

Find climate change solutions... on-line!



The Pembina Institute for Appropriate Development has assembled an easy-to-use Internet database of success stories and practical tools and suggestions for reducing greenhouse gas emissions. Visit www.climatechangesolutions.com for climate change solutions for individuals and families, communities and small municipalities, large companies, the agriculture sector and heavy industry.

You can also go to www.toolsofchange.com for case studies on community programs that address climate change. Use the site's interactive planning guides and worksheets to help develop your own climate change public education and outreach program.

www.climatechange.gc.ca

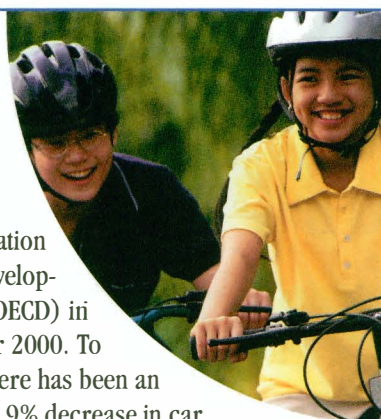
Cars don't belong at school!

Almost half of all school students in the Greater Vancouver Regional District go to school by car. It's bad for their health and bad for the environment. **Better Environmentally Sound Transportation (BEST)**'s "Off Ramp: School Car Trip Reduction Programme" teaches students about the connection between cars, air quality and climate change, and inspires them to get out of the car and onto the street – walking, cycling, or taking public transportation.

The pilot project, which runs in 9 schools in Vancouver and Victoria, received an Environmentally Sustainable Transportation Award by the Organization for Economic

Cooperation and Development (OECD) in October 2000. To date, there has been an average 9% decrease in car trips to the schools; the goal is a decrease of 20%.

At the elementary school level, **Active and Safe Routes to School** encourages students to walk or bike to school instead of being driven. An action kit distributed to every elementary school in Canada explains how to implement ideas like walking school buses. The program has resources to help schools and planners address infrastructure issues related to routes to school.

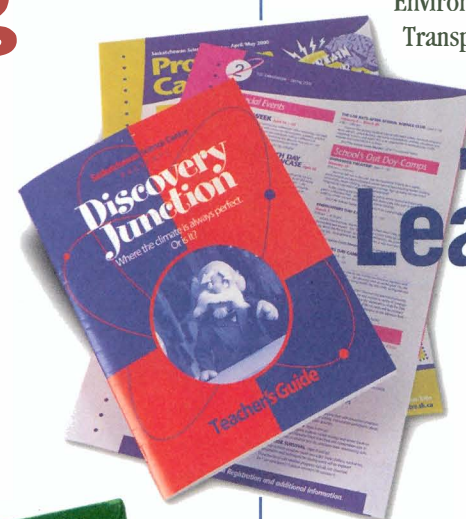


Are you doing your bit?

All Canadians contribute to greenhouse gas emissions – every time we turn on a light, drive the car to the corner store, start up a computer or do anything that uses energy. The actions of individual Canadians account for about **28% of Canada's total greenhouse gas emissions** – that's almost six tonnes per person per year!

If we're part of the problem, we must be part of the solution. Here are 10 quick and easy ways you can reduce your energy consumption, save money and help create a healthier environment and economy for Canada.

Every bit counts!



10 Ways to Reduce Greenhouse Gas Emissions

- 1- Turn off lights, appliances, televisions and computers when they are not needed. Many electronic appliances and computers stay on even when turned off, because they are in "standby mode." Turn off the power when you are away for more than a week.
- 2- Seal all leaks around doors, windows and cracks where heat escapes from your home. You will save up to 20% on your heating bill.
- 3- Insulate when you renovate your home. Over the years, a small up-front cost can pay for itself several times over in energy savings.
- 4- When buying a new household appliance, room air conditioner or vehicle, check the **EnerGuide** label to help you select the most energy-efficient model that meets your needs.
- 5- Avoid idling your vehicle – 10 seconds of idling uses more fuel than restarting your engine.
- 6- Use an automatic set-back thermostat for your home's heating and air conditioning.
- 7- Leave the car at home – walk or bike on short trips. For longer trips, take the bus. One busload of passengers takes 40 vehicles off the road, saving 70 000 litres of fuel, 175 tonnes of carbon dioxide emissions and nine tonnes of pollutants per year.
- 8- Use energy-efficient lighting products such as compact fluorescent bulbs. They last 10 times longer and use 75% less energy than regular incandescent light bulbs.
- 9- Clean your furnace filter regularly to ensure good airflow and keep your furnace properly tuned.
- 10- Install low-flow shower heads and fix leaky or dripping faucets.

