Developing an Energy Management Program

If you’re new to energy efficiency, the first step you should take is to develop an energy management program. An energy management program studies electricity usage, how and where electricity is used and evaluates ways to save in order to reduce and implement electricity conservation measures to increase a building’s operating efficiency. It can also involve training employees on electricity-saving steps they can take.

An energy management program can include:

**Heating, Ventilating, Air Conditioning (HVAC)**

Cooling makes up about 23 percent of electricity use in a stand-alone, all-electric restaurant. A number of measures can be implemented into a restaurant’s cooling system to provide a more efficient operation including:

- Installing energy-efficient air conditioning/chiller equipment.
- Installing HVAC fans and pumps with variable frequency drives that can control motor and pump speeds, as well as the electricity needed to run the fans and pumps.
- Putting window film on to reduce heat loss.
- Adding insulation for windows and doors, such as weather stripping and thresholds.
- Installing a timer on supply air fans.
- Utilizing energy management systems.
- Decreasing the daytime thermostat setting.
- Installing a night setback procedure.

**Lighting**

Lighting can take up almost 20% of electricity use in a stand-alone, all-electric restaurant. While incandescent lamps are commonly used for aesthetic purposes and color-rendering characteristics, these can be converted to more efficient lighting without sacrificing light quality and design.

We have a number of rebates and measures that can help store lighting become even more energy-efficient which include:

- Participating in our Restaurant Lighting Direct Install Offer — This is a free lighting retrofit. Exclusions apply.
- Replacing older, less efficient T12s with low-wattage T8 and T5 lamps with electronic ballasts.
- Installing reflectors which enables delamping by reducing the number of lamps needed.
- Replacing your incandescent bulbs with CFLs which use 75 percent less energy and last 10 times longer than traditional bulbs.
- Replacing fluorescent light exit signs with LED exit signs.
- Installing induction lighting which offers long-lasting, low-maintenance solutions to hard-to-reach places and public facilities.
• Installing pulse-start metal halide and high-pressure sodium lamps. These lamps provide high-intensity lighting, long lamp light and high energy efficiency for spaces where lights are used for many hours and have high ceilings.
• Adding occupancy sensors, or automatic lighting controls, this switches off the lights when people leave the room and turn them back on when people return. Programmable timers can also turn lights on and off at appropriate hours.
• Installing light tubes and other natural light maximizers that can replace some electric lighting.

Cooking and Refrigeration

Cooking and food storage equipment uses a lot of energy. Cooking uses about 14 percent of total electricity use and refrigeration about 26 percent. As such, it is important that all cooking and refrigeration equipment operate efficiently. Be sure to turn off all cooking devices whenever possible and provide regular refrigeration maintenance.

Hot Water

Heating water for washing dishes, cooking, bathrooms and other uses make up about 5 percent of total electricity use in a restaurant. However, electricity can be saved by upgrading the existing insulation on both the water heater tank and distribution pipe, as well as by installing more energy-efficient water heating equipment.

Miscellaneous

About 10 percent of energy used in a restaurant is to run miscellaneous equipment, such as cash registers and appliances. Turning off these devices whenever practical and providing a regular maintenance program will help lower energy expenses.

For more information, call Hawaii Energy’s Business program at (808) 839-8880 or email hawaiiennergy@leidos.com.