for small businesses to finance energy-efficiency improvement projects.

Did You Know?

Energy-efficient upgrades typically save you money that can be used to pay for the cost of projects.

It's your business decision to weigh your competing needs for capital versus continuing increases in operating costs for energy. Remember – even a longer return-on-investment on energy efficiency results in affordable comfort, and new, more reliable equipment that will pay for itself with energy savings. Strategic energy efficiency investments are your hedge against the certainty of higher utility bills that you cannot control.

The following resources can help you find funding information and opportunities for your upgrade:

To help you locate special offers and rebates in your area, ENERGY STAR provides an online zip code driven tool.

The Office of Small Business Development Centers (SBDC) **(EXIT>)** is affiliated with the U.S. Small Business Administration (SBA), and has offices in all states offering free services to help small firms develop conventional loan applications for loans backed by the SBA. SBA loan programs include business start-up, expansion, property and major equipment purchases, and disaster recovery. For SBA loan information please visit http://www.sba.gov/financing/index.html **(EXIT>)**

ENERGY STAR's Resources: Finance, Products & Services Web page

ENERGY STAR's Directory of Energy Efficiency Programs (DEEP)

EPA's Small Business Gateway

ENERGY STAR's Buildings Upgrade Manual - Financing Section **(PDF)**

Energy Crossroads **(EXIT>)**

Small Business Administration's Financing Your Business **(EXIT>)**

DOE's Energy Efficiency and Renewable Energy's Financing Solutions & Incentives **(EXIT>)**

National Association of State Energy Officials' "State and Territory Energy Offices" Web page**(EXIT>)**

Alliance to Save Energy's Financing Energy Efficiency Web page **(EXIT>)**

Local Government Commission's Funding Opportunities **(EXIT>)**

Another aspect of funding energy-efficiency is group purchasing with business association members, other franchisees, etc. to achieve lower unit prices on efficient equipment with volume purchases. Read more about this strategy in ENERGY STAR Small Business' Group Purchasing Fact Sheet **(PDF)**

The Small Business Association of Michigan operates a group purchasing Web site at www.sbam.org (EXIT>) that is open to all small businesses throughout the United States.

GETTING STARTED: SELECTING CONTRACTORS

The selection of experienced, competent contractors and other energy professionals is critical to the success of your energy-efficiency project(s). Here are some guidelines to aid you in choosing a contractor:

- Ask for multiple current references that you can contact about work the contractor performed.
- Ask the contractor to provide a cost-estimate in writing for any work they will do.
- Make sure they are licensed and insured contractor.
- The contractor should certify that their work conforms to state and local regulations and codes.
- Verify that the contractor carries workers' compensation insurance.
- Make sure the contractor has experience and will use energy-efficient equipment.

Did You Know?

Many contractor associations offer valuable information and advice on selecting a contractor, and a directory of listings. For example, visit the Air Conditioning Contractors of America **(EXIT >)** Web site.

Visit ENERGY STAR's online "Service and Product Provider Directory" and search for contractors and energy professionals in your area to help you with your upgrade(s).

Check the following sources for additional tips on selecting a contractor:

ENERGY STAR's 10 Tips for Hiring a Heating and Cooling Contractor

California Energy Commission's How To Hire An Energy Services Company Handbook **(PDF) (EXIT>)**

California Energy Commission's How To Hire An Energy Auditor To Identify Energy Efficiency Projects Handbook **(PDF) (EXIT>)**

State of Oregon Construction Contractors Board Consumer Help **(EXIT>)**

If you have a home-based business, you may also find the following resources useful:

ENERGY STAR's Recommendations for Finding a Contractor

Lawrence Berkeley National Laboratory's Home Energy Saver **(EXIT>)**

GETTING STARTED: PRIORITIZING PROJECTS

You may wonder, "Where should I start?" Do I replace one piece of equipment or system at a time? Or, should I do a comprehensive upgrade of my entire facility? The answer will vary depending on each individual business' situation. The age of your current equipment and facility systems, your type of business, your local utility rates, your hours of operation, and your access to capital are all key factors in what level of upgrade makes business sense. One place to start is with low-cost and no-cost changes such as those listed in the Sure Energy Savers section of this guide.

