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Running a commercial food service or kitchen is an energy intensive business. Anything you do to increase your energy efficiency can translate into significant savings.

Installing a natural gas “booster heater” for your dishwasher is one little-known improvement that can make a big difference. According to some industry experts, it can cut your water heating costs in half.

With all the cooking, refrigerating and dishwashing involved in running a restaurant, it’s little wonder that restaurants use almost two and one-half times as much energy per square foot as the average commercial building. Water heating is the third highest energy use (after cooking and general heating) and accounts for about 17 percent of a restaurant’s energy consumption.

One reason the water heating bills are so high is that restaurants wash a lot of dishes. And in order to ensure that the dishes are properly sanitized, health regulations require that food-service establishments either use water at or above 180° F during the rinse cycle or add chemical disinfectants to the rinse water.

Chemicals may save energy but can have other associated costs. They also require a longer drying time and can lead to spotting on the dishes. And it’s neither safe nor cost-conscious to heat water for general use above 140° F in order to meet the requirements for a dishwasher’s rinse cycle. As a result, most restaurants sanitize their dishes by using a special water heater attached to the dishwasher that heats the water to the necessary temperature during the rinse cycle—a so-called “booster heater.”

In the past, most booster heaters were electric. One of the big drawbacks of gas boosters had

been their venting requirements. But with improvements in technology, especially increased flexibility in venting that allows the boosters to be installed almost anywhere, natural gas-fired units have become easy to install and use. And almost all models are compact, whether they are a floor model, attach to the wall, or fit under a counter.

The biggest advantage of a natural gas booster heater is that it costs less to run than an electric heater. But there are other benefits, including:

- Safety—less risk of scalding because only the water for the rinse cycle is heated to 180° F.
- Faster drying and fewer spots on dishware than if chemicals are used.
- The main water heater can be used to meet other hot water demands.
- A quicker recovery time, which helps keep water temperature constant.
- Lower maintenance costs, because there are no elements to burn out.

To estimate how much money you might save by switching to a natural gas booster heater, consider the following example.

A full-service restaurant serving 300 meals per day uses about 210 gallons per day for high-temperature dishwashing. If the booster heater for the dishwasher were switched to a natural gas model, the hot water bill for the dishwasher would be reduced by almost 60 percent. (The savings are based on average electricity and gas costs and seven days a week operation.)

Here’s how the figures break down:

If you use 210 gallons per day for high-temperature dishwashing, this results in 11,225 kilowatt-hours (kWh) of electricity use. Assuming

your electricity costs seven cents per kWh, that comes to \$730 a year.

A natural gas model uses about 480 therms to heat the comparable amount of water. Assuming your gas costs are 65 cents a therm, that comes to \$340 a year.

Your savings? \$390 a year.

Savings on the electric bill can be even higher for commercial businesses that pay not only for energy consumption over time (measured in kilowatt-hours (kWh)), but also for electric demand. Electric demand is the maximum amount of energy you use in your establishment, or what is called your peak power load, and is measured in kilowatts (kW) of electricity. Your electric bill will indicate if you pay for demand (kW) as well as consumption (kWh).

The main drawback to a natural gas booster heater is the up-front cost, which may be \$6,000 to \$7,000. For new food-service facilities, however, or those needing to replace their equipment, the natural gas booster heater can be a smart choice.

If you're interested in learning more about natural gas booster heaters, contact Focus on Energy. Funded by a utility surcharge and overseen by the Wisconsin Department of Administration's Division of Energy, Focus on Energy works throughout the state to encourage energy efficiency and the use of renewable energy, in order to enhance the environment and to ensure the future supply of energy for Wisconsin. It serves 85 percent of the state's utility customers, both commercial and residential. (The remaining 15 percent are customers of certain municipal utilities and rural electric cooperatives that currently are not participating in Focus on Energy.)

Focus on Energy offers a broad array of services, from training seminars and workshops, to advice on best practices, to guidance on technical information and help on developing an energy survey. All its services are completely voluntary and are free to eligible institutions.

For more information on how you can save money and energy, contact Focus on Energy at 800.762.7077 and ask for someone from the commercial sector. You can also visit our Web site at www.focusonenergy.com.

ENERGY SAVING TIPS FOR RESTAURANTS

Installing a booster heater for your dishwasher is just one of many ways your restaurant can save money and increase energy efficiency.

Focus on Energy can help you with other suggestions—from saving on lighting bills by switching to fluorescent lights, to improved efficiency when ventilating your kitchen, to buying energy efficient equipment such as refrigerators and ice makers.

Three basic rules to remember:

- If it's not in use, turn it off. That goes for ovens as well as lights.
- When it is time to buy new equipment, choose the most efficient. Look for the Environmental Protection Agency's ENERGY STAR® logo.
- Little changes add up. Cooking with a lid, for example, can increase efficiency by as much as 14 percent.

Let Focus on Energy save you money and energy. For more information, contact Focus on Energy at 800.762.077 and ask for someone from the commercial sector. You can also visit our Web site at www.focusonenergy.com.