



FEDERATION
OF CANADIAN
MUNICIPALITIES

FÉDÉRATION
CANADIENNE DES
MUNICIPALITÉS



PARTNERS FOR CLIMATE PROTECTION

Creating a change
in climate through
local action



www.fcm.ca/pcp



“Edmonton has participated in the Partners for Climate Protection (PCP) program right from the start. We see this program as an important part of moving toward our long-term goal of becoming carbon neutral.”

Mayor Stephen Mandel, City of Edmonton

“The Town of Annapolis Royal sees climate action as one of the most important strategic initiatives of our time. The environment is the air we breathe, the water we drink and the soil we grow our food in. If we don’t protect the envelope we live in, there will be no future.”

Mayor Phil Roberts, Town of Annapolis Royal

“Richmond Hill is a proud participant in the Partners for Climate Protection program and committed to doing our part to protect the environment. Through our Clean Air programs, Richmond Hill not only met our target of 20% reduction below 2000 levels by 2009, but also exceeded our target by reducing our greenhouse gas emissions by 33% below 2000 levels. We plan to keep this momentum going by continuing to make the environment a priority.”

Councillor Brenda Hogg, Town of Richmond Hill



WHAT ARE GREENHOUSE GASES?

Greenhouse gases (GHGs) are gases such as carbon dioxide, methane, nitrogen oxide, sulphur oxide and others that trap heat in the earth's atmosphere. The effect they create is called the greenhouse effect. Human activity has caused an increase in these gases. Their release into the atmosphere has contributed to global warming.

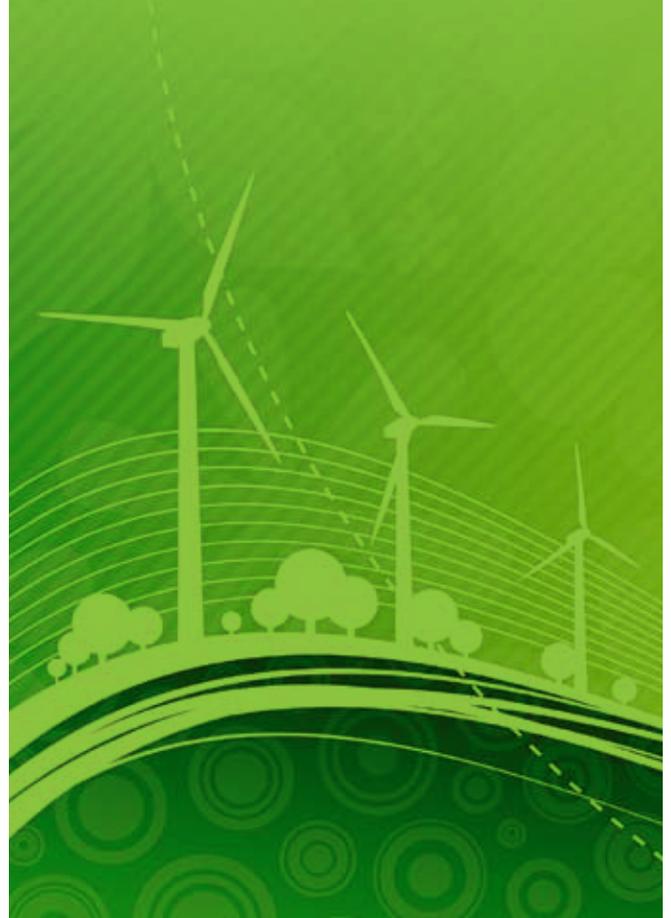
CLIMATE CHANGE IN CANADA

Canada is feeling the impacts of climate change

Climate change is having an impact in your community and across the country. Average temperatures are rising, snow and ice cover are declining, and natural disasters, such as wildfires and floods, are affecting more Canadian communities more often.

Integrated action on climate change is crucial. An effective response will aim to reduce the rate and magnitude of climate change, while we cope with the damages from climate change that we cannot avoid. The direct benefits that come from action include energy cost savings, avoided infrastructure impacts, and local job creation.

According to the National Round Table on the Environment and the Economy (NRTEE), costs from climate impacts could exceed \$5 billion in 2020 and grow to more than \$21 billion by 2050.



