

Regulations Amending the Energy Efficiency Regulations

Statutory authority

Energy Efficiency Act

Sponsoring department

Department of Natural Resources

REGULATORY IMPACT ANALYSIS STATEMENT

(This statement is not part of the Regulations.)

Executive summary

Issue: Regulatory action is one way that the Government of Canada can address harmful greenhouse gas emissions (GHGs) and air pollutants. In Canada and globally, the use of minimum energy performance standards and complementary market stimulation activities to promote research and development, energy conservation practices and market penetration of the most energy efficient products results in ongoing market transformation, energy savings and associated GHG reductions. The *Energy Efficiency Regulations* (the Regulations) are regularly amended to add new products, increase the stringency of minimum energy performance requirements, and update testing methodologies or labelling requirements.

Description: This proposed amendment is the second of three proposals to deliver greenhouse gas and related emissions reductions as per Canada's Clean Air Regulatory Agenda (CARA) and which is undertaken in a climate of harmonized North American standards. As proposed, it would

- Increase the stringency and/or scope of existing minimum energy performance standards (MEPS) for eight currently regulated products:
 - Electric motors
 - Residential gas boilers
 - Residential oil boilers
 - Dry-type transformers
 - Large air-conditioners and heat pumps
 - Commercial self-contained refrigeration
 - Room air-conditioners
 - General service incandescent reflector lamps
- Introduce new MEPS and associated reporting and compliance requirements for six products:
 - Standby for electronic products

Compact audio products
TV and TV combination units (and reporting only of TV on mode)
Video products

External power supplies
Digital TV adaptors
Electric boilers
Portable air-conditioners
Single package vertical air-conditioners and heat pumps

- Update the Regulations to reflect minor changes stemming from a recent amendment to the *Energy Efficiency Act* and other relevant standard updates.

Cost-benefit statement: As a result of this proposed amendment, the net present value of benefits for all Canadians is estimated to be \$2.08 billion over the service life of products shipped by 2020.

Other benefits include aggregate annual energy savings of 0.60 petajoules in 2010, increasing to 7.60 petajoules in 2020 and GHG emission reductions of approximately 0.08 megatonnes in 2010, increasing to approximately 0.97 megatonnes in 2020.

Business and consumer impacts: The use of harmonized standards and a nationally recognized conformity assessment regime through the National Standards System (NSS) reduces the burden on stakeholders. Test standards developed through the NSS are often incorporated by reference in the Regulations as well as by provinces with active energy efficiency regulations. The requirement for third-party verified energy efficiency performance, aligned with electrical safety and fuel-burning safety certifications, results in a transparent and level playing field for all manufacturers and consumer confidence in energy savings resulting from the use of products complying with the standard.

Domestic and international coordination and cooperation: As an importer of most of these products, Canada has generally harmonized standards with provinces and other major trading partners such as the United States (U.S.).

Performance measurement and evaluation plan: Performance measures and estimated impacts for the proposed Regulations have been established in the Treasury Board submission for CARA. Progress towards meeting the energy efficiency regulatory goals of CARA will be found in departmental business plans, reports on plans and priorities, and the Report to Parliament under the *Energy Efficiency Act*. A formal evaluation of the Energy Efficiency Standards and Labelling program as conducted by Natural Resources Canada (NRCan or the Department) evaluation authorities began in 2009 for completion in 2010.

Issue

Pursuant to the *Energy Efficiency Act* (the Act), the *Energy Efficiency Regulations* encourage the efficient and economic use of energy. The Act and its accompanying Regulations contribute to the competitiveness of Canada's economy and help Canada to address national and international climate change goals.

Carbon dioxide (CO₂), a by-product of fossil fuel consumption, has been identified as the most significant greenhouse gas (GHG) contributing to climate change. In recent years, as economic growth has given rise to higher energy use in Canada and throughout the world, the use of fossil fuels has intensified and CO₂ emissions have increased.

Since a general shift to alternative energy sources is years away, the most practical and immediate approach to limiting CO₂ emissions is to improve energy efficiency.

Background

In 1992, Parliament passed Canada's *Energy Efficiency Act* (Act) and amended it in 2009. The Act provides for the making and enforcement of regulations requiring energy-using products to meet minimum energy-performance standards (MEPS), for product labelling and for the promotion of energy efficiency and alternative energy use, including the collection of data and statistics on energy use.

The *Energy Efficiency Regulations* have been in effect since 1995. To date, they have been amended 10 times to incorporate new MEPS for additional products or to increase the stringency of existing MEPS.

The purpose of the MEPS implemented under the *Energy Efficiency Regulations* is to eliminate shipment of inefficient, energy-using products that for the purpose of sale or lease are either imported into Canada, or transported between provinces. Since most energy-using products must cross provincial or international borders to reach their markets, national energy performance standards are an effective tool to raise the level of energy efficiency throughout Canada. MEPS are necessary where voluntary market forces are unable to overcome barriers that prevent consumers from making more efficient choices.

NRCan has calculated that, in 2010, the MEPS put into effect by the *Energy Efficiency Regulations* (since 1995), including the first of three CARA amendments, will have achieved a reduction in GHG emissions of 26 megatonnes (Mt) per year. This proposed amendment is the second of the three planned CARA amendments. When combined, these three amendments along with related efforts in labelling are estimated to have an annual, aggregate impact in 2010–2011 of

- energy reductions between 13.37 and 14.85 petajoules per year;
- GHG reductions between 1.4 and 1.6 Mt per year (using current conversions); and
- air pollutant reductions, the most significant of which are 725–1 002 tonnes of NO_x, 837–3 446 tonnes of SO₂ and 204–1 155 tonnes of PM₁₀.

This proposed amendment, when combined with the previous amendment, but not including labelling initiatives, will account for just under two-thirds of the CARA *Energy Efficiency Regulations'* contribution—0.48 Mt in 2010, rising to 10.64 Mt in 2020. No estimates for the reduction of other emissions are provided due to uncertainties in calculation for the limited number of products.

NRCan participates in standards development and conformity assessment through the National Standards System (NSS). The use of harmonized standards and a nationally

recognized conformity assessment regime reduces the burden on stakeholders. Other participants in this system include provincial regulators, utilities and manufacturers. Test standards developed through the NSS are often incorporated by reference in the *Energy Efficiency Regulations* as well as by provinces with active energy efficiency regulations. These provinces are Nova Scotia, New Brunswick, Quebec, Ontario and British Columbia. Provincial legislation governs transactions in internal provincial markets.

As a participant in a global marketplace, NRCan seeks, where possible, to harmonize standards with those of other jurisdictions. In addition to considering provincial requirements in the development of energy efficiency standards, NRCan considers the energy efficiency regulations of the United States at the federal and state levels. Significant standards activities in the United States include the *Energy Policy Act of 2005* (EPAct), the *Energy Independence and Security Act of 2007* (EISA), and the *California Code of Regulations, Title 20: Appliance Efficiency Regulations* administered by the California Energy Commission (CEC). It is also important to harmonize with other jurisdictions and trading partners such as the European Union (E.U.) and Asia. Unique Canadian conditions, such as a colder climate, will sometimes support standards differing from those of other jurisdictions.

The risk of not acting now is outlined in the Government's Clean Air Regulatory Framework document. If Canada did not continue to increase the energy efficiency of products on the market, it would be limiting its contribution to the global effort to reduce greenhouse gas emissions and air pollutants and would be at a competitive disadvantage in terms of productivity related to higher energy use overheads per capita.

Objectives

Reducing greenhouse gas emissions and air pollution is a high priority for the Government. This proposed amendment will contribute to the goal of clean energy and a clean environment for all Canadians. The specific objectives of this proposed amendment to the *Energy Efficiency Regulations* are

- to reduce Canada's greenhouse gas emissions and associated harmful air pollutants through the elimination of the least efficient products by
 - increasing the stringency and/or scope of existing minimum energy performance standards (MEPS) for eight currently regulated products, and
 - introducing MEPS and associated reporting and compliance requirements for six new products; and
- to ensure Canada remains competitive and a harmonized leader in reaping the benefits of energy efficiency stock improvements and associated energy savings for all Canadians.

Description

Increase the stringency and/or scope of existing MEPS for eight currently regulated products

Electric motors

NRCan has prescribed energy efficiency requirements for electric motors since 1995 and includes motors in integral gear assemblies. As of January 1, 2011, the proposed changes to the Regulations for electric motors would

- increase the stringency of most current motor efficiency requirements for 1 to 200 HP (0.75 to 150 kW) motors to premium efficiency levels;
- eliminate most of the current exclusions for 1 to 200 HP (0.75 to 150 kW) motors so that they would have to meet the current efficiency levels; and
- extend the MEPS coverage to include some 201 to 500 HP (151 kW to 185 kW) motors to current efficiency levels.

The proposed Regulations would harmonize with EISA minimum energy performance levels set for December 19, 2010, as well as with regulations for electric motors in place in British Columbia effective January 1, 2011.

Residential gas and oil-fired boilers

Gas and oil-fired boilers have been regulated since 1998. The proposed Regulations would as of September 1, 2010,

- increase the stringency of the current MEPS for residential gas and oil-fired boilers (input not exceeding 88 kW) by a 2–5% increase in the AFUE;
- prohibit the use of constant burning pilots for all gas boilers; and
- require reporting of electrical consumption for gas and oil-fired boilers.

As of September 1, 2012, the proposed Regulations would

- require a means of automatically adjusting water temperature, with the exception of boilers equipped with tankless domestic water heating coils.

The proposed MEPS are harmonized with a recent U.S. Department of Energy (DOE) rulemaking but some of the provisions being implemented are two years in advance of those of the United States as the majority of residential gas and oil boilers already meet the proposed minimum annual fuel utilization efficiency (AFUE) requirement. NRCan will continue to investigate moving to condensing level MEPS for these products.

Dry-type transformers

NRCan has prescribed energy efficiency requirements for dry-type transformers since 2005.

The proposed Regulations would

- increase existing MEPS for single and three phase dry-type transformers with a basic impulse insulation level (BIL) of 20–150 kV;
- increase the scope to include transformers with a BIL up to 199 kV;
- remove exclusions for encapsulated and instrument transformers; and

- provide new exemptions for special impedance transformers, grounding transformers and on-load regulating transformers.

The proposed MEPS are harmonized with EPC 2005 DOE rulemaking requirements for medium voltage dry-type transformers that came into effect on January 1, 2010. As a result of the consultation with Canadian stakeholders, there are some slight scope differences.

Commercial self-contained refrigeration

Self-contained commercial refrigerators, freezers and refrigerator-freezers with doors or drawers that are used for storing product, food and beverages have been regulated since 2007. This proposed amendment would increase the efficiency for these units to harmonize with EPC levels effective January 1, 2010.

Large air-conditioners and heat pumps

Large air-conditioners and heat pumps are used for space conditioning of commercial and large buildings. Units with a capacity of 19 kW to 73 kW (65 000 to 250 000 Btu/h) units have been regulated since 1998. This proposed amendment would extend the scope to include units with a capacity as high as 223 kW (760 000 Btu/h). The proposed MEPS would come into force on January 1, 2010, and are harmonized with ASHRAE 90.1-2007 which is already in force in the United States.

Room air-conditioners

Room air-conditioners have been regulated since 1995. Sales of room air-conditioners have increased steadily to over 600 000 per year (although annual sales are dependent on the amount of hot weather). A 2008 market assessment indicated that over 40% of models sold in Canada meet the present ENERGY STAR® efficiency levels that are proposed as the new minimum efficiency levels. Canada's North American lead in adopting these MEPS for all units irrespective of date of manufacture as of January 1, 2011, reflects on the positive impact of ENERGY STAR market transformation activities.

General service incandescent reflector lamps

Currently there are existing MEPS for large diameter reflector light bulbs with medium screw bases — including PAR, R, ER and BR reflector lamps. The proposed amendment consolidates all these lamps under one regulated product — general service incandescent reflector lamps — and would introduce MEPS and labelling for some currently exempted products while increasing the MEPS for others. Proposed changes are harmonized with EISA.

Introduce new MEPS and associated reporting and compliance requirements for six products

Standby for electronic products

The proposed amendment would introduce MEPS for three new product categories that consume energy in standby mode:

- Compact audio products
- TV and TV combination units
- Video products.

It would also require reporting of energy consumption of TVs in on mode.

In broad terms, standby power is consumed when a product is not performing its main function, but is considered to be turned off by the user. In 2007, the Government of Canada announced its intent to lead in limiting the standby power consumption of products to the “1-Watt initiative” promoted by the International Energy Agency and endorsed at Gleneagles by the G8 leaders in 2005. Although the standby power of a single product may be small, the vast numbers of affected products on the market create a large demand on the electrical grid.

The proposed MEPS would set maximum limits to standby mode and off mode power consumption and would be implemented in two stages. The first tier would take effect on July 1, 2010, at levels between 3 and 4 W, comparable to California. Limits for off mode are in line with E.U. regulations. Also the reporting of the on mode power consumption of televisions would be required starting in 2010. The second tier would come into effect on January 1, 2013, and would bring in 0.5 W MEPS with a 0.5 W allowance for additional functionality. This aligns with similar activities in the European Union in terms of timing and required power levels. It is expected to extend these levels in a horizontal fashion to other products at a later date.

External power supplies

External power supplies are small external plug-in devices that convert AC 120-V line voltage to a lower voltage either AC or DC to power various small products. Often called power adaptors, they are commonly sold with portable or electronic end-use products such as portable or mobile phones, modems, camcorders, portable monitors and notebooks. Most power supplies are only 30% to 60% efficient when operating and consume 1 to 3 W when no product is attached to them. The opportunities to reduce energy consumption for this common product exist and have been recognized and acted upon by ENERGY STAR, the European Union, CEC, and the United States with EISA.

The proposed Regulations are harmonized with EISA MEPS that came into effect in the United States on July 1, 2008, for no-load mode and active mode. The proposed Regulations would have an effective date of July 1, 2010, as well as a slightly broader scope by including external power supplies for commercial and residential products.

Digital TV adaptors

Most of Canada’s TV transmission will be digital as required by the Canadian Radio-Television and Telecommunications Commission on August 31, 2011. Consumers who do not subscribe to satellite or cable and rely solely on over-the-air TV broadcasts for their television broadcast will need to purchase either a television with a built-in digital TV signal tuner or a digital television adaptor (also termed digital-to-analog converter)

to convert digital broadcast signals to analog signals. The proposed MEPS for both on mode and standby mode as well as provisions for an auto-power down feature would limit the expected increase in electrical consumption due to the influx of digital TV adaptors. The MEPS are harmonized with ENERGY STAR levels and are consistent with commonly sold efficiencies in the United States.

Electric boilers

The proposed September 1, 2012, requirement for temperature controls for electric boilers matches a similar requirement for gas and oil boilers and is harmonized with EISA.

Portable air-conditioners

In the last decade, especially with respect to room air-conditioners, portable air-conditioners have made significant market gains. Their price has fallen substantially and installation is often less complicated than for room air-conditioners. The proposed Regulations would require energy efficiency performance reporting for all models and would set MEPS for the smaller air-cooled units as of January 1, 2011. Within two years, NRCan plans to re-evaluate the minimum efficiency requirements and expects to introduce EnerGuide labelling.

Canada would be the first North American country to regulate this product, referencing a recently completed test standard.

Single package vertical air-conditioners and heat pumps

Vertical air-conditioners and heat pumps are relatively new specialized single package units. They are similar to package terminal air-conditioners and heat pumps, but with a vertical orientation. The proposed MEPS would be harmonized with ASHRAE 90.1-2007 and EISA.

Update the Regulations to reflect minor changes stemming from a recent amendment to the Energy Efficiency Act and other relevant standard updates

The proposed amendment includes, in addition to necessary changes stemming from the September 2009 changes to the Act, appropriate updates to referenced standards as a result of ongoing participation and monitoring of standards development work in Canada and in North America.

The main standard change responds to the need to clarify the referenced test procedure CAN/CSA/C300-08 for residential refrigerators with automatic icemakers for which issues have been raised in a number of fora since 2008. The proposed change aims to ensure that these units are tested for energy consumption in a way that reflects how the product performs in the home.

Regulatory and non-regulatory options considered

Maintaining the status quo

If the amendment is not implemented, Canada will lose a cost-effective opportunity to reduce its GHG and other atmospheric emissions, e.g. smog pre-cursors, which are associated with energy use.

As described above, most of these new standards have equivalents in effect or proposed in the United States. Not to implement similar standards would increase the risk of attracting inefficient products that are not allowed to be sold in the United States.

Canada's other trading partners are making rapid energy efficiency improvements. The standards contained in this proposed amendment will help to maintain and improve Canada's competitive position in supplying products to international and domestic markets.

Without the national standards contained in the proposed amendment and complementary provincial requirements (where authorized under provincial legislation), inefficient energy-using equipment could be sold in provinces or territories that do not have performance requirements. This would hinder the Government of Canada's objectives of reducing CO₂ emissions and achieving cost savings for energy users.

Voluntary program

NRCan uses awareness and information programs such as ENERGY STAR to increase acceptance of energy-efficient equipment. The voluntary programs support the mandatory regulations. As markets for efficient products grow, MEPS can effectively eliminate the least efficient products. As MEPS are introduced, criteria for ENERGY STAR are updated to continue to recognize the top-performing products on the market. As administrator of the ENERGY STAR program in Canada, NRCan ensures that the program requirements are maintained, that products meet the stated requirements, and that specifications are updated to reflect improvements in product offerings — all in an effort to maintain the credibility of the program. Voluntary measures, on their own, do not guarantee market transformation.

Regulatory action

Without the proposed Regulations, cooperation from all industry members could not be guaranteed, especially in the case of imported goods. Consequently, firms generally support the use of MEPS to ensure a level playing field.

Benefits and costs

The benefits and costs of increasing the minimum energy performance standards for these products are evaluated in four parts:

(a) *Benefits and costs to society.* A quantitative analysis measuring the economic attractiveness to society was conducted for the products specified in the proposed amendment.

(b) *Energy/GHG analysis.* A description of the analysis of aggregate energy savings and associated reductions in GHG emissions, resulting from the proposed amendment.

(c) *Benefits and cost to business.* A qualitative discussion of the impact of the proposed amendment on affected manufacturers and dealers.

(d) *Benefits and cost to Government.* A qualitative discussion of the impact of the proposed amendment to Government.

Benefits and costs to society

NRCan undertook a quantitative analysis of the net benefits to society to determine the economic attractiveness of improving the energy efficiency of the products and the impact on Canadian society. The analysis examines the impact of the proposed Regulations compared to that of a non-regulatory environment. The net benefits from the regulatory option are incremental over the non-regulatory option.

The analysis was conducted for units that would not meet the proposed minimum energy performance standard and that are considered to be the least efficient of their class.

Results of the analysis are presented for a single unit within each product class. This presentation methodology enables Canadians who purchase a product covered under the *Energy Efficiency Regulations* to know whether they can expect a positive or negative economic impact over the service life of the product as a result of the energy efficiency improvement.

Methodology and assumptions

NRCan analyzed the economic attractiveness of the minimum energy performance standards and the impact on Canadian society within a cost-benefit analysis framework, using the incremental cost and energy savings data associated with the various technologies that increase the energy efficiency of the benchmark products. Benchmark products are often characterized as the least efficient products available for sale in Canada.

A cost-benefit analysis framework allows for the net present value of a stream of costs and benefits to serve as the indicator of economic attractiveness. The net present value is calculated by subtracting the present value of incremental costs from the present value of incremental benefits, over the service life of the product. The incremental costs are differentials between a benchmark product price, and the cost of that product with levels of efficiency that meet or exceed those specified in the amendment. The incremental benefits are the present value of energy savings and reductions in GHG emissions associated with the efficiency improvement.

A negative net present value indicates that the efficiency improvement is not economically attractive (costs exceed benefits), whereas a net present value greater than zero indicates the efficiency improvement is economically attractive (benefits exceed costs). A net present value equal to zero indicates that society would be indifferent.

