

FACT SHEET

REFRIGERATION

A typical food service business or grocery store spends about \$4 per square foot on energy, nearly half of which could be for refrigeration alone. Fortunately, there are many cost-effective ways to improve the efficiency and performance of refrigeration systems, and incentives from ComEd's *Smart Ideas for Your Business*SM can help you put them in place.

QUICK, COOL UPGRADES FOR WALK-INS

Strip curtains and automatic door closers are inexpensive, easy-to-install upgrades suitable for most walk-in coolers and freezers. Installing strip curtains or clear plastic swinging doors in the doorways of walk-in boxes and refrigerated warehouses reduces air infiltration 75 percent. Incentives of \$4 per square foot means the payback can be in measured in months. (Incentives are not available for strip curtains on display cases.) Installing automatic door closers on main coolers and walk-in freezers helps keep cold air in – and may qualify for a \$150 per door incentive for freezers (\$75 for coolers). More energy leaks can be stopped by replacing old, worn gaskets, and those replacement gaskets may qualify for incentives of \$4 per linear foot.

ENERGY UPGRADES FOR REFRIGERATED DISPLAY CASES AND WALK-IN COOLERS/FREEZERS

LED Refrigeration Case Lighting

Refrigerated display cases are typically lit by fluorescent systems, but light output for fluorescent lamps can drop as much as 60 percent in cold temperatures. LED lighting performs better as the temperature drops and uses up to 50 percent less energy and emits less heat than fluorescent systems. The light from LEDs can be “aimed,” so they help make displays effective as well as efficient. Replacing fluorescent refrigerated case lighting with LED illumination can qualify for prescriptive incentives of \$20 per door.

Anti-Sweat Heater Controls

When warm, humid air from a store's interior meets the cold surface of a refrigerated display case, condensation can build up on door gaskets and create fogging and “sweating” on doors. To prevent sweating, the refrigerated display case doors and frames are heated. Some 80 percent of stores run their anti-sweat heaters 24 hours a day, 365 days a year, even though they only need to run continuously when a store's relative humidity reaches 55 percent.

One of the simplest ways to reduce energy costs is to install relatively inexpensive humidity-sensing controls for the anti-sweat heaters to ensure that they are used only when necessary. With an incentive from ComEd's *Smart Ideas for Your Business* of \$30 per horizontal linear foot of refrigerated display case, anti-sweat heater controls are likely to pay for themselves in a year or less.



A grocery store in the Chicago suburbs installed 20 anti-sweat heater controls on 90 refrigerator and freezer doors. This will save 90,450 kWh in energy per year. The project cost \$13,900, and with a \$6,750 incentive from ComEd's *Smart Ideas for Your Business* program, it will pay for itself in less than a year.

Electronically Commutated Evaporator Fan Motors

Virtually all coolers and freezers use forced-circulation evaporators with propeller fans powered by fractional-horsepower motors — typically inefficient shaded-pole motors. Replacing a shaded-pole motor with an electronically commutated motor (ECM) (now mandated in new walk-in refrigeration units) lowers energy costs and significantly improves walk-in cooler or freezer performance.

An ECM delivers the same power as a comparable shaded pole motor while consuming only one-third the energy. Since a typical grocery store, for example, might have hundreds of these motors,

an upgrade can produce energy savings so substantial that break-even for the motor retrofit is often less than two years. Payback can occur more quickly with an incentive of \$35–\$50 per motor for replacing an existing shaded-pole evaporator fan motor in a refrigerated display case or walk-in with an ECM.

Evaporator Fan Controls

Evaporator fans need to run at full speed about half the time — when refrigerant is flowing through the evaporator. The rest of the time, the fan circulates cooled air, so the fan speed could be reduced by 75 percent. Evaporator fan controllers sense the flow of refrigerant in the unit and reduce the fan speed when full airflow is not required. Reducing the operating speed reduces the fan's energy consumption. Since the motor consumes less energy, less heat is added to the refrigerated compartment, and the compressor will run less often.

Energy savings vary from 10–60 percent, depending on such factors as duty cycle and evaporator motor power. Controls that meet specifications are eligible for incentives of \$60 per motor from ComEd's *Smart Ideas for Your Business* program.

SAVING ENERGY WITH NEW EQUIPMENT

ENERGY STAR® Commercial Freezers

ENERGY STAR labeled commercial freezers are more energy efficient because the energy savings are built in: Components like ECM evaporator and condenser fan motors, hot gas anti-sweat heaters and high-efficiency compressors will significantly reduce energy consumption and utility bills. Energy savings over standard freezers can be as much as 35 percent, and an ENERGY STAR freezer can pay for itself in less than two years. An incentive from ComEd's *Smart Ideas for Your Business* — \$100 for a solid-door freezer, \$400 for a glass-door freezer makes that payback even faster.

High-Efficiency Ice Makers

ENERGY STAR commercial ice machines are on average 15 percent more energy-efficient and 10 percent more water-efficient than standard models. Each ENERGY STAR qualified ice machine can save about 1,160 kWh annually. Air-cooled ice machines that meet the specifications of ComEd's *Smart Ideas for Your Business* program could qualify for an incentive of \$150 to \$350 depending on size.

ENERGY STAR® Refrigerated Beverage Vending Machines

New and rebuilt ENERGY STAR® qualified beverage vending machines use 50 percent less energy than a standard machine by incorporating high efficiency compressors, fan motors and lighting systems. ENERGY STAR estimates that qualifying models save about 1,700 kWh per year, and ComEd's *Smart Ideas for Your Business* could provide a \$100 incentive per machine.

You can obtain a further 20 percent energy reduction by using the ENERGY STAR machine's built-in software that puts it into low-energy lighting and low-energy refrigeration mode at off-peak times. Retrofitting older machines with occupancy sensors to turn them off during periods of low activity can save 30–50 percent and qualify for an additional \$30–\$100 incentive.

FIVE SMART IDEAS FOR YOUR BUSINESS

1. Boost your bottom line by cutting energy costs.
2. Safeguard the environment by reducing emissions.
3. Reduce maintenance demands and related downtime.
4. Distinguish your business as a leader in saving energy and protecting the environment.
5. Use cash incentives to reduce up-front costs and shorten payback periods.

CONTACT US

For more information about ComEd's *Smart Ideas for Your Business* visit www.ComEd.com or call **888-806-2273**.