HOW CAN YOUR MUNICIPALITY CUT GHGs?

Local governments across Canada are creating momentum for climate protection through simple, cost-effective activities that improve quality of life. These activities are reducing GHG emissions through:

land use, energy and transportation planning – bylaws and development incentives – infrastructure design – green procurement – building retrofits – water conservation – solid waste diversion – renewable energy

MUNICIPALITIES AND CLIMATE CHANGE

Local governments and the communities they serve are taking action

Hundreds of local governments and communities in Canada are taking a stance on climate change. They are moving forward with sustainable policies and approaches to manage water supplies, reduce energy consumption, optimize transportation and examine land use policies. These actions yield two benefits: they increase economic efficiencies and reduce GHG emissions.

Your role matters today and for the future



Local governments play a key role in climate protection. More than 44 % of Canada's GHG emissions are under the direct or indirect control of municipalities. Local

governments are making important contributions to climate protection by cutting emissions from municipal operations. They are also implementing cost-effective investments and creating incentive-based policies that support sustainable infrastructure and development practices.

CHANGING THE BUSINESS CLIMATE TO A CLIMATE BUSINESS

Local governments' investments reap rewards

By investing in emission reductions, especially as part of a whole-system sustainability strategy, your local government can achieve multiple benefits for municipal operations, civic services and the broader community. These benefits go well beyond reducing GHG emissions.

Building the business case



The economy of tomorrow offers local governments like yours a business opportunity, but only if you position yourself to maximize climate advantages. Investment opportunities in the green economy have a strong multiplier effect

that deliver good economic, employment and business dividends. For example, green investments to expand transit service and energy efficiency retrofits create about 18 jobs in the repair and maintenance industry per million dollars invested.

Depending on the range of actions you take and the needs of your community, the dividends you reap may include better financial performance due to energy and materials cost savings. This can have an impact in areas like facilities design, government operations and fleet management. Other benefits to consider are improved air quality leading to better public health and your ability to respond more readily to federal and provincial carbon and energy regulations in the future.

WHAT GREEN ECONOMY BENEFITS CAN YOU REALIZE?

Save money by cutting energy costs – Be a leader in energy efficiency and enhance your corporate image and community relations – Improve air quality and citizens’ health – Create more jobs by investing in alternative energy sources – Generate power locally and reduce dependencies on energy suppliers outside your municipality – Measure and report on quantifiable results once your green economy framework is in place

Money is leaking out of your municipality faster than GHGs!



Did you know municipalities directly control and indirectly influence more than 44% of GHG emissions in Canada? Moreover, most municipalities do not have a complete understanding of

how much they spend each year on energy costs? Municipalities can spend several million dollars annually for energy costs, depending on population size.

Population	Municipal Corporate Energy Expenditures (\$)	Total Community Energy Expenditures (\$)
under 5,000	200,000	8.9 million
under 10,000	300,000	30 million
10,000 to 49,999	970,000	97 million
50,000 to 99,999	2 million	105 million
100,000 to 499,999	7.5 million	600 million
500,000 to 999,999	10 million	700 million
1 million and over	100 million	3.7 billion

Most of this money leaves the municipality. Climate action is an economic development opportunity that can improve energy efficiency and lead to your municipality generating clean energy.

“We expect to save more than \$13,000 a year in energy costs, which gives us a payback in 5.6 years.”