Assumptions for base case analysis

The economic analysis consisted of a base case analysis and a sensitivity analysis. Key assumptions for the base case scenario include the following:

- Benefits and costs are measured in real 2008 dollars;
- 7% real discount rate; ([see footnote 1](#))
- Canadian average energy prices, based on Natural Resources Canada's official energy supply and demand forecast (*Canada's Energy Outlook: The Reference Case 2006*); and
- Valuation of the GHG emissions incorporated into the analysis at \$30 per tonne. ([see footnote 2](#))

Product-specific assumptions

Product-specific assumptions are based on product-specific market analysis reports, testing reports, industry data, engineering studies, experience in other regulating jurisdictions, stakeholder consultation, and other data sources.

Electric motors

- Effective date: January 1, 2011
- Service life
 - 5 horsepower — 17 years
 - 15 horsepower — 19 years
 - 30 horsepower — 22 years
 - 75 horsepower — 22 years
 - 150 horsepower — 28 years
 - 300 horsepower — 29 years
- The baseline models used were

Electric motors

- 5 horsepower — 87.5% (Table I)
- 5 horsepower — 88.2% (Table II)
- 15 horsepower — 91.0% (Table I)
- 15 horsepower — 91.44% (Table II)
- 30 horsepower — 92.4% (Table I)
- 30 horsepower — 93.33% (Table II)
- 75 horsepower — 94.1% (Table I)
- 75 horsepower — 94.53% (Table II)
- 150 horsepower — 95.0% (Table I)
- 150 horsepower — 95.3% (Table II)
- 300 horsepower — 94.1% (Table I)
- 300 horsepower — 94.2% (Table II)
- Typical usage
 - 5 horsepower — 2 600 hours per year
 - 15 horsepower — 3 150 hours per year

30 horsepower — 3 650 hours per year
75 horsepower — 4 660 hours per year
150 horsepower — 4 735 hours per year
300 horsepower — 5 444 hours per year

- All motors have a load factor of 60%.

Residential gas and oil boilers

- Effective date: September 1, 2010
- Service life: 30 years
- Boiler installations are based on the furnace input capacity in Btu per hour (Btu/h)
- Type of installations

60% retrofit
40% new

- Regional benchmarks were based on the duty cycles from Calgary, Montréal, Toronto and Vancouver.
- Each benchmarked boiler was assumed to operate in the corresponding size home:
 - 75 000 Btu/h — 1 200 ft² townhouse
 - 100 000 Btu/h — 1 800 ft² two-storey detached house
 - 150 000 Btu/h — 3 000 ft² two-storey detached house
 - 250 000 Btu/h ([see footnote 3](#)) — 5 000 ft² two-storey detached house
- The baseline models used were

Gas-fired water boilers

Input 75 000 Btu/h AFUE 80% (Table I)
Input 75 000 Btu/h AFUE 81% (Table II)
Input 100 000 Btu/h AFUE 80% (Table I)
Input 100 000 Btu/h AFUE 81% (Table II)
Input 150 000 Btu/h AFUE 80% (Table I)
Input 150 000 Btu/h AFUE 81% (Table II)
Input 250 000 Btu/h AFUE 80% (Table I)
Input 250 000 Btu/h AFUE 81% (Table II)

Oil-fired water boilers

Input 75 000 Btu/h AFUE 80% (Table I)
Input 75 000 Btu/h AFUE 82% (Table II)
Input 100 000 Btu/h AFUE 80% (Table I)
Input 100 000 Btu/h AFUE 82% (Table II)
Input 150 000 Btu/h AFUE 80% (Table I)
Input 150 000 Btu/h AFUE 82% (Table II)

Input 250 000 Btu/h AFUE 80% (Table I)
Input 250 000 Btu/h AFUE 82% (Table II)

Oil-fired steam boilers

Input 150 000 Btu/h AFUE 80% (Table I)
Input 150 000 Btu/h AFUE 81% (Table II)
Input 250 000 Btu/h AFUE 80% (Table I)
Input 250 000 Btu/h AFUE 81% (Table II)

- No analysis performed on 75 000 Btu/h and 100 000 Btu/h oil-fired steam and all gas-fired steam boilers since all models meet the proposed 2010 MEPS.

Dry-type transformers

- Effective date: January 1, 2010
- Service life: 32 years
- Typical usage: 8 760 hours per year at 50% root-mean-square (RMS) loading
- Three-phase dry-type transformers baseline models include

300 kVA at 98.50%
1 500 kVA at 99.00%
2 000 kVA at 99.00%

Large air-conditioners (AC) and heat pumps

- Effective date: January 1, 2010
- Service life: 15 years
- The baseline size designation

Medium AC — between 19.0 kW and 39.6 kW (between 65 kBtu/h and 135 kBtu/h)

Large AC — between 39.6 kW and 70.3 kW (between 135 kBtu/h and 240 kBtu/h)

Very large AC — between 70.3 kW and 223 kW (between 240 kBtu/h and 760 kBtu/h)

Large heat pump with capacity equal to or greater than 65 kBtu/h (19.0 kW)

- Equivalent full-load hours used for Canada (based on full-load hours for Calgary, Montréal, Toronto and Vancouver)

Medium air-conditioner — 1 021

Large air-conditioner — 1 039

Very large air-conditioner — 1 042

Heat pump (heating and cooling) — 1 860 (838 + 1022)

- Includes energy savings from resulting heating efficiency gains for heat pumps.

Commercial self-contained refrigeration

- Effective date: January 1, 2010
- Service life of commercial self-contained refrigeration: 10 years
- No analysis performed on transparent and opaque refrigerators-freezers since all models meet the proposed 2010 MEPS.
- Heat-loss factor: the heat-loss factor was assumed to be zero.
- The baseline models used were

Refrigerator with opaque doors — volume of 648 litres

Refrigerator with transparent doors — volume of 847 litres

Freezer with transparent doors — volume of 370 litres

Freezer with opaque doors — volume of 591 litres

Ice-cream type freezer with opaque doors — volume of 388 litres

Ice-cream type freezer with transparent doors — volume of 617 litres

Room air-conditioners

- Effective date: January 1, 2011
- Service life: 10 years
- Typical usage: 591 hours per year (based on cooling hours from Calgary, Montréal, Toronto and Vancouver)
- The baseline models used were

5 200 Btu/h window-mounted, no reverse cycle

6 300 Btu/h window-mounted, no reverse cycle

10 400 Btu/h window-mounted, no reverse cycle

15 450 Btu/h window-mounted, no reverse cycle

25 200 Btu/h window-mounted, no reverse cycle

General service incandescent reflector lamps

- Effective date: June 1, 2009
- Typical usage

residential use — 840 hours per year

commercial and industrial use — 3 550 hours per year

- Service life

Residential

85 W BR30 (2 000 hour service life) replaced by a 60 W PAR30 (3 000 hour service life) residential use — 3.57 years

75 W BR38 (2 000 hour service life) replaced by a 50 W PAR38 (2 500 hour service life): residential use — 2.98 years

120 W BR40 (2 000 hour service life) replaced by a 90 W PAR38 (2 500 hour service life): residential use — 2.98 years

75 W ER30 (2 000 hour service life) replaced by a 50 W ER30 (2 000 hour service life): residential use — 2.38 years

120 W ER40 (2 000 hour service life) replaced by a 90 W PAR38 (2 500 hour service life): residential use — 2.98 years

Commercial

85 W BR30 (2 000 hour service life) replaced by a 60 W PAR30 (3 000 hour service life): commercial use — 0.84 years

75 W BR38 (2 000 hour service life) replaced by a 50 W PAR38 (2 500 hour service life): commercial use — 0.70 years

120 W BR40 (2 000 hour service life) replaced by a 90 W PAR38 (2 500 hour service life): commercial use — 0.70 years

75 W ER30 (2 000 hour service life) replaced by a 50 W ER30 (2 000 hour service life): commercial use — 0.56 years

120 W ER40 (2 000 hour service life) replaced by a 90 W PAR38 (2 500 hour service life): commercial use — 0.70 years

- BR lamps were estimated to be used 63% in residential and 37% in commercial sectors.
- ER lamps were estimated to be used 100% in commercial sector.
- Incandescent to halogen lamp replacement: a general heat-loss factor of 14% for residential use. Commercial heat-loss is zero.

Standby for electronic products

- Tier one effective date: July 1, 2010
- Tier two effective date: January 1, 2013
- The baseline models used were

Compact audio products

Service life of integrated audio: 6.5 years

Service life of portable audio: 4 years

Service life of portable clock radio: 4 years

The baseline models used were

Integrated stereo with monochrome display and remote

Portable audio with monochrome display

Portable clock radio with monochrome display

Typical usage

Integrated stereo — 93% of time in standby

Portable audio — 92% of time in standby

Clock radio — 59% of time in standby

Television and television combination units

Service life of televisions: 7 years

The baseline models used: plasma television with remote

Typical usage: 84% of time in standby

Video products

Service life of non-recording video players: 5 years

Service life of recording video players: 5 years

The baseline models used were

Non-recording video players: DVD player with built-in VCR with a remote

Recording video players: DVD player with a DVD recorder and a remote

Typical usage

Non-recording video players — 88% of time in standby

Recording video — 73% of time in standby

External power supplies

- Effective date: July 1, 2010
- External power supplies were defined to have two modes: no load mode and active mode. Active mode is a reference to the state of the external power supply and not the product it is attached to.

No load mode is the condition in which the input of a power supply is connected to an ac source consistent with the power supply's nameplate ac input voltage, but the output is not connected to an end-use product or any other load.

Active mode ([see footnote 4](#)) is the condition in which the input of a power supply is connected to line voltage ac and the output is connected to an ac or a dc load (end-use product), drawing a fraction of the power supply's nameplate power output greater than zero.

- Product or combination of products used to estimate costs and energy savings for each wattage bin.
- The baseline ([see footnote 5](#)) models used were

Less than 1 W bin

Service life ([see footnote 6](#))

Low-wattage mobile phone — 2 years

Typical usage ([see footnote 7](#)) (power modes the EPS is required to supply)

Low-wattage mobile phone

No load mode: 7 446 hours per year

Active mode: 613 hours per year (438 hours per year at high power level,
175 hours per year at low power level)

The 1 to 5 W bin

Service life

Mobile phones — 2 years

Typical usage (power modes the EPS is required to supply)

Mobile phones

No load mode: 7 446 hours per year

Active mode: 613 hours per year (438 hours per year at high power level,
175 hours per year at low power level)

The 5 to 10 W bin

Service life

Cordless phones — 3 years

Typical usage (power modes the EPS is required to supply)

Cordless phones

No load mode: 0 hours per year

Active mode: 8 760 hours per year (3 592 hours per year at high power
level, 1 489 hours per year at mid power level, 3 679 hours per year at low
power level)

The 10 to 20 W bin

Service life

Modem — 5 years

Portable video player — 5 years

Camcorder — 5 years

Typical usage (power modes the EPS is required to supply)

Modem

No load mode: 0 hours per year

Active mode: 8 760 hours per year (8 760 hours per year at high power
level)

Portable video player

No load mode: 0 hours per year

Active mode: 1 460 hours per year (73 hours per year at high power level, 1
387 hours per year at low power level)

Camcorder

No load mode: 110 hours per year
Active mode: 99 hours per year (44 hours per year at high power level, 55 hours per year at low power level)

The 20 to 50 W bin

Service life

Portable printer — 5 years
Small flat panel TV — 5 years

Typical usage (power modes the EPS is required to supply)

Portable printer

No load mode: 0 hours per year
Active mode: 8 760 hours per year (88 hours per year at high power level, 8 672 hours per year at low power level)

Small flat panel TV

No load mode: 0 hours per year
Active mode: 8 760 hours per year (1 139 hours per year at high power level, 7 621 hours per year at low power level)

The 51 to 100 W bin

Service life

Flat panel monitor — 5 years
Notebook — 5 years

Typical usage (power modes the EPS is required to supply)

Flat panel monitor

No load mode: 0 hours per year
Active mode: 8 760 hours per year (3 139 hours per year at high power level, 3 431 hours per year at mid power level, 2 190 hours per year at low power level)

Notebook

No load mode: 0 hours per year
Active mode: 8 059 hours per year (2 978 hours per year at high power level, 964 hours per year at mid power level, 4 117 hours per year at low power level)

The greater than 100 W bin

Service life

High wattage notebook — 5 years

Typical usage (power modes the EPS is required to supply)

High wattage notebook

No load mode: 0 hours per year

Active mode: 8 059 hours per year (2 978 hours per year at high power level, 964 hours per year at mid power level, 4 117 hours per year at low power level)

Digital television adaptors

- Effective date: January 1, 2010
- Service life: 5 years
- Typical usage

16.4 hours per day on mode

7.6 hours per day standby mode

- The baseline model

Consumes 17 W in on mode and 2 W in standby mode

Portable air-conditioners

- Effective date: January 1, 2011
- Service life: 10 years
- Typical usage: 591 hours per year (based on cooling hours from Calgary, Montréal, Toronto and Vancouver)
- The baseline models used were

Air-cooled, 12 000 Btu/h

Single package vertical air-conditioners and heat pumps

- Effective date: January 1, 2011
- Service life: 15 years
- The baseline models used were

Single package vertical air-conditioner — 36 000 Btu/h

Single package vertical heat pump — 36 000 Btu/h

- Equivalent full-load hours used (based on cooling hours from Calgary, Montréal, Toronto and Vancouver)

Single package vertical air-conditioner — 711 hours

Single package vertical heat pump — 1 782 hours

- Includes energy savings from resulting heating efficiency gains for heat pumps.

Assumptions for sensitivity analysis

In addition to the base case analysis, sensitivity analyses were carried-out on the discount rate, energy prices and combinations of the two. All sensitivity analyses were calculated from the base case.

- For the discount rate sensitivity, the base case was re-evaluated using a real discount rates of 5% and 10%.
- For the energy price sensitivity analysis, Canadian average prices were substituted with high and low regional energy prices, according to *Canada's Energy Outlook: The Reference Case 2006*.
- In the combined energy price–discount rate sensitivity analysis, the base case was re-evaluated under two scenarios. The first scenario combined high energy prices with the low discount rate (5%). The second scenario combined low energy prices with the high discount rate (10%). This approach broadens the range of economic attractiveness presented in the discount rate sensitivity analysis and the energy price sensitivity analysis.

Expected results

Table I summarizes the net benefits from the proposed MEPS. The figures for each product in Table I reflect one design option yielding an efficiency improvement that meets the efficiency standards contained in this amendment.

Table I: Summary of net benefits analysis

Products class	Annual energy savings	Net present value of benefits \$2008
	Incremental electricity saved (kWh/yr/unit)	(\$/unit)
Electric motors		
5 horsepower	133	\$33.56
15 horsepower	325	\$95.03
30 horsepower	637	\$209.20
75 horsepower	2 161	\$872.83
150 horsepower	2 677	\$1 272.91
300 horsepower	8 536	\$6 595.52
	Incremental natural gas saved (GJ/yr/unit)	(\$/unit)
Gas-fired water boilers		
Input 75 000 Btu/h	1.18	(\$117.73) (see footnote 8)
Input 100 000 Btu/h	2.38	\$87.36
Input 150 000 Btu/h	3.89	\$345.35
Input 250 000 Btu/h	6.49	\$787.88
	Incremental oil saved (GJ/yr/unit)	(\$/unit)
Oil-fired water boilers		

Input 75 000 Btu/h	0.50	(\$151.60) (see footnote 9)
Input 100 000 Btu/h	1.03	(\$31.60) (see footnote 10)
Input 150 000 Btu/h	1.71	\$120.48
Input 250 000 Btu/h	2.85	\$167.31
Oil-fired steam boilers	Incremental oil saved (GJ/yr/unit)	(\$/unit)
Input 150 000 Btu/h	0.88	\$35.54
Input 250 000 Btu/h	1.46	\$166.88
Dry-type transformers	Incremental electricity saved (kWh/yr/unit)	(\$/unit)
300 kVA	4 320	\$2 496.80
1 500 kVA	8 034	\$3 823.77
2 000 kVA	13 387	\$9 244.76
Large air-conditioners and heat pumps	Incremental electricity saved (kWh/yr/unit)	(\$/unit)
Medium air-conditioner	717.0	\$226.68
Large air-conditioner	2 278.9	\$1 003.69
Very large air-conditioner	1 974.5	\$845.26
Large heat pump	2 870.9	\$1 088.98
Commercial self-contained refrigeration	Incremental electricity saved (kWh/yr/unit)	(\$/unit)
Opaque refrigerator	481.0	\$275.37
Transparent refrigerator	1 088.7	\$623.21
Opaque freezer	328.7	\$188.18
Transparent freezer	1 270.5	\$727.29
Opaque ice-cream type freezer	575.7	\$329.58
Transparent ice-cream type freezer	2 215.2	\$1 268.09
Room air-conditioners	Incremental electricity saved (kWh/yr/unit)	(\$/unit)
Less than 6 000 Btu/h	29.6	\$16.47
6 000 to 7 999 Btu/h	35.9	\$16.55
8 000 to 13 999 Btu/h	58.1	\$24.30
14 000 to 20 000 Btu/h	88.0	\$50.99
Greater than 20 000 Btu/h	167.8	\$43.57
General service incandescent reflector lamps	Incremental electricity saved (kWh/yr/unit)	(\$/unit)
Residential		
85 W BR30 — residential	18.0	\$4.18
75 W BR38 — residential	18.0	\$2.08
120 W BR40 — residential	21.6	\$3.05

75 W ER30 — residential	18.0	\$1.55
120 W ER40 — residential	21.6	\$4.39
Commercial		
85 W BR30 — commercial	88.9	\$4.51
75 W BR38 — commercial	88.9	\$2.25
120 W BR40 — commercial	106.7	\$3.24
75 W ER30 — commercial	88.9	\$1.49
120 W ER40 — commercial	106.7	\$4.61
Standby power electronic products	Incremental electricity saved (kWh/yr/unit)	(\$/unit)
Integrated stereo	198.6	\$101.27
Portable audio	14.8	\$3.79
Clock radio	44.1	\$15.29
Television	170.1	\$86.66
Non-recording video player	71.4	\$30.84
Recording video player	112.2	\$43.49
Appliances requiring external power supplies	Incremental electricity saved (kWh/yr/unit)	(\$/unit)
Low-wattage mobile phone — less than 1 W	7.79	\$1.40
Mobile phone — 1 to 5 W	7.3	\$1.30
Cordless phone — 5 to 10 W	18.1	\$4.95
Modem — 11 to 20 W	11.6	\$4.89
Portable video player — 11 to 20 W	2.4	\$0.91
Camcorder — 11 to 20 W	0.2	(\$0.01)
		(see footnote 11)
Portable printer — 21 to 50 W	20.1	\$8.56
Small flat panel TV — 21 to 50 W	15.3	\$6.49
Flat panel monitor — 51 to 100 W	9.4	\$3.87
Notebook — 51 to 100 W	22.8	\$9.64
High wattage notebook — greater than 100 W	1.7	\$0.53
Digital television adaptors	Incremental electricity saved (kWh/yr/unit)	(\$/unit)
Digital television adaptor unit	30.0	\$10.94
Portable air-conditioners	Incremental electricity saved (kWh/yr/unit)	(\$/unit)
Air-cooled, less than 36 000 Btu/h	172.1	\$79.80
Single package vertical air-conditioners and heat pumps	Incremental electricity saved (kWh/yr/unit)	(\$/unit)
Single package vertical air-conditioner	132.2	(\$154.19)
		(see footnote 12)

Single package vertical heat pump 551.9

\$155.34

Summary: costs and benefits to society

The results of the analysis show that there are positive net economic benefits to Canada from adopting the MEPS contained in this proposed amendment. The sensitivity analysis indicates that the results are fairly robust for a wide range of assumptions. The benefits will vary by individual user depending on end-use sector, geographical location and/or operational practices.

