Drinking Water

Drinking water is water consumed for potable purposes in an office or food service/dining area and at government events and functions. It typically comes packaged in plastic or glass bottles. Bottled water could be spring water or processed water and may or may not be carbonated. Spring water is potable water that comes from an underground source.

What are the key green issues?

- **Energy Consumption and GHG Emissions:** In 2009, Canadians bought approximately 2.29 billion litres of bottled water. It takes large amounts of energy to produce plastic bottles, approximately 3.4 megajoules to manufacture the packaging, bottle and cap of a one-litre plastic bottle. It results in equally significant amounts of CO_2 emissions.
- **Water Use:** Increasing worldwide water scarcity makes water a precious resource. In Canada, it takes about 1.3 to 2 litres of water to make one litre of bottled water. Another issue is the extraction of water by private bottling companies, often for export purposes, from Canadian lakes, streams and wells. Over the long term this may negatively impact aquatic wildlife habitats and reduce the water table in the vicinity that supplies water to local communities.
- **Recycled Content:** The majority of polyethylene terephthalate (PET) bottles are still made from virgin materials rather than recycled content, thus producing additional greenhouse gases. However, big beverage companies such as Coca Cola and Pepsi have started to roll out plastic bottles made from up to 100 percent plant-based renewable resources instead of petroleum-derived resources.
- **Waste:** In Canada, PET recycling rates range from 60 percent to 85 percent. But the cost of recycling is very high. For instance, in 2011, the gross cost to recycle and process 107,000 tonnes of recyclable material in the region of Peel, Ontario was over $30 million dollars. When bottles end up in the trash and are incinerated, chlorine (and potentially dioxin) can be released into the air and heavy metals may be deposited in the ash. Sometimes, recycled bottles are destined for export abroad, e.g. to China, thus requiring additional energy to transport.

How do alternatives to bottled water advance Government's strategic priorities?

☑ Reducing Energy Use and Carbon Emissions

By using (filtered) tap water, a large amount of energy use and GHG emissions associated with the production of bottled water is reduced.

☑ Reducing Unnecessary Waste

Although a significant amount of PET bottles are recycled in Canada, these items still make up about 15 to 40 percent of solid waste in our landfills. Not using bottles at all, whether made from plastic or glass, reduces solid waste as well as the energy used associated with bottle recycling.

☑ Reducing Costs

Even taking into account the bulk water purchases and water delivery contracts used by many institutions, bottled water is still more expensive than an equivalent amount of gasoline. Switching to tap water provided by water fountains and plumbed-in dispensers will significantly reduce costs. As municipal infrastructure is already in place to treat and prepare drinking water, no further costs or use of resources are necessary.

County of Santa Clara, California — Switching to Drinking Fountains

Cost of Bottled Water	Cost of Drinking Fountains	Saving over 5 Years
$655,755 (5 year contract)	$419,000–$639,000 (installation in year 1 and yearly maintenance costs for 4 years)	$16,755–$236,755

Myth Buster

Some people think that bottled water is safer and purer than tap water. There is no evidence to support this; the quality standards for bottled and municipal waters in Canada are similar.

Recommended	Why is it important?	How do I know I am getting it?
☑ Replace bottled water coolers with ENERGY STAR rated plumbed-in, bottle-less dispensers with filtration systems	Bottle-less coolers use 30 to 50 percent less energy than bottled resources and significantly reduce greenhouse gas emissions (GHGs) by eliminating the bottle manufacturing, bottling, storage, distribution, delivery, as well as the removal, recycling, or dumping of used bottles. The cost of bottle-less filtered water coolers is typically half the cost of delivered bottled water.	For filters, ask the supplier which contaminants the filter removes and the percentage it removes; ask for evidence of compliance with NSF/ANSI standards (by NSF International, formerly the National Sanitation Foundation, and the American National Standards Institute).
☑ Install insulated water fountains with filtration systems	Insulated fountains help conserve energy. Filtration systems reduce chlorine taste and odour that many people dislike in tap water.	Ask for compliance with Canadian Standards Association (CSA) and IPC (Association Connecting Electronics Industries) and UPC (Universal product code) standards. For filters, ask for evidence of compliance with NSF/ANSI standards. Ask for types and environmental impacts of refrigerants used. Hydrofluorocarbons (HFCs) have replaced older more ozone depleting hydrochlorofluorocarbons (HCFCs) but are still potent greenhouse gas sources. Ask for HFCs with a short atmospheric lifespan (days or weeks, instead of the dozens of years for a few HFCs now in use).
☑ Reusable bottles/pitchers: Look for unlined containers, containers lined with water-based resins, or ones that have been independently tested if made from plastic, look for high-density polyethylene (HDPE or #2)	Unlined containers or containers lined with water-based resins are proven not to leach health damaging chemicals. High-density polyethylene (HDPE or #2) plastic bottles are known for their durability and wide-ranging recyclability.	Verify with your supplier that containers will not leach and have been independently tested.

What else could I look for?

In addition to the minimum recommended criteria outlined above, there are stronger green attributes you can look for when making your purchasing decision.

Recommended	Why is it important?	How do I know I am getting it?
Switch to ENERGY STAR rated bottled coolers	If unable to switch to bottle-less coolers, switch remaining bottled water coolers to ENERGY STAR rated coolers, which are more energy efficient (up to 50 percent) than standard water coolers and have more insulation to better keep heated water hot and chilled water cold.	Look for ENERGY STAR rated bottled water coolers.
Maintain, renovate and/or upgrade existing drinking water infrastructure	If economical, retrofit older fountains, filters, and bottle-less coolers to reduce wasted water and ensure drinking water quality.	

Resources

- Responsible Purchasing Network, Responsible Purchasing Guide Bottled Water Alternatives
- Agriculture and Agri-Food Canada, The Canadian Bottled Water Industry
- Health Canada, The Safety of Bottled Water
- Pacific Institute
- Polaris Institute, From Cradle to Grave: The Environmental Footprint of Bottled Water
- The Catch Behind Coca-Cola's Switch to Plant-based Bottles, Greenbiz.com
- Region of Peel, Myths about Tap Water