Learning about climate change

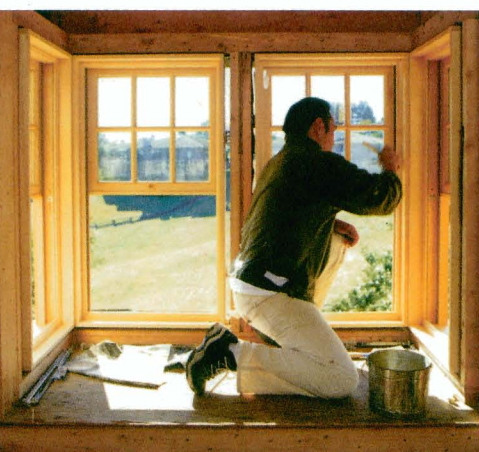
Every year, 150 000 people find out more about climate change from the Saskatchewan Science Centre's "Project Climate Change." This project, a dynamic blend of educational programs, exhibits and outreach, promotes better public understanding of global climate change by addressing why climate change is happening, its potential impacts and what individuals can do to reduce its causes and effects. Meanwhile, visitors to "Climate Warning!" at the **Montreal Biosphère** and the "Living Planet" at **Science World British Columbia** are learning about climate change and how they can reduce greenhouse gas emissions.

These are just 3 of 10 museum and science-centre exhibits that the Government of Canada funds throughout Canada that have shown more than 2 million Canadians the solutions to the problem of climate change. Find out more at http://www2.climatechange.gc.ca/ccaf/search_e.cfm

House calls

All the cracks and air leaks in the average home add up to a 14 cm² hole in your walls. Your heat – and your money – are disappearing out through that hole.

Making your home more energy efficient can save you money, make your home more comfortable and reduce your greenhouse gas emissions. In co-operation with organizations such as Saskatchewan's Sun



Ridge Group, Ontario's Green Communities and the New Brunswick Lung Association, and with support from the CCAE, approved EnerGuide for Houses delivery agents can show you how to improve the energy efficiency of your home. To learn more, visit <http://oee.nrcan.gc.ca/houses-maisons/english/e3.cfm>

Want to know more?

Visit the Government of Canada climate change Web site, at www.climatechange.gc.ca.

You can also call **1 800 0-Canada** (1 800 622-6232, or TTY: 1 800 465-7735) toll-free and ask for a climate change information kit.



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THINK CLIMATE:



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The Earth is getting warmer

The 20th century was the warmest globally in the past 1,000 years. In fact, the 1980s and 1990s were the warmest decades on record.

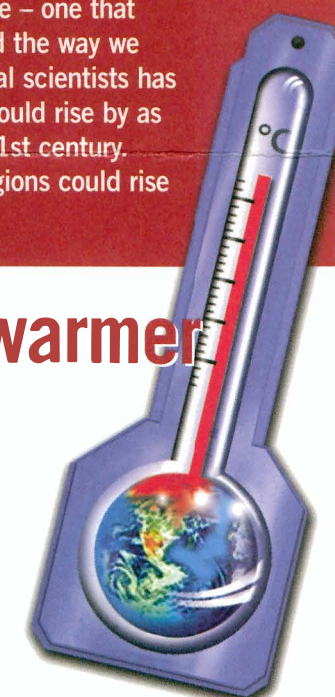
The Earth is experiencing a change in climate – one that will affect our environment, our economy and the way we live for years to come. A panel of international scientists has predicted that average global temperatures could rise by as much as 1.4°C to 5.8°C by the end of the 21st century. In Canada, average temperatures in some regions could rise by as much as 5°C to 10°C.



What's wrong with warmer temperatures?

To some Canadians, warmer temperatures may seem appealing – especially in the middle of winter. But scientists in Canada and around the world have warned of the possible consequences, some of which we may already be experiencing:

- More **severe weather events** such as thunderstorms, heavy rains, hail, and tornadoes could take a heavy toll on human lives and property.
- Longer and more intense heat waves could make **air pollution** in larger urban areas worse. Air pollution has been linked to increased deaths and illness from asthma and other respiratory diseases.
- More **droughts** could harm crop yields and increase the risk of forest fire.
- Drier conditions could affect the quantity and quality of our **water**.
- Sea-level rises could increase **flooding and erosion** along Canada's coasts. Combined with violent storms, this could cause sea water to surge inland, damaging buildings, roads, and bridges.



