

## Restaurants

### Food Preparation

Food preparation, especially cooking, is the number one energy user, no matter what the type of restaurant.

Reducing energy use comes down to wise operation of the kitchen equipment – run the equipment only when it is needed.

- Implement a schedule of start-up and shut-down for appliances so that they are operating only when needed. This schedule should include staggering the turn-on times of electric equipment to avoid large temporary electrical loads during kitchen start-up. Post the schedule in a highly visible spot to make it easier for employees to implement.
- Reduce idle time on cooking equipment. Pre-heat cooking equipment only 15 to 30 minutes before it is needed and set the unit to the minimum preheat temperature.

Cutting the stand-by time for an electric broiler by one hour a day can save as much as \$460 per year.

- Cooking equipment that is nearly instant-on, could be turned off during light traffic times. For example, a small bun toaster uses 3,600 Watts of energy, which costs a restaurant only 3.6¢ per hour to operate. 3.6¢ per hour does not sound like much; however, if this unit can be off for 6 hours a day each day of the year, the savings add up to \$79 per year.
- Use the most efficient cooking equipment available.  
  
Ovens, steamers and fryers are more efficient to operate than range tops, griddles and broilers. If you have a convection oven, use it if possible instead of conventional ovens.

- The typical exhaust and supply fans in the hood will cost about \$446 for electricity to run these fans.

To reduce this cost, install a two speed control on the fans so that when only part of the cooking equipment is being used, hood energy use can be reduced.

- Service all gas cooking equipment at least twice a year to maximize efficiency, including adjusting the flame on the pilot light and recalibrating the thermostat.
- Cooling fans should be directed towards workers, not cooking equipment.

### Heating and Air Conditioning

Heating and air conditioning represents the second highest source of energy use in any restaurant.

- Use programmable thermostats and set the temperature down 10o to 15o at night in the winter. Because Kentucky is a humid state, don't set the temperature up at night in the summer because humidity problems in the building will result.
- If you have a heat pump, either install a smart thermostat that keeps the strip heat off during building reheat or use outdoor thermostats to prevent the strip heat from coming on unless absolutely necessary.
- Replace or clean filters on a monthly basis.
- Have the indoor coils cleaned every three years. Because of the cooking, grease collects on the coils causing dirt to build up on them.

Dirty coils will reduce the efficiency of the unit and reduce cooling/heating capacity.

- Inspect the duct work and insure that all the joints are tightly sealed. Cloth duct tape is not sufficient. The joints and seams, including the joints on flexible ductwork should be sealed with a mastic sealer. This material is readily available at any large HVAC supply house.
- It is important that all outside ductwork, either on the roof or up the side of the building, be fully sealed and well insulated.

## Lighting

- Retrofit older fluorescent fixtures with new electronic ballasts and T8 (1" diameter) lamps. For a four-foot fixture a 37% savings will be realized.
- Replace incandescent lights with compact fluorescent lights. If the lights are controlled by dimmers, then purchase dimmable compact fluorescent lamps. These bulbs have a higher first cost but, because of their long life will more than pay for themselves just in maintenance savings alone.
- Use occupancy sensors in infrequently used spaces.

Storage closets, backrooms, break rooms and equipment rooms are ideal locations for these sensors. Leviton, Hubble and others make a variety of these devices.

- Replace any incandescent exit sign lamps with an LED replacement kit – 1/10th the energy and 100 times the life. An example of such a replacement kit is TCP Inc.'s model 20715 candelabra base retrofit kit. Replacing a typical incandescent exit light with an LED light will

save \$34 per year and pay for itself in less than a year and a half.

- If the outside lights are on a timer, be sure the timer has some back-up in case the power goes out. This can be either a spring for an electro-mechanical clock or with a battery for a digital clock.
- Also, if you have to replace the existing time clock, replace it with a 365 day unit that changes the on and off times based on the changing times of sunrise and sunset, e.g. Intermatic ET8000 series Time Switch.

## Other considerations

- Repair dripping faucets. Even a small drip of only once every three seconds will waste over 1,000 gallons of water a year. If hot water is dripping then there is the additional waste of the energy used to heat it.
- Run only full loads in the dish washer. It takes as much hot water to wash a partial load as a full load.
- Use a chemical rinse. This eliminates the need for a booster heater for the dishwasher.
- Check the seals around the doors on the refrigeration equipment and repair or replace as necessary.
- Clean the compressors and coils of the refrigeration equipment regularly.
- Refrigerated food should be stored in as few refrigeration units (refrigerators or freezers) as possible. Full refrigerators and freezers are more efficient than partially full units. Turn off the refrigeration units that are not needed

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