Based on the results in Table I and product shipment trends, the estimated net present value of benefits for all Canadians would be approximately \$1.14 billion over the service life of products shipped by 2015 and would increase to \$2.02 billion over the service life of products shipped by 2020.

Energy/GHG analysis

Methodology and assumptions

The energy savings impacts associated with the proposed Regulations were obtained by comparing the following:

- the business-as-usual case (i.e. excluding the Regulations); and
- the impact case (i.e. the business-as-usual scenario including the Regulations).

The energy savings associated with residential boilers, external power supplies, room air-conditioners, portable air-conditioners, digital television adaptors and standby power for electronic products occur in the residential sector.

The energy savings associated with large air-conditioners and heat pumps, single package vertical air-conditioners and heat pumps and commercial self-contained refrigeration occur in the commercial sector.

The energy savings associated with dry-type transformers and general service incandescent reflector lamps occur in the residential, commercial and industrial sectors.

The energy savings associated with electric motors occurs in both the commercial and industrial sectors.

The analysis was conducted for units that would not meet the MEPS and that are considered to be the most popular or average of their class.

The reductions in GHG emissions were calculated by applying emissions factors consistent with those published by Environment Canada ([see footnote 13](#)) to the marginal fuels used to generate the electricity that would be saved through the proposed amendment.

Expected results

The estimated energy savings impact of the proposed amendment is presented in Table II. The results are presented for the years 2015, 2020, 2025 and 2030. Energy savings would begin to accrue with the implementation of the standard. Total energy savings associated with this amendment would be 5.03 petajoules annually in 2015, increasing to 11.05 petajoules annually in 2030 as the sale of more efficient equipment steadily replaces the pre-regulation stock.

Table II: Energy savings (petajoules)

Year	2015	2020	2025	2030
Residential	3.51	4.71	5.18	5.64
Commercial	1.02	1.81	2.53	3.10
Industrial	0.51	1.07	1.70	2.31
Total	5.03	7.60	9.41	11.05

* Numbers may not add up because of rounding.

The estimated annual reductions in GHG emissions resulting from the aggregate energy savings are presented in Table III. Reductions in GHG emissions are estimated at approximately 0.65 megatonnes annually in 2015, increasing to approximately 1.41 megatonnes annually in 2030.

Table III: Reduction in greenhouse gas emissions (megatonnes)

Year	2015	2020	2025	2030
Residential	0.45	0.60	0.65	0.71
Commercial	0.13	0.23	0.33	0.40
Industrial	0.07	0.14	0.22	0.30
Total	0.65	0.97	1.20	1.41

* Numbers may not add up because of rounding.

Cost and benefits to business

The proposed Regulations would bring about changes in the types of products sold in Canada. It would also generate costs and benefits to business and industry. Employment has not been an issue, owing to the limited production of the regulated products in Canada. NRCan works to minimize any negative impacts by consulting in advance and recognizing industry concerns, by referencing industry recognized standards and harmonized MEPS, and through outreach, education and streamlining of administrative requirements.

Industry support

Industry has been consulted in the development of the proposed Regulations including reviewing and commenting on the costs used during the analysis. NRCan has taken industry's comments into consideration and made modifications, where appropriate, to the proposed Regulations. (See Consultation section.)

North American harmonization

Industry prefers North American harmonization in test methods, effective dates and performance level(s), coupled with adequate advanced notice before regulations come into force. This facilitates international trade, reduces the risk of non-compliance and potential dumping of inefficient stock, and reduces industry's transitional production costs. NRCan strives to harmonize except for individual cases that may vary for policy, climatic or technical reasons as detailed in the product-specific consultation sections.

Costs to industry

Incremental costs for more efficient technology and compliance are passed on to consumers and are justified by the energy savings. The increased cost per unit usually drops as sales volumes increase to meet demand and the standard product becomes commoditized. Higher margins applied to new-generation, high-efficiency products often replace this revenue. The high-efficiency products benefit from labelling and promotion programs that are associated with the standards regime.

Minimizing administrative burden

To ensure a level playing field for compliance and enforcement, the proposed Regulations have administrative provisions to reduce the risk of non-compliance: third-party energy efficiency verification, energy efficiency reporting prior to import or inter-provincial transport, and import reporting (as detailed in the Compliance section below).

- *Third-party energy efficiency verification.* These verification programs contribute to product quality assurance by facilitating interpretation and training on testing procedures, providing public-verified ratings and efficiency marking of verified units, and systematic challenge mechanisms. For industry, these costs are typically less than 1% of the unit cost.
- *Submitting energy efficiency reports prior to import or interprovincial transport.* This is a one-time activity per model (facilitated by electronic reporting forms supplied by NRCan) and is generally based upon the industry's internal inventory management systems. The burden of complying with this requirement is minimal.
- *Import reporting requirements.* These are minimal and are currently an integral part of the customs process due to NRCan's early participation in Canada Border Services Agency's (CBSA) electronic Single Window initiative. The details required to be reported are few and often typically included with the commercial import documentation already required by CBSA.

Additional benefit

NRCan's compliance and enforcement also adds value to business in the promotion and sale of standard and high-efficiency products. Verified performance ratings are posted to the NRCan Web site ([see footnote 14](#)) and provide readily accessible information to individuals or business looking to make energy efficiency purchases as well as for provincial and utility programs engaged in promoting energy efficiency.

Costs and benefits to the Government of Canada

Treasury Board approved the resources identified under CARA for the Energy Efficiency Standards and Labelling Program. Thirty-two million dollars over four years support

- the development of this amendment along with two others, one completed and one planned;
- the compliance and maintenance of the existing Regulations; and
- labelling programs for equipment.

Analytical support is provided through the Department's core human resources and is estimated at one full-time equivalent employee per year.

Rationale

The cost-benefit and environmental analysis confirms that the proposed MEPS for all products would, due to energy savings, generate important net monetary benefits to Canadians while contributing to GHG emission reduction targets.

The impact of the proposed MEPS from this amendment on Canadian society is summarized in Table IV. The table presents the aggregated annual totals for 2010 and 2020, the cumulative total up to 2020 and the average from 2009 to 2020.

Table IV: Summary of benefits and costs to Canadians

Costs, benefits and distribution (Discounted to 2009)		Aggregate Annual Totals		Total Cumulative	Average Annual
		2010	2020	by 2020	
A. Quantified impacts \$ (Millions in 2008 prices)*					
Benefits	Canadians	107	388	2 479	207
Costs	Canadians	23	65	398	33
Net benefits				2 081	173
B. Quantified impacts in non-\$**					
Positive impacts on Canadians	Energy savings (petajoules)	0.60	7.60	50.89	4.24
	GHG emissions reductions (megatonnes)	0.08	0.97	6.53	0.54

Notes

*Section A represents the estimated present value of benefits and costs for all Canadians over the service life of products shipped by 2020 based on product shipment trends. Benefits consist of energy savings and reductions in GHG emissions. Costs consist of differentials between a benchmark product price, and the cost of that product with levels of efficiency that meet or exceed those specified in the amendment.

**Section B represents the estimated energy savings and reductions in GHG emissions for all Canadians.

Numbers may not add up because of rounding.

The proposed Regulations represent a balanced approach that considers market forces, industry concerns, product availability and affordability in a global and North American context. Tools that are used include detailed market assessments, consultation and the impact analyses.

The MEPS ensure Canadians an adequate supply of more efficient product options that meet the objective of reducing Canada's greenhouse gas and air pollution emissions through the accelerated introduction of more energy efficient products into Canada's equipment stock.

Consultation

General commentary

NRCan follows general consultation practices for individual products as follows:

- *National Standards System.* The relevant Canadian Standards Association (CSA) Steering Committees, Technical Committees and Technical Subcommittees, assembled from stakeholders (including manufacturers, industry associations and other interested groups), provided input, and reviewed and voted upon changes to the test standard. For some products, the minimum efficiency requirements have been incorporated by consensus into the test procedure standards.
- *Bulletins.* Bulletins were distributed to interested stakeholders. Distribution lists targeted key market channel stakeholders, key federal and provincial stakeholders, and general interest groups (advocacy groups, international regulators). Many of these individuals and organizations in turn forwarded the bulletins to provide access to a larger audience of stakeholders. Bulletins are emailed and posted on the *Energy Efficiency Regulations* Web site (NRCan Web site) at <http://oee.nrcan.gc.ca/regulations>, and are often printed for distribution at trade shows.
- *Workshops and webinars.* Workshops and post-bulletin webinars were held to provide stakeholders with a public forum to have the proposed requirements explained and review comments and invite additional input as required especially where there were significant issues raised that were best addressed as a group in conjunction with the bulletin process. Invitations were sent out to identified stakeholders. In some cases, bilateral discussions were held with stakeholders with subproduct-specific issues. The meeting notes and presentation materials were forwarded to webinar participants.

Product-specific consultation prior to pre-publication

Electric motors

NRCan began preliminary discussions with stakeholders following the industry and advocate agreement in the United States that was subsequently enacted by EISA. A bulletin was sent in March 2009 to over 700 stakeholders, from which NRCan received 11 comments.

In June 2009, NRCan held a webinar to review the proposed Regulations and to address comments that were received on the content of the bulletin. Fifty-two stakeholders participated in the webinar.

Issues identified during consultation

(a) Integral gear assemblies

NRCan initially proposed raising the minimum efficiency of motors contained in integral gear assemblies to premium efficiency levels from their current MEPS. Some stakeholders suggested there be no change to be consistent with the proposed inclusion of stand-alone motors used with gear reducers at the current motor MEPS levels, since both of these products compete in the market place. Others suggested that they be removed from the proposed Regulations altogether. As integral gear assemblies have been regulated since 1999, exempting them from the Regulations would be unfair to manufacturers who have complied with the Regulations. Therefore, NRCan proposes that MEPS for integral gear assemblies remain at the current efficiency levels.

(b) Inclusion of cooling type

It was suggested that cooling type be added to the proposed Regulations and that the scope should specifically define which types are included or excluded (i.e. Totally Enclosed Fan Cooled [TEFC], Totally Enclosed Air Over [TEAO], Totally Enclosed Non-ventilated [TENV] and water-cooled). TEFC and open motors are the most common motors sold in Canada and are currently regulated. TENV, TEAO and water-cooled motors are excluded from MEPS because the test method does not define a set-up procedure or standard cooling conditions for the testing of these types of motors; no changes have been made.

(c) Complete efficiency values for efficiency table

Stakeholders suggested that efficiency values for all 6 and 8 pole motors of sizes 300 to 500 HP be included in the MEPS table. NRCan determined to not make any changes to the table which is harmonized with the U.S. requirements.

(d) Test methods

NRCan received comments suggesting that the DOE test method be specifically referenced for testing motors in Canada in addition to CSA C390. Some stakeholders were concerned that only requiring CSA C390 would cause additional burden in terms of testing and cost. The current Canadian Regulations reference CSA C390 only and there have been no issues raised to date. For this reason, the proposed Regulations continue to reference the CSA C390 test method only.

(e) Unique motor identifier (UMI)

NRCan requested feedback from dealers on their preference to use model numbers in addition to or in place of a UMI for their products. Many indicated a preference to use model numbers to match current business practice while some stakeholders prefer to use

the UMI to facilitate reporting. NRCan proposes that dealers submit their energy efficiency reports using either a model number or UMI.

Residential gas and oil boilers

In June 2008, NRCan received support from the Canadian Institute of Plumbing and Heating concerning harmonizing with the 2012 U.S. MEPS on an earlier timeline. In April 2009, a bulletin was sent to over 375 stakeholders. It was followed by a June 2009 webinar with 30 participants including industry associations, manufacturers, provincial regulators, gas utilities, etc. A meeting to discuss boiler control requirements was held in Toronto in October 2009 with 22 participants, including boiler manufacturers, controls manufacturers, industry associations and certification labs.

Issues identified during consultation

(a) Potential condensation issues with oil-fired boilers

Some stakeholders indicated that in northern climates there may be condensation problems when venting an 84% AFUE oil-fired boiler into an existing chimney. Investigations have shown that there are no issues or additional costs moving from the current 80% to the proposed 84% level. No changes were made to the proposed Regulations.

(b) Reporting electrical consumption of boiler pumps

Manufacturers question the proposed reporting of electrical consumption for boiler pumps since many boilers are not sold with pumps. Boiler installers can purchase and install a range of off-the-shelf pumps, with differing electrical consumption, depending on the field configuration. NRCan clarified that where no pump is supplied, the manufacturers can report a default value as per the standard.

(c) Time to comply with water temperature control requirements

Stakeholders felt they needed additional time to comply with the proposal to require controls that automatically adjust water temperature, for both logistical and technical reasons. NRCan has delayed the effective date of the boiler control design requirements to harmonize with the United States. Industry will continue to be engaged during this interim period to clarify these 2012 technical requirements.

Dry-type transformers

NRCan began preliminary discussions with dealers and manufacturers of dry-type transformers shortly after the United States announced changes to their regulations for transformers in 2007. In May 2009, a bulletin was issued to over 700 stakeholders. Following the bulletin, NRCan held two webinars: one in June 2009 with 27 stakeholders and another in November 2009.

All those who commented on the bulletin and participated in the webinars were in favour of harmonizing energy efficiency regulations between Canada and the United States as much as possible.

Issues identified during consultation

(a) Scope of exclusions and inclusions

Historically, there have been differences in the scope of products regulated in Canada and in the United States. As a result of stakeholder input, NRCan proposes to adopt exclusions for special impedance transformers, grounding transformers, furnace transformers, resistance grounding transformers and on-load regulating transformers. It was also determined that exclusions were not necessary for transformers with tap ranges of 20%, uninterruptible power supply transformers, instrument transformers, machine tool (control) transformers, and encapsulated transformers.

(b) Setting an upper kV limit

NRCan's initial bulletin did not include an upper limit to the ≥ 96 kV BIL range. Some stakeholders noted that it would be too costly to meet the efficiency requirements at a BIL rating of 200 kV or more. The proposed Regulations set an upper limit of 199 kV.

(c) Determining appropriate MEPS for all dry-type transformer sizes

There are some sizes of transformers that have MEPS in Canada which are not included in the U.S. regulations. For three-phase units, the U.S. regulations only cover units up to 3 000 kVA while Canada's existing Regulations set MEPS for units up to 7 500 kVA. NRCan proposed to scale efficiency values for three-phase units with a rating between 3 000 to 7 500 kVA. Stakeholders were in agreement with this method of establishing higher MEPS for these transformers.

NRCan also consulted on using the same scaling method to establish higher efficiencies for additional sizes not covered in the United States, i.e. for 1) single-phase transformers of kVA rating 15 to 50 and within the BIL range 96–199 kV, and for 2) three-phase transformers of kVA rating 15 to 150 and within the BIL range 96–199 kV. Stakeholders suggested that it would be more appropriate to use the efficiency values listed in CSA C802.2-06 for these units. This is what NRCan now proposes.

(d) Exclusion for special impedance transformers

Stakeholders noted during the June webinar that the table of normal impedance ranges in the U.S. regulation could unintentionally exempt some designs of transformers that are currently regulated, due to their impedance. NRCan requested information from stakeholders on two occasions regarding normal impedance ranges that would be acceptable for the Canadian market and received responses from a number of manufacturers. NRCan has proposed a more stringent table of normal impedance ranges (i.e. units with an impedance level that fell outside the normal impedance ranges would be excluded from the MEPS) that was favourably received by the November webinar participants.

(e) Effective date

NRCan consulted on an effective date harmonized with the United States of January 1, 2010. Manufacturers requested an implementation date that would allow for current

orders to be completed and suggested a lag time from the date of registration. NRCan proposes that MEPS apply to transformers manufactured three months after the date of registration.

Large air-conditioners and heat pumps

The first bulletin was sent in March 2009 to over 400 stakeholders. Several comments were received and a revised bulletin was sent in April 2009. The major change was to include a recent revision to ASHRAE 90.1-2007 that established a new metric for part load efficiency called Integrated Energy Efficiency Ratio (IEER). Ten comments were received in total for both bulletins.

Issues identified during consultation

(a) Size limit

On the initial bulletin there was no size limit. The proposed Regulations set an upper size limit of 223 kW (760 000 Btu/h) to harmonize with U.S. regulations.

(b) Effective date

Manufacturers requested additional time for testing and rating, especially considering the requirement to report a new part load efficiency metric, the IEER. The proposed date is harmonized with the U.S. date that is already in force.

(c) Condensing units

Since 1998, condensing units have had MEPS in Canada but not in the United States. Industry suggested that condensing units be dropped from the Canadian Regulations while also pointing out that removal would create a significant loophole in the Regulations. Condensing units will continue to be a regulated product with their existing MEPS.

(d) Compliance

Industry supported the need for diligent compliance activity to ensure a level playing field for suppliers. All dealers of regulated products are subject to the requirements of the *Energy Efficiency Act* and Regulations. Compliant models will be listed on the NRCan Web site and specific issues of compliance will be dealt with as they arise in accordance with the public compliance policy.

Commercial self-contained refrigeration

A bulletin was sent in June 2009 to over 1 100 stakeholders. NRCan received a few requests for clarifications and a comment regarding the compliance burden for low production volume custom built units.

NRCan invited stakeholders to participate in a webinar in August 2009 on the proposed Regulations. There were 62 participants consisting primarily of manufacturers and dealers, other regulators, utilities and certification bodies.

This provided NRCan with an opportunity to clarify certain details not provided in the bulletin. These details include the definition for transparent units, the change to a lower harmonized ice-cream test temperature, and the test temperature for ambient and test packages for pull-down application units. Comments were received regarding the zero-dollar incremental cost used by NRCan in the cost-benefit analysis based on consultant market information. No additional sources of relevant information were found or provided and, therefore, the current valuation remains unchanged based on *Application of Best Industry Practices to the Design of Commercial Refrigerators*, TIAX LLC, June 2002. During the webinar, NRCan invited proposals but received none on defining and modifying the proposed Regulations to deal with custom units.

Room air-conditioners

A bulletin was distributed in March 2009 to over 400 stakeholders communicating the proposal to increase the MEPS to the present ENERGY STAR levels. One written comment from an electricity utility strongly supported the change as it would reduce peak demand for electricity. In September 2009, a webinar was held with over 20 participants. There were some questions for clarification on the proposal. One organization asked whether all categories of room air-conditioners have ENERGY STAR qualified models. A review of NRCan's public list of models indicates that all categories and size ranges have qualifying models.

General service incandescent reflector lamps

In January 2009, a bulletin was sent to over 1 000 stakeholders. Only one comment was received from a lamp manufacturer regarding the effective date proposed of June 1, 2009. Due to delays in adopting this U.S. harmonized regulation, no changes to the effective date are proposed.

Standby for electronic products

In January 2009, a bulletin was issued to over 800 stakeholders. This was followed by a January 2009 workshop in Toronto, Ontario, to meet, present and solicit additional feedback from 22 stakeholders representing manufacturers, consultants, provincial governments, and interest groups.

A second bulletin was issued at the end of July 2009. This bulletin made a number of changes to address stakeholder concerns including adding a number of requirements to match the E.U. regulations. Another major change was to add the requirement for the reporting of on-mode power of televisions, although the minimum levels are not proposed at this time. The bulletin was followed by a webinar with 52 participants. Although, originally consulted on five products, this proposed amendment will affect only

- compact audio products;
- televisions; and
- video products.

Issues identified during consultation

(a) Standby power of multifunction devices (MFDs) and printers and

(b) Power management for all products

Many inquiries were received, with most concerns coming from the printer and MFD manufacturers. NRCan proposed changing the definition of standby mode for printers and MFDs to align with ENERGY STAR so that shutting off the machine could be considered putting it on standby. To maximize potential energy savings for printers and MFDs in sleep mode, NRCan proposed the requirement for power management for these products, as well as for compact audio, video and TV products. This aligned with the E.U. requirement for power management. Subsequent consultations with stakeholders/manufacturers for printers and MFDs revealed that the European Union requires power management only if this function is appropriate for the intended use of the product. Printer and MFD manufacturers contended that it is inappropriate to require printers/MFDs to automatically shut off, since re-starting their products takes a long time, and many users are remotely located. In addition, the European Union has not made a final decision on the appropriateness of power management for printers and MFDs, but is in the process of drafting a voluntary agreement with imaging equipment manufacturers to address the efficiency of printers and MFDs without regulations. These issues, related to defining power management and setting appropriate levels for standby, have lead to postponing the regulation for MFDs and printers.