We are changing our climate

Gases in our atmosphere – water vapour, carbon dioxide, methane and nitrous oxide – act like a greenhouse to keep the sun's heat in and help make our planet livable. Without this natural greenhouse effect, the average temperature on Earth would be -18°C – too cold to support life.

But too many greenhouse gases can be harmful. As we burn more and more fossil fuels to power our cars and trucks, keep our industries humming and make our homes more comfortable, we are increasing concentrations of greenhouse gases in our atmosphere. These gases are thickening the blanket that insulates the Earth, causing average temperatures to rise.

In January 2001, the Intergovernmental Panel on Climate Change (IPCC), made up of top climate scientists from around the world, concluded that "there is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activity."

Canada is taking action

The Government of Canada has an action plan to reduce greenhouse gas emissions in the transportation, energy, industry and buildings sectors of our economy and in its own operations. But all Canadians can take actions that will reduce greenhouse gas emissions and help solve the problem of climate change – and at the same time save money and improve our health. Visit www.climatechange.gc.ca to learn what you can do, and what governments and businesses are already doing.

Are you doing your bit?

Find out what you can do about climate change. Check out the back page, or visit www.climatechange.gc.ca

Canadians are taking action ON CLIMATE CHANGE

Government of Canada
Action Plan 2000 on Climate Change



Government of Canada Action on Climate Change

The Government of Canada is investing \$1.1 billion for action on climate change over the next five years.

In 1997, as part of the Kyoto Protocol, Canada agreed to reduce its greenhouse gas emissions to 6% below 1990 levels, by the period 2008–2012. When fully implemented, the Government of Canada's action on climate change is projected to take us one-third of the way toward meeting this target while laying the foundation for future actions.

The measures target the sectors of our economy that are responsible for more than 90% of Canada's greenhouse gas emissions – transportation, oil and gas production, and electricity generation – as well as energy use by industry and by individual Canadians.

The Government of Canada has created the Sustainable Development Technology Fund and the Canadian Foundation for Climate and Atmospheric Sciences to support new technology and scientific research. In addition, the federal government has established two Green Municipal Funds to assist

municipalities in their emissions-reduction efforts. It has also renewed the Climate Change Action Fund (CCAF) for a further three years. The CCAF was created in 1998 to support early actions on climate change, including public outreach, technology development, and research into the science and impacts of climate change and how we can adapt to it. Many of the initiatives profiled in these pages are supported by the CCAF.

The Government of Canada's action on climate change incorporates the best ideas arising from two years of extensive consultations with more than 450 experts from industry, academia, non-government organizations, municipalities, and federal, provincial and territorial governments. Learn more by visiting www.climatechange.gc.ca/english/whats_new/action_plan.shtml

What's in it for you:

What's in Action Plan 2000 for Canadians? Lots! Here are just a few examples:

- An ENERGY STAR® mark that helps businesses and consumers identify products that are "top of their class" in energy efficiency;
- A consumer information and education program to encourage "clean choices" in vehicles and fuels;
- Home energy evaluations available in key centres across Canada;
- Information for home buyers about the benefits of buying or building an energy-efficient home;
- Energy audits for small and medium-sized enterprises to help them compare their greenhouse gas emissions to industry averages;
- A demonstration program to test the use of different fuelling options for fuel cell vehicles.

Blowing IN THE WIND

There's a new wind blowing, and it's signaling a change in how we generate energy. From Pincher Creek in Alberta, to Gull Lake, Saskatchewan, to wind farms on Quebec's Gaspé Peninsula and in Prince Edward Island, electricity generated from wind power is turning out to be a great way to reduce emissions.

The Government of Canada is doing its part to encourage wind energy. By buying wind power for its Alberta facilities, the government helped the local utility sell four times the original purchase to other customers, including homeowners. Through the Climate Change Action Fund, the Government of Canada is also supporting two waterfront wind turbines that will sell renewable energy directly to Toronto customers. Each turbine will provide enough electricity to power 250 to 300 households per year.

Renewable energy can help reduce emissions from Canada's electricity sector. Wind power, solar power, hydro-electricity and earth and biomass energy can all produce electricity without depleting our natural resources. The Government of Canada is working with partners to support projects to lower the costs of renewable energy and make it a more attractive option for consumers and industry alike.

Did you know?

