

## Proposed Amendment to Canada's Energy Efficiency Regulations

### BULLETIN

October 2004

### COMMERCIAL REACH-IN, FOOD SERVICE REFRIGERATORS AND FREEZERS

Natural Resources Canada's (NRCan's) Office of Energy Efficiency (OEE) is proposing to amend Canada's *Energy Efficiency Regulations* (the Regulations) to require dealers of reach-in, food service refrigerators and freezers imported or shipped interprovincially for sale or lease in Canada to comply with minimum energy performance standards.

The purpose of this document is to provide stakeholders with background information on the content of the Regulations so that they can submit comments before proceeding with pre-publication in the *Canada Gazette, Part 1*. NRCan is particularly looking to receive feedback from stakeholders on the proposed minimum energy performance standards and effective date. Depending on the nature of the comments received, NRCan may initiate further consultation.

### BACKGROUND

The most recent Canadian Standards Association standard for food service refrigerators and freezers (CAN/CSA C827-98) was published in 1998.

This standard contains voluntary minimum performance criteria for annual energy consumption that vary with the volume of the refrigerator or freezer.

These performance criteria are regulated by the Province of Ontario's *Energy Efficiency Act* (Ontario Regulation 82/95, amended to O. Reg 18/02) and apply to products manufactured, sold, or leased after April 1, 2003.

Technical criteria for ENERGY STAR qualified commercial solid door refrigerators and freezers are in effect in the United States. Canada does not currently cover these items as ENERGY STAR products, but is expected to do so in the near future. The US ENERGY STAR performance criteria cover four types of products — refrigerators, refrigerator-freezers, freezers, and ice-cream cabinets — and does not further subdivide them. The CSA standard, on the other hand, subdivides them into different types of refrigerators and freezers. The US ENERGY STAR criteria only cover solid door equipment, whereas the CSA standard covers both solid-door and glass-door equipment. The minimum performance levels specified by US ENERGY STAR are generally lower (more energy-efficient) than those set out in the CSA standard.

The California Energy Commission has regulated the performance levels of reach-in refrigerators, freezers and refrigerator-freezers, with Tier 1 levels in effect as of March 2003, and Tier 2 levels coming into effect in August 2004. The Tier 1 levels were set so that 25% of the units in the California Energy Commission's database would be eliminated for sale in California, and the Tier 2 levels were set so that 50% of the units would be eliminated for sale.

It is proposed that the new Canadian performance levels be identical to the California Tier 1 levels. The California levels were chosen rather than those of CSA C827-98 because the CSA standard does not contain enough data to specify performance levels for some of the more common types of reach-in refrigerators and freezers; these units would therefore fall outside the regulations.

## PRODUCT DESCRIPTION

NRCan is proposing that the Regulations will apply to reach-in, food service refrigerators and freezers. For the purposes of the Regulation, reach-in refrigerators, freezers and refrigerator-freezers are refrigerated storage cabinets or freezers that have sliding or hinged doors and a source of refrigeration requiring an energy input. The following types of units are covered:

### Refrigerators:

- 1 Reach-in cabinets
- 2 Pass-through cabinets
- 3 Roll-in or roll-through cabinets
- 4 Wine chillers that are not consumer products

### Freezers:

- 1 Reach-in cabinets
- 2 Pass-through cabinets
- 3 Roll-in or roll-through cabinets

### Refrigerator-freezers:

- 1 Reach-in cabinets

## ENERGY PERFORMANCE TEST PROCEDURE

The proposed test method is ANSI/ASHRAE Standard 117-2002, *Method of Testing Closed Refrigerators*, with the following exceptions: the back (loading) doors of pass-through and roll-through refrigerators and freezers shall remain closed throughout the test, and the controls of all appliances shall be adjusted to obtain the following product temperatures:

Type	Integrated Average Product Temperature (Section 9.1.1) in °C
Refrigerator compartment	3.3 ± 1.1
Freezer compartment	-17.8 ± 1.1
Wine chiller	7.2 ± 1.1
Ice Cream Cabinet	-20.6 ± 1.1

The standard can be ordered from:

American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.  
1791 Tullie Circle N.E.  
Atlanta, GA 30329 USA  
Tel.: 1-800-527-4723  
Web site: <http://www.ashrae.org>

Volume shall be calculated in accordance with clause 4 of CAN/CSA C300-00, entitled *Energy Performance and Capacity of Household Refrigerators, Refrigerator-Freezers, and Freezers*.

