

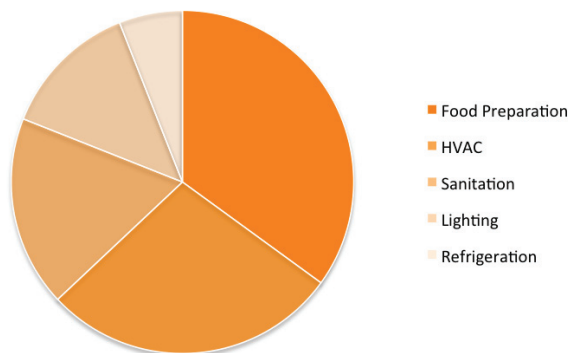
FACT SHEET: Gas Savings from Commercial Kitchens

New Mexico Gas offers cash incentives for qualifying commercial, industrial and institutional customers who apply for incentives from commercial kitchen improvements. For additional details on how to receive such incentives, and the energy that you can save over the life of a commercial kitchen, contact James DeMeritt at jdemeritt@clearesult.com or (505) 225-2995.

WHEN TO IMPLEMENT HIGH EFFICIENCY COMMERCIAL KITCHEN MEASURES

- Pre-rinse spray valves provide great retrofit opportunities in almost all applications and can provide natural gas and water savings in existing and new facilities
- Cooking equipment will most likely only be purchased during new construction or end-of life
- Installing a separate water heater for non-kitchen measures (lower temperature applications) may be a good measure in facilities that are currently overheating 50% or more of their water
- New Mexico Gas offers incentives for several types of gas-fired commercial kitchen equipment

Example of the Average Energy Consumption in a Full-Service Restaurant (British Thermal Units - BTU)



PRE-RINSE SPRAY VALVES

Pre-rinse spray valves are used in commercial or institutional kitchens to remove food waste from dishes prior to cleaning in a dishwasher. Pre-rinse spray valves offer a great opportunity for energy savings because they use the most water, and therefore achieve the greatest savings.



A federal standard requires all pre-rinse spray valves manufactured after January 1, 2006 to have a maximum flowrate of 1.6 gallons per minute (gpm). Pre-rinse spray valves in existing facilities can be using as much as 5 gpm. New pre-rinse spray valves use as little as 0.64 gpm, but installing valves with very low flow rates can result in reduced performance. New Mexico Gas Company incentivizes pre-rinse spray valves with a flow rate of 1.25 gpm, which offers both high performance and substantial savings. In new construction and retrofit applications these devices are a cost-effective way to reduce natural gas and water costs.²

DEMAND HOT WATER HEATER

Water heaters in commercial kitchens must provide hot water at a higher temperature (170 °F⁴) than domestic water heaters due to sanitation requirements. Standard temperatures for domestic hot water are in the range of 100 – 120 °F. Instead of maintaining a water heater in a commercial kitchen at the temperature required to meet sanitation requirements, the water heater can be maintained at 100-120 °F and a tankless or instantaneous water heater (aka demand water heater) can be added to boost the water heater temperature to meet higher temperature sanitation requirements. When the building requires only domestic hot water (e.g. hand washing) the demand water heater can be bypassed, thus using no additional energy. Depending

Interesting Facts

- Commercial kitchens are found in many facilities, including: restaurants, schools, hospitals, nursing homes, dormitories, prisons, and even some office or government buildings¹
- Commercial kitchens use about 2.5 times as much energy per square foot as other commercial buildings
- The dishwashing operation in a typical restaurant consumes over two-thirds of all the water used by that establishment. In some cases, nearly one-half of the water used in dishwashing is used by the pre-rinse spray valve²

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Interesting Facts

- Pre-rinse spray valves result in cost savings by reducing water and wastewater costs as well as energy costs associated with water heating
- High efficiency cooking equipment typically saves hundreds of dollars per year in energy costs
- A commercial kitchen can reduce its water heating energy by 5-10% by introducing a demand hot water heater to boost water heater temperature for sanitation

on the water heater and associated line losses, commercial kitchens can reduce their water heating costs by 5-10% by introducing a demand water heater.

HIGH EFFICIENCY KITCHEN EQUIPMENT

Whenever equipment is ready for replacement, ENERGY STAR® appliances should be purchased. The incremental cost for purchasing energy efficient appliances will more than payback over the lifetime of the appliance.

ENERGY STAR has created specifications for several types of commercial kitchen equipment. Both ENERGY STAR and the Consortium on Energy Efficiency (CEE) Commercial Kitchens Initiative offer valuable resources for commercial kitchen equipment including qualifying products lists and energy savings calculators. The table below summarizes the typical savings that can be realized when comparing ENERGY STAR kitchen equipment to market average kitchen equipment.

MAINTENANCE

Water leaks - especially hot water leaks - should be addressed, as wasted water, sewer, and water heating costs can add up to hundreds of dollars a year. Additionally, clogged filters in HVAC units and ventilation systems are another source of wasted energy and should be cleaned or replaced.

| ENERGY STAR Qualifying Equipment | Annual Gas Savings (therms) ⁵ | Annual Gas & Water Cost Savings ⁶ |
|--|--|--|
| Steamers | 1,000 | \$2,000 |
| Fryers | 500 | \$470 |
| Convection Oven | 300 | \$285 |
| Griddle | 150 | \$140 |
| Dishwasher (with gas water heat; savings depend on type of dishwasher) | 500-1,500 | \$450-\$2,200 |

¹Diagram from ENERGY STAR Guide for Restaurants

²CEE Commercial Kitchens Initiative Program Guidance on Pre-Rinse Spray Valves

³Pre-rinse spray valves may not work well in facilities with water pressures greater than 85 psi or less than 40 psi based on CEE Program Guidance on Pre-rinse Spray Valves and performance data from 2005 pilot study conducted in Waterloo, Ontario

⁴Illinois Department of Public Health

⁵ENERGY STAR Commercial Kitchen Package Calculator updated January 1, 2011

⁶Assuming national average water and gas rates; for steamers and dishwashers roughly half of the cost savings are associated with reduction in gas use, roughly half are associated with reduction in water use