Also, as power management was added to the amendment to draw significant savings mainly from printers and MFDs, the requirement for power management for all five initial product categories was removed.

(c) Harmonizing with other jurisdictions

Manufacturers requested that NRCan harmonize the scope, definitions, and power levels with the standards of several other jurisdictions. However, each jurisdiction has slightly different requirements and the U.S. DOE does not have any regulations for standby power for compact audio products, televisions and video products. The proposed Tier 1 power limits were closely aligned with the CEC 2007 standby power limits in their *Appliance Efficiency Regulations*. The need for an off mode and/or a standby mode in Tier 1 harmonizes with the E.U. Tier 1 standby regulation. The Tier 2 standby power limits for these products were changed to align with the E.U. power limits that will take effect in January 2013.

(d) Definition and scope

Stakeholders were asked to provide financial or technical justification for any exemptions. To allow for the exemption of some industrial products, the scope has been revised to cover only products connected to a single phase voltage of 240 nominal or less. NRCan clarified that, as products must be connected to mains power as at least one power source, products that are solely battery-operated are excluded.

(e) Third-party verification

Stakeholders raised issue with the need for third-party verification and associated verification mark. NRCan maintains that the requirement of a verification mark from a

certification body accredited by the Standards Council of Canada has served the regulatory program well in the past. The program provides a level playing field for all manufacturers.

(f) Analysis data

The validity of the standby power data used in the analysis of this regulation was questioned by the Consumer Electronics Association, which presented a report produced by TIAX LLC as the most accurate and up-to-date picture of standby power. The average standby power data in the TIAX report and the data used by NRCan were found to be very close, and given that the NRCan data had been collected more recently and from Canadian sources, no change in the base data set was made for the analysis.

(g) Effective date

Many stakeholders stated that the Tier 1 effective date was too soon; it has been delayed to July 2010. The Tier 2 effective date remains January 2013.

(h) On-mode testing of TVs

Stakeholders expressed concerns that TV on-mode testing could result in variable results due to some vagueness about TV luminance settings in the IEC62087 test standard. One manufacturer suggested using the test method listed in Version 4 of the ENERGY STAR Television Standard. NRCan has harmonized the test methodology for reported values with California's TV testing method, which is based on ENERGY STAR Version 4 test procedure.

External power supplies

A bulletin was sent to 500 stakeholders in April 2009. There were 40 inquiries for clarification of the proposed requirements. These comments were discussed at a webinar held in May 2009 with over 40 participants and subsequent follow up with specific stakeholders, including bilateral discussions with industry associations. A notice to stakeholders in July 2009 signalled NRCan's intent to delay the effective date into 2010.

Issues identified during consultation

(a) Third-party verification

Most inquiries for clarification related to Canada's third-party compliance regime, number of models to be tested, use of base models in testing and reporting, lab accreditation, etc. NRCan proposes to require third-party verification; however, manufacturers will have marking options.

(b) Energy efficiency marking

Most of the concerns related to Canada's third-party compliance regime centered around the requirement for an energy efficiency verification mark of compliance from a Standards Council of Canada accredited certification body. Manufacturers raised

concerns about limited real estate on an already very crowded nameplate. In addition, many products are already marked with a Roman numeral according to the ENERGY STAR labelling protocol. The use of the mark is required by the U.S. DOE standards.

In order to harmonize with existing labelling requirements of other jurisdictions, NRCan is proposing to accept the use of the Roman numeral as an alternative to the energy efficiency verification mark if the Roman numeral is clearly indicated on the product according to the ENERGY STAR protocol, and if the product performance is initially verified by a Standards Council of Canada accredited certification body with a relevant energy efficiency scope (i.e. offering an EPS energy efficiency verification program). NRCan proposes to increase its surveillance activities by requiring regular follow-up testing of products for which the Roman numeral marking alternative is chosen to ensure that compliance is maintained.

(c) Scope

The initial bulletin proposed a broad scope which only excluded medical devices, and some EPS that function as battery chargers for a detachable battery pack. In response to comments received, two additional scope exemptions are proposed affecting

- units that charge batteries for motor-operated (driven) products, both to harmonize with the U.S. EISA and in recognition that they will be included in future regulatory activity on battery chargers; and
- power-over-Ethernet (POE) units with an internal power supply as does California. This does not exempt EPS that supply many end-use products equipped with POE functionality.

Upon examination, no exemption has been proposed for industrial products given the lack of technical impediment to meeting the MEPS.

(d) Exemption of specific replacement units from MEPS

Although still subject to reporting requirements, it is proposed that cradled replacement EPS units that are marked as powering specific essential public service emergency communication equipment that was manufactured prior to July 1, 2010, do not need to meet MEPS if imported or shipped in quantities of less than 50.

(e) Effective date

The effective date of July 2010 differs from the original proposal, so as to provide dealers with additional time to meet the third-party verification requirements. The delay was communicated in a July 2009 notice.

Digital TV adaptors

A bulletin was sent to over 350 stakeholders in May 2009. A follow-up webinar was held in August 2009 with 18 participants representing a broad range of stakeholders. No significant issues were identified.

Residential electric boilers

Stakeholders were consulted concerning gas and oil water boilers. The proposed Regulations reflect comments received and are harmonized with the U.S. prescriptive requirements to provide a means of automatically adjusting water temperature set for 2012, instead of 2010 as initially proposed.

Portable air-conditioners

A bulletin was distributed to over 400 stakeholders in May 2009, with a follow-up webinar held in September 2009. About 20 stakeholders participated and were able to view the regulatory proposal and provide additional feedback.

Issues identified during consultation

(a) Test method

There was concern that the test method is no longer harmonized with the industry association test method in the United States. The referenced CSA test method C370 had been developed jointly with the Association of Home Appliance Manufacturers (AHAM). However, after publication of C370, at the request of one manufacturer, AHAM made some changes to definitions in their version of the test method. The CSA Technical Committee recently accepted the rationale and plans to incorporate changes. However, the basis for the test has not changed, and the information and ratings to be collected will be correct. Therefore, the proposed reporting and the introduction of minimum efficiency levels can proceed, referencing the current CSA test method.

(b) Efficiency data

Comments were received questioning the validity of analysis due to a concern that manufacturers' data had been used without ensuring that the test conditions were in accord with CSA C370. The consultant confirmed that manufacturers' data had been checked and converted to the correct conditions. When this question arose during the webinar, additional data and input were invited, but none has been submitted.

(c) Labelling

EnerGuide labelling was proposed initially, but will be delayed for a future amendment. Some stakeholders commented that more lead time would be required.

Single package vertical air-conditioners and heat pumps

A bulletin was distributed by email in June of 2009. Beyond responses pointing out an error in the rating conditions, no substantive comments were received.

Clarification of test procedure for refrigerators with an automatic icemaker

The issue of the interpretation of the referenced test procedure CAN/CSA-C300-08 for residential refrigerators with automatic icemaker has been raised in a number of fora since 2008. A clarification is required in the Regulations to ensure that all products are tested to represent their level of energy consumption in the home.

Consistent with clarification notices sent January 2009 by U.S. DOE, May 2009 by NRCan to ENERGY STAR participants and August 2009 by CSA International, a bulletin describing the proposed Regulations was sent by NRCan to over 200 stakeholders in September 2009.

All comments with respect to the proposed amendment were positive and no significant issues were identified.

Implementation, enforcement and service standards

It is expected that the compliance and enforcement procedures already in place for all products regulated under the *Energy Efficiency Regulations* will continue to serve well for these products.

The main features of this system are as follows.

Verification marking and energy efficiency reporting

For products prescribed under the *Energy Efficiency Regulations*, NRCan employs a third-party verification system using the services of certification bodies accredited by the Standards Council of Canada. Verified energy performance data will be submitted to NRCan by the dealer in an energy efficiency report as specified in Part V and Schedule IV of the *Energy Efficiency Regulations*. This is only required once for each model, before importation or inter-provincial shipment.

For external power supplies, NRCan has proposed alternatives to the use of the energy efficiency verification mark while requiring that the product be verified by a third-party certification organization as per the consultation portion of this document. NRCan would be increasing its market surveillance for this product to reduce the risk of non-compliance.

Customs reporting and monitoring

NRCan's procedures for commercial imports of prescribed products will apply to products prescribed under the Regulations.

This involves cross-checking data received from customs release documents with the energy efficiency reports that dealers submit to NRCan. This cross-checking ensures that NRCan can verify the compliance of imports clearing customs.

The proposed Regulations will require importations of prescribed product to provide in their customs release documents, the minimal information needed for customs monitoring.

Direct fieldwork: Market survey and product testing

NRCan will conduct product testing on a complaint-driven basis. The market is highly competitive and suppliers are cognizant of performance claims made by their competitors. Challenge procedures by which performance claims can be questioned exist in all verification programs.

Strategic environmental assessment

In accordance with the *Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals*, a preliminary strategic environmental assessment (SEA) was conducted for the proposed Regulations. Elements of this amendment have undergone environmental analysis via a previous detailed SEA in 2008 — bill to amend the *Energy Efficiency Act*. Moreover, the analysis of environmental impacts is ongoing and inherent to the program. Expected outcomes, including greenhouse gas reductions and associated environmental impacts, are detailed in the Benefits and costs section of this document.

Conclusion

An appropriate level of compliance with the Regulations will result from support by North American manufacturers, third-party verification, customs monitoring, cooperation with regulating provinces, communication activities, market surveys, and product testing as required.

Performance measurement and evaluation

Situation

As noted, these proposed Regulations are the second of those announced as part of the Energy Efficiency Standards and Labelling component of CARA. They will therefore be subject to the performance management strategy as outlined in the CARA Treasury Board submission and the Horizontal Results-based Management Accountability Framework prepared for CARA.

Detailed accounts of progress towards this objective will be found in departmental business plans, reports on plans and priorities, and the Report to Parliament under the *Energy Efficiency Act*.

Performance measurement and evaluation plans have been established for the Energy Efficiency Standards and Labelling program as a whole with, key activities and outputs are identified, expectations quantified, ongoing data collection from program files maintained, and appropriate targets defined. Feedback on the status of all activities is provided to the program on a continuous basis.

The Performance Measurement and Evaluation Plan is under development and will be completed prior to publication in *Canada Gazette*, Part II, and available upon request.

Evaluation

A formal evaluation of the Energy Efficiency Standards and Labelling program has been initiated by NRCan's departmental evaluation authorities commencing in 2009 and for completion in 2010. Given this timing, the actual impact of this proposed amendment may just be beginning for some products and not yet in effect for others.

- The evaluation will likely focus on the historical effects of the program to determine, in a general sense, the relevance and cost effectiveness of MEPS and labelling programs.
- The key question is: To what extent were the standards successful in transforming equipment markets such that more energy efficient equipment was introduced faster than would have been likely without the standards?
- More specific questions would include the following:
 - To what extent were the impacts incremental to normal market improvement?
 - To what extent was the standards development process transparent and inclusive?
 - With respect to labelling provisions of these proposed Regulations, to what extent has the awareness of Canadians changed regarding the environmental/energy implications of energy efficiency?
- Answers to these questions would be determined by interviews with program managers, staff and stakeholders (including but not limited to business and related associations, consumer groups, provincial governments), program data, and ongoing regulatory analysis of various markets. Systematic consumer surveys have been conducted in the past and more are planned as are consultations with industry and utility stakeholders.

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PROPOSED REGULATORY TEXT

Notice is hereby given, pursuant to section 26 of the *Energy Efficiency Act* ([see footnote a](#)), that the Governor in Council, pursuant to sections 20 ([see footnote b](#)) and 25 of that Act, proposes to make the annexed *Regulations Amending the Energy Efficiency Regulations*.

Interested persons may make representations concerning the proposed Regulations within 75 days after the date of publication of this notice. All such representations must cite the *Canada Gazette*, Part I, and the date of publication of this notice, and be addressed to John Cockburn, Director, Equipment Division, Office of Energy Efficiency, Department of Natural Resources, 930 Carling Avenue (CEF, Building 1, Observatory Crescent), 2nd Floor, Room 25, Ottawa, Ontario K1A 0Y3 (tel.: 613-996-4359; email: equipment@nrcan.gc.ca).

Ottawa, June 3, 2010

JURICA ČAPKUN
Assistant Clerk of the Privy Council

REGULATIONS AMENDING THE ENERGY EFFICIENCY REGULATIONS

AMENDMENTS

PART 1

1. (1) The definitions “autotransformer”, “drive (isolation) transformer”, “BR lamp”, “encapsulated transformer”, “ER lamp”, “furnace transformer”, “instrument transformer”, “non-ventilated transformer”, “rectifier transformer”, “sealed transformer”, “testing transformer” and “welding transformer” in subsection 2(1) of the *Energy Efficiency Regulations* ([see footnote 15](#)) are repealed.

(2) The definitions “large air-conditioner”, “large heat pump”, “model number”, “motor”, “room air-conditioner”, “single package central air-conditioner”, “single package heat pump”, “split-system central air-conditioner”, “split-system heat pump” and “standby mode” in subsection 2(1) of the Regulations are replaced by the following:

“large air-conditioner” means a commercial or industrial unitary air-conditioner with a cooling capacity of 19 kW (65 000 Btu/h) or more, but does not include a single package vertical air-conditioner; (*climatiseur de grande puissance*)

“large heat pump” means a commercial or industrial unitary heat pump intended for air-conditioning and space-heating applications with a cooling capacity of 19 kW (65 000 Btu/h) or more, but does not include a single package vertical heat pump; (*thermopompe de grande puissance*)

“model number” means, in respect of any model of an energy-using product, the designator that is assigned to that model for the purposes of these Regulations and that distinguishes it from similar models; (*numéro du modèle*)

“motor” means, except with respect to gas furnaces for the purposes of paragraph 12(2)(f), a machine that converts electrical power into rotational mechanical power, including any of those machines that is incorporated into another product — whether or not that other product is an energy-using product and that

(a) is rated for continuous duty operation;

(b) is a design type that is

(i) an electric three-phase induction design,

(ii) a cage or squirrel-cage design, or

(iii) a NEMA design A, B or C with NEMA T or U frame dimensions, or IEC design N or H;

(c) is designed to operate at a single speed;

(d) has a nominal output power of not less than 1 HP (0.746 kW) and not more than 500 HP (375 kW);

(e) has a nominal voltage of not more than 600 V AC;

(f) has a nominal frequency of 50/60 Hz or 60 Hz;

(g) has a two, four, six or eight pole construction;

(h) has an IP code from 00 to 66;

(i) is of open or enclosed construction;

(j) is of foot-mounted construction or flange-mounted construction; and

(k) has a standard shaft, R-shaft or S-shaft, or is a close-coupled pump motor or a vertically-mounted solid shaft normal thrust motor;

but does not include a NEMA design A or C motor of more than 200 HP and not more than 500 HP or an IEC design H motor of more than 150 kW and not more than 375 kW; (*moteur*)

“room air-conditioner” means a single-phase electric air-conditioner that has a cooling capacity of 10.55 kW (36 000 Btu/h) or less, but does not include a packaged terminal air-conditioner, a portable air-conditioner or a single package vertical air conditioner; (*climatiseur individuel*)

“single package central air-conditioner” means a single-phase or three-phase central air-conditioner that is a single package unit and that has a cooling capacity of less than 19 kW (65 000 Btu/h), but does not include a single package vertical air-conditioner; (*climatiseur central monobloc*)

“single package heat pump” means a single-phase or three-phase air-to-air heat pump that is a centrally ducted, single package unit and that has a cooling or heating capacity of less than 19 kW (65 000 Btu/h), but does not include a single package vertical heat pump; (*thermopompe monobloc*)

“split-system central air-conditioner” means a single-phase or three-phase central air-conditioner that is a split-system and that has a cooling capacity of less than 19 kW (65 000 Btu/h); (*climatiseur central bibloc*)

“split-system heat pump” means a single-phase or three-phase air-to-air heat pump that is a centrally ducted, split-system and that has a cooling or heating capacity of less than 19 kW (65 000 Btu/h); (*thermopompe bibloc*)

“standby mode” with respect to

(a) a refrigerated beverage vending machine or a snack and refrigerated beverage vending machine means a mode into which the machine automatically enters during a period of extended inactivity that is capable of reducing the energy consumption of the machine by means of the following power states:

(i) a refrigeration power state in which the average temperature of the refrigerated beverages is allowed to rise to 4.4°C, and

(ii) if the machine is equipped with lights,

(A) a lighting power state in which the lights are turned off, and

(B) a machine power state in which the reduced power states referred in subparagraph (i) and clause (ii)(A) are both in operation at the same time;

(b) a television means the mode in which the appliance while connected to mains power, cannot produce either sound or picture, but can be switched into another mode with a remote control unit, an internal signal or a timer;

(c) a video product means the mode in which the appliance while connected to mains power, cannot produce either video or audio output signals or provide any mechanical function, but can be switched into another mode with a remote control unit, an internal signal or a timer; and

(d) a compact audio product means the mode in which the appliance while connected to mains power, cannot produce sound or provide any mechanical function, but can be switched into another mode with a remote control unit, an internal signal or a timer; and

(e) a digital television adapter means the mode in which the adapter, while connected to mains power, is at the lowest power consumption level without the user being able to switch it off and with the capacity of lasting for an indefinite time. (*mode Veille*)

(3) Paragraph (f) of the definition “dry-type transformer” in subsection 2(1) of the Regulations is replaced by the following:

(f) a grounding transformer,

(4) The definition “dry-type transformer” in subsection 2(1) of the Regulations is amended by striking out “or” at the end of paragraph (m) and by replacing paragraph (m) with the following:

(m) a special impedance transformer,

(n) a transformer with a nominal low-voltage line current of 4000 A or more,

(o) an on-load regulating transformer, or

(p) a resistance grounding transformer. (*transformateur à sec*)

(5) The portion of the definition “general service incandescent reflector lamp” in subsection 2(1) before paragraph (f) of the Regulations is replaced by the following:

“general service incandescent reflector lamp” means an incandescent reflector lamp with a bulb shape as described in ANSI C79.1 or similar shape that has

(a) an E26/24 single contact or E26/50 × 39 skirted, medium screw base,

(b) a nominal voltage or voltage range that lies at least partially between 100 volts and 130 volts,

(c) a diameter greater than 57 mm, and

(d) a nominal power of not less than 40 W and not more than 205 W,

(6) The definition “general service incandescent reflector lamp” in subsection 2(1) of the Regulations is amended by adding the following after paragraph (g):

(h) a BR30 lamp or BR40 lamp with a nominal power of up to 50 W, or 65 W,

(i) a R20 lamp with a nominal power of not more than 45 W,

(j) a silver bowl lamp, or

(k) a lamp for heat-sensitive applications. (*lampe-rélecteur à incandescence standard*)

(7) Paragraph (p) of the definition “general service lamp” in subsection 2(1) of the Regulations is replaced by the following:

(p) a silver bowl lamp,

(8) Paragraph (b) of the definition “life” in subsection 2(1) of the Regulations is replaced by the following:

(b) general service incandescent reflector lamps, the rated life in hours as calculated in accordance with CSA C862-09, and

(9) Paragraph (b) of the definition “luminous flux” in subsection 2(1) of the Regulations is replaced by the following:

(b) for general service incandescent reflector lamps, the lumen output determined according to CSA C862-09,

(10) Subparagraph (a)(i) of the definition “self-contained commercial refrigerator” in subsection 2(1) of the Regulations is replaced by the following:

(i) has at least one compartment for the storage of food, beverages or flowers at temperatures above 0°C,

