



Energy Answers for Restaurants

Restaurant operations are extremely energy-intensive. A typical restaurant expends \$3.13 per square foot for electricity. The good news is that restaurants can reduce these costs by implementing simple energy efficiency measures. **Every dollar saved through efficiency goes straight to the bottom line.** This fact sheet provides an overview of typical energy efficiency measures and a list of resources for more information.

One-Step Strategy

There's one way to save energy every time without spending a dime: Turn it off. Get staff on-board with these energy-savings strategies to ensure success.

- Shut off fans, lights, cooking equipment, holding cabinets, computers, and signs when not in use.
- Cut standby time. During slow periods turn broilers, ovens, fryers, and exhaust hoods down or off.
- Close refrigerator, freezer, oven and steamer doors between uses.
- Pre-heat cooking appliances only as long as needed.

Get Comfortable with Efficiency

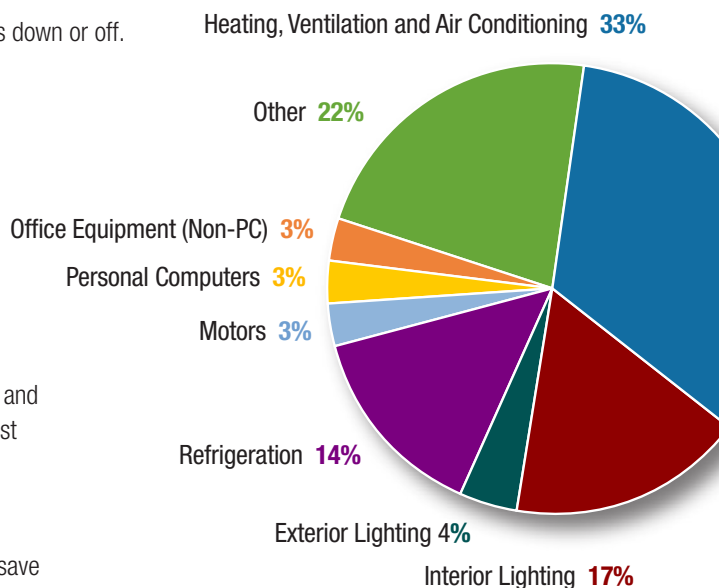
Lighting and cooling consume the most electricity in restaurants and they have the largest impact on comfort. Replacing lighting is relatively easy and it can reduce your cooling requirements by 30%, so it's a good starting point.

Energy-efficient lights are available in a variety of styles and functions—from chandeliers and sconces to recessed cans and spotlights. Many are dimmable. Keep in mind that the least efficient lights may be the cheapest to purchase but will cost the most to operate.

Consider these energy-saving strategies:

- Replace old overhead T12 tubes with more efficient T8s and electronic ballasts and save 15-25% of lighting energy use.
- Install occupancy sensors in restrooms, break rooms, storage areas, and walk-in refrigerators to save 30-75% of lighting energy. Use timers for exterior lighting and be sure to adjust seasonally. Use daylight controls in the dining area to benefit from sunlight.
- Install ENERGY STAR® qualified LED exit signs, which use 80% less energy and last 10 years, compared to 12 months or less for incandescent.
- Use a programmable thermostat to raise the temperature after closing and save up to \$500 per year.
- Don't wait until it breaks! Schedule regular maintenance and tune-ups to keep air conditioning equipment running smoothly. Change filters regularly.
- Replace your aging or inoperable air conditioning system with a high efficiency model and save \$900 per year. Be sure the system is properly sized. Bigger isn't always better.

Fig. 1 Typical Electricity End-Use in Arizona Restaurants



A SIMPLE TWIST OF THE WRIST

You could save \$84 per year by switching four dimmable incandescent bulbs with four dimmable CFLs.

Find Savings in the Air

Effective ventilation is critical for comfort, health and safety. Consider these strategies to save energy:

- Add variable controls to your kitchen exhaust system to reduce operating costs by 30-50%.
- Operate two-speed fans on low whenever possible.
- Introduce unconditioned make-up air near the kitchen hood. This will minimize the amount of conditioned air exhausted at the hood.
- Have a professional balance your ventilation system to ensure proper air distribution. A sure sign that your system is out of balance is an outside door that blows open frequently or is difficult to push open due to suction.

Trim Kitchen Energy Use

REFRIGERATION

Replace old appliances with ENERGY STAR labeled commercial solid door refrigerators and freezers, which save up to 45% of electricity use with a 1.3 year payback compared to other models. Additional measures to consider:

- Switch incandescent lamps to fluorescents in your walk-in. Add strip-curtains to reduce air infiltration by up to 75%.
- Install anti-sweat heater controls on display cases. These controls sense humidity conditions and turn the heaters off when un-needed.
- Install high-efficiency evaporative fan motors.
- Add glass doors to display cases to improve efficiency by 50%. Note: Seek professional assistance when conducting a retrofit to ensure compressor system is not oversized.
- Purchase a high-efficiency ice-maker. Set production for nighttime hours to reduce demand charges.

WATER HEATING

Save twice—on electricity and water bills—by reducing hot water consumption.

- Fix dripping faucets and pipe joints. Install aerators on hand sink faucets.
- If your system has a recirculation pump, install a timer to turn it off when the kitchen is closed.
- Insulate hot water pipes. Flush sediment from the tank twice a year.
- If your water heater has an automatic flue damper, be sure it is on, so heat doesn't escape up the flue.
- Replace old, high-volume kitchen pre-rinse sprayers with high-velocity, low-flow models. You'll use half the water, cut energy use for water heating, and reduce your sewage costs.
- Use cold water to operate a food disposer. Cold water solidifies grease so it can be ground up and washed away. This simple step saves energy, water, and potential plumbing problems.

OPERATION & MAINTENANCE

- Recharge low refrigerant. Clean condenser and evaporator coils. Replace torn or loose door gaskets.
- Check current temperature settings with accurate thermometer and adjust to manufacturer's recommendations as necessary. Check defrost settings to prevent cycle from running longer than needed. A typical cycle is 15 minutes, four times daily.
- Regularly clean the fryer heating element and remove sediment for best performance.
- Clean burners. Check oven doors for loose hinges.
- Flush out steamer boilers and remove mineral build-up.
- Stagger start times of heavy-duty electric cooking equipment to keep demand charges down.

ENERGY STAR

The best way to save when buying new kitchen equipment is to look for the ENERGY STAR label. Commercial fryers, hot food holding cabinets, solid door refrigerators and freezers, and steam cookers may earn the ENERGY STAR. These products can save up to 60% on energy costs compared with conventional models. The savings continue over the lifetime of the equipment and can really boost your profitability.

SHARE YOUR SUCCESS STORY

Tell your patrons and the community about your conservation efforts. Become an ENERGY STAR partner.

Can We Help?

APS offers incentives for qualified efficiency measures. Learn more about the Solutions for Business program at aps.com

Recommended Resources

APS: Solutions for Business Center, Energy Survey and "Ways to Save" Technology Fact Sheets
aps.com

Putting Energy into Profits:
ENERGY STAR Guide for Restaurants
www.energystar.gov/ia/business/small_business/restaurants_guide.pdf