Energy-Efficient Refrigeration

Leading the Way to a Brighter Future

A program of the Maine Public Utilities Commission

Coolers and freezers offer a number of opportunities to reduce ongoing energy costs and enhance equipment reliability. Look for these features on new equipment or consult your refrigeration contractor to determine if any of this equipment can be added to existing equipment. Please call the Efficiency Maine Business Program at 866-376-2463 if you have questions about your refrigeration efficiency opportunities, or if you need help completing the application.

Evaporator Fan Motor Controls for Coolers or Freezers

This control turns off a portion of your evaporator fan while the compressor is not running, saving a significant amount of energy.

Incentive: $550 per control

Door Heater Controls for Coolers or Freezers

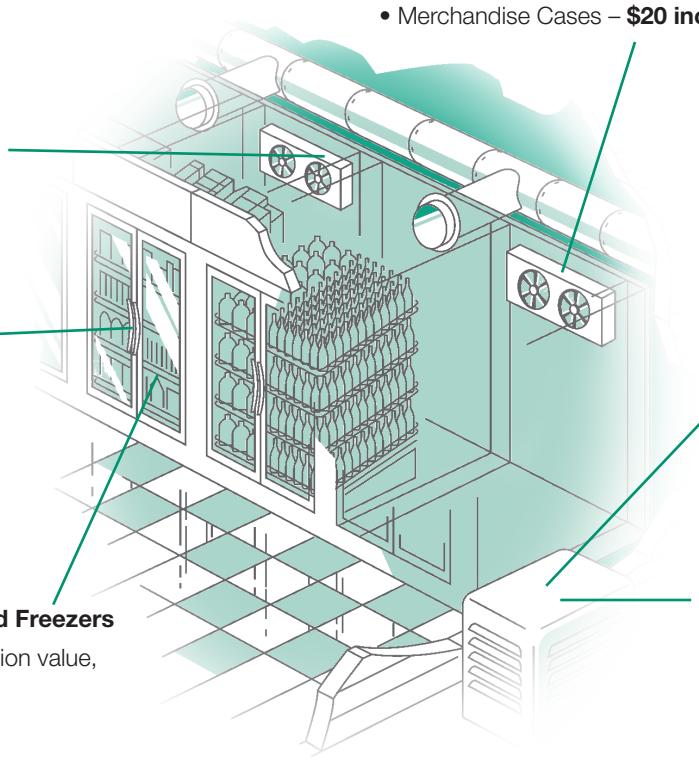
Most cooler and freezer doors have heaters to prevent condensation and they run continuously all year. Humidity-based door heater controls limit operation of door heaters as needed.

Incentive: $150 per circuit

Zero Energy Doors for Coolers and Freezers

Zero Energy Doors have a high insulation value, eliminating the need for door heaters.

- Coolers – **$125 incentive per door**
- Freezers – **$300 incentive per door**



High-Efficiency Evaporator Fan Motors

"Permanent Split Capacitor" (PSC) motors and Electronically Commutated Motors (ECM) operate at variable speeds, offering significant savings when compared with conventional motors.

- Walk-in Coolers or Freezers – **$50 incentive per PSC motor**
- Refrigerated Warehouse – **$100 incentive per ECM motor**
- Merchandise Cases – **$20 incentive per ECM motor**

Floating Head Pressure Controls

Refrigeration systems are designed for the hottest, most humid days. Floating head pressure controls allow the system to operate more efficiently during typical conditions.

Incentive: $250 (1 coil), $375 (2 coils), $500 (3 coils)

New Compressors

Both discus and scroll compressors use less energy than standard compressors and can last up to one third longer. Incentives of between $220 and $750 are available on new compressors, depending on the compressor size (see application for complete list).

TIPS FOR MORE SAVINGS

Commercial ENERGY STAR® Reach-in Coolers & Freezers

Compared to standard models, ENERGY STAR labeled commercial solid door refrigerators and freezers can lead to energy savings of as much as 45 percent. **Incentive: $100**

Commercial Ice Makers

Commercial ice makers represent approximately 11 percent of all commercial refrigeration energy use. With the average annual energy use of a 500 lb./day air-cooled ice-maker being 5,000 kWh, energy-efficient commercial ice-makers offer significant differences in life-cycle savings. **Incentive: $100**

Lighting

Lighting equipment inside the cooler adds heat. In situations where the lighting operates for hours at a time, replacing T12 fluorescent lighting with High Performance lamps and ballasts will reduce heat and provide additional savings. See Efficiency Maine's Lighting Application for more information about lighting options and incentive amounts.

Efficiency Maine is a statewide effort to promote the more efficient use of electricity, help Maine residents and businesses reduce energy costs, and improve Maine's environment.

Efficiency Maine is funded by electricity consumers and administered by the Maine Public Utilities Commission.

No or Low Cost Energy Saving Practices

Whether you have state of the art refrigeration or have taken all the steps you can to upgrade your existing equipment, the key to controlling refrigeration costs is TOM (tuning, operation and maintenance). This includes:

Monitor case temperatures:
Make sure they match the product being cooled. Temperatures that are unnecessarily low waste energy.

Maintain clean coils:
Evaporator and condenser coils should be cleaned monthly. Refrigeration systems with heat transfer surfaces that are free of dirt and scale buildup are more efficient because they don't have to work as hard. This step alone can save 25 percent in operational costs and help prevent early compressor failure.

Inspect and insulate the suction line of your refrigeration equipment:
This will minimize heat gain and water condensation.

Check the time clocks that control defrost cycles:
Defrosting should be set at the minimum time needed to melt the frost build-up in the case evaporator coils. Settings usually need to be adjusted seasonally.

Clear obstructions:
Make sure that display case air curtains, grilles, or registers are clean and free of obstructions to assure proper airflow across the evaporator coils.

Maintain door seals:
A compressor has to work harder when warm air infiltrates the refrigerated space through a door that doesn't seal properly.

Load items as quickly as possible and load cold items when received:
The longer the door stays open, energy is lost as the system works to return to the temperature set point. Items that are allowed to warm up before they are loaded into the refrigerator put more of a strain on the refrigeration system than items that are loaded while they are still cool.

Consult with your service technician:
An annual check, which includes checking refrigerant, can help maximize the efficiency of your operation.

For More Information

Efficiency Maine offers incentives on a number of energy-efficient refrigeration features. Learn more about cash incentives available by visiting our website, efficiencymaine.com/business or call us at 866-376-2463. Our staff will be glad to work with you and your suppliers to provide information and technical assistance, and to provide a list of suppliers familiar with Efficiency Maine. When you are ready to act, we will help you fill out the applications. Just let us know how we can help you achieve your electric energy efficiency goals.