

Environmental Purchasing Checklist

Refrigerators

This checklist suggests environmental criteria for use by Australian Government departments and agencies in purchasing refrigerators. These environmental criteria would generally be considered together with price, quality and other purchasing criteria, in accordance with the [Commonwealth Procurement Guidelines and Best Practice Guidance](#). The checklist also provides tips for purchasers and users and links to further information. Purchasers may choose to amend the criteria and specifications to meet their own requirements.

WHAT ARE THE ENVIRONMENTAL ISSUES?

All products or services have some impact on the environment, which may occur at any or all stages of the product's life cycle – raw material acquisition, manufacture, distribution, use and disposal. This checklist focuses on the environmental impacts that may be relevant to purchasers of refrigerators. Refrigerators consume relatively large amounts of energy because they operate continuously. Using an appropriately sized energy-efficient refrigerator will reduce energy consumption and associated greenhouse gas emissions. Energy-efficient equipment produces less heat, reducing the loading on air conditioning systems.

KEY AUSTRALIAN GOVERNMENT POLICIES

The [Commonwealth Procurement Guidelines and Best Practice Guidance](#) state that the core principle governing Australian Government procurement is value for money, a concept evaluated on a whole of life basis of the goods or services being procured. Officials buying goods and services need to be satisfied that the best possible outcome has been achieved taking into account all relevant costs and benefits over the whole of the procurement cycle.

According to the [Commonwealth Procurement Guidelines and Best Practice Guidance](#), “officials should be aware of any relevant environmental legislation and targets set by the Commonwealth, and ensure they take into account matters affecting the environment ... when formulating requirements. They should include relevant environmental criteria in specifications and requests for tender.”

[Australian Government Energy Policy](#) “Measures for Improving Energy Efficiency in Commonwealth Operations”: requires:

- all new appliances to have 2-star or better Energy Rating* under the Appliance Energy Efficiency Rating Label Scheme.
- tenant's light and power use in office buildings to achieve a target of 10,000 MJ per person per year by 2002.

* This corresponds to 4-stars under the old Energy Efficiency Label Scheme. The scheme was revised in 1999 because too many appliances were bunched up at the top end of the scale.

SUGGESTED ENVIRONMENTAL PURCHASING CRITERIA FOR REFRIGERATORS

Give consideration to refrigerators ...	Comments
<p>... having an Energy Rating of at least two stars and the lowest comparative energy consumption.</p> <p>A few 4 star very efficient refrigerators are available (in February 2002); there is a wide choice among models with 3.5 and 3 stars.</p>	<p>Specifying a refrigerator that gets the maximum number of stars may reduce your energy use by several hundred kilowatt-hours per year.</p> <p>Galaxy award-winning refrigerators are the energy-efficiency leaders.</p> <p>The Comparative Energy Consumption (CEC) on the energy label will allow you to compare refrigerators of different sizes.</p>
<p>... with capacity suited to your needs.</p>	<p>A refrigerator that is larger than you need can waste energy and increase greenhouse gas emissions.</p> <p>Once you have determined the smallest size fridge that meets your needs, you can identify the model with the lowest energy use.</p> <p>Freezer space typically consumes more energy than a similar volume of standard refrigerator space; you can save energy if you buy a refrigerator with a small freezing compartment.</p>
<p>... using a refrigerant that is <i>not</i> a greenhouse gas.</p>	<p>Manufacturers are gradually moving from use of HFC refrigerants, which are a potent greenhouse gas, to hydrocarbons, which are not a greenhouse gas. Selecting a refrigerator using hydrocarbon refrigerants, where available, will decrease your contribution to the greenhouse effect.</p>
<p>... that will fit easily into available space.</p>	<p>You should allow a minimum of 50mm between the back and sides of the refrigerator and adjoining walls for efficient operation</p>
<p>... with low operating noise levels.</p>	<p>The noise of a refrigerator may be distracting if offices are located nearby. Ask manufacturers to provide information on operating noise levels because models vary. A <i>Choice</i> magazine report in 2001 found noise levels varying from 36 to 47 decibels (dB) in different models.</p>
<p>... with low environmental impact packaging.</p>	<p>See Packaging checklist.</p>
<p>... from companies that document additional environmental benefits of their products or superior environmental performance of their companies.</p>	<p>Documentation for products could include external verification of claims, e.g., certification of the product through a reputable environmental labelling program. (Imported products may be certified under an overseas program.)</p> <p>Documentation for companies could include environmental management systems certified to ISO 14001, public environmental reporting, Design for Environment (DfE) policies etc.</p>

TIPS FOR PURCHASERS

You can ask suppliers to confirm if they will take back the refrigerator at end of life. This will not necessarily preclude a sale of the used item.

Some refrigerators have a door open alarm to let users know when they have left the door open too long.

Avoid refrigerators with unnecessary energy-using features such as automatic icemakers.