Canadians idling light-duty vehicles for five minutes every day waste over 1.6 million litres of fuel and produce more than 4500 tonnes of greenhouse gas emissions.

Sea levels on the northern coast of BRITISH COLUMBIA could rise up to 30 cm by 2050. The Fraser River Delta is expected to experience flooding. Warmer ocean temperatures will send salmon further north in search of colder water. Inland, melting permafrost and glaciers will increase the risk of landslides in mountain regions.

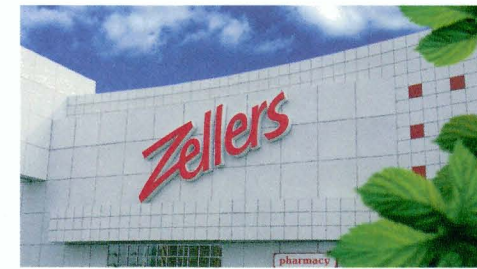
Permafrost is melting in Canada's NORTH, putting transportation routes and buildings at risk. The Arctic sea ice cover is thinning and summer cover has shrunk by some 15%. Shorter ice seasons mean less feeding time for polar bears, who become 10 kg lighter for every week earlier they are forced to stop hunting, impairing cub survival. An increase in summer insects is threatening caribou and reindeer populations.

Overall crop yields on the PRAIRIES are expected to fall as drought offsets a longer growing season. Northward expansion of agriculture may offset some of this loss. Drier weather could also make crops more vulnerable to pests and disease. Forest zones could shift north, and longer, warmer, and drier fire seasons would lead to more frequent forest fires.

SOUTHERN ONTARIO will see shorter winters but an increase in hot, humid days in summer, with more smog; Toronto could experience 50 days every year with temperatures above 30°C instead of the current 10 days. Water levels in the Great Lakes are projected to be lower; for every centimetre below average water levels, ships have to reduce their cargoes by 50–100 tonnes. Reduced water availability would affect hydro-electricity generation. Farmers would have a longer growing season, particularly in NORTHERN ONTARIO, but there are also expected to be more pests, floods, and droughts. There would also be increases in the frequency of forest fires.

Business is getting in on the act

Canadian businesses and industries are taking action on climate change, by reducing their energy use, developing new technologies and exploring renewable energy alternatives. These steps are protecting our environment, while helping companies improve their profitability by saving money.



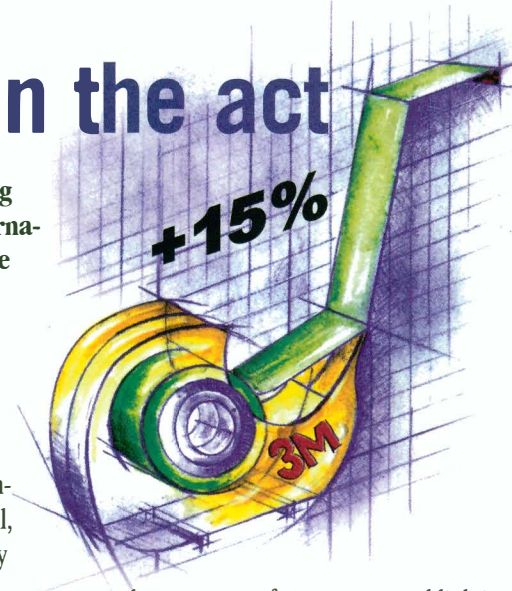
Zellers Earns Climate Change Points and Rewards

Zellers, one of Canada's leading department store chains, is earning points of its own with an aggressive program to reduce energy consumption in its stores nationwide. Among the rewards are impressive energy cost savings, reduced greenhouse gas emissions and a stronger bottom line.

With help from Natural Resources Canada's Energy Innovators Plus initiative, Zellers has launched a project in 10 of its stores across Canada to improve lighting, install energy management systems and upgrade heating, ventilating and air-conditioning equipment. Overall, the project is expected to cut the stores' energy consumption by 17% and reduce their greenhouse gas emissions by 2700 tonnes. Get more information at <http://oee.nrcan.gc.ca/eii>.

3M Canada Company

No newcomer to energy conservation, 3M Canada Company has made major advances toward meeting its parent company's worldwide efforts to boost energy efficiency by 15%. It has used life-cycle management, improved processes and operating procedures and investments in high-efficiency



motors, heat recovery from steam, and lighting retrofits to help its manufacturing facilities reach their energy reduction targets.