If cash flow is an issue, you may want to wait until a piece of equipment or system fails or is a certain number of years old before replacing it with an energy-efficient model. However, if you are building a new facility or doing a major remodel, you should incorporate energy-efficient upgrades into your design due to the lower incremental cost of "doing it right the first time." For an existing facility, it may come down to what is financially feasible for your business at a particular time. Ask your contractor if they can assist you in prioritizing your energy-efficiency projects.

In addition, the following resources may be helpful to you:

ENERGY STAR's Cash Flow Opportunity (CFO) Calculator

ENERGY STAR's Building Upgrade Manual's Business Analysis Section **(PDF)**

Rebuild America's Project Planning Tools **(EXIT>)**

DOE's Building Technologies Program's Planning and Financing Your Project **(EXIT>)**

GETTING STARTED: MANAGING PROJECTS

The size and complexity of the energy-efficiency project your business undertakes will most likely be the main factor in deciding who will manage the project. For something as simple as replacing HVAC filters or replacing incandescent lamps (light bulbs) with ENERGY STAR compact fluorescent lamps (CFLs), you or your staff could do it yourselves. Depending on the skills on your staff, installing caulking and weather-stripping, ceiling fans, occupancy sensors for lights, LED exit signs, and programmable thermostats may be "do-it-yourself" projects not requiring outside help.

A more complex project, such as designing and replacing your facility's entire lighting system, will require the help of someone who has experience managing that type of project. Here are some resources to assist you in the process of managing your energy-efficiency projects:

ENERGY STAR's Create Action Plan

ENERGY STAR's New Building Design

Rebuild America's Solution Center Services **(EXIT>)**

California Energy Commission's How to Hire a Construction Manager For Your Energy Efficiency Projects Handbook **(PDF) (EXIT>)**

As your business implements energy-efficient projects it is good practice to continuously assess energy performance to ensure that savings are being achieved. ENERGY STAR offers tools to help you understand and assess your facility's energy performance.

SURE ENERGY SAVERS

It's easy to get started improving the energy efficiency of your facility with little expertise or money. There are many reliable, low-risk, high-return actions that you can do, and are relatively simple! If resources permit, undertaking a comprehensive energy efficiency program, with the assistance of a professional if needed, would yield even greater savings. However, while you are considering a comprehensive program at least implement as many of the actions from the following list that you can to start saving now! Further information on these topics can be found in the Larger Opportunities section of this guide.

Don't let this discourage you, or delay your taking simpler actions for sure savings. There are many reliable, low-risk, high-return upgrades that you can implement with limited or no technical support. So, if you don't do anything else, at least implement as many actions from the following list as you can. More detailed information on these topics can be found elsewhere in this guide.

Lighting

- Turn off lights (and other equipment) when not in use. High utility costs often include paying for energy that is completely wasted by equipment left "on" for long periods while not in use.
- Replace incandescent light bulbs with ENERGY STAR qualified compact fluorescent lamps (CFLs), wherever appropriate. CFLs cost about 75% less to operate, and last about 10 times longer. Their prices are dramatically lower now than when first introduced.
- Install switch plate occupancy sensors in proper locations to automatically turn lighting off when no one is present, and back on when people return. Even good equipment can be installed wrong, so don't install the sensor behind a coat rack, door, bookcase, etc. It must be able to "see" an approaching person's motion to turn on the light before, or as they enter an unlit area.
- Adjust lighting to your actual needs; use free "daylighting."
- To prevent glare, eyestrain, and headaches, do not "over-light." Too much light can be as bad for visual quality as too little light – and it costs a lot more.
- Install ENERGY STAR qualified exit signs. These exit signs can dramatically reduce maintenance by eliminating lamp replacement and can save $10 dollars per sign annually in electricity costs while preventing greenhouse gas emissions.
- Consider upgrading from older T12 (1.5" diameter) tubes with magnetic ballasts to more efficient T8 (1" diameter) fluorescent lamp tubes with solid-state electronic ballasts.

