



Case Studies of Benefits

When Canadians want to save energy and money and help the environment, they look for the ENERGY STAR® symbol to identify energy-efficient products.

The ENERGY STAR symbol can help families, businesses and institutions save hundreds or even thousands of dollars a year in energy costs by directing them to energy-efficient products.

ENERGY STAR qualified products perform as well as or better than conventional equipment. They are also good for the environment — they save energy and reduce greenhouse gas (GHG) emissions that contribute to climate change and pollutants that cause urban smog.

The following examples demonstrate the potential for reductions in energy consumption, costs and GHG emissions by purchasing products that comply with ENERGY STAR qualifications:

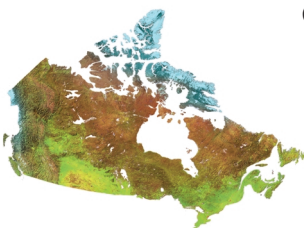
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1 Family Saves \$100 a Year Buying New Refrigerator

A federal civil servant, working in the area of energy efficiency, applies her knowledge on the benefits of energy efficient products at home. Her family is looking to replace their 17-year-old refrigerator — a 17-cubic-foot, top-mounted unit with an EnerGuide rating of 125 kWh per month (1500 kWh per year). At the Ontario average elective electricity rate of

\$0.077 per kilowatt hour (combined distribution and energy charge), they are paying \$115 a year to operate the refrigerator. When taxes are included, the total rises to about \$123.

Using the ENERGY STAR symbol as a shopping tool, the family has selected a model that is slightly larger (18 cubic feet) and about three times more energy efficient, with an EnerGuide rating of 417 kWh per year. The new unit costs \$1,148, with taxes included. However, the annual cost of operating the refrigerator (taxes included)



ENERGY STAR



will drop to about \$34. Over the estimated 17-year life of their new refrigerator, this Ottawa family will save about \$1,500 compared with their existing appliance (assuming electricity rates remain constant). In other words, the new refrigerator will pay for itself through energy savings in about 13 years.

2 ENERGY STAR® and Durham Region's "Green" Community Project

Durham Region, in partnership with Canada Mortgage and Housing Corporation, is defining a new standard for water efficiency in new home construction through a project that should also have a significant impact on energy consumption and greenhouse gas (GHG) emissions.

Working with local builder Tribute Homes, Durham is planning a 200-home "green" community in Ajax, Ontario. As part of the project, front-loading washing machines will be installed in 100 of the homes. These ENERGY STAR labelled machines consume 40 percent less water and 70 percent less energy than conventional models. Energy-efficient dishwashers that meet the strict ENERGY STAR specifications are also being installed in the homes. Taken together, these two appliances should save the residents of a 100-home community more than \$4,075 per year in energy costs and reduce GHG emissions by 23 tonnes a year. Low-flow showerheads will further reduce water and energy consumption.

The project is slated to get under way in the fall of 2003, and the results will be closely monitored and shared with other builders and municipalities.

3 When it Makes Financial Sense to "Stay Ahead of the Joneses"

Trying to "stay ahead of the Joneses" can lead to financial nightmares for some people, but consider the following scenario. The Jones family of Saskatoon, Saskatchewan, has all the conveniences of modern life — a gas furnace, central air conditioning, a refrigerator, clothes washer and dishwasher, TV, VCR, DVD, stereo system, computer and laser printer. But none of this equipment complies with the strict energy efficiency specifications of the ENERGY STAR initiative. The Smith family living next door, on the other hand, has taken some time to do comparative shopping, and they've used the ENERGY STAR mark as one of their purchasing criteria.

So how does this help the Smiths stay ahead of the Joneses? The Jones family would pay about \$950 a year to operate the equipment noted above, compared with only \$720 to operate the Smith family's ENERGY STAR labelled equipment. That's a saving of \$230 a year — year after year after year. Although some ENERGY STAR labelled equipment costs a little more to purchase, many of the products cost the same as or less than comparable conventional equipment.

