



Energy Consumption of Major Household Appliances Shipped in Canada

Trends for 1990–2008: A Summary

The *Energy Consumption of Major Household Appliances Shipped in Canada – Trends for 1990–2008* report analyses shipment data for the six major household appliances (refrigerators, freezers, dishwashers, electric ranges, clothes washers and electric clothes dryers) between 1990 and 2008. These data were collected through the co-operation of the Canadian Appliance Manufacturers Association (CAMA) and represent the majority of shipments to Canadian retailers and builders during this period. The key findings of this report are discussed below.

Key findings

- Energy efficiency improvements of major household appliances ranged from 16 percent for freezers to 79 percent for clothes washers over 1990 to 2008, as measured by reductions in the average annual unit energy consumption (UEC) of appliances shipped in Canada. Figure 1 summarizes the average annual UEC of appliances shipped in 1990 and 2008. The full report discusses the factors that have contributed to these improvements.

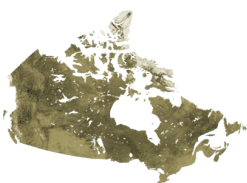
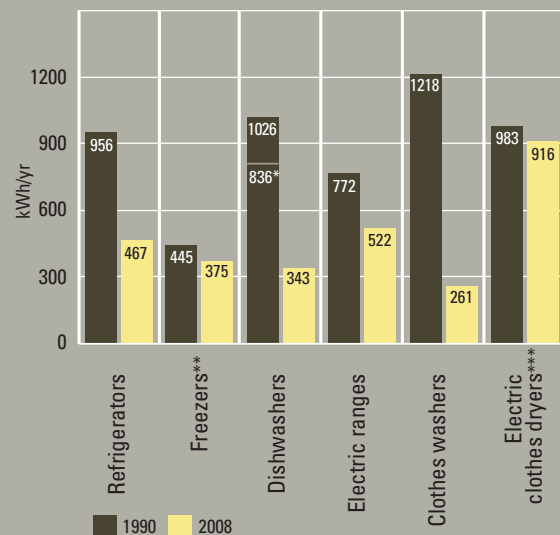
*This figure represents the average annual UEC of dishwashers in 1990 if the frequency of use is assumed to be the same as in 2008.

**The average annual UEC for freezers is based on 1991 data.

***The average annual UEC for electric clothes dryers is shown for 1992 because data for 1990 and 1991 are based on a small number of shipments and may be unrepresentative of the actual market.



Figure 1
Average annual UEC of appliances,
1990 and 2008



- A household operating an average set of major household appliances purchased in 2008 might expect them to consume fewer than 2900 kilowatt hours per year (kWh/yr) of electricity, approximately half as much as a set purchased in 1990. In addition to reducing energy demand and the associated impacts of electricity generation (such as greenhouse gas emissions), these energy efficiency improvements reduce household expenditures on electricity. Assuming an electricity price of 9.7 cents/kWh,¹ annual electricity costs for a set of appliances purchased in 1990 would be approximately \$535, while costs for a set of appliances purchased in 2008 would be reduced by almost half, to about \$280.

- To illustrate the significance of energy efficiency improvements on overall energy consumption, this report quantified energy savings from all shipped appliances in Canada between 1992 and 2008. In 2008, the estimated energy savings exceeded 47 petajoules.

- The energy efficiency improvements of major household appliances can be attributed to various factors, including

- the research and development carried out by appliance manufacturers
- consumer demand for more energy-efficient products
- standards that limit the amount of energy each appliance may consume (such as the minimum energy performance standards)
- information initiatives such as the EnerGuide for Equipment program and the ENERGY STAR® Initiative in Canada
- the various incentives and rebates offered by the federal, provincial/territorial and municipal governments and utilities

- The share of shipments of ENERGY STAR qualified appliances in Canada increased to 89 percent of dishwashers, 64 percent of clothes washers and 53 percent of refrigerators in 2008. The internationally recognized

ENERGY STAR symbol is a simple way for consumers to identify products that are among the most energy efficient on the market. In 2008, the average ENERGY STAR qualified refrigerator, dishwasher and clothes washer consumed 5 percent, 9 percent and 54 percent less energy (respectively) than the average *non*-ENERGY STAR qualified appliance of each category. These differences have generally decreased over time, indicating that the energy consumption range for these appliances is diminishing.

¹This was the average Canadian residential price in 2008 (Natural Resources Canada, 2010, *Energy Use Data Handbook, 1990 to 2008*, Table 18, Residential Sector, oee.nrcan.gc.ca/corporate/statistics/neud/dpa/tableshandbook2/res_00_18_e_4.cfm).



To see the entire report, visit the Web site at oee.nrcan.gc.ca/statistics/publications.

For more information about the services of Natural Resources Canada's Office of Energy Efficiency, send an e-mail to euc.cec@nrcan-rncan.gc.ca.

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Cat. No. M141-16/1-2008 (Print) ISBN 978-1-100-52371-2

Cat. No. M141-16/1-2008E-PDF (On-line) ISBN 978-1-100-15065-9