(11) Paragraph (b) of the definition “unique motor identifier” in subsection 2(1) of the Regulations is replaced by the following:

(b) with respect to a motor referred to as

(i) a NEMA design in the definition “motor”, the power in HP, and

(ii) an IEC design in the definition “motor”, the power in kW,

(12) Paragraph (f) of the definition “type” in subsection 2(1) of the Regulations is replaced by the following:

(f) room air-conditioners that are

(i) 120V louvred with reverse cycle,

(ii) 120V louvred without reverse cycle,

(iii) 120V non-louvred with reverse cycle,

(iv) 120V non-louvred without reverse cycle,

(v) 120V casement-only,

(vi) 120V casement-slider,

(vii) 240V louvred with reverse cycle,

(viii) 240V louvred without reverse cycle,

(ix) 240V non-louvred with reverse cycle,

(x) 240V non-louvred without reverse cycle,

(xi) 240V casement-only, or

(xii) 240V casement slider, and

(13) Subsection 2(1) of the Regulations is amended by adding the following in alphabetical order:

“AHRI” means the Air-Conditioning, Heating and Refrigeration Institute. (*AHRI*)

“AHRI 340/360” means the AHRI standard ANSI/AHRI 340/ 360-2007 entitled *Performance Rating of Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment*. (*AHRI 340/360*)

“AHRI 1200” means the AHRI standard 1200-2008 entitled *Performance Rating of Commercial Refrigerated Display Merchandisers and Storage Cabinets*. (*AHRI 1200*)

“ASHRAE 103” means the ANSI/ASHRAE standard 103-2007 entitled *Method of Testing for Annual Fuel Utilization Efficiency of Residential Central Furnaces and Boilers*. (*ASHRAE 103*)

“automatic water temperature adjustment device” means, with respect to a gas boiler, an oil-fired boiler and an electric boiler, a device required under section 4.7; (*dispositif automatique de réglage de la température de l'eau*)

“compact audio product” means an integrated amplifier and tuner encased in a single housing, with attached or separable speakers and which may also produce sound from another source and uses mains power as at least one means of power; (*produit audio compact*)

“CSA C370” means the CSA standard CAN/CSA C370-09 entitled *Cooling Performance of Portable Air Conditioners*. (*CSA C370*)

“CSA C380” means the CSA standard CAN/CSA-C380-08 entitled *Test Procedure for the Measurement of Energy Consumption of Set-Top Boxes (STBs)*. (*CSA C380*)

“CSA C381.1” means the CSA standard CAN/CSA-C381.1-08 entitled *Test method for calculating the energy efficiency of single-voltage external ac-dc and ac-ac power supplies*. (*CSA C381.1*)

“CSA C390-10” means the CSA standard CSA-C390-10 entitled *Test Methods, Marking Requirements, and Energy Efficiency Levels for Three-Phase Induction Motors*. (*CSA C390-10*)

“CSA C742-08” means the CSA standard CAN/CSA-C742-08 entitled *Energy performance of automatic icemakers and ice storage bins*. (*CSA C742-08*)

“CSA C746-06” means the CSA standard CAN/CSA-C746-06 entitled *Performance Standard for Rating Large and Single Packaged Vertical Air Conditioners and Heat Pumps*. (*CSA C746-06*)

“CSA C802.2-06” means the CSA standard CAN/CSAC802.2-06 entitled *Minimum Efficiency Values for Dry-Type Transformers*. (*CSA C802.2-06*)

“CSA C862-09” means the CSA standard CAN/CSA-C862-09 entitled *Performance of incandescent reflector lamps. (CSA C862-09)*

“CSA C62301” means the CSA standard CAN/CSA-C62301-07 entitled *Household Electrical Appliances – Measurement of Standby Power. (CSA C62301)*

“detachable battery pack” means a battery that is contained in a separate enclosure from an end-use product designed to be removed or disconnected from the end-use product for recharging; (*bloc-batterie amovible*)

“digital television adapter” means a device that is a type of terrestrial set-top box whose primary function is to receive an Advanced Television Systems Committee terrestrial television broadcast and to demodulate, decode and convert it into an analog television format; (*adaptateur de téléviseur numérique*)

“electric boiler” means a boiler that uses electric energy as a source of heat and that is intended for application in a hot water central heating system having an input rate not exceeding 88 kW (300 000 Btu/h) and is not equipped with tankless domestic water heating coils; (*chaudière électrique*)

“external power supply” means a power supply device that

(a) is designed to convert line voltage ac input into lower voltage dc or ac output,

(b) is able to convert to only one dc or ac output voltage at a time,

(c) is designed to be used with a separate end-use product that constitutes the primary load,

(d) is encased in an enclosure separate from that end-use product and is connected to that product by an electrical connection, and

(e) has a nominal output power of 250 W or less,

but does not include a device

(f) that powers the charger of a detachable battery pack of an end-use product,

(g) that charges the battery of an end-use product that is fully or primarily motor operated,

(h) that is an accessory to a medical device as defined in section 1 of the *Medical Devices Regulations*; or

(i) that is a power sourcing equipment as defined in IEEE 802.3-2008 Standard entitled *Standard for Information Technology — Telecommunications and Information Exchange Between Systems — Specific requirements Part 3*; (*bloc d'alimentation externe*)

“grounding transformer” means a three phase transformer intended to provide a neutral point for system grounding purposes, either by means of

(a) a wye primary winding with a neutral connected to ground and a delta secondary winding, or

(b) a transformer with its primary winding in a zig-zag winding arrangement, and no secondary winding; (*transformateur de mise à la terre*)

“information and status display” means a device, including a clock, providing visual alphanumeric or graphical information or the status of the equipment; (*affichage*)

“integrated energy efficiency ratio” means a single number cooling part-load efficiency metric calculated for large air conditioners and large heat pumps in AHRI 340/360; (*taux d’efficacité énergétique intégré*)

“mains power” means, with respect to compact audio products, video products and televisions, an alternating current electric power source in a building that is less than or equal to nominal 240 volt single phase supply; (*alimentation principale*)

“off mode” in respect of

(a) a television means the mode in which the appliance, while connected to a mains power cannot produce either sound or picture or provide any mechanical function and cannot be switched into another mode with a remote control unit, a timer or another source,

(b) a video product means the mode in which the appliance, while connected to a mains power cannot provide any mechanical function and cannot be switched into another mode with a remote control unit, a timer or another source, and

(c) a compact audio product means the mode in which the appliance, while connected to a mains power cannot produce sound or provide any mechanical function and cannot be switched into another mode with a remote control unit, a timer or another source; (*mode Arrêt*)

“on-load regulating transformer” means a transformer that varies the voltage, the phase angle, or both, of an output circuit and compensates for fluctuation of load and input voltage, phase angle or both voltage and phase angle; (*transformateur de réglage en charge*)

“pull-down temperature reduction capability” means, with respect to a self-contained commercial refrigerator, the capability of the refrigerator, when fully loaded in an area having an ambient temperature of 32.22°C with 355 ml beverage cans that at the time of loading, have reached a temperature of 32.22°C, to cool those cans to a stable overall integrated product temperature of 3.33°C in 12 hours or less; (*capacité d’abaisser la température*)

“portable air-conditioner” means a single package air-conditioner unit that

(a) is represented by the configurations as shown in Table 1 of CSA C370,

(b) is typically mounted on wheels for the purpose of moving the unit, and

(c) has a cooling capacity less than 19 kW (65 000 Btu/h); (*climatiseur portatif*)

“replacement external power supply” means a cradled external power supply that

(a) powers essential public service emergency communications,

(b) is marked for replacement of a specified end-use product that was manufactured before July 1, 2010, and

(c) is imported or shipped in quantities of less than fifty units; (*bloc d'alimentation externe de remplacement*)

“resistance grounding transformer” means a transformer that is designed for grounding the neutral of a three-phase electrical system, a three-phase transformer or a generator; (*transformateur de mise à la terre résistif*)

“silver bowl lamp” means a lamp that has a reflective coating applied directly to the part of the bulb surface that reflects light toward the lamp base and that is marketed as a silver bowl lamp; (*lampe à calotte argentée*)

“single package vertical air-conditioner” means a single package commercial air conditioner that is air-cooled and encased, with or without heating capability but not a heat pump, the major components of which are arranged vertically and that is intended for mounting through, or on either side of, an exterior wall; (*climatiseur vertical monobloc*)

“single package vertical heat pump” means a single package commercial heat pump that is air-cooled, encased and uses reverse cycle refrigeration as its primary heat source, the major components of which are arranged vertically and that is intended for mounting through, or on either side of, an exterior wall; (*thermopompe verticale monobloc*)

“special impedance transformer” means any dry-type transformer built to operate at an impedance outside of the normal range for that transformer’s nominal power in kVA shown in the table of normal impedance ranges set out in Part 6 of Schedule I; (*transformateur d'impédance particulière*)

“television” means an analog or digital device designed primarily for the display and reception of a terrestrial, satellite, cable, Internet Protocol TV (IPTV), or other broadcast or recorded transmission of analog or digital video and audio signals and includes

(a) a television monitor, namely a television without an internal tuner, receiver or playback device,

(b) a combination television, namely a system in which a television and an additional device or devices, including a DVD player or VCR are combined into a single unit in which the additional device is included in the television casing, and

(c) a component television, namely a television composed of two or more separate components marketed and sold as a television under one model or system designation,

but does not include a computer monitor, namely, an analog or digital device designed primarily for the display of computer generated signals and that is not marketed for use as a television; (*téléviseur*)

“transparent” means, with respect to a self-contained commercial refrigerator, self-contained commercial refrigerator-freezer or self-contained commercial freezer, that its glass area covers at least 75% of the principal display face; (*transparent*)

“20 CCR” means the *Amendments to Appliance Efficiency Regulations*, California Code of Regulations, Title 20, sections 1601 through 1608, 2009 Appliance Efficiency Rulemaking, Phase 1, Part C, Docket Number 09-AAER-1C, November 18, 2009; (*20 CCR*)

“video product” means an electronic device encased in a single housing, that has an integral power supply, is connected to a mains power, and is designed solely to produce or record, or both, audio and video signals, to or from digital or analogue media; (*appareil vidéo*)

2. (1) The portion of subsection 3(1) of the Regulations before paragraph (a) is replaced by the following:

3. (1) Subject to subsections (2) to (29), the following products are prescribed as energy using products:

(2) Paragraphs 3(1)(j.3) and (j.4) of the Regulations are repealed.

(3) Subsection 3(1) of the Regulations is amended by striking out “and” at the end of paragraph (z.2) and by adding the following after paragraph (z.3):

(z.4) compact audio products;

(z.5) televisions;

(z.6) video products;

(z.7) digital television adapters;

(z.8) external power supplies;

(z.9) portable air-conditioners;

(z.91) single package vertical air-conditioners;

(z.92) single package vertical heat pumps;

(z.93) electric boilers;

(4) Subsection 3(5.1) of the Regulations is replaced by the following:

(5.1) A product referred to in paragraph (1)(j.2) shall not be considered to be an energy-using product

(a) for the purposes of Part II unless, if it is a general service incandescent reflector lamp that is an ER lamp or BR lamp, its manufacturing process is completed on or after January 1, 2003;

(b) for the purposes of Part III, unless its manufacturing process is completed on or after September 1, 2008; or

(c) for the purposes of Part IV, unless its manufacturing process is completed on or after December 31, 1996.

(5) Subsection 3(6) of the Regulations is replaced by the following:

(6) For the purposes of Parts II to V, a product referred to in paragraph (1)(n) shall not be considered to be an energy-using product

(a) unless its manufacturing process is completed on or after November 27, 1999 and it is

(i) an explosion-proof motor, or

(ii) a motor that is contained within an integral gear assembly; or

(b) unless its manufacturing process is completed on or after January 1, 2011 and it has one of the following characteristics:

(i) it has an eight pole construction,

(ii) it is a NEMA U frame or equivalent IEC dimensions,

(iii) it is a NEMA design C or IEC design H,

(iv) it is a close-coupled pump motor,

(v) it is a vertically-mounted solid shaft normal thrust motor,

(vi) it is a fire pump motor of nominal output power greater than 200 HP (150 kW) and up to and including 500 HP (375 kW),

(vii) it is not a foot-mounting, a type C face-mounting or a type D flange-mounting motor, or

(viii) it is a two, four, six or eight pole, NEMA design B motor of output power greater than 200 HP and up to and including 500 HP or is a two, four, six or eight pole IEC design N motor of output power greater than 150 kW and up to and including 375 kW.

(6) Subsection 3(10) of the Regulations is repealed.

(7) Section 3 of the Regulations is amended by adding the following after subsection (25):

(26) For the purposes of Parts II to V, a product referred to in paragraph (1)(z.7) shall not be considered an energy-using product unless its manufacturing process is completed on or after January 1, 2010.

(27) For the purposes of Parts II to V, a product referred to in any of paragraphs (1)(z.4) to (z.6) and (z.8) shall not be considered an energy-using product unless its manufacturing process is completed on or after July 1, 2010.

(28) For the purposes of Parts II to V, a product referred to in any of paragraphs (1)(z.9) to (z.92) shall not be considered an energy-using product unless its manufacturing process is completed on or after January 1, 2011.

(29) For the purposes of Parts II to V, a product referred to in paragraph (1)(z.93) shall not be considered an energy-using product unless its manufacturing process is completed on or after September 1, 2012.

3. (1) Paragraphs 4(1)(a) and (b) of the Regulations are replaced by the following:

(a) for an energy-using product referred to in any of paragraphs 3(1)(a) to (h.1), (h.3), (i), (j), (j.2), (j.5), (j.7) to (m.3), (n.1) to (p), (r), (s), (v), (w) and (y) to (z.93), an energy efficiency standard set out in column III of Part 1 of Schedule I applies to the product set out in column I if the manufacturing process of the product is completed during the period set out in column IV;

(b) for an energy-using product referred to in any of paragraphs 3(1)(j.1), (t), (u) and (x), an energy efficiency standard set out in column III of Part 1 of Schedule I applies to the product set out in column I;

(b.1) for an energy-using product referred to in paragraph 3(1)(q), an energy efficiency standard set out in column III of Part 1 of Schedule I applies to the product set out in column I if the manufacturing process of the product is completed during the period set out in column IV; and

(2) Subparagraphs 4(1)(c)(ii) to (iv) of the Regulations are replaced by the following:

(ii) if the manufacturing process of the product is completed on or after November 27, 1997 and before January 1, 2011

(A) an energy efficiency standard set out in column II of Part 2 of Schedule I applies to any such product the power of which is set out in column I if the product is a NEMA

motor as described in subparagraph (b)(iii) of the definition “motor” in subsection 2(1),
or

(B) an energy efficiency standard set out in column II of Part 3 of Schedule I applies to any such product the power of which is set out in column I if the product is an IEC motor as described in subparagraph (b)(iii) of the definition “motor” in subsection 2(1),

(iii) for the purposes of clause (ii)(A), if the power of a product described in subparagraph (b)(iii) of the definition “motor” in subsection 2(1) is not set out in Part 2 of Schedule I, the power of that product is deemed to be the power set out in that Part that is both

(A) lower than the actual power of the product, and

(B) closest to the actual power of the product,

(iv) for the purposes of clause (ii)(B), if the power of a product described in subparagraph (b)(iii) of the definition “motor” in subsection 2(1) is not set out in Part 3 of Schedule I, the power of that product is deemed to be the power set out in that Part that is both

(A) lower than the actual power of the product, and

(B) closest to the actual power of the product,

(v) if the manufacturing process of the product is completed on or after January 1, 2011 and the product is one described in the definition “motor” in subsection 2(1) and is not part of an integral gear assembly, is not a fire pump motor, has an output power equal to or greater than 1 HP (0.746 kW) and up to and including 200 HP (150 kW), has 2, 4 or 6 poles, is NEMA T frame or IEC frame number of 90 or above, is NEMA design A or B or IEC design N, has a standard shaft, reduced shaft or short shaft and has foot-mounting or C-face mounting with feet or detachable feet or D-flange mounting with feet or detachable feet, an energy efficiency standard set out in Table 3 of CSA C390-10 tested at 100% of rated full load applies to the product, and

(vi) if the manufacturing process of the product is completed on or after January 1, 2011, and the product is one described in the definition “motor” in subsection 2(1) other than a product referred to in subparagraph (v), an energy efficiency standard set out in Table 2 of CSA C390-10 tested at 100% of rated full load applies to the product.

(3) Subsection 4(1) of the Regulations is amended by striking out “and” at the end of paragraph (b.1), by adding “and” at the end of paragraph (c) and by adding the following after paragraph (c):

(d) for an energy-using product referred to in paragraph 3(1)(v),

(i) if the manufacturing process of the product is completed on or after January 1, 2005 and the product is 1.2 kV class, an energy efficiency standard set out in column III of Part 1 of Schedule I applies to the product set out in column I if the manufacturing process of the product is completed during the period set out in column IV,

(ii) if the manufacturing process of the product is completed on or after January 1, 2005 and before January 1, 2010 and the product has a BIL between 20 kV and 150 kV, an energy efficiency standard set out in column III of Part 1 of Schedule I applies to the product set out in column I if the manufacturing process of the product is completed during the period set out in column IV,

(iii) if the manufacturing process of the product is completed on or after January 1, 2010 and the product is single-phase with a BIL between 20 kV and 199 kV, an energy efficiency standard set out in column II of Part 4 of Schedule I applies to the product having a kVA rating set out in Column I,

(iv) if the manufacturing process of the product is completed on or after January 1, 2010 and the product is three-phase with a BIL between 20 kV and 199 kV, an energy efficiency standard set out in column II of Part 5 of Schedule I applies to the product having a kVA rating set out in column I,

(v) if the kVA rating of the product falls between the kVA ratings set out in column 1 of Part 4 or 5 of Schedule I, its minimum energy efficiency standard is an interpolation of the corresponding minimum efficiency standards specified for those ratings in column II, and

(vi) if the product is a three-phase transformer having multiple high-voltage windings and a voltage ratio other than 2:1, the minimum energy efficiency standard specified in column II of Part 5 of Schedule I or interpolated in accordance with subparagraph (v), is reduced by 0.11.

(4) Section 4 of the Regulations is amended by adding the following after subsection (1.1):

(1.2) During the period beginning on July 1, 2010 and ending on June 30, 2015, if an energy-using product referred to in paragraph 3(1)(z.8) is a replacement external power supply and its manufacturing process is completed during that period, there is no energy efficiency standard applicable to the product.

(5) Section 4 of the Regulations is amended by adding the following after subsection (3):

(3.1) An energy-using product referred to in paragraph 3(1)(v), the kVA rating of which is set out in column I of Part 4 or 5 of Schedule I, complies with the energy efficiency standard referred to in subsection (1) only if the product meets the standard when tested in accordance with the testing procedure established by CSA C802.2-06.

(3.2) The energy efficiency standard set out in paragraph (1)(a) that applies to an energy-using product referred to in paragraph 3(1)(v) does not apply to that product three months after the coming into force of this Part and the energy efficiency standard set out in paragraph (1)(d) applies to that product.