The standard can be ordered from:

Canadian Standards Association  
5060 Spectrum Way, Suite 100

Mississauga ON L4W 5N6  
 Tel.: 1 800 463-6727  
 In Toronto, call 747-4000.  
 Web site: <http://csa.ca>

**MINIMUM ENERGY PERFORMANCE STANDARDS**

The actual daily power consumed (in kWh/day) shall not exceed the amounts specified below:

Note: V is the refrigerator volume measured in litres  
 AV (adjusted volume) is equal to the refrigerator volume plus 1.63 times the freezer volume.  
 $E_{\text{daily}}$  = Maximum daily energy consumption (kWh)

PRODUCT	DOOR TYPE	MAXIMUM DAILY ENERGY CONSUMPTION (kWh)
Reach-in cabinets, pass-through cabinets and roll-in or roll-through cabinets that are refrigerators, and wine chillers that are not consumer products	SOLID	$E_{\text{daily}} = 0.00441V + 4.22$
	TRANSPARENT	$E_{\text{daily}} = 0.00607V + 5.78$
Reach-in cabinets, pass-through cabinets and roll-in or roll-through cabinets that are freezers	SOLID	$E_{\text{daily}} = 0.0141V + 2.83$
	TRANSPARENT	$E_{\text{daily}} = 0.0332V + 5.10$
Reach-in cabinets that are refrigerator-freezers	SOLID	$E_{\text{daily}} = 0.00964AV + 2.63$

**EFFECTIVE DATE**

NRCan is proposing that the energy efficiency standard for food service refrigerators and freezers come into effect on **JANUARY 1, 2006**.

All food service refrigerators, freezers and refrigerator-freezers subject to the Regulations as described in this document that are manufactured after the specified date will be required to meet the stated efficiency levels.

**LABELLING REQUIREMENTS**

No labelling requirements will be introduced at this time.

**VERIFICATION REQUIREMENTS**

The same verification requirements that apply to other products regulated under the *Energy Efficiency Act* will apply to reach-in, food service refrigerators and freezers.

NRCan is proposing that regulated reach-in, food service refrigerators and freezers will carry a verification mark indicating that the energy performance of the product has been verified. The verification mark is the mark of a Standards Council of Canada (SCC) accredited certification organization that administers an energy performance verification program for this product. NRCan will also accept labels issued by a province indicating that the product meets the

provincial energy efficiency levels as a verification mark, providing that the provincial level is equivalent to or more stringent than the federally regulated level.

## **REPORTING REQUIREMENTS**

The energy efficiency report required for this product will include the following information:

- Type of product (refrigerator, freezer, or refrigerator-freezer)
- Brand name
- Manufacturer
- Model number
- Name of the organization or province that carried out the verification and authorized the verification mark that will appear on the product
- Daily energy consumption in kWh (to one decimal place)
- Type of refrigerator, freezer, or refrigerator-freezer:
  - Reach-in cabinet
  - Pass-through cabinet
  - Roll-in or roll-through cabinet
  - Wine chiller
- Door type (solid or transparent)
- Volume (in litres) of the refrigerator compartment, if there is one
- Volume (in litres) of the freezer compartment, if there is one
- For refrigerator-freezers only: adjusted volume (in litres)

This report must be submitted, by the dealer, to the Minister of NRCan *before* the product is imported into Canada or traded interprovincially for the first time.

## **IMPORTING REQUIREMENTS**

A dealer who imports these products into Canada must include the following information on the customs release document:

- Type of product
- Model number
- Brand name
- Name and address of the dealer importing the product
- Purpose for which the product is being imported (i.e. for sale or lease in Canada without modification; for sale or lease in Canada after modification to comply with energy efficiency standards; or for use as a component in a product being exported from Canada)

## **HARMONIZATION**

NRCan attempts as much as possible to harmonize with other regulatory agencies.

The proposed federal levels harmonize with regulations in effect for the state of California.

## **ECONOMIC, ENERGY AND GREENHOUSE GAS EMISSIONS ANALYSIS**

NRCan uses a cost-benefit analysis to determine the economic attractiveness of improving the energy efficiency of equipment. The improved efficiency required by these changes to the Energy Efficiency Regulations is expected to provide positive benefits to Canadians, particularly if the reduction of greenhouse gas emissions is taken into account. The impact of this amendment on energy, electricity demand, and greenhouse gas reductions is being assessed, and will be published in an update to this bulletin.

## COMMENTS INVITED

The information in this bulletin is being issued in advance of pre-publication in the Canada Gazette to allow time for concerned parties to comment on the proposal. All correspondence should be forwarded to:

Glen Campbell  
Office of Energy Efficiency  
Natural Resources Canada  
1 Observatory Crescent  
Building #1, 2<sup>nd</sup> Floor  
Ottawa ON K1A 0E4  
Tel.: (613) 947-8774  
Fax: (613) 947-5286  
e-mail: [glen.campbell@nrcan.gc.ca](mailto:glen.campbell@nrcan.gc.ca)  
[http://oee.nrcan.gc.ca/regulations/home\\_page.cfm](http://oee.nrcan.gc.ca/regulations/home_page.cfm)

Comments are invited **by October 29, 2004**. If there are sufficient comments, a workshop on the proposed regulations governing refrigerators and freezers may be held before the end of November. Please advise Glen Campbell if you would be interested in attending such a workshop.