3M is an Industrial Energy Innovator with Natural Resources Canada, and is one of 763 organizations registered with Canada's Climate Change Voluntary Challenge and Registry Inc., a national registry for initiatives to reduce greenhouse gas emissions. Find out more at <http://oee.nrcan.gc.ca/cipec> or www.vcr-mvr.ca

Teachers!

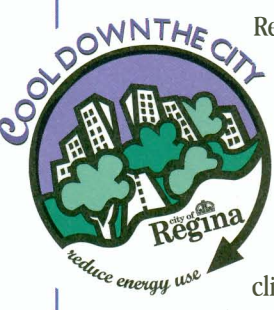


Bring climate change into your classroom. Check out the Resources for Teachers section at www.climatechange.gc.ca for information and tools.

Did you know?

Evergreen trees on the north side of your home can shelter it against winter winds and reduce your home's demand for heat. Shade trees on the south side can cool your home in summer and reduce demand for air conditioning. Trees absorb and store carbon dioxide and filter out pollution.

In our Cities, in our towns...



Regina, Saskatchewan, is "Cooling Down the City" by encouraging residents to help reduce the community's greenhouse gas emissions to 20% below 1990 levels by 2005. The city is sponsoring events such as vehicle-emissions clinics and "Find Another Way Days" to encourage residents to walk, cycle or take the bus.

EARTHCARE Sudbury, in Ontario, is using exhibits and programs to highlight the science behind climate change and to promote actions by individuals and community groups to help lower the city's greenhouse gas emissions to 20% below 1990 levels by 2010.



Regina and Sudbury are just two members of the Federation of Canadian Municipalities (FCM) that are taking the lead to reduce greenhouse gas emissions through the Partners for Climate Protection Program, supported by the Climate Change Action Fund. To find out what communities like yours are doing to reduce greenhouse gas emissions, visit www.ec.gc.ca/ecoaction/index_e.htm

Climate Change ACROSS the COUNTRY...

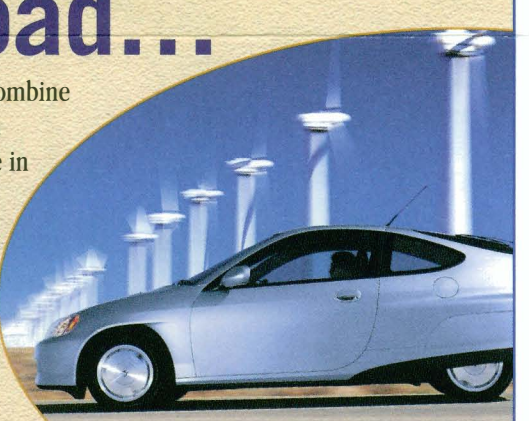


Expect more severe weather-related events such as heat waves, floods, and winter storms in QUEBEC. Water levels in the St. Lawrence River are projected to be about 1.25 metres lower. In 1988–1991, a 30 cm drop resulted in a 15% decrease in tonnage handled by the Port of Montreal.

Rising sea levels – as much as 70 cm on the Atlantic coast of Nova Scotia by 2100 – and more intense and more frequent storms would lead to flooding, coastal erosion, and harm to animal and plant life in the ATLANTIC PROVINCES. Many plants are already flowering earlier each spring, making them more vulnerable to late frosts.

Take to the road...

with a new alternative – hybrid cars that combine batteries with gasoline engines. The Toyota Prius and the Honda Insight, now available in Canada, are two of the most fuel-efficient cars you can buy. That saves you money and helps to reduce greenhouse gas emissions. Best of all, the battery charges while you're driving – you never have to plug it in! Find out more at <http://oee.nrcan.gc.ca/vehicles>



What are the energy gobblers in your home?

Of all your household appliances, the refrigerator is the biggest energy user – it accounts for 11% of the average household's energy use each year. But today's refrigerators are much improved. A typical top-mount refrigerator rolling off the assembly line today uses about 70% less energy than one made in 1984. That can save you about \$75 each year, depending on how much you pay for electricity.

The average Canadian family does about 392 loads of wash per year. That's a lot of water and electricity. So next time you're appliance shopping, check out the new front-loading washing machines. They use 50% less energy and 40% less water than traditional top-loading models. Less energy used, fewer greenhouse gases produced.

Don't forget to check the EnerGuide label. The lower the number, the better. If there is no label, ask for it. It's your ticket to finding the most energy-efficient appliance on the market. Get more information at <http://oee.nrcan.gc.ca/appliances>