4. The portion of section 4.1 of the Regulations before paragraph (a) is replaced by the following:

4.1 In respect of an energy-using product referred to in any of paragraphs 3(1)(y) to (z.1) that is manufactured before January 1, 2010, compliance with the energy efficiency standard referred to in subsection 4(1) shall be determined in accordance with the testing procedures established by ASHRAE 117 that are applicable to the product defined in these Regulations, except that

5. The Regulations are amended by adding the following after section 4.4:

4.5 In respect of an energy-using product referred to in any of paragraphs 3(1)(y) to (z.1) that is manufactured on or after January 1, 2010, compliance with the energy efficiency standard referred to in subsection 4(1) shall be determined in accordance with the testing procedures established by AHRI 1200 that are applicable to the product defined in these Regulations, except that the test will be conducted

(a) with all standard factory installed accessories, such as lighting, perimeter heat and pan heater, in the on position if manually controlled;

(b) with all accessories, such as electric condensate pans, that are included as standard with the equipment but are not factory-installed, installed and in the on position;

(c) with a disabled power management device unless the device cannot change to a new integrated average product temperature after the test has been concluded;

(d) at one or more of the following integrated average temperatures

(i) for a product intended for ice cream temperature applications, $-26.1^{\circ}\text{C} \pm 1.1^{\circ}\text{C}$,

(ii) for a product intended for low temperature applications, $-17.8^{\circ}\text{C} \pm 1.1^{\circ}\text{C}$,

(iii) for a product intended for medium temperature applications, $3.3^{\circ}\text{C} \pm 1.1^{\circ}\text{C}$,

(iv) for a product intended for wine chiller or floral storage temperature applications, or both, $7.2^{\circ}\text{C} \pm 1.1^{\circ}\text{C}$, and

(v) for a product that cannot maintain any of the temperatures set out in subparagraphs (i) to (iv), the lowest temperature setting and the test result reported at that temperature; and

(e) with the refrigerated volume calculated in accordance with clause 4 of CSA C300-08.

4.6 In respect of an energy-using product referred to in paragraph 3(1)(p) that is manufactured on or after January 1, 2008, compliance with the energy efficiency standard referred to in subsection 4(1) shall be determined in accordance with the testing procedures established by CSA C300-08 that are applicable to the product defined in these Regulations, except that the adjustments prior to testing regarding the operability of the automatic icemaker are as follows:

(a) the icemaker shall be on but not in the process of freeing or removing ice pieces;

(b) no ice shall be in the ice storage bin;

(c) the level indicating arm shall be mechanically fixed in the ice full condition or, if the icemaker does not have a level indicating arm, it may be disabled by another means that only prevents it from freeing or removing ice pieces;

(d) all other components shall be activated in the same manner as when the icemaker is on but not in the process of freeing or removing ice pieces;

(e) the ice storage bin shall be maintained at a temperature consistent with normal operation of the equipment in the home when the icemaker is on but not in the process of freeing or removing ice pieces from the icemaker; and

(f) if the ice storage bin has a consumer-adjustable setting for multiple ice storage temperatures, it shall be set at the lowest temperature setting.

4.7 In respect of an energy-using product referred to in any of paragraphs 3(1)(h), (n.1) and (z.93), compliance with the energy efficiency standard referred to in paragraph 4(1)(a) shall be determined in accordance with the following conditions, as applicable to the product defined in these Regulations:

(a) gas boilers, oil-fired boilers and electric boilers shall have an automatic water temperature adjustment device that adjusts the temperature of the water supplied by the boiler to ensure that an incremental change in inferred heat load produces a corresponding incremental change in the temperature of the water supplied;

(b) for boilers that fire at a single power, the condition set out in paragraph (a) is met if the device automatically allows the burner or heating element to fire only when the device has determined that the inferred heat load cannot be met by the residual heat of the water in the system;

(c) for hot water boilers with no inferred heat load, the device shall limit the water temperature in the boiler to not more than 60°C; and

(d) a boiler for which the device is required shall operate only when the device is installed.

6. The heading of Part III of the Regulations is replaced by the following:

LABELLING

7. Sections 6 and 7 of the Regulations are replaced by the following:

6. The form of labelling an energy-using product is set out in Schedule II for products listed in paragraphs 5(a) to (g) and in Schedule III for room air-conditioners.

7. The manner of labelling an energy-using product is by attaching an adhesive tag, a flap tag or a hang tag to the product in such a manner that the tag is readily visible when the product is viewed from the front.

8. Paragraphs 10.1(b) and (c) of the Regulations are repealed.

9. Paragraph 10.2(1)(a) of the Regulations is replaced by the following:

(a) except in the case of the energy-using products referred to in paragraph 10.1(a) that are BR lamps or ER lamps, the words “Light Output / Flux lumineux”, followed by the product’s luminous flux and the word “Lumens”;

10. Subsection 11(3) of the Regulations is replaced by the following:

(3) An energy using product referred to in paragraph 3(1)(z.8) need not be labelled in accordance with subsection (2) if

(a) a mark that is clearly and permanently applied to the product in accordance with ENERGY STAR’s *International Efficiency Marking Protocol for External Power Supplies*;

(b) the product’s energy performance has been verified by a certification body; and

(c) a model number is clearly marked on the product that can be traced to the certification body’s energy performance verification.

(4) The verification mark shall be affixed to a surface of the energy-using product so that the mark is readily visible. However, in the case of an energy-using product referred to in any of paragraphs 3(1)(j.1), (j.2) and (j.6), the verification mark may be affixed to the exterior of the product’s package.

11. The heading of Part V of the Regulations is replaced by the following:

PROVISION OF INFORMATION

12. (1) The portion of subsection 12(1) of the Regulations before paragraph (a) is replaced by the following:

12. (1) The information required to be provided to the Minister pursuant to subsection 5(1) of the Act shall be filed with the Minister

(2) The portion of subsection 12(2) of the Regulations before paragraph (a) is replaced by the following:

(2) The information provided under subsection (1) in respect of the energy-using product shall include:

13. Section 17.1 of the Regulations is replaced by the following:

17.1 If the information under section 5 of the Act has been provided in respect of a particular motor, all other motors that have the same unique motor identifier as that motor and that are at least as energy efficient as that motor are exempt from the application of that section.

14. Schedule I to the Regulations is amended by replacing “(Section 4)” after the heading “SCHEDULE I” with “(Subsection 2(1) and section 4) ”.

15. The portion of item 8.1 of Part 1 of Schedule I to the Regulations in column III is replaced by the following:

Column III

Item Energy Efficiency Standard

8.1 CSA C749-07

Table 1

16. The portion of item 46 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Column IV

Item Completion Period

46. on or after December 31, 1998 until August 31, 2010

17. Part 1 of Schedule I to the Regulations is amended by adding the following after item 46:

	Column I	Column II	Column III	Column IV
Item	Energy-using Product	Standard/ Legislative Provision	Energy Efficiency Standard	Completion Period
46.1	Gas boilers intended for low pressure steam systems	CSA P.2	Annual fuel utilization efficiency $\geq 80\%$ No continuously burning pilot light	on or after September 1, 2010

18. The portion of item 47 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Column IV

Item Completion Period

47. on or after December 31, 1998 until August 31, 2010

19. Part 1 of Schedule I to the Regulations is amended by adding the following after item 47:

Item	Column I	Column II	Column III	Column IV
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Energy-using Product	Standard/ Legislative Provision	Energy Efficiency Standard	Completion Period
47.01 Gas boilers intended for hot water systems	CSA P.2	Annual fuel utilization efficiency \geq 82% No continuously burning pilot light	on or after September 1, 2010 until August 31, 2012
47.02 Gas boilers intended for hot water systems not equipped with tankless domestic water heating coils	CSA P.2 Section 4.7	Annual fuel utilization efficiency \geq 82% Must be equipped with an automatic water temperature adjustment device No continuously burning pilot light	on or after September 1, 2012
47.03 Gas boilers intended for hot water systems with tankless domestic water heating coils	CSA P.2	Annual fuel utilization efficiency \geq 82% No continuously burning pilot light	On or after September 1, 2012

20. Items 56 to 59 of Part 1 of Schedule I to the Regulations are replaced by the following:

Item	Column I Energy-using Product	Column II Standard/ Legislative Provision	Column III Energy Efficiency Standard	Column IV Completion Period
56.	General service incandescent reflector lamps that are BR lamps	CSA C862-01	CSA C862-01 Table 1 second column	on or after January 1, 2003 until May 31, 2009
57.	General service incandescent reflector lamps that are ER lamps with a nominal power other than 50 W, 75 W or 120 W	CSA C862-01	CSA C862-01 Table 1 second column	on or after January 1, 2003 until May 31, 2009
58.	General service incandescent reflector lamps that are ER lamps with a nominal power of 50 W, 75 W or 120 W	CSA C862-01	CSA C862-01 Table 2 second column	on or after January 1, 2003 until May 31, 2009
59.	General service incandescent reflector lamps other than BR or ER lamps	CSA C862-01	CSA C862-01 Table 1 second column	before June 1, 2009
59.1	General service incandescent	CSA C862-09	CSA C862-01	on or after June

reflector lamps that are ER30 or ER40 lamps with a rated power of ≤ 50 W or ER40 lamps with a rated power = 65 W

Table 1 and Table 2 second column 1, 2009

- 59.2 General service incandescent reflector lamps other than those that are ER30 or ER40 lamps with a rated power of ≤ 50 W or ER40 lamps with a rated power = 65 W
- CSA C862-09 CSA C862-09 on or after June 1, 2009
- Table 1 second column

21. Items 64.1 to 64.94 of Part 1 of Schedule I to the Regulations are replaced by the following:

	Column I	Column II	Column III	Column IV
Item	Energy Using Product	Standard/ Legislative Provision	Energy Efficiency Standard	Completion Period
64.1	Ice-makers that produce ice in a batch process	CSA C742-08	CSA 742-08, Table 2 and Table 3	on or after January 1, 2008

22. The portion of item 74 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Column IV

Item	Completion Period
74.	on or after September 1, 2005 until December 31, 2009

23. Part 1 of Schedule I to the Regulations is amended by adding the following after item 74:

	Column I	Column II	Column III	Column IV
Item	Energy-using Product	Standard/ Legislative Provision	Energy Efficiency Standard	Completion Period
74.1	Large air-conditioners that are cooled by air, have a cooling capacity ≥ 19 kW and < 40 kW and either no heating section or an electric heating section	CSA C746-06 for energy efficiency ratio AHRI 340/360 for integrated energy efficiency ratio (IEER)	energy efficiency ratio = 11.2 integrated energy efficiency ratio (IEER) = 11.4	on or after January 1, 2010

24. The portion of item 75 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Column IV

Item	Completion Period
75.	on or after September 1, 2005 until December 31, 2009

25. Part 1 of Schedule I to the Regulations is amended by adding the following after item 75:

	Column I	Column II	Column III	Column IV
Item	Energy-using Product	Standard/ Legislative Provision	Energy Efficiency Standard	Completion Period
75.1	Large air-conditioners that are cooled by air, have a cooling capacity \geq 40 kW and $<$ 70 kW and either no heating section or an electric heating section	CSA C746-06 for energy efficiency ratio AHRI 340/360 for integrated energy efficiency ratio (IEER)	energy efficiency ratio = 11.0 integrated energy efficiency ratio (IEER) = 11.2	on or after January 1, 2010
75.2	Large air-conditioners that are cooled by air, have a cooling capacity \geq 70 kW and $<$ 223 kW and either no heating section or an electric heating section	CSA C746-06 for energy efficiency ratio AHRI 340/360 for integrated energy efficiency ratio (IEER)	energy efficiency ratio = 10.0 integrated energy efficiency ratio (IEER) = 10.1	on or after January 1, 2010
75.3	Large air-conditioners that are cooled by air, have a cooling capacity \geq 223 kW and either no heating section or an electric heating section	CSA C746-06 for energy efficiency ratio AHRI 340/360 for integrated energy efficiency ratio (IEER)	energy efficiency ratio = 9.7 integrated energy efficiency ratio (IEER) = 9.8	on or after January 1, 2010

26. The portion of item 76 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Column IV

Item	Completion Period
76.	on or after September 1, 2005 until December 31, 2009

27. Part 1 of Schedule I to the Regulations is amended by adding the following after item 76:

	Column I	Column II	Column III	Column IV
Item	Energy-using Product	Standard/ Legislative Provision	Energy Efficiency Standard	Completion Period
76.1	Large air-conditioners that are cooled by air, have a cooling capacity ≥ 19 kW and < 40 kW and a heating section other than an electric heating section	CSA C746-06 for energy efficiency ratio AHRI 340/360 for integrated energy efficiency ratio	energy efficiency ratio = 11.0 integrated energy efficiency ratio (IEER) = 11.2	on or after January 1, 2010

28. The portion of item 77 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Column IV

Item	Completion Period
77.	on or after September 1, 2005 until December 31, 2009

29. Part 1 of Schedule I to the Regulations is amended by adding the following after item 77:

	Column I	Column II	Column III	Column IV
Item	Energy-using Product	Standard/ Legislative Provision	Energy Efficiency Standard	Completion Period
77.1	Large air-conditioners that are cooled by air, have a cooling capacity ≥ 40 kW and < 70 kW and a heating section other than an electric heating section	CSA C746-06 for energy efficiency ratio AHRI 340/360 for integrated energy efficiency ratio (IEER)	energy efficiency ratio = 10.8 integrated energy efficiency ratio (IEER) = 11.0	on or after January 1, 2010
77.2	Large air-conditioners that are cooled by air, have a cooling capacity ≥ 70 kW and < 223 kW and a heating section other than an electric heating section	CSA C746-06 for energy efficiency ratio AHRI 340/360 for integrated energy efficiency ratio (IEER)	energy efficiency ratio = 9.8 integrated energy efficiency ratio (IEER) = 9.9	on or after January 1, 2010

77.3 Large air-conditioners that are cooled by air, have a cooling capacity \geq 223 kW and a heating section other than an electric heating section	CSA C746-06 for energy efficiency ratio	energy efficiency ratio = 9.5	on or after January 1, 2010
	AHRI 340/360 for integrated energy efficiency ratio (IEER)	integrated energy efficiency ratio (IEER) = 9.6	

30. The portion of item 78 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Column IV

Item	Completion Period
78.	on or after September 1, 2005 until December 31, 2009

31. Part 1 of Schedule I to the Regulations is amended by adding the following after item 78:

Item	Column I	Column II	Column III	Column IV
Energy-using Product	Standard/ Legislative Provision	Energy Efficiency Standard	Completion Period	
78.1 Large air-conditioners that are cooled by water or evaporation, have a cooling capacity \geq 19 kW and $<$ 40 kW and either no heating section or an electric heating section	CSA C746-06 for energy efficiency ratio	energy efficiency ratio = 11.5	on or after January 1, 2010	
	AHRI 340/360 for integrated energy efficiency ratio (IEER)	integrated energy efficiency ratio (IEER) = 11.7		

32. The portion of item 79 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Column IV

Item	Completion Period
79.	on or after September 1, 2005 until December 31, 2009

33. Part 1 of Schedule I to the Regulations is amended by adding the following after item 79:

Item	Column I	Column II	Column III	Column IV
		Standard/ Energy	Energy	

	Energy-using Product	Legislative Provision	Efficiency Standard	Completion Period
79.1	Large air-conditioners that are cooled by water or evaporation, have a cooling capacity \geq 40 kW and $<$ 70 kW and either no heating section or an electric heating section	CSA C746-06 for energy efficiency ratio AHRI 340/360 for integrated energy efficiency ratio (IEER)	energy efficiency ratio = 11.0 integrated energy efficiency ratio (IEER) = 11.2	on or after January 1, 2010
79.2	Large air-conditioners that are cooled by water or evaporation, have a cooling capacity \geq 70 kW and either no heating section or an electric heating section	CSA C746-06 for energy efficiency ratio AHRI 340/360 for integrated energy efficiency ratio (IEER)	energy efficiency ratio = 11.0 integrated energy efficiency ratio (IEER) = 11.1	on or after January 1, 2010

34. The portion of item 80 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Column IV

Item	Completion Period
80.	on or after September 1, 2005 until December 31, 2009

35. Part 1 of Schedule I to the Regulations is amended by adding the following after item 80:

	Column I	Column II	Column III	Column IV
Item	Energy-using Product	Standard/ Legislative Provision	Energy Efficiency Standard	Completion Period
80.1	Large air-conditioners that are cooled by water or evaporation, have a cooling capacity \geq 19 kW and $<$ 40 kW and a heating section other than an electric heating section	CSA C746-06 for energy efficiency ratio AHRI 340/360 for integrated energy efficiency ratio (IEER)	energy efficiency ratio = 11.3 integrated energy efficiency ratio (IEER) = 11.5	on or after January 1, 2010

36. The portion of item 81 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Item	Column IV
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Completion Period

81. on or after September 1, 2005 until December 31, 2009

37. Part 1 of Schedule I to the Regulations is amended by adding the following after item 81:

	Column I	Column II	Column III	Column IV
Item	Energy-using Product	Standard/ Legislative Provision	Energy Efficiency Standard	Completion Period
81.1	Large air-conditioners that are cooled by water or evaporation, have a cooling capacity \geq 40 kW and $<$ 70 kW and a heating section other than an electric heating section	CSA C746-06 for energy efficiency ratio AHRI 340/360 for integrated energy efficiency ratio (IEER)	energy efficiency ratio = 10.8 integrated energy efficiency ratio (IEER) = 11.0	on or after January 1, 2010
81.2	Large air-conditioners that are cooled by water or evaporation, have a cooling capacity \geq 70 kW and a heating section other than an electric heating section	CSA C746-06 for energy efficiency ratio AHRI 340/360 for integrated energy efficiency ratio (IEER)	energy efficiency ratio = 10.8 integrated energy efficiency ratio (IEER) = 10.9	on or after January 1, 2010

38. The portion of item 86 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Column IV

Item	Completion Period
86.	on or after September 1, 2005 until December 31, 2009

39. Part 1 of Schedule I to the Regulations is amended by adding the following after item 86:

	Column I	Column II	Column III	Column IV
Item	Energy-using Product	Standard/ Legislative Provision	Energy Efficiency Standard	Completion Period

86.1	Large heat pumps that have a cooling capacity of ≥ 19 kW and < 40 kW and either no heating section or an electric heating section	CSA C746-06 for energy efficiency ratio and heating coefficient of performance AHRI 340/360 for integrated energy efficiency ratio (IEER)	energy efficiency ratio = 11.0 heating coefficient of performance ≥ 3.3 with 8.3°C inlet air and ≥ 2.25 with -8.3°C inlet air integrated energy efficiency ratio (IEER) = 11.2	= on or after January 1, 2010
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40. The portion of item 87 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Column IV

Item	Completion Period
87.	on or after September 1, 2005 until December 31, 2009

41. Part 1 of Schedule I to the Regulations is amended by adding the following after item 87:

Item	Column I Energy-using Product	Column II Standard/ Legislative Provision	Column III Energy Efficiency Standard	Column IV Completion Period
87.1	Large heat pumps that have a cooling capacity of ≥ 40 kW and < 70 kW and either no heating section or an electric heating section	CSA C746-06 for energy efficiency ratio and heating coefficient of performance AHRI 340/360 for integrated energy efficiency ratio (IEER)	energy efficiency ratio = 10.6 heating coefficient of performance ≥ 3.2 with 8.3°C inlet air and ≥ 2.05 with -8.3°C inlet air integrated energy efficiency ratio (IEER) = 10.7	on or after January 1, 2010
87.2	Large heat pumps that have a cooling capacity of ≥ 70 kW and either no heating section or an electric heating section	CSA C746-06 for energy efficiency ratio and heating coefficient of performance AHRI 340/360 for integrated energy efficiency ratio (IEER)	energy efficiency ratio = 9.5 heating coefficient of performance ≥ 3.2 with 8.3°C inlet air and ≥ 2.05 with -8.3°C inlet air integrated energy efficiency ratio (IEER) = 9.6	on or after January 1, 2010

42. The portion of item 88 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Column IV

Item	Completion Period
88.	on or after September 1, 2005 until December 31, 2009

43. Part 1 of Schedule I to the Regulations is amended by adding the following after item 88:

Item	Column I Energy-using Product	Column II Standard/ Legislative Provision	Column III Energy Efficiency Standard	Column IV Completion Period
88.1	Large heat pumps that have a cooling capacity of ≥ 19 kW and < 40 kW and a heating section other than an electric heating section	CSA C746-06 for energy efficiency ratio and heating coefficient of performance AHRI 340/360 for integrated energy efficiency ratio (IEER)	energy efficiency ratio = 10.8 heating coefficient of performance ≥ 3.3 with 8.3°C inlet air and ≥ 2.25 with -8.3°C inlet air integrated energy efficiency ratio (IEER) = 11.0	on or after January 1, 2010