Heating and Air Conditioning

- "Tune-up" your heating, ventilating and air-conditioning (HVAC) system with an annual maintenance contract. Even better, have your HVAC serviced prior to both heating and cooling seasons. Even a new ENERGY STAR qualified HVAC system, like a new car, will decline in performance without regular maintenance. A contract automatically ensures that your HVAC contractor will provide "pre-season" tune-ups before each cooling and heating season. You save energy and money, and your system may last years longer with reasonably priced yearly maintenance fees. Your chances of an emergency HVAC break-down also become very remote with regular maintenance.
- Regularly change (or clean if reusable) HVAC filters every month during peak cooling or heating season. New filters usually only cost a few dollars. Dirty filters cost more to use, overwork the equipment, and result in lower indoor air quality.
- Install an ENERGY STAR qualified programmable thermostat to automate your HVAC system. This solid-state, electronic device optimizes HVAC operation"24/7" based on your schedule, and can be "overridden"

as needed for unscheduled events. So consumers and staff always enter a comfortable facility, this "smart thermostat" can turn on the HVAC one hour before arrival instead of heating or cooling unoccupied space.

- Control direct sun through windows depending on the season and local climate. During cooling season, block direct heat gain from the sun shining through glass on the east and especially west sides of the facility. Depending on your facility, options such as "solar screens," "solar films," awnings, and vegetation can help. Over time, trees can attractively shade the facility, and help clean the air. Interior curtains or drapes can help, but it's best to prevent the summer heat from getting past the glass and inside. During heating season, with the sun low in the South, unobstructed southern windows can contribute solar heat gain during the day.
- Keep exterior doors closed while running your HVAC. It sounds simple but it will help to avoid wasteful loss of heated or cooled air.
- Use fans. Comfort is a function of temperature, humidity, and air movement. Moving air can make a somewhat higher temperature and/or humidity feel comfortable. Fans can help delay or reduce the need for air conditioning, and a temperature setting of as much as 3 to 5 degrees higher can feel just as comfortable with fans, and each degree of higher temperature can save about 3% on cooling costs. When the temperature outside is more comfortable than inside, a "box fan" in the window, or large "whole facility" fan in the attic, can push air out of the facility and pull in comfortable outside air. Fans can improve comfort and save energy year round.
- Plug leaks with weather stripping and caulking. This will help prevent the escape of heated or cooled air from your facility. Caulking and weather stripping also let you manage your ventilation, which is the deliberate controlled exchange of stuffy inside air for fresher outdoor air. To learn more about indoor air quality in your facility visit EPA's "Indoor Air Quality" Web page.

Office Equipment

- Always buy ENERGY STAR qualified products for your business. The ENERGY STAR mark indicates the most efficient computers, printers, copiers, televisions, windows, thermostats, ceiling fans, and other appliances and equipment.

Water – Hot and Cold

- Fix leaks. Small leaks add up to many gallons of water and dollars wasted each month. Water conservation saves energy and money, especially when it is hot water.
- Use water-saving faucets, **(EXIT>)** showerheads, **(EXIT>),** toilets and urinals **(EXIT>)** to save water.
- Install an insulation blanket on water heaters seven years of age or older, and insulate the first 3 feet of the heated water "out" pipe on both old and new units.
- If buying a new water heater, always buy the most efficient model possible. In areas of infrequent water use, consider "tankless" water heaters to reduce "standby" storage costs and waste.
- Set water temperature only as hot as needed (110-120 degrees) to prevent scalds and save energy (check local codes for specific temperatures for your business type).
- When landscaping, practice green landscaping (greenscaping or xeriscaping) to preserve natural resources and prevent waste and pollution by using plants native to your climate that require minimal watering and possess better pest resistance. If local code allows, consider diverting "gray water" **(PDF)** for irrigation rather than using fresh water.

Kitchen and Food Service Equipment

- Purchase ENERGY STAR qualified kitchen and commercial food service equipment. For example, qualified refrigerators and freezers can save over 45% of the energy used by conventional models, which equals as much as $140 annually for refrigerators and $100 for freezers; deep fryers can save between $60 and $180 per year; hot food holding cabinets can save up to $280 per year; and steam cookers can save between $450 and $820 per year depending on fuel.

- For existing refrigerators, clean refrigerator coils twice a year and replace door gaskets if a dollar bill easily slips out when closed between the door's seals.
- Have large and walk-in refrigeration systems serviced at least annually. This includes cleaning, refrigerant top off, lubrication of moving parts, and adjustment of belts. This will help ensure efficient operation and longer equipment life.
- Consider retrofitting existing refrigerators and display cases with anti-sweat door heater controls, and variable speed evaporator fan motors and controls.

Funding

- Check the various government entities in your area for tax incentives the may apply to energy-efficiency upgrades you perform in your facility.
- Contact your local utilities to inquire about rebate programs they have that may apply to energy-efficiency upgrades to your facility.