And by purchasing the ENERGY STAR labelled products, the Smiths would reduce their home's annual energy consumption by 7880 kWh and cut their production of greenhouse gas (GHG) emissions by about 1.9 tonnes annually. That's equivalent to planting 205 trees to remove GHGs from the atmosphere.

4 What Can Happen When 100 000 Households Turn to ENERGY STAR

Just how big an impact can ENERGY STAR labelled equipment have on energy costs? Let's invent a fictional community in the Montréal, Quebec, area with 100 000 homes that all have ENERGY STAR labelled gas furnaces, central air conditioners, refrigerators, clothes washers, dishwashers, TVs, VCRs, DVDs, stereo systems, computers and laser printers. How much money would the residents of this community save over the lifetime of their energy-efficient equipment, compared with residents of a similar city with average energy-consuming appliances? The answer might surprise you. If we assume that energy prices remain constant, the residents of our fictional community would save about \$213 million in energy costs.

5 Small Business Buys Into the ENERGY STAR Concept

Small businesses can be big winners with ENERGY STAR. To illustrate this point, let's consider a company that has 200 employees working in an office environment. We'll assume that the company needs 180 computers and monitors, 18 laser printers, 9 fax machines, 6 high-speed photocopiers and 6 scanners to efficiently handle its business volume. By purchasing products that meet ENERGY STAR specifications instead of buying conventional equipment, the company would save a total of \$3,200 in energy costs per year (more than 75 percent of this on computers alone!).*

What could the company do with the money saved? One option is to invest it in its employees. Why not offer bonuses for jobs well done, set up incentive plans for reaching sales

targets, donate the money to charity on behalf of employees or make the annual company picnic a little more special this year? With ENERGY STAR, the company will be saving money, building a better company and helping to protect the environment (for example, the equipment mentioned above would reduce greenhouse gas emissions by about 17 tonnes per year). Those are goals every company should strive for.

6 *Tips for Making a Home Office Energy Efficient and Affordable*

After 15 years of working as a project manager for the same company, Jane Green has decided to fulfill a lifelong dream by establishing her own home-based business. She knows from experience that a computer, printer, fax machine and copier are the minimum equipment she will need to get her home office up and running. To minimize costs, Jane decides to buy equipment that is as energy efficient as possible while still providing the speed and functions she needs to get her work done. After doing a bit of research and visiting some office equipment suppliers, she quickly concludes that the answer lies in selecting ENERGY STAR labelled products.

Using the handy ENERGY STAR calculator provided by Natural Resources Canada's Office of Energy Efficiency, Jane determines that buying a computer and monitor that qualify for the ENERGY STAR symbol will save her \$44 in electricity costs over the expected four-year life of the machine — at no extra purchase cost.* She can save even more money by combining the printer, fax machine and copier in a single multi-function device. By purchasing an ENERGY STAR labelled multi-function device with a speed of 11 to 20 images per minute — again at no extra cost compared with a conventional machine — Jane stands to save \$111 in energy costs in her first four years of business, bringing her total energy savings to \$155. She will also save about \$500 in capital costs by purchasing a multi-function device (one machine instead of three).

Jane Green's business decisions will also help protect the environment. By purchasing an ENERGY STAR labelled computer and multi-function device, Jane will reduce greenhouse gas emissions by 935 kilograms over the equipment's lifetime — the equivalent of planting 25 trees. Imagine the impact if the more than 1 million Canadians working out of their homes (according to the 1996 Census of Canada) chose ENERGY STAR qualified office equipment!

7 *How ENERGY STAR Labelled Televisions Can Save Hotel Operators Money*

Overlooking small details can sometimes lead to costly mistakes. In the hotel business, for example, purchasing televisions for each guest room should be a relatively easy decision to make: simply buy in bulk and look for the best deal available. But what about the "second" price tag for these televisions — the cost of electricity to operate them from year to year?

Our example assumes that a hotel in Nova Scotia with 100 rooms is replacing all of its televisions as part of a major renovation project. Purchasing conventional units on the market today would probably cost the hotel about \$55,000 (assuming \$550 per unit), and the 100 TVs would consume about \$11,550 worth of electricity over their anticipated 11-year life. But buying ENERGY STAR labelled products makes a lot more business sense.