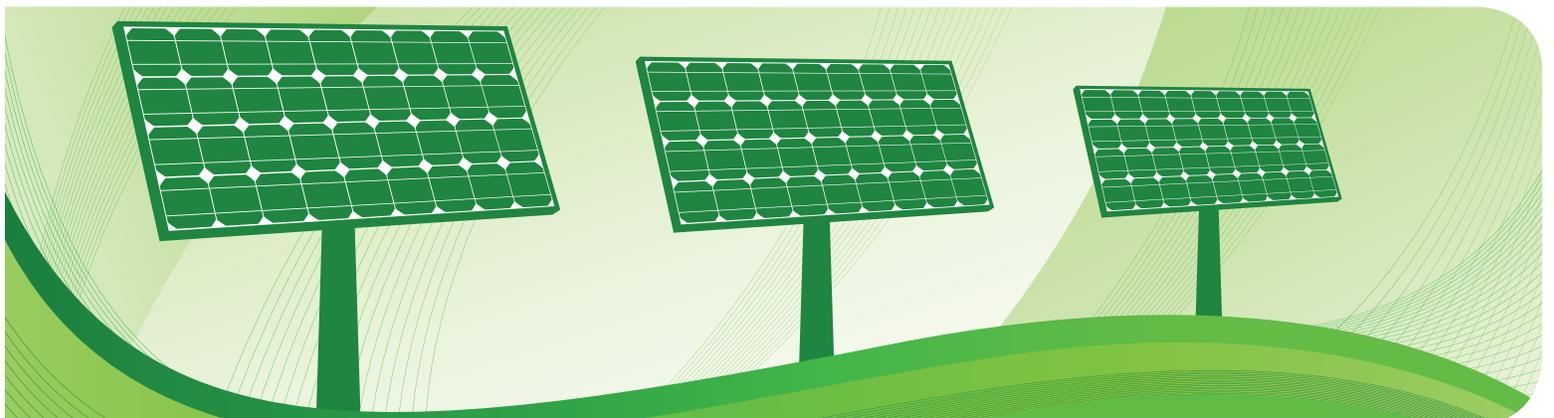
Jihad Elzamer, City of Fredericton Energy Analyst, on the installation of an ammonia heat recovery system at the Lady Beaverbrook Rink, which will cut GHG emissions by 35 tonnes annually

“In the first six months...we’ve already saved \$6,400, which includes the cost of energy and the B.C. carbon tax.”

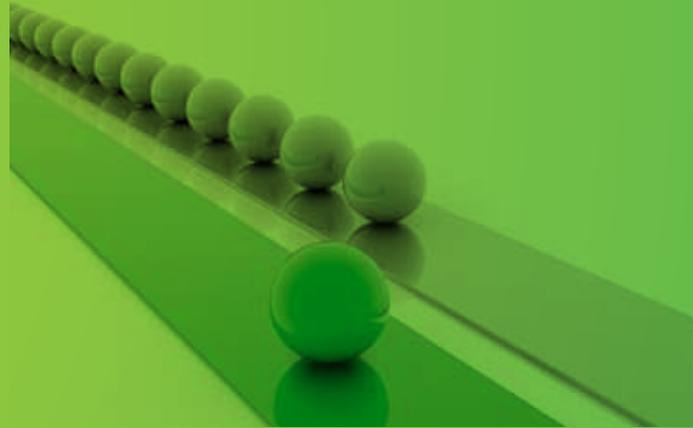
Ryan Schmidt, Township of Langley Environmental Coordinator, on the use of a geothermal heating and cooling system at the Aldergrove water treatment plant, which is expected to cut GHG emissions by 70 tonnes annually

“Annual savings are between \$20,000 and \$25,000, based on 2007 natural gas prices, and GHG reductions are about 186 tonnes. The SolarWall is paying for itself and the first installation has a capital budget payback period of only two to three years.”

Richard Munn, Manager of Technical Services, Greater Sudbury Housing Corporation



MUNICIPAL ACTIONS TO REDUCE GHGs



IN THE CORPORATE SECTOR:

- 1** Retrofit buildings and adopt green building standards for new buildings and sites.
- 2** Change traffic lights to energy-saving light-emitting diodes (LEDs).
- 3** Replace streetlights with more efficient bulbs.
- 4** Start a water conservation program.
- 5** Plant trees to improve air quality.
- 6** Start an anti-idling program for municipal vehicles.
- 7** Create staff incentives for carpooling and the use of public transit.
- 8** Promote green fleet management practices such as 'right sizing', low carbon fuels, and hybrid/ electric vehicles.
- 9** Purchase renewable energy or develop local sources for generation (such as wind, solar or district energy).
- 10** Implement comprehensive landfill gas recovery systems at municipal landfill sites.

