1-1-1900

Your Restaurant and the Energy Crisis

Arthur C. Avery
Then there's the matter of covers. Food in covered range-top pots and steam-jacketed kettles will come to a simmer with 15 to 20 per cent less energy than uncovered food. Once it has reached the desired temperature, the covered pot will use one-fourth the energy that an uncovered pot requires.

Likewise, keep the oven door closed when the oven is in use. Every second the oven door is opened, the oven temperature drops one to three degrees. And be sure that the oven door has close-fitting gaskets to reduce heat loss.

Unless you are baking, it is not necessary to preheat the oven. And range-top preheating is seldom required. If you do need to preheat, be sure that you don't preheat longer than necessary. A solid-top range usually needs no more than 10 to 15 minutes to preheat. And the same is true for fryers, ovens, grills, and steam tables.

Other equipment
Whenever you can, use energy-efficient equipment. Use steam, oven heat, and fryers to replace the range, griddle, and broiler when possible. Pressure cookers are efficient energy-users, too.

You can fill a fryer with water for cooking fragile vegetables and meats such as ham and frankfurters. The fryer is a natural for re-heating jobs and can keep pans of food hot until serving time. In addition, you can use many fryers for roasting small quantities of beef. Put the meat in the fryer at 375°F and immediately lower the temperature to 185°F. The fryer will cook in the same amount of time as a regular oven with only 15 per cent roasting loss. And it turns out a product that looks and tastes like an oven roast.

Of course, whatever piece of equipment you are using, remember to use a cover whenever possible. For example, a covered fryer on standby duty uses one-fourth the energy of an uncovered one. And when frying chicken, a covered fryer will do the job in less time—and with less energy.

About refrigeration
As you might suspect, you can save energy in your use of refrigeration, too. Refrigerators with self-closing doors tend to require less energy. And removing refrigerated goods in quantity at one time rather than opening the door many times saves energy. If you have a walk-in refrigerator with reach-in doors, place everything needed for a meal behind the reach-in doors. Opening the reach-in door does not let out as much cooled air as opening the walk-in door does.

Walk-in refrigerators should have an exterior light that indicates when the refrigerator lights are on. And a heavy plexiglass door will enable you to see the refrigerator contents without opening the door needlessly.

Place refrigerator equipment well away from heating equipment. And don't place the refrigerator condensers in the same room with the hot water heaters. Keep evaporators free from ice—not more than 3/4 inch—and condensers free from dust and dirt. Also check to be sure that compressor belts aren't worn; if they are, replace them before they slip.

It saves energy to cool hot foods to room temperature before placing them in the refrigerator. However, this practice can result in spoiled food—and food poisoned patrons! For this reason, USDA is recommending that hot foods never be allowed to stay out for more than an hour or two at room temperatures.

It will also save energy if you thaw frozen foods in the refrigerator. And you'll reduce the energy load of cooking equipment if frozen foods are thawed before cooking.

The dishwashing brigade
There are several common sense approaches to saving energy when it comes to washing dishes. For example, stack dishes until you can turn on a fully loaded dishwasher. Also check to be sure that the dishwasher power rinse turns off after each rack is rinsed.

The dishwasher tanks should be at the proper temperatures—140°F, 160°F, and 180°F. To heat the water any hotter wastes energy. Turn off the dishwasher hot water heater when the dishwasher is not being used.

Out of the kitchen
Of course, your kitchen equipment doesn't determine the total amount of energy your food establishment requires. Your entire building—from insulation in the kitchen to lighting in the cloak room—requires energy. And you can save energy building-wide by following a few energy-saving suggestions.

First, maintain temperatures at 68 to 72°F in winter and 76 to 78°F in the summer. And maintain proper humidity, too. If humidity is high in winter and low in summer, you won't waste excess energy in heating and cooling.

Naturally, when the building is not in use, you should lower the thermostat in the winter and raise it in the summer. Don't heat or cool rooms in which people spend little time. During the winter, some operators cut off the air intake to the kitchen at night. Some use the air conditioner fans to remove excess heat and send it to places where it is in short supply.

Also turn the hot water tank back to 75°F at night and up to 140°F during the day. And turn off exhaust fans when you're not cooking.

An intro to insulation
Insulation is a big word in the energy-saving game. Use it to save energy in your restaurant just as you do to save energy in your home. For example, a simple way to insulate is to open draperies when the sun is on the windows and to close them when the sun goes down during the winter. During the summer, do the opposite.

Pipe insulation is even more vital. Suppose you have a steam pipe losing 73,000 BTU's. If you insulate the pipe with two inches of insulation, you can reduce its loss to about 4,000 BTU's. And three inches of insulation would cut the loss to 2,600—a savings of about 96 per cent!

In addition, a water heater with five inches of insulation is eight per cent less costly than one with two inches. And of course, insulating equipment saves energy, too.

Some light on lighting
Lighting is an important part of your operation. And it may be an energy-wasting part unless you are lighting wisely. You need to know which lighting sources give the most light per watt and use that type. This chart may be helpful:

<table>
<thead>
<tr>
<th>Lighting</th>
<th>Lumens/Watt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incandescent</td>
<td>17-20</td>
</tr>
<tr>
<td>Mercury</td>
<td>56-63</td>
</tr>
<tr>
<td>Fluorescent</td>
<td>67-83</td>
</tr>
<tr>
<td>Multi-Vapor</td>
<td>85-100</td>
</tr>
<tr>
<td>Sodium</td>
<td>105-130</td>
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</tbody>
</table>
A last word

This bulletin is by no means a complete guide to energy conservation in your restaurant. The tips given here are to help you start thinking about saving energy. Use your common sense to seek out other ways to reduce the amount of energy you use. You'll find energy saving will decrease your overhead—and it certainly will contribute to the well being of the country!

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Other tips for energy conservation

In addition to the tips above, you should know about these energy-savers:

- Cook slowly at low heat to save the most energy. Fast cooking at high temperatures wastes energy.
- Self-cleaning ovens require more energy than conventional ovens.
- Using disposables is energy-wise.
- Soft water improves water heater efficiency and thus saves energy.
- Griddles that can be heated in sections can save energy if you heat only as much as you need at one time.
- The National Restaurant Association claims that cooking roasts at 250°F instead of 350°F saves 25 to 50 per cent on energy.
- Baking potatoes in foil wastes energy because foil repels heat and steams the potatoes.

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There's no doubt about it. Energy is in short supply. It's expensive. And that adds up to hardship for a restaurant—unless you do something to help conserve energy in your food service operation. The National Restaurant Association says restaurants could conserve 20 to 30 per cent of the energy they use—150 to 250 millions of barrels of oil per year!

So let's take a look at the various ways you can save energy in your restaurant.

Range management

Ranges are one of the biggest energy-wasters in your kitchen. That's why it's important that you think "energy" as you use the range.

First, don't use the range top if you can help it. The steamer and oven are much more efficient than the range. So prepare your pasta, rice, puddings, and similar products in the steamer. If you are simply reducing the volume of a food, do so in an oven set at 225°F without stirring the product.

Also, check out the pots and pans you use on your range. Look for square pots with bottoms that are rounded inward. They should rest squarely on the rangetop. And if you are using several pots, it's wise to herd them together close to use all the residual heat.

Don't use pots that are smaller than the burner. The heating element should be one inch less in diameter than the pot. And gas flames should not be turned up so high that they lick up the side of the pot. Instead, set the flame so it just makes contact with the pot bottom.

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