44. The portion of item 89 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Column IV

Item	Completion Period
89.	on or after September 1, 2005 until December 31, 2009

45. Part 1 of Schedule I to the Regulations is amended by adding the following after item 89:

Item	Column I Energy-using Product	Column II Standard/ Legislative Provision	Column III Energy Efficiency Standard	Column IV Completion Period
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89.1	Large heat pumps that have a cooling capacity of ≥ 40 kW and < 70 kW and a heating section other than an electric heating section	CSA C746-06 for energy efficiency ratio and heating coefficient of performance	energy efficiency ratio = on or after 10.4 heating coefficient of performance ≥ 3.2 with 8.3°C inlet air and ≥ 2.05 with -8.3°C inlet air
		AHRI 340/360 for integrated energy efficiency ratio	integrated energy efficiency ratio = 10.5
89.2	Large heat pumps that have a cooling capacity of ≥ 70 kW and a heating section other than an electric heating section	CSA C746-06 for energy efficiency ratio and heating coefficient of performance	energy efficiency ratio = on or after 9.3 heating coefficient of performance ≥ 3.2 with 8.3°C inlet air and ≥ 2.05 with -8.3°C inlet air
		AHRI 340/360 for integrated energy efficiency ratio (IEER)	integrated energy efficiency ratio (IEER) = 9.4

46. The portion of item 90 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Column IV

Item	Completion Period
90.	on or after December 31, 1998 until August 31, 2010

47. Part 1 of Schedule I to the Regulations is amended by adding the following after item 90:

Column I	Column II	Column III	Column IV
Item Energy-using Product	Standard/ Legislative Provision	Energy Efficiency Standard	Completion Period
90.1 Oil-fired boilers intended for low pressure steam systems	ASHRAE 103	Annual fuel utilization efficiency $\geq 82\%$	on or after September 1, 2010
90.2 Oil-fired boilers intended for hot water systems	ASHRAE 103	Annual fuel utilization efficiency $\geq 84\%$	on or after September 1, 2010 until August 31, 2012
90.3 Oil-fired boilers intended for hot water systems not equipped with tankless domestic	ASHRAE 103	Annual fuel utilization efficiency $\geq 84\%$	on or after September 1, 2012

water heating coils

Section 4.7 Must be equipped with an automatic water temperature adjustment device

90.4 Oil-fired boilers intended for hot water systems, equipped with tankless domestic water heating coils ASHRAE 103 Annual fuel utilization efficiency $\geq 84\%$ on or after September 1, 2012

48. The portion of item 102.1 of Part 1 of Schedule I to the Regulations in column II is replaced by the following:

Column II

Item Standard/Legislative Provision

102.1 Section 4.6

49. The portion of item 115 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Column IV

Item Completion Period

115. on or after January 1, 2005 until December 31, 2009

50. Part 1 of Schedule I to the Regulations is amended by adding the following after item 115:

	Column I	Column II	Column III	Column IV
Item	Energy-using Product	Standard/ Legislative Provision	Energy Efficiency Standard	Completion Period
115.1	Dry-type transformers, single phase, 1.2 kV class	CSA C802.2-06	CSA C802.2-06 clause 8 and Table 1, second column	on or after January 1, 2010

51. The portion of items 116 and 117 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Column IV

Item Completion Period

116. on or after January 1, 2005 until December 31, 2009

117. on or after January 1, 2005 until December 31, 2009

52. Part 1 of Schedule I to the Regulations is amended by adding the following after item 117:

	Column I	Column II	Column III	Column IV
Item	Energy-using Product	Standard/ Legislative Provision	Energy Efficiency Standard	Completion Period
117.1	Dry-type transformers, three phase, 1.2 kV class	CSA C802.2-06	CSA 802.2-06 clause 8 and Table 1, sixth column	on or after January 1, 2010

53. The portion of item 118 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Column IV

Item	Completion Period
118.	on or after January 1, 2005 until December 31, 2009

54. Part 1 of Schedule I to the Regulations is amended by adding the following after item 118:

	Column I	Column II	Column III	Column IV
Item	Energy-using Product	Standard/ Legislative Provision	Energy Efficiency Standard	Completion Period
118.1	Dry-type transformers, BIL 20-199kV	CSA C802.2-06	Subparagraphs 4(1)(d)(ii) to (v)	on or after January 1, 2010

55. The portion of item 126 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Column IV

Item	Completion Period
126.	on or after January 1, 2008 until December 31, 2009

56. Part 1 of Schedule I to the Regulations is amended by adding the following after item 126:

Column I	Column II	Column III	Column IV
	Standard/ Legislative	Energy Efficiency	Completion

Item	Energy-using Product	Provision	Standard	Period
126.1	Self-contained commercial refrigerators that are not transparent	Section 4.5	$E_{\text{daily}} = 0.00353$ $V + 2.04$	on or after January 1, 2010

57. The portion of item 128 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Column IV

Item	Completion Period
128.	on or after January 1, 2008 until December 31, 2009

58. Part 1 of Schedule I to the Regulations is amended by adding the following after item 128:

Column I		Column II	Column III	Column IV
Item	Energy-using Product	Standard/ Legislative Provision	Energy Efficiency Standard	Completion Period
128.1	Transparent self-contained commercial refrigerators without pull-down temperature reduction capability	Section 4.5	$E_{\text{daily}} =$ $0.00424 V +$ 3.34	on or after January 1, 2010
128.2	Transparent self-contained commercial refrigerators with pull-down temperature reduction capability	Section 4.5	$E_{\text{daily}} =$ $0.00445 V +$ 3.51	on or after January 1, 2010

59. The portion of items 131 and 132 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Column IV

Item	Completion Period
131.	on or after January 1, 2008 until December 31, 2009
132.	on or after January 1, 2008 until December 31, 2009

60. Part 1 of Schedule I to the Regulations is amended by adding the following after item 132:

Column I		Column II	Column III	Column IV
Item	Energy-using Product	Standard/ Legislative Provision	Energy Efficiency Standard	Completion Period
132.1	Self-contained commercial	Section 4.5	$E_{\text{daily}} = 0.01413$	on or after

freezers that are not transparent

V + 1.38

January 1, 2010

61. The portion of item 133 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Column IV

Item	Completion Period
133.	on or after April 1, 2007 until December 31, 2009

62. Part 1 of Schedule I to the Regulations is amended by adding the following after item 133:

	Column I	Column II	Column III	Column IV
Item	Energy-using Product	Standard/ Legislative Provision	Energy Efficiency Standard	Completion Period
133.1	Transparent self-contained commercial freezers	Section 4.5	$E_{\text{daily}} = 0.02649 V + 4.10$	on or after January 1, 2010

63. The portion of item 135 of Part 1 of Schedule I to the Regulations in column IV is replaced by the following:

Column IV

Item	Completion Period
135.	on or after January 1, 2008 until December 31, 2009

64. Part 1 of Schedule I to the Regulations is amended by adding the following after item 135:

	Column I	Column II	Column III	Column IV
Item	Energy-using Product	Standard/ Legislative Provision	Energy Efficiency Standard	Completion Period
135.1	Self-contained commercial refrigerator-freezers that are not transparent	Section 4.5	$E_{\text{daily}} = \text{greater of either } (0.00953 AV - 0.71) \text{ or } 0.70$	on or after January 1, 2010

65. Part 1 of Schedule I to the Regulations is amended by adding the following after item 154:

Item	Column I	Column II	Column III	Column IV
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Energy-using Product	Standard/ Legislative Provision	Energy Efficiency Standard	Completion Period
155. Compact audio products	CSA C62301	<p>Must be capable of entering one of the following modes, or more if applicable:</p> <p>(a) a standby mode with a power consumption \leq 3 W, with information or status display active;</p> <p>(b) a standby mode with a power consumption \leq 3 W, without information or status display; or</p> <p>(c) an off mode with a power consumption \leq 1 W.</p>	on or after July 1, 2010 until December 31, 2012
156. Compact audio products	CSA C62301	<p>Must be capable of entering one of the following modes, or more if applicable:</p> <p>(a) a standby mode with a power consumption \leq 1 W, with information or status display active;</p> <p>(b) a standby mode with a power consumption \leq 0.5 W, with inactive information or status display;</p> <p>(c) a standby mode with a power consumption \leq 0.5 W, without information or status display; or</p> <p>(d) an off mode with a power consumption \leq 0.5 W.</p>	on or after January 1, 2013
157. Televisions	CSA C62301	Must be capable of	on or after July

		entering one of the following modes, or more if applicable:	1, 2010 until December 31, 2012
		(a) a standby mode with a power consumption \leq 4 W, with information or status display active;	
		(b) a standby mode with a power consumption \leq 4 W, without information or status display; or	
		(c) an off mode with a power consumption \leq 1 W.	
158. Televisions	CSA C62301	Must be capable of entering one of the following modes, or more if applicable:	on or after January 1, 2013
		(a) a standby mode with a power consumption \leq 1 W, with information or status display active;	
		(b) a standby mode with a power consumption \leq 0.5 W, with inactive information or status display;	
		(c) a standby mode with a power consumption \leq 0.5 W, without information or status display; or	
		(d) an off mode with a power consumption \leq 0.5 W.	
159. Video products	CSA C62301	Must be capable of entering one of the following modes, or more if applicable:	on or after July 1, 2010 until December 31, 2012
		(a) a standby mode with	

			a power consumption \leq 3 W, with information or status display active;	
			(b) a standby mode with a power consumption \leq 3 W, without information or status display; or	
			(c) an off mode with a power consumption \leq 1 W.	
160. Video products	CSA C62301	Must be capable of entering one of the following modes, or more if applicable:		on or after January 1, 2013
			(a) a standby mode with a power consumption \leq 1 W, with information or status display active;	
			(b) a standby mode with a power consumption \leq 0.5 W, with inactive information or status display;	
			(c) a standby mode with a power consumption \leq 0.5 W, without information or status display; or	
			(d) an off mode with a power consumption \leq 0.5 W.	
161. Digital television adapters	CSA C380	Must be capable of automatically entering standby mode and must be capable of entering the following modes:		on or after January 1, 2010
			(a) an on mode with a power consumption \leq 8 W; and	

			(b) a standby mode with a power consumption \leq 1 W.	
162.	External power supplies	CSA C381.1	Minimum average efficiency at the highest and lowest nominal output power setting: (a) if the nominal output power is < 1 W, $0.5 \times$ that power; (b) if the nominal output power is ≥ 1 W and ≤ 51 W, $0.09 \times \ln$ (that power) + 0.5; and (c) if the nominal output power is > 51 W, 0.85. No load power ≤ 0.5 W.	on or after July 1, 2010
163.	Portable air-conditioners that are cooled by air with a cooling capacity of \leq 36,000 Btu/h (10.5 kW)	CSA C370	Spot cooling efficiency (with CSA C370 configuration number 5) = $7.76 + 0.0164 \times$ its cooling capacity in Btu/h/1000	on or after January 1, 2011
164.	Single package vertical air-conditioners with a cooling capacity $<$ 65,000 Btu/h (19 kW)	CSA C746-06	Energy efficiency ratio = 9.0	on or after January 1, 2011
165.	Single package vertical air-conditioners with a cooling capacity \geq 65,000 Btu/h (19 kW) and $<$ 135,000 Btu/h (39.5 kW)	CSA C746-06	Energy efficiency ratio = 8.9	on or after January 1, 2011
166.	Single package vertical air-conditioners with a cooling capacity \geq 135,000 Btu/h (39.5 kW)	CSA C746-06	Energy efficiency ratio = 8.6	on or after January 1, 2011
167.	Single package vertical heat pumps with a cooling capacity $<$ 65,000 Btu/h (19 kW)	CSA C746-06	Energy efficiency ratio = 9.0 Heating coefficient of performance = 3.0	on or after January 1, 2011

168.	Single package vertical heat pumps with a cooling capacity \geq 65,000 Btu/h (19 kW) and $<$ 135,000 Btu/h (39.5 kW)	CSA C746-06	Energy efficiency ratio = 8.9 Heating coefficient of performance = 3.0	on or after January 1, 2011
169.	Single package vertical heat pumps with a cooling capacity \geq 135,000 Btu/h (39.5 kW)	CSA C746-06	Energy efficiency ratio = 8.6 Heating coefficient of performance = 2.9	on or after January 1, 2011
170.	Electric boilers	ASHRAE 103 Section 4.7	Must be equipped with an automatic water temperature adjustment device	on or after September 1, 2012

66. Schedule I to the Regulations is amended by adding the following after Part 3:

PART 4

Item	Column I	Column II		
	Single phase kVA rating	Minimum Energy Efficiency Standards (percentage at 50% nominal load)		
		20-45 kV BIL	>45-95 kV BIL	> 95-199 kV BIL
1.	15	98.10	97.86	97.60
2.	25	98.33	98.12	97.90
3.	37.5	98.49	98.30	98.10
4.	50	98.60	98.42	98.20
5.	75	98.73	98.57	98.53
6.	100	98.82	98.67	98.63
7.	167	98.96	98.83	98.80
8.	250	99.07	98.95	98.91
9.	333	99.14	99.03	98.99
10.	500	99.22	99.12	99.09
11.	667	99.27	99.18	99.15
12.	833	99.31	99.23	99.20

Note: BIL means basic impulse insulation level.

PART 5

Column I		Column II		
		Energy Efficiency Standard (percentage at 50% nominal load)		
Item	Three-phase kVA rating	20-45 kV BIL	>45-95 kV BIL	> 95-199 kV BIL
1.	15	97.50	97.18	96.80
2.	30	97.90	97.63	97.30
3.	45	98.10	97.86	97.60
4.	75	98.33	98.12	97.90
5.	112.5	98.49	98.30	98.10
6.	150	98.60	98.42	98.20
7.	225	98.73	98.57	98.53
8.	300	98.82	98.67	98.63
9.	500	98.96	98.83	98.80
10.	750	99.07	98.95	98.91
11.	1 000	99.14	99.03	98.99
12.	1 500	99.22	99.12	99.09
13.	2 000	99.27	99.18	99.15
14.	2 500	99.31	99.23	99.20
15.	3 000	99.34	99.26	99.24
16.	3 750	99.38	99.30	99.28
17.	5 000	99.42	99.35	99.33
18.	7 500	99.48	99.41	99.39

PART 6

Item	Column I	Column II	Column III	Column IV
	kVA	Single Phase Dry-Type Normal Impedance Range (%)*	kVA	Three-Phase Dry-Type Normal Impedance Range (%)*
1.	15	1.5 - 10.0	15	1.5 - 10.0
2.	25	1.5 - 10.0	30	1.5 - 10.0
3.	37.5	1.5 - 10.0	45	1.5 - 10.0
4.	50	1.5 - 10.0	75	1.5 - 10.0
5.	75	2.0 - 10.0	112.5	1.5 - 10.0
6.	100	2.0 - 10.0	150	1.5 - 10.0
7.	167	2.5 - 10.0	225	2.5 - 10.0
8.	250	3.5 - 10.0	300	2.5 - 10.0
9.	333	3.5 - 10.0	500	3.5 - 11.0
10.	500	3.5 - 11.0	750	3.5 - 11.0
11.	667	3.5 - 11.0	1,000	3.5 - 11.0
12.	833	3.5 - 11.0	1,500	3.5 - 11.0

13.	2,000	3.5 - 12.0
14.	2,500	3.5 - 12.0
15.	3,000	4.5 - 12.0
16.	3,750	5.0 - 13.0
17.	5,000	5.0 - 13.0
18.	7,500	5.0 - 13.0

* Linear interpolations shall be used to define the normal impedance range for transformers with kVA ratings not shown in the table.

67. Schedule IV to the Regulations is amended by replacing “ (Subsection 12(2) and paragraph 15(2)(b)) ” after the heading “SCHEDULE IV” with “ (Paragraph 12(2)(f)) ”.

68. Item 4.1 of Schedule IV to the Regulations is replaced by the following:

	Column I	Column II	Column III
Item	Energy-using Product	Standard/ Legislative Provision	Information
4.1	Dry-type transformers	CSA C802.2-06	<p>(a) kVA rating;</p> <p>(b) single or three-phase;</p> <p>(c) low voltage winding in volts;</p> <p>(d) high voltage winding rating in volts;</p> <p>(e) whether it is 1.2 kV class;</p> <p>(f) BIL rating;</p> <p>(g) tested efficiency in per cent;</p> <p>(h) the loss, in watts, when under load (load loss);</p> <p>(i) the loss, in watts, when not under load (no-load loss);</p> <p>(j) whether it is three-phase with high-voltage windings and a voltage ratio that, between the highest and lowest of their rated voltages, is other than 2:1; and</p> <p>(k) the percentage impedance.</p>

69. The portion of item 10.1 of Schedule IV to the Regulations in column I is replaced by the following:

Column I

Item	Energy-using Product
10.1	Gas boilers manufactured on or after December 31, 1998 and before August 31, 2010

70. Schedule IV to the Regulations is amended by adding the following after item 10.1:

	Column I	Column II	Column III
Item	Energy-using Product	Standard/ Legislative Provision	Information
10.2	Gas boilers manufactured on or after September 1, 2010 until August 31, 2012	CSA P.2	<p>(a) which of the following fuels the product uses:</p> <ul style="list-style-type: none"> (i) propane, or (ii) natural gas; <p>(b) for which of the following systems the product is intended:</p> <ul style="list-style-type: none"> (i) low pressure steam, or (ii) hot water; <p>(c) in kW, the maximum heat input and output nominal capacities;</p> <p>(d) power burner motor's consumption (PE), in kW;</p> <p>(e) water pump electrical energy input rate (BE), in kW;</p> <p>(f) average annual electrical energy consumption (E_{AE}) in kWh; and</p> <p>(g) annual fuel utilization efficiency.</p>
10.3	Gas boilers manufactured on or after September 1, 2012	CSA P.2	(a) which of the following fuels

the product uses:

(i) propane, or

(ii) natural gas;

(b) for which of the following systems the product is intended:

(i) low pressure steam, or

(ii) hot water;

(c) in kW, the maximum heat input and output nominal capacities;

(d) power burner motor's consumption (PE), in kW;

(e) water pump electrical power (BE), in kW;

(f) average annual electrical energy consumption (E_{AE}) in kWh;

(g) annual fuel utilization efficiency;

(h) whether equipped with tankless domestic water heating coils; and

(i) the type of automatic water temperature adjustment device the product uses, if any.

71. The portion of item 15.3 of Schedule IV to the Regulations in columns I and II is replaced by the following:

Column I		Column II
Item	Energy-using Product	Standard/Legislative Provision
15.3	General service incandescent reflector lamps manufactured before June 1, 2009	CSA C862-01

72. Items 15.4 and 15.5 of Schedule IV to the Regulations are replaced by the following:

	Column I	Column II	Column III
Item	Energy-using Product	Standard/ Legislative Provision	Information
15.4	General service incandescent reflector lamps manufactured on or after June 1, 2009	CSA C862-09	(a) lamp description; (b) nominal power; (c) lamp class as specified in ANSI C78.21 Table 1 of Part II; (d) average lamp efficacy; (e) life; and (f) luminous flux.

73. The portion of item 16.4 of Schedule IV to the Regulations in column II is replaced by the following:

	Column II
Item	Standard/Legislative Provision
16.4	CSA C742-98 for ice-makers that produce ice in a continuous process and CSA C742-08 for ice-makers that produce ice in a batch process

74. The portion of item 18.3 of Schedule IV to the Regulations in column I is replaced by the following:

	Column I
Item	Energy-using Product
18.3	Large air-conditioners manufactured on or after September 1, 2005 and before January 1, 2011

75. Schedule IV to the Regulations is amended by adding the following after item 18.3:

	Column I	Column II	Column III
Item	Energy-using Product	Standard/ Legislative Provision	Information
18.31	Large air-conditioners	CSA C746-06	(a) AHRI

manufactured on or after
January 1, 2011

AHRI 340/360 for the
integrated energy
efficiency ratio (IEER)

classification;

(b) cooling capacity in
kW (Btu/h);

(c) energy efficiency
ratio; and

(d) integrated energy
efficiency ratio (IEER).