IN THE COMMUNITY SECTOR:

- 1** Start a community-wide composting program.
- 2** Sell rain barrels at a reduced cost and launch an awareness program on water conservation.
- 3** Use financial incentives to help residents reduce waste.
- 4** Promote energy efficiency in the industrial sector.
- 5** Create incentives for using public transit.
- 6** Use bylaws and development approval incentives to increase building standards and land use mix.
- 7** Support and encourage energy efficiency initiatives in the residential and private sectors.
- 8** Develop and maintain infrastructure friendly to pedestrians and bicycles.
- 9** Initiate commuter challenges to reduce vehicle use.
- 10** Support community garden initiatives or urban agriculture using surplus land or by developing green roofs.



MUNICIPALITIES IN ACTION

How municipalities are leading the way on climate action



Over the past two decades, local governments in Canada have emerged as leaders in the field of climate change mitigation. All across the country, local and regional governments are pursuing strategies to monitor and reduce GHG emissions.

Whistler Geo-exchange — Population 10,228

The Resort Municipality of Whistler, British Columbia adopted a Green Building Policy with higher efficiency standards. The Spruce Grove Field House installed a geo-exchange system to heat the building. The system saved the equivalent of 1,100 gigajoules (GJ) of propane usage and reduced GHG emissions by 65 tonnes per year. The geo-exchange system cost about \$126,000 and produces annual savings of about \$21,000.

New Glasgow Stadium Heat Recovery — Population 9,455

The Town of New Glasgow, Nova Scotia made a commitment to reduce energy and GHG emissions at both the corporate and community levels. It installed an ice plant heat recovery system to capture and reuse waste heat at the 60-year-old John Brother MacDonald Stadium. The heat recovery project cuts annual GHG emissions by about 153 tonnes and saves the town about \$22,000 a year in heating energy costs. The project cost about \$300,000, and the town expects the payback period to be about 10 years. With a typical arena producing enough waste heat to meet the needs of 30-60 homes, the stadium's system is designed so that any extra waste heat can be used to heat other buildings in the future.

Saskatoon Rain Barrels — Population 202,340

In 2010, the City of Saskatoon sold its citizens more than 1,500 rain barrels. The barrels conserve water by capturing runoff from roofs. This relieves pressure on local water systems and indirectly reduces GHG emissions due to less demand on the plants that treat and distribute water. The 1,500 rain barrels sold by Saskatoon have the potential to reduce annual GHG emissions by 94 tonnes and reduce energy costs at the water plants.

Calgary District Energy Centre – Population 1,019,994

The City of Calgary recently developed a district energy centre that generates energy through the use of natural gas, rather than coal. The system became operational in March 2010, and is capable of supplying heat for up to 930,000 m² (10 million ft²) of new and existing commercial and residential space. The city's municipal building was the first facility to be connected to the district energy system. The switch has allowed the city to replace seven aging boilers, and to profit from both lower energy and maintenance costs. These savings bode well for future connections anticipated in the community.

Burlington Solar Heating and Waste Heat Recovery – Population 163,000

The City of Burlington recently installed seasonal solar heating and a year-round waste heat recovery system at its Tansley Woods Community Centre. The 90-panel solar installation covers an area of 398 m², and is capable of supplying up to 325 kW of thermal energy—roughly 25% of the energy used to heat the centre's swimming pool. The total implementation cost of this measure was \$116,970. As a result of this initiative, the city should expect to see annual cost savings of \$28,275, with the system paying for itself in a little over two years. The alternative energy systems will not only save the city money, but will also contribute to significant GHG reductions. The local utility provider, Burlington Hydro, estimates that the measure will save 24,138 m³ of natural gas and 101,000 kWh of electricity per year. These energy savings amount to 67.5 tonnes of avoided GHG emissions.

Vancouver Landfill Gas Recovery System – Population 545,671

The City of Vancouver owns and operates a large municipal solid waste facility located in Delta, British Columbia. Since 2003, the city has been piping a portion of the landfill gas to a nearby cogeneration facility, where it is used to generate both electricity and heat. The system works to reduce GHG emissions in two key ways: by avoiding direct emissions of landfill gas (methane), and by displacing emissions from conventional electricity and heat generation (i.e. natural gas fired boilers). In 2008, the recovery system collected 38,971,000 m³ of landfill gas. The project is currently the largest GHG reduction initiative in the Lower Mainland, eliminating more than 250,000 tonnes in annual GHG emissions. In addition to these impressive reductions, the project also generates considerable revenue. The city currently earns \$400,000 annually through an agreement with MAXIM Power.