New technology is available in some refrigerators: some have electronic micro-processor controls that provide independent controls for the freezer and refrigerator space; other models use inverter technology which automatically matches compressor speed and output to the amount of food in the refrigerator, thus significantly reducing energy consumption.

Refrigerators that contain casters or other method for easy movement allow coils on the back of the refrigerator to be dusted regularly, assisting efficient operation.

You can require suppliers to include the take back of all packaging in their bids and specify how they dispose of that material.

You can request that suppliers specify what, if any, recycled content is used in the equipment.

TIPS FOR USERS

Keep temperatures within the refrigerator at the highest level that provides effective cooling of food. The refrigerator should be between 3 and 5°C, with the freezer between -15 and -18°C. Every degree lower increases energy use by 5%.

If possible, minimise the number of times the door is opened.

Do not refrigerate items that don't need refrigeration (this unnecessarily increases the load on the fridge).

Where items will be stored in the fridge for more than a day, wrap or pack in air tight containers, if practical, to avoid them drying out and to reduce the load that the evaporated moisture places on the fridge.

Ensure that cleaners periodically dust any coils at the rear of the unit so that the refrigerator will operate efficiently.

Consider reducing the number of smaller bar fridges you may have spread throughout your offices. It may be energy efficient and cost effective to have larger refrigerators in central locations.

SUCCESS STORIES

The Communications Centre adjacent to the John Gorton Building in Canberra is being refurbished by the Department of the Environment and Heritage in order to provide a high quality working environment for the Australian Greenhouse Office. The refurbishment will be a leading example of environmentally sustainable development and will set new

benchmarks for energy consumption and environmental performance in refurbished office space. The Communications Centre fit out will include a 440 litre fridge in the kitchen with an energy rating of 3½ stars which has been awarded the Galaxy Energy Award in 2000 and 2001 (Galaxy Energy Awards are presented to appliances that have the highest star rating in their class). The tea points will have 120 litre fridges, with an energy rating of 2½ stars.

Further success stories can be found at the [Greening of Government website](#).

LINKS TO FURTHER INFORMATION

The **Greening of Government** website provides the policy framework for Greening of Government, as well as a range of Green Procurement Tools and other useful information. <http://www.ea.gov.au/industry/sustainable/greening-govt/index.html>

Energy label website lists all refrigerators by size and energy rating. It also lists the Galaxy award winning models. <http://www.energyrating.gov.au/>

Sustainable Energy Authority Victoria website includes additional helpful information on selecting refrigerators. <http://www.seav.vic.gov.au/>

Choice magazine and online provides useful information about refrigerator features and operation, as well as covering energy efficiency aspects (requires paid subscription): <http://www.choice.com.au/>

Design for Environment - Reducing environmental impacts through better design (such as using less toxic components, or making the product easier to disassemble and recycle or reuse) is referred to as Design for Environment or DfE. Many manufacturers, suppliers and industry associations may be able to provide information on their DfE activities. The Department of the Environment and Heritage has an introduction to DfE in business available at <http://www.ea.gov.au/industry/finance/publications/producer.html>

Environmental Specification

Refrigerators

Purchasers should request information from potential suppliers at the time of requesting a quotation. This environmental specification is intended to provide assistance in obtaining environmental data from suppliers. The information that would be requested from suppliers is shown in the Information required column. Items in this specification are based on criteria in the Environmental Purchasing Checklist for Refrigerators

Consideration will be given to refrigerators ...	Information required from companies	Weighting (total= 100%)
... having an Energy Rating of at least two stars, and the lowest comparative energy consumption within the specified size range	Identify the Energy Rating of the refrigerator	at least two stars required by Australian Government Energy Policy
... with low energy use.	Specify the energy use of the refrigerator. Provide details on temperature controls, including whether separate controls are provided for the refrigerator and freezer, etc.	35-45%
... using a refrigerant that is not a greenhouse gas.	Supply the name of the refrigerant used and its global warming potential (in CO2 equivalents)	20-30%
... with low operating noise levels.	Specify the noise level in decibels (dB) of the refrigerator during normal running	10-20%
... with low environmental impact packaging (this criterion to be used only where packaging is significant) .	List the types of packaging used in delivering your product, including bulk delivery packaging. Specify: <ul style="list-style-type: none"> the total weight per unit product, the proportion of recycled material used, and whether the packaging can be recycled locally. 	5-15%
	State whether you will take back the packaging for reuse or recycling after delivery.	
	Describe any disposal advice provided on your product packaging, including the size, location and colour of the advice notice.	
	Specify whether your packaging includes any loose fill material.	
	Specify whether your company is a signatory to the National Packaging Covenant . See http://www.ea.gov.au/industry/waste/covenant/signatories.html	
... from companies that document additional environmental benefits of their products or superior environmental performance of their companies.	Provide appropriate documentation to support any environmental claims made.	5-15%

