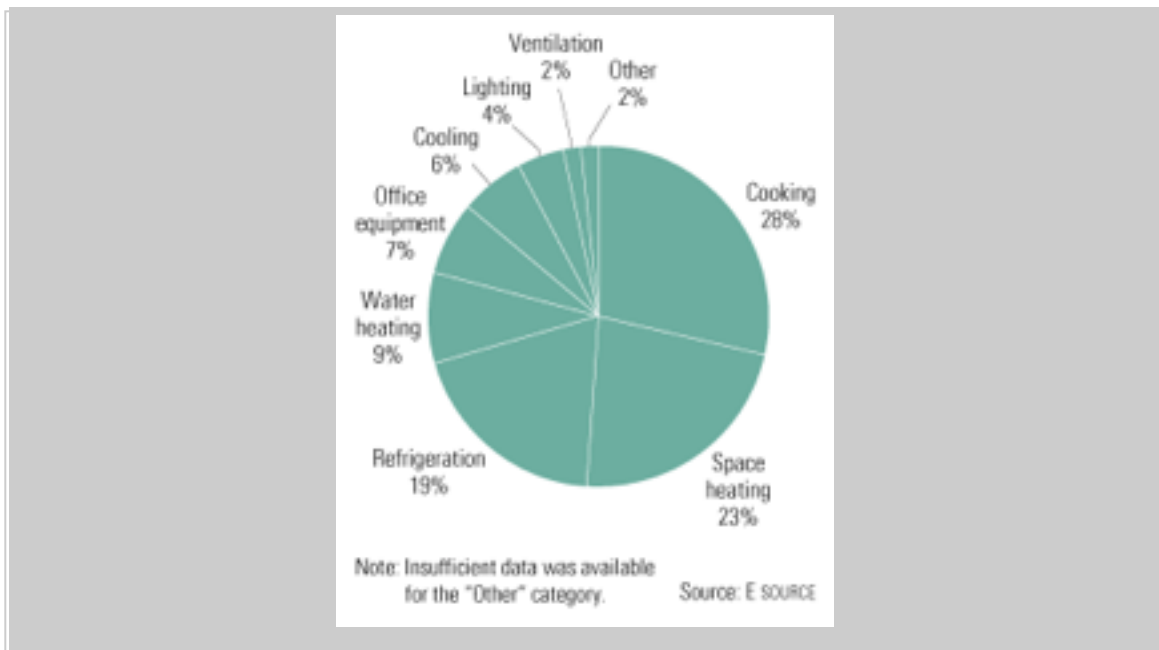


Written By: *Jenifer Schaefer,*  
*Wayne Peterson CEM*

### **Restaurant Energy Savings**

In a typical restaurant, 80% of energy consumption is used in the kitchen area and space heating. Restaurants in the U.S. are one of the greatest energy using intensities of any type of commercial building. On average, restaurants use 38 kilowatt-hours of electricity and 111 cubic feet of natural gas annually per square foot. Most utilities charge commercial buildings for their natural gas based on the amount of energy delivered. Electricity, on the other hand, can be charged based on two measures: consumption and demand.



### **Consumption vs. Demand of Electricity**

Electricity can be measured in kilowatt-hours that a building consumes during a month. Demand is measured by the peak demand, in kilowatts, based on the month or the previous 12 months; it depends on how the utility company decides to calculate it. Demand charges can range from a few dollars per kilowatt-hour to \$20 dollars a kilowatt-hour.

Owners should keep a close eye on utility bills and take action to reduce peak demand at all times. This will definitely help the bottom line. Saving energy doesn't always take days of planning. There are many things that can be done right now to start saving energy and cutting down on costs.

### **Quick Energy Saving Fixes:**

- Educating employees about the importance of cost savings and energy savings will help with the goal at hand. The back up fryers should be turned off instead of being on for 75% of the day.
- For example: if kitchen fryers were turned off for five hours a day it could result in a savings of about \$150.00.
- If a restaurant is open five days a week for 10 hours a day, it can save around \$3,000 a month. Making the savings \$36,000 a year.

#### **Equipment that can be turned off to save energy:**

- All cooking equipment not being used
- Exhaust fans
- Computers, also turning equipment down will help.
- For equipment that should not be turned off entirely, such as the refrigeration system or air conditioner, set controls to lower levels during operating hours and turn down equipment just before closing each night.

By installing T8 lamps the lighting bill should decrease by 35%.

#### **Use daylighting controls on:**

- Day lighting control systems use sensors and either switches or dimmers to adjust electric lighting levels in response to available daylight. These systems offer the potential to cut energy use, reduce peak demand, and create a more desirable indoor environment in your restaurant.
- Lighting lit by light-emitting diodes (LEDs). LEDs direct light very effectively and come in many colors, which make them a good candidate for restaurant applications. Although initial costs for LED's are high, the lamps can last 5 to 10 years; they will also save on maintenance costs.
- Incandescent exit signs
- Exterior signs
- Colored accent lights
- Menu boards

#### **Repair and Maintenance**

- **Water heater** -There are a number of steps you can take to make your existing water heater as efficient as it can be. Most important thing you can do is make sure it's set to a temperature no higher than 140 degrees Fahrenheit (F).
- **Repair controls.** Thermostats and control systems can drift out of calibration or even fail outright. Take the time to periodically check thermostats and other

everything is working the way it should. This will improve cooking performance, safety, kitchen appearance, and also reduce energy use.

- **Fix water leaks**
- **Change AC filters**

### **Long-term Solutions:**

Converting kitchen equipment can dramatically increase the efficiency, comfort, and safety of a restaurant.

- **High-efficiency kitchen equipment.** Cooking equipment, coolers, and dishwashers are energy hogs in a restaurant—high-efficiency cooking equipment can be 15 to 30 percent more energy-efficient than standard equipment..
- **Low-flow pre-rinse spray valves.** The easiest and most cost-effective method of saving hot water in a commercial kitchen is to install low-flow pre-rinse spray valves in the dish room.
- **Smart vent hoods.** Intelligent, variable-speed hood controller systems can significantly reduce energy costs in your kitchens.
- **Evaporator fan controllers in coolers.**
- **Water Heater Measures**
- **High-efficiency water heaters.** When replacement time comes around, upgrade your water heater to a high-efficiency model. High-efficiency models often cost a little more up-front, they'll save \$400 per year in fuel expenses.
- **Tankless water heaters.** High-efficiency, "tankless" hot water heaters, also known as on-demand water heaters, heat water only when it's needed and can save significant amounts of money and take up less space than traditional models.

SM Engineering hopes that this article was useful in the sense educating oneself with the right information to help conserve energy in restaurants and lower utility costs.

Please contact SM Engineering with any questions regarding energy savings within the Restaurant business.

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*Please email questions to: [info@smeng.com](mailto:info@smeng.com)*

**SM Engineering: 1-800-598-5596**