Green Tool Kit

ENERGY CONSERVATION

Appliances & Refrigeration

The Green Business Program of Santa Barbara County recommends replacing refrigerators that are more than 10 years old. When you are ready to purchase a new refrigerator or freezer, be sure to purchase Energy Star certified models. See Energy Star's website to find an Energy Star model from your preferred brand. Also check to make sure that your refrigerator temperature is between 38ºF and 41ºF, and your freezer is between 10ºF and 20ºF. If your refrigerator does not have exact temperature settings, place the dial to the middle temperature setting available.

Rebate requirements for energy efficient appliances are set by the Consortium for Energy Efficiency. For commercial refrigerators, as used in restaurants and hotels, rebates are available through PG&E and SCE.

The Food Service Technology Center is also a great resource for restaurants to find energy and water efficient appliances and rebates for system upgrades.

Computer Power Management

Computers are serious energy consumers, especially considering the amount of time they sit unused: while you are at a meeting, lunch, or even home for the evening. Many people assume that the screen savers indicate that the computer is in low power mode, but in fact there is little savings. Still others believe that turning the computer off and on uses more energy. Neither is true. In order to ensure that your systems are powered down correctly, take the following steps:

• Monitors should be set to sleep after 10 minutes, and CPUs after 20 minutes.
• If you are a very large business with an IT manager dedicated to installing software through the network, consider network power management.

There are rebates available through SCE for network-enabled computer power management.

Lighting

Lighting is often the most effective way to reduce energy use, and the rebates often available from energy utilities can make these changes easy to implement. Check with SCE or PG&E regarding rebates here. For more information on resources that can help you improve your energy efficiency, visit SCEEP for south county businesses or Santa Barbara County Energy Watch for north county businesses. Here are the most common types:

Light Emitting Diodes

LEDs are semiconductor devices that produce visible light when an electrical current is passed through them. There are many LED options, which are more energy efficient and longer lasting than fluorescents and incandescents, and also do not contain toxic mercury. Some examples of LED options can be viewed Here. For more information, visit Energy Star lighting.

Incandescent

The standard incandescent is the most common light bulb. This is the pear-shaped bulb you have seen more than any other. The label should have a wattage listed, most commonly in the 60-100 W range. Applicants to the Green Business Program must replace incandescent bulbs with LEDs.

Halogen

Common halogen bulbs are large flood lamps with a screw-in base, or bi-pin bulbs that go into track or recessed light fixtures. Replace the screw-in bulbs and pin-based bulbs with the LED version of the same lamp type. Remove any non-spotlighting halogen fixtures with ones that will accept LEDs. Be sure to get dimmables bulbs if the fixture uses a dimmer.

Compact Fluorescent (CFLs)

Fig. 2

Fig. 1

Fig. 3

If your business has CFLs in place, they do not need to be immediately replaced by LED bulbs. There are three common types of compact fluorescent bulbs. The first (Fig. 1) is the two-pin based lamp. The second (Fig. 2) common type is the spiral cone, which is often hidden in the other behind frosted glass. The third (Fig. 3) looks quite similar to the standard incandescent, with the exception of a larger base that holds the ballast of the compact fluorescent. These are commonly used in industrial applications, and are very common in the recessed reflective cans seen in many offices. When choosing a compact fluorescent, be skeptical of the lamps that aren't Energy Star certified. Be sure to get bulbs that have a high color rendering index (CRI), which is on a scale of 1-100. CRI measures how well the light source is able to reveal the colors of various objects faithfully in comparison with a natural light source. Also look for the color temperature on the label. A 'warm white' lamp would be closest to the color of an incandescent, at about 2700 K. If you'd like brighter, whiter light closer to daylight, look for color temperatures in the 4000K to 5000K range (the higher the color temperature, the whiter the light). Note that compact fluorescents are also made in PAR and R type shapes to replace halogens, however these generally provide a flood light effect rather than the spotlighting effect of a halogen bulb. To get the spotlighting effect, LEDs should be used.

Linear Fluorescent Lamps

These are the most common fluorescents in commercial applications. The long thin tubes that we see in warehouses, offices, and businesses everywhere are very efficient, but there are a few types: the T-12 ,the T-8, and the T-5 lamp. The T-12 has a diameter of 1.5 inches, the T-8 is 1 inch, and the T-5 is 5/8 inch in diameter. The older T-12 lamps are less efficient and require magnetic ballasts, while T-8s and T-5s are more efficient and use more efficient electronic ballasts. In addition, electronic ballasts operate at a much higher frequency, minimizing the flicker of the lamps, which reduces eye fatigue and headaches that can be experienced by some people.

Exit Signs

The Green Business Program suggests that LED exit signs be used in businesses seeking certification. It is sometimes difficult to tell which kind you have without opening the sign. Look for a strip of tiny red or green lights to indicate that you have an LED sign, one or two two-pin bulbs that indicate you have an incandescent sign, or two bulbs that look like compact fluorescents to indicate a CFL sign. The incandescent bulbs are usually 15-25 W each, and are labeled as such.

Occupancy Sensors

For spaces with variable occupancy, like restrooms, conference rooms, storage rooms, hotel bathrooms, and lockers, consider using occupancy sensors. When doing a survey of your facility's energy use, look for places where lights are on and no one is home. If these are spaces that are empty for long periods and have short bursts of use, they could be a good fit for an occupancy sensor. There are many options for the sensors: most used in commercial settings have a sensor integrated into the switch. In guest bathrooms, you might use a sensor with an integrated LED nightlight, so that guests don't have to leave the light on in order to find their way to the restroom at night. For spaces with one owner (like a private office) it is simpler and cheaper to educate the users to turn off lights themselves.

Heating Ventilation And Cooling (HVAC)

These are the points most often skipped in the checklist. Depending on your business' situation in the building (tenant, owner, subletter, etc) you will have zero to complete control over the heating and cooling systems. If you are a tenant in a multi tenant building, the building manager is likely to have chosen the systems, and maintains them, in which case you as a tenant would be responsible only for the setpoints (78ºF for cooling and 68ºF for heating) on your thermostats and use of small energy-efficient heaters and fans. When the facility is closed, HVAC should be turned off or should maintain temperatures of 55ºF for heating and 90ºF for cooling. However if your company owns the building, you would be expected to answer all questions regarding HVAC equipment and maintenance.