PARTNERS FOR CLIMATE PROTECTION

We can help.

What is PCP?

The Partners for Climate Protection (PCP) program is a network of more than 200 Canadian municipal governments committed to reducing GHGs and acting on climate change.

PCP is a partnership between the Federation of Canadian Municipalities (FCM) and ICLEI - Local Governments for Sustainability. It is the Canadian component of ICLEI's international Cities for Climate Protection (CCP) program. PCP receives financial support from FCM's Green Municipal Fund™ (GMF).

What does PCP offer?

PCP can help empower your community to decide where, when and how it will take action on climate change.

It is up to local governments to develop and evaluate their reasons for taking action on climate change. The PCP milestone framework and toolkit can be a platform for your municipality to

- build the business case for climate protection
- foster collaborative approaches with the wider community
- engage the public on issues surrounding climate change and local sustainability

BY WORKING WITHIN PCP, YOUR MUNICIPALITY BENEFITS FROM:

A plan:

PCP's five-milestone framework is a proven municipal strategy to cut GHGs and reduce energy consumption.

Milestone 1

Create a Baseline Emissions Inventory and Forecast



Milestone 2

Set Emissions Reduction Targets



Milestone 3

Develop a Local Action Plan



Milestone 4

Implement the Local Action Plan



Milestone 5

Monitor Progress and Report Results



What is the Green Municipal Fund?

The Green Municipal Fund (GMF) is a unique program administered by FCM. It supports municipal initiatives across Canada that benefit the environment, local economies and quality of life. Municipal endeavours aligned with GMF's goals and criteria are eligible to receive grants and below-market loans to plan for and implement activities that will reduce GHGs.

Networking:

PCP offers valuable opportunities to share experiences with more than 200 participating municipalities and an international network of municipal governments.

Resources:

PCP members have access to useful resources and information, including case studies, templates, technical assistance and newsletters.

Recognition:

PCP recognizes the achievements of its members. As they implement each milestone or emission reduction project, they receive letters of recognition from the FCM President for their leadership. Municipal representatives are also invited to speak about their leadership during conferences and workshops, providing a broader profile to their accomplishments.

Free Support:

Your municipality can be part of PCP at no cost. Because cost does not present a barrier, municipalities of all sizes can be engaged in climate protection.

What are other municipalities doing?

Municipalities are taking action and generating measurable GHG reductions and cost savings through various innovative measures in their communities. To help highlight such efforts, PCP produces the *GHG Reduction Initiative of the Month* (GRIM). This report shares the environmental and economic results of action, along with lessons learned and next steps.

The *Enviro-Fleets Guide to Helpful Resources* provides fleet managers with information and tools from across Canada on greening municipal heavy-duty fleet vehicles and reducing emissions.

View our collection of sustainability bylaws

A growing number of Canadian municipalities are integrating sustainability into their planning processes. Planning is a complex process in itself, and developing the policies and bylaws needed to support planning can be an added challenge. The Federation of Canadian Municipalities' GMF has prepared a collection of sustainability bylaws for municipalities. It provides excellent examples of municipal bylaws, policies and procedures implemented by small and large Canadian municipalities in a range of sectors, including energy.

JOIN PCP TODAY!

MEMBERSHIP IS ONLY FIVE STEPS AWAY:

- 1** After reviewing this document, contact the secretariat for more details, and to ask questions.
- 2** Download a sample council resolution at www.fcm.ca/pcp or contact the PCP secretariat.
- 3** Appoint one staff member and one elected official to be your main contacts with PCP.
- 4** Fax, mail or e-mail your adopted council resolution, along with the staff member's and elected official's contact information, to the PCP secretariat. (See contact information below.)
- 5** The PCP secretariat will send you a PCP information package, including a list of resources and the PCP Milestone Framework. Apply to GMF for a grant to cover up to 50% of the costs of completing milestones 1, 2 and 3.

CONTACT PCP

Find out more about PCP by visiting www.fcm.ca/pcp or by contacting the PCP secretariat at 613 907 6346. Email pcp@fcm.ca



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