ENERGY STAR labelled TVs generally do not cost any more than a conventional unit, but they consume significantly less energy when turned off, which means that they are continually using less energy. If the 100 TVs purchased by the hotel met ENERGY STAR specifications, they would consume about \$9,680 worth of electricity over 11 years, for a total savings of \$1,870 compared with conventional models. And greenhouse gas emissions would be reduced by more than 1.6 tonnes annually — the equivalent of planting 176 trees.

8 *ENERGY STAR Labelled Lighting Products in Commercial Buildings*

Lighting is a major operating cost for commercial building owners, but there are ways to control these costs and help protect the environment at the same time. Replacing conventional lighting with ENERGY STAR labelled compact fluorescent light bulbs (CFLs) and exit signs should be at the top of your list.

Replacing a single 75-watt incandescent bulb with a 25-watt compact fluorescent light that meets ENERGY STAR specifications would save 365 kWh of electricity and \$45 over the lifetime of the CFL (taking into account the \$15 cost of the CFL, compared with about 50¢ for an incandescent bulb).* Imagine if you retrofitted an entire building with CFLs: assuming 2000 lights, your estimated net savings would be \$89,798 over the lifetime of the CFLs. A significant portion of

*The energy-cost savings in this example are calculated based on average electricity prices in Ontario.

these savings would be in maintenance costs because CFLs last up to 10 times longer than incandescents and don't need to be replaced as often.

The numbers are equally impressive for exit signs. A standard exit sign costs about \$49 a year to operate (\$19 for electricity and \$30 for maintenance). In comparison, an ENERGY STAR® labelled exit sign (maximum of 10 watts per lamp in active mode) costs only \$9 a year to operate. Over its lifetime, the ENERGY STAR labelled exit sign would save you about \$207 (taking into account its \$30 cost premium) compared with the standard unit. If your building has 20 exit signs, estimated lifetime savings jump to \$4,149.

From an environmental perspective, installing 2000 CFLs and 20 exit signs that meet ENERGY STAR specifications would reduce greenhouse gas emissions by 407 tonnes over the lifetime of these products — the equivalent of permanently removing 67 cars from the road.

9 Opportunities for Apartment Building Owners to Reduce Their Operating Costs

Let's assume you own a 10-storey, 200-unit residential building. As the owner, you are responsible for providing refrigerators, stoves and dishwashers in each unit as well as a commercial clothes washer and dryer on each floor. You are also responsible for maintaining hallway, lobby and basement lighting, and you use a total of 240 compact fluorescent light bulbs (CFLs) to do the job. Building regulations call for exit signs on each floor and in the lobby and basement areas. How much energy and money could you save over the equipment's lifetime by making sure that all of these products meet ENERGY STAR specifications? Here's how it breaks down:

Equipment	No. of Units	10-Year Energy Cost Savings* (dollars)	10-Year Energy Savings (kWh)
Refrigerators	200	\$10,974	232 329
Dishwashers	200	\$11,486	210 000
Clothes washers	10	\$2,513	47 411
Exit signs	25	\$5,936	26 280
CFLs	240	\$17,580	131 400
Total		\$48,489	647 420

*The energy-cost savings in this example are calculated based on average electricity prices in Ontario.

Note: Clothes dryers and ranges are not included in these calculations because they are not part of the ENERGY STAR high-efficiency initiative.

Even after paying the small price premium associated with some ENERGY STAR labelled equipment, you would be saving tens of thousands of dollars in energy costs. At the same time, you would be making an important contribution to Canada's climate change efforts — installing the above-noted ENERGY STAR labelled equipment would prevent more than 350 tonnes of greenhouse gas emissions from entering the atmosphere over the equipment's lifetime.

For more information on ENERGY STAR in Canada, visit the Web site at energystar.gc.ca, or call the publications line at 1 800 387-2000 (toll-free).



Leading Canadians to Energy Efficiency at Home, at Work and on the Road

The Office of Energy Efficiency of Natural Resources Canada strengthens and expands Canada's commitment to energy efficiency in order to help address the challenges of climate change.

