

# REFRIGERATION

Refrigeration equipment represents a significant capital and operating cost in many tourism businesses, as unlike other electrical appliances, refrigerators operate 24 hours a day, every day of the year.

Refrigeration costs can be cut by:

- low cost actions involving the existing equipment, and
- selecting the most appropriate equipment, when new or replacement equipment is needed.

## Existing Refrigeration

### *No Cost Actions*

- *Limit your number of refrigerators.*

This sounds obvious, but businesses often run too many refrigerators, especially when these are provided by a third party (ie. a soft drink company) who doesn't pay the electricity bill. If you are using multiple freezers that are all partially full, combine the contents into one or two freezers and switch off the unused freezers.

- *Switch off*

Switch off refrigerators when not in use. Soft-drink refrigerators can be switched off overnight, as the door seal will ensure cool air is retained. Motel room refrigerators can be left off and open when rooms are vacant, particularly in low season when rooms may be empty for prolonged periods. Have housekeeping staff turn off refrigerators in rooms which are not booked and not on standby.

Switch off display refrigerator lighting (and anti-sweat door heaters if fitted) outside trading hours. Most models have a separate light switch.

- *Adjust the thermostat*

Set the thermostat to the appropriate temperature considering the food stored and the storage period.

For example, in a kitchen where food is turned over every two or three days, freezers can be set to minus 10°C instead of the more usual minus 20°C without problems. Raising the thermostat setting will reduce energy costs by about 3% per degree for freezers and 6% per degree for refrigerators.

Every time the door is opened, cold air escapes and the refrigerator must work hard to bring the temperature back to an acceptable level. Ensure that doors to cool rooms and refrigerators are not left open by educating staff and installing self-closing doors.

- *Defrost*

Defrost refrigerators and freezers as soon as a layer of ice has formed.

- *Promote air flow*

Keep the coils on the back of the fridge or freezer clean, and allow at least 5 cm between the coils and the wall to improve ventilation. If bar fridges are placed in cupboards, ensure there is a 5cm gap above the fridge to promote air flow.

Locate refrigerators in a cool spot, out of the sun and away from heat sources such as ovens or hot water systems.

## Low Cost Actions

- *Servicing*

Have your refrigeration equipment serviced every six months by a refrigeration mechanic. This will ensure your equipment is in good condition and operating as efficiently as possible.

- *Maintain door seals*

If your fridge seal can't hold a five dollar note in place – it needs replacing. Likewise, mould around door seals indicates a degraded seal that is allowing cool air to escape.

## Selecting New Refrigeration Equipment

You can save capital costs, energy costs, and maintenance costs by selecting the most appropriate refrigeration equipment. A good general rule is to use the smallest appliance that will suit your requirements.

### *Domestic refrigerator-freezers*

These range from 140 litre bar fridges to 500 litre family-size models. Their advantages are a low purchase price and a range of temperature zones within the cabinet.

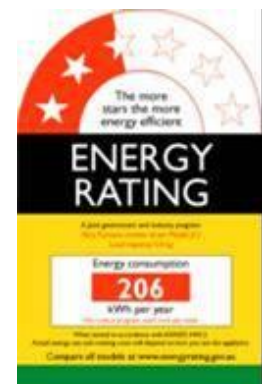
- Choose an energy efficient model - see the box below. Decide on the type and size appliance you need, and then consider only those with four stars or more. Then use the actual kWh consumption figures to assist with your selection.

#### Energy Efficiency Labelling

Common appliances that use electricity are registered and labelled under the Minimum Energy Performance Standards (MEPS) program, which rates their energy-efficiency – the more stars, the more energy-efficient the appliance. This mandatory rating program includes the following products:

- refrigerators & freezers
- air-conditioners
- clothes dryers
- clothes washing machines
- dishwashers

To search for an efficient appliance, go to [www.enerevrating.gov.au/adbsearch](http://www.enerevrating.gov.au/adbsearch)



### *Display Refrigerators*

These have the advantage of displaying produce and allowing customers to make a selection before opening the door. However, display fridges are much more expensive to purchase, and use **five to ten times** the electricity of a large domestic fridge.

- For display refrigerators supplied by food and drink companies, request energy consumption data. Selecting the most energy efficient two door drink refrigerator can save you \$200 per year.

### *Built-in Cold Rooms and Freezer Rooms*

The advantage of built-in cold and freezer rooms is the ability to conveniently store and access large quantities of food as they provide a large storage space which is kept at the same temperature. On the downside, this means that separate units are required for optimal storage of vegetables at a higher temperature than milk and meat, and another room for frozen goods.

Compared to domestic style refrigerators cold rooms have a much higher capital cost, higher energy consumption per litre of storage (typically three to four times as much), more difficult and more frequent maintenance, and more difficult relocation or replacement.

- Always choose the smallest refrigeration appliance that will suit your requirements.