76. The portion of item 18.7 of Schedule IV to the Regulations in column I is replaced by the following:

Column I

Item	Energy-using Product
18.7	Large heat pumps manufactured on or after September 1, 2005 and before January 1, 2011

77. Schedule IV to the Regulations is amended by adding the following after item 18.7:

Column I	Column II	Column III
Item	Energy-using Product	Standard/ Legislative Provision
Item	Energy-using Product	Information
18.8	Large heat pumps manufactured on or after January 1, 2011	CSA C746-06 AHRI 340/360 for the integrated energy efficiency ratio (IEER)
		(a) AHRI classification; (b) cooling capacity in kW (Btu/h); (c) heating capacity in kW (Btu/h); (d) energy efficiency ratio; (e) heating coefficient of performance at 8.3°C; (f) heating coefficient of performance at -8.3°C; (g) which of the following heating sections, if any, the product features: (i) electric, or

(ii) gas; and

(h) integrated energy efficiency ratio (IEER).

78. The portion of item 19.1 of Schedule IV to the Regulations in column I is replaced by the following:

Column I

Item

Energy-using Product

19.1 Motors manufactured on or after November 27, 1997 and before January 1, 2011

79. Schedule IV to the Regulations is amended by adding the following after item 19.1:

Item	Column I Energy-using Product	Column II Standard/ Legislative Provision	Column III Information
19.11	Motors manufactured on or after January 1, 2011	CSA C390-10	(a) nominal efficiency value; (b) output power in HP or kW; (c) the motor design, if NEMA, A, B or C or if IEC, N or H; (d) the number of poles; (e) whether the motor is of open or enclosed construction; (f) the frame type, whether T-Frame, U-frame or IEC frame; (g) whether it is a close-coupled pump, vertically-mounted solid shaft normal thrust or fire pump motor; (h) whether it is an integral gear assembly; (i) the shaft type, whether standard shaft, R-shaft or S-shaft;

(j) the mounting type; and

(k) whether the motor is footless, has feet or has detachable feet.

80. The portion of item 19.2 of Schedule IV to the Regulations in column I is replaced by the following:

Column I

Item	Energy-using Product
19.2	Oil-fired boilers manufactured on or after December 31, 1998 and before August 31, 2010

81. Schedule IV to the Regulations is amended by adding the following after item 19.2:

Column I	Column II	Column III	
Item	Energy-using Product	Standard/ Legislative Provision	Information
19.21	Oil-fired boilers manufactured on or after September 1, 2010 and before September 1, 2012	ASHRAE 103	(a) for which of the following systems the product is intended: (i) low pressure steam, or (ii) hot water; (b) in Btu/h, the maximum heat input and output nominal capacities; (c) power burner motor's consumption (PE), in kW; (d) water pump electrical energy input rate (BE), in kW; (e) average annual electrical energy consumption (E_{AE}) in KWh; and (f) annual fuel utilization efficiency.
19.22	Oil-fired boilers manufactured on or after September 1, 2012	ASHRAE 103	(a) for which of the following systems the product is

intended:

(i) low pressure steam, or

(ii) hot water;

(b) in Btu/h, the maximum heat input and output nominal capacities;

(c) power burner motor's consumption (PE), in kW;

(d) water pump electrical energy input rate (BE), in kW;

(e) average annual electrical energy consumption (E_{AE}) in KWh;

(f) annual fuel utilization efficiency;

(g) whether equipped with tankless domestic water heating coils; and

(h) the type of automatic water temperature adjustment device the product uses, if any.

82. The portion of item 21.2 of Schedule IV to the Regulations in column II is replaced by the following:

Column II

Item Standard/Legislative Provision

21.2 Section 4.6

83. The portion of item 22 of Schedule IV to the Regulations in column III is amended by adding “and” at the end of paragraph (c) and by replacing paragraphs (d) to (f) with the following:

Column III

Item Information

22. (d) type.

84. The portion of items 30 and 31 of Schedule IV to the Regulations in column I is replaced by the following:

Column I

- | Item | Energy-using Product |
|-------------|--|
| 30. | Self-contained commercial refrigerators with cabinet drawers or cabinet doors and manufactured on or after April 1, 2007 and before January 1, 2010 |
| 31. | Self-contained commercial refrigerators without cabinet drawers or cabinet doors and manufactured on or after April 1, 2007 and before January 1, 2010 |

85. Schedule IV to the Regulations is amended by adding the following after item 31:

Item	Column I Energy-using Product	Column II Standard/ Legislative Provision	Column III Information
31.1	Self-contained commercial refrigerators manufactured on or after January 1, 2010	Section 4.5	<p>(a) E_{daily};</p> <p>(b) which of the following cabinet styles the product features:</p> <p style="padding-left: 20px;">(i) reach-in,</p> <p style="padding-left: 20px;">(ii) pass-through,</p> <p style="padding-left: 20px;">(iii) roll-through, or</p> <p style="padding-left: 20px;">(iv) roll-in;</p> <p>(c) whether the product has a worktop surface;</p> <p>(d) whether the product is designed for installation under a counter;</p> <p>(e) whether the product is designed for the cooling and storage of wine or flowers;</p> <p>(f) whether the product has pull-down temperature reduction capability;</p> <p>(g) the number and type of doors and drawers, if any;</p>

(h) the perpendicular measurement of the glass area of the principal display face, in cm²;

(i) the total perpendicular area of the principal display face, in cm²;

(j) in litres, the volume of the refrigerator compartment;

(k) in litres, the volume of the freezer compartment, if any; and

(l) the integrated average temperature at the lowest temperature setting in Celsius if tested at the lowest temperature setting.

86. The portion of items 32 and 33 of Schedule IV to the Regulations in column I is replaced by the following:

Column I

Item	Energy-using Product
32.	Self-contained commercial freezers with cabinet doors and manufactured on or after April 1, 2007 and before January 1, 2010
33.	Self-contained commercial freezers without cabinet doors and manufactured on or after April 1, 2007 and before January 1, 2010

87. Schedule IV to the Regulations is amended by adding the following after item 33:

Item	Column I Energy-using Product	Column II Standard/ Legislative Provision	Column III Information
33.1	Self-contained commercial freezers manufactured on or after January 1, 2010	Section 4.5	(a) E_{daily} ; (b) which of the following cabinet styles the product features: (i) reach-in, (ii) pass-through,

- (iii) roll-through, or
- (iv) roll-in;
- (c) whether the product has a worktop surface;
- (d) whether the product is designed for installation under a counter;
- (e) whether the product is designed for the cooling and storage of ice cream or similar foods;
- (f) the number and type of doors and drawers, if any;
- (g) the glass area of the principal display face, in cm²;
- (h) the principle display face, in cm²;
- (i) in litres, the volume of the freezer compartment; and
- (j) the integrated average temperature at the lowest temperature setting in Celsius if tested at the lowest temperature setting.

88. The portion of item 34 of Schedule IV to the Regulations in column I is replaced by the following:

Column I

Item	Energy-using Product
34.	Self-contained commercial refrigerator-freezers manufactured on or after April 1, 2007 and before January 1, 2010

89. Schedule IV to the Regulations is amended by adding the following after item 34:

Column I	Column II	Column III
Item Energy-using Product	Standard/ Legislative Provision	Information
35. Self-contained commercial refrigerator-freezers	Section 4.5	<ul style="list-style-type: none"> (a) E_{daily}; (b) which of the following

manufactured on or
after January 1, 2010

cabinet styles the product
features:

- (i) reach-in,
- (ii) pass-through,
- (iii) roll-through, or
- (iv) roll-in;

(c) whether the product has a
worktop surface;

(d) whether the product is
designed for installation
under a counter;

(e) the number and type of
doors and drawers, if any;

(f) the glass area of the
principal display face, in
cm²;

(g) the principal display
face, in cm²;

(h) in litres, the volume of
the refrigerator
compartment;

(i) in litres, the volume of
the freezer compartment;

(j) in litres, the adjusted
volume (AV); and

(k) the integrated average
temperature at the lowest
temperature setting in
Celsius if tested at the lowest
temperature setting.

36. Compact audio products CSA C62301
manufactured on or
after July 1, 2010 and
before January 1, 2013

(a) the power consumption,
in watts, in standby mode
with information or status
display active;

(b) the power consumption,

- | | | |
|--|---|---|
| 37. Compact audio products CSA C62301 manufactured on or after January 1, 2013 | in watts, in standby mode without information or status display; | (c) the power consumption, in watts, in off mode; and |
| | | (d) the type of audio product. |
| | | (a) the power consumption, in watts, in standby mode with information or status display active; |
| | | (b) the power consumption, in watts, in standby mode with information or status display inactive; |
| | | (c) the power consumption, in watts, in standby mode without information or status display; |
| | | (d) the power consumption, in watts, in off mode; and |
| 38. Televisions manufactured on or after July 1, 2010 | CSA C62301 for standby and off modes | (e) the type of audio product. |
| | 20 CCR sections 1602 and 1604 for the functions and characteristics listed in paragraphs (e) to (k) in column III | (a) the power consumption, in watts, in standby mode with information or status display active; |
| | | (b) the power consumption, in watts, in standby mode with information or status display not active; |
| | | (c) the power consumption, in watts, in standby mode without information or status display; |
| | | (d) the power consumption, in watts, in off mode; |
| | | (e) the power consumption, |

			in watts, in on mode;
			(f) whether the television has a forced menu;
			(g) the Luminance L_{home} in candela/m ² ;
			(h) the Luminance L_{high} in candela/m ² ;
			(i) the screen size in cm (inches);
			(j) the aspect ratio; and
			(k) the type of picture technology.
39.	Video products manufactured on or after July 1, 2010 and before January 1, 2013	CSA C62301	(a) the power consumption, in watts, in standby mode with information or status display active;
			(b) the power consumption, in watts, in standby mode without information or status display;
			(c) the power consumption, in watts, in off mode; and
			(d) the type of play-back or recording technology capability.
40.	Video products manufactured on or after January 1, 2013	CSA C62301	(a) the power consumption, in watts, in standby mode with information or status display active;
			(b) the power consumption, in watts, in standby mode with information or status display not active;
			(c) the power consumption, in watts, in standby mode without information or status

			display;
			(<i>d</i>) the power consumption, in watts, in off mode; and
			(<i>e</i>) the type of playback or recording technology capability.
41.	Digital television adaptors	CSA C380	(<i>a</i>) the power consumption, in watts, in on mode;
			(<i>b</i>) the power consumption, in watts, in standby mode; and
			(<i>c</i>) whether the product can automatically enter into standby mode.
42.	External power supplies	CSA C381.1	(<i>a</i>) nominal output, in volts (V), at highest and lowest output setting;
			(<i>b</i>) nominal output power, in watts (W), at highest and lowest output setting, if applicable;
			(<i>c</i>) whether the output is ac or dc;
			(<i>d</i>) the average efficiency at highest and lowest output setting;
			(<i>e</i>) when under no load, the nominal output power measured in watts (W);
			(<i>f</i>) whether it is a replacement external power supply;
			(<i>g</i>) if a replacement external power supply, the end-use equipment and the brand and model number of that equipment;

- | | | | |
|-----|--|-------------|---|
| 43. | Single package vertical air conditioners | CSA C746-06 | <p>(h) the Roman numeral mark, if applicable;</p> <p>(i) whether the product bears a verification mark; and</p> <p>(j) the certification body referred to in paragraph 11(3)(b) of these Regulations, if applicable.</p> <p>(a) Air-Conditioning and Refrigeration Institute classification;</p> <p>(b) cooling capacity in kW (Btu/h); and</p> <p>(c) energy efficiency ratio.</p> |
| 44. | Single package vertical heat pump | CSA C746-06 | <p>(a) Air-Conditioning and Refrigeration Institute classification;</p> <p>(b) cooling capacity in kW (Btu/h);</p> <p>(c) heating capacity in kW (Btu/h);</p> <p>(d) energy efficiency ratio; and</p> <p>(e) heating coefficient of performance.</p> |
| 45. | Portable air-conditioners | CSA C370 | <p>(a) cooling capacity in kW (Btu/h);</p> <p>(b) which type of cooling system the product features:</p> <p style="padding-left: 20px;">(i) air-cooled, or</p> <p style="padding-left: 20px;">(ii) water-cooled;</p> <p>(c) spot cooling efficiency;</p> <p>(d) whether the product features a reverse cycle; and</p> |

46. Electric boilers	ASHRAE 103	<p>(e) test configuration from Table 1 of CSA C370.</p> <p>(a) input rate in kW; and</p> <p>(b) the type of automatic water temperature adjustment device the product uses.</p>
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PART 2

90. (1) The definition “off mode” in subsection 2(1) of the Regulations is amended by striking out “and” at the end of paragraph (b), by adding “and” at the end of paragraph (c) and by adding the following after paragraph (c):

- (d) a room air conditioner means the mode in which the appliance, while connected to a mains power source,
- (i) provides no air circulation, and
- (ii) cannot be switched into another mode with a remote control unit, an internal signal or a timer.

(2) The definition “standby mode” in subsection 2(1) of the Regulations is amended by striking out “and” at the end of paragraph (d), by adding “and” at the end of paragraph (e) and by adding the following after paragraph (e):

- (f) a room air conditioner means the mode in which the appliance, while connected to a mains power source,
- (i) provides no air circulation, and
- (ii) can be switched into another mode with a remote control unit, an internal signal or a timer.

91. Subsection 3(2) of the Regulations is replaced by the following:

(2) Subject to subsection (6), for the purposes of Parts II to V, a product referred to in any of paragraphs (1)(a), (c) to (g), (h.1), (i), (j), (k), (l), (m), (n), (o), (p), (r) and (s) shall not be considered to be an energy-using product unless its manufacturing process is completed on or after February 3, 1995.

92. Paragraphs 4(1)(b) and (b.1) of the Regulations are replaced by the following:

(b) for an energy-using product referred to in any of paragraphs 3(1)(j.1), (q), (t), (u) and (x), an energy efficiency standard set out in column III of Part 1 of Schedule I applies to the product set out in column I;

93. Items 103 and 104 of Part 1 of Schedule I to the Regulations are replaced by the following:

Column I		Column II	Column III	Column IV
Item	Energy-using Product	Standard/ Legislative Provision	Energy Efficiency Standard	Completion Period
103.	Room air-conditioners with louvred sides and without reverse cycle that are not casement only or casement sliders	CSA C368.1	Minimum energy efficiency ratio of (a) if cooling capacity is < 8 000 Btu/h, 10.7; (b) if cooling capacity is ≥ 8 000 Btu/h but < 14 000 Btu/h, 10.8; (c) if cooling capacity is ≥ 14 000 Btu/h but < 20 000 Btu/h, 10.7; and (d) if cooling capacity is ≥ 20 000 Btu/h, 9.4.	N/A
103.1	Room air-conditioners without louvred sides and without reverse cycle that are not casement only or casement sliders	CSA C368.1	Minimum energy efficiency ratio of (a) if cooling capacity is < 8 000 Btu/h, 9.9; (b) if cooling capacity is ≥ 8 000 Btu/h but < 20 000 Btu/h, 9.4; and (c) if cooling capacity is ≥ 20 000 Btu/h, 8.5.	N/A
103.2	Room air-conditioners with louvred sides and with reverse cycle that are not casement only or casement sliders	CSA C368.1	Minimum energy efficiency ratio of (a) if cooling capacity is < 20 000	N/A

			Btu/h, 9.9; and	
			(b) if cooling capacity is $\geq 20\,000$ Btu/h, 9.5.	
103.3	Room air-conditioners without louvred sides and with reverse cycle that are not casement only or casement sliders	CSA C368.1	Minimum energy efficiency ratio of	N/A
			(a) if cooling capacity is $< 14\,000$ Btu/h, 9.2; and	
			(b) if cooling capacity is $\geq 14\,000$ Btu/h, 8.8.	
104.	Room air-conditioners that are casement only	CSA C368.1	Minimum energy efficiency ratio of 9.5	N/A
104.1	Room air-conditioners that are casement sliders	CSA C368.1	Minimum energy efficiency ratio of 9.2	N/A

94. Item 22 of Schedule IV to the Regulations is replaced by the following:

	Column I	Column II	Column III
	Energy-using Item	Standard/ Legislative Provision	Information
22.	Room air-conditioners	CSA C368.1 CSA C62301 for power use	(a) current, in amperes; (b) cooling capacity in Btu/h; (c) energy efficiency ratio; (d) which of the following categories applies to the product: (i) with louvred sides, (ii) without louvred sides, (iii) casement-only, or (iv) casement-slider; (e) which of the following cycles applies to the product:

- (i) with reverse cycle, or
 - (ii) without reverse cycle;
- (f) with which of the following voltages the product functions:
- (i) 120 volts, or
 - (ii) 240 volts;
- (g) the power consumption, in watts, in standby mode; and
- (h) the power consumption, in watts, in off mode.

PART 3

COMING INTO FORCE

95. (1) Subject to subsection (2), Part 1 comes into force on the day on which these Regulations are registered.

(2) Subsections 1(3) and (4) and 3(3) and (5), sections 49 to 54, 66 and 68 come into force on the day that is three months after the day on which these Regulations are registered.

(3) Part 2 comes into force on January 1, 2011.

[24-1-o]

[Footnote 1](#)

The Treasury Board (of Canada) recommends a cost-benefit analysis to be conducted using an 8% real discount rate with lower rates used for real social discounting. Research conducted by Natural Resources Canada has identified 7% as the appropriate real social discount rate for this analysis.

[Footnote 2](#)

Valuation of GHG emissions is based on marginal mitigation costs of CO₂ emissions. The foundation of this valuation comes from consultation with other Government of Canada departments and emissions credit trading systems such as the Clean Development Mechanism and the European Union Greenhouse Gas Emission Trading System. A sensitivity analysis was carried out on the valuation of GHG emissions using \$15, \$30 and \$50 per tonne. The expected results from the base case of \$30 per tonne are reported in Table I. Valuation of GHG emissions is assumed to be constant over the duration of the analysis. These valuations will be reviewed periodically.

[Footnote 3](#)

The energy requirement for the 250 000 Btu/h unit was determined by multiplying the energy requirement for a 150 000 Btu/h unit by 1.66666 which equals 250 000 Btu/h divided by 150 000 Btu/h.

[Footnote 4](#)

Active mode has three power levels: high power level, mid power level and low power level. Not all products had all levels.

[Footnote 5](#)

For external power supplies (EPS), the baseline model refers to the product that the EPS is supplying power to, because that product dictates the amount of power that will be passed through the EPS.

[Footnote 6](#)

The service for the product is assumed to be the same as the EPS because products are sold with an EPS.

[Footnote 7](#)

Any time a product is connected to an EPS, it is actively supplying power to that product even if the product is not active. An EPS that is plugged-in to a wall socket but is not connected to a product is in “no load mode.”

[Footnote 8](#)

Negatively affected gas-fired water boilers represent 3% of all gas-fired water boilers.

[Footnote 9](#)

Negatively affected oil-fired water boilers represent 6% of all oil-fired water boilers.

[Footnote 10](#)

Negatively affected oil-fired water boilers represent 6% of all oil-fired water boilers.

[Footnote 11](#)

Negatively affected external power supplies represent 6% of all external power supplies.

[Footnote 12](#)

Negatively affected single package vertical air-conditioners and heat pumps represent 78% of the single package vertical air-conditioner and heat pump market.

[Footnote 13](#)

www.ec.gc.ca/pdb/ghg/ghg_home_e.cfm

[Footnote 14](#)

www.oee.nrcan.gc.ca/regulations

[Footnote 15](#)

SOR/94-651

[Footnote a](#)

S.C. 1992, c. 36

[Footnote b](#)

S.C. 2009, c. 8, s. 5