A RESOURCE GUIDE

TOP ASKS FOR CLIMATE ACTION

RAMPING UP LOW CARBON COMMUNITIES

by Karen Farbridge,
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CENTRE FOR CIVIC GOVERNANCE

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by Karen Farbridge,
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SUMMARY

LOCAL GOVERNMENTS HAVE A CRUCIAL ROLE to play in combating climate change. Their decisions impact, directly or indirectly, over half of Canada's greenhouse gas (GHG) emissions.[1] This offers huge scope for meeting Canada's national climate responsibilities, with the right kind of support from federal and provincial governments.

The report is directed to ramping up climate action through local government decision making and it was prepared with the needs of elected leaders in mind. The Top Asks identified in the report are those that federal, provincial, and territorial elected governments could put in place so that local decision makers have the tools they need to maximize climate action. And the potential is substantial.

If you are an elected leader, you are likely being called upon more often to address the consequences of a changing climate — from forest fires in the west, floods in the prairies, sea level rise in the north, to ice storms in the east. Canada needs a bold plan to reduce GHG emissions. We have an enormous task ahead of us.

There are four emerging trends pushing local governments to centre stage: the localization of energy, the mainstreaming of climate change in land use planning, rapid urbanization, and the importance of place in a global economy.

Canada can and must ramp up climate action by empowering low carbon communities.

What do local governments need to unleash their climate potential? Which top asks have the most leverage for impact?

The actions set out in this report — 18 for the federal government, and 24 for the provinces and territories — are based on an extensive literature review with input from local elected leaders. They are not the only actions that could make a difference, but they are actions that could have a great impact.

These actions focus on five priority areas:

- **CAPACITY BUILDING**;
- **SMART GROWTH**;
- **HARNESSING LOCAL ENERGY**;
- Reducing carbon pollution from the **BUILDING SECTOR;** and
- Reducing carbon pollution from the **TRANSPORTATION SECTOR.**

Canada needs a bold plan to reduce GHG emissions. We have an enormous task ahead of us. Local governments have a crucial role to play.

1 Natural Resources Canada, "Integrated Community Energy Solutions: A Roadmap for Action," (2009).

Local governments have a crucial role to play in combating climate change. Their decisions impact, directly or indirectly, over half of Canada's GHG emissions.

TORONTO PHOTO COURTESY MICHAEL MURAZ/FLICKR

Over 100 local elected officials responded to the Top Asks survey. As one respondent said: "Just about all of the offered actions need to be done, should have been done 25 or 30 years ago when some of us said they were necessary. We are so late in the game that dramatic response is required (well beyond Paris), meaning action on all fronts is needed."

Top Asks identifies key federal, provincial, and territorial actions needed to unleash local government climate potential. They are early wins in the transition to net zero emissions in 2050.

Top Asks

Canada can and must ramp up climate action by empowering low carbon communities. Our country can't be a climate leader without local government action.

Where to start:

FEDERAL TOP ASKS	
Capacity building	Adopt science-based greenhouse gas targets. Put a price on carbon for net-zero emissions by 2050. Address capacity shortfalls that stand in the way of local government climate action.
Funding	Line up sustainable infrastructure spending programs with local climate action. Allocate subsides to GHG-friendly industry.
Natural capital	Fund local government baseline assessments of natural capital. Include the carbon storage value of natural capital in national GHG accounting.
Harnessing local energy	Fund community- and Indigenous-owned renewable energy capacity.
Building sector	Incentivize energy efficiency retrofits in homes and commercial buildings.
Transportation sector	Prioritize transit and active transportation infrastructure projects over auto-only infrastructure.

PROVINCIAL & TERRITORIAL TOP ASKS	
Capacity building	Adopt science-based greenhouse gas targets. Put a price on carbon for net-zero emissions by 2050. Address capacity shortfalls that stand in the way of local government climate action.
Funding	Line up sustainable infrastructure spending programs with local climate action. Allocate subsides to GHG-friendly industry.
Smart growth	Change legislation so that energy and climate change policies are part of land use planning.
Harnessing local energy	Change the building code to make renewable-energy-powered homes and buildings.
Building sector	Fund ambitious retrofit programs. Enable property-assessed financing and on-bill financing. Support low income households to address energy poverty.
Transportation sector	Support local governments to improve public transit and active transportation in urban and rural communities.

"Just about all of the offered actions need to be done, should have been done 25 or 30 years ago when some of us said they were necessary. We are so late in the game that dramatic response is required (well beyond Paris), meaning action on all fronts is needed."

— Top Asks Survey respondent

VANCOUVER PHOTO COURTESY PAUL KRUEGER/FLICKR

Are there other actions that our federal and provincial governments must take to reduce climate change? Absolutely. This report speaks to the potential of local governments.

Where to Raise Top Asks for Empowering Low Carbon Communities

You can discuss these asks with your:

- Council;
- Constituents, community groups, and staff;
- Federal, provincial, and territorial elected representatives;
- Provincial, territorial, and national local government associations; and
- Government-led climate change consultations.

SECTION 1

Introduction

Local governments have a crucial role to play in combatting climate change alongside federal, provincial, and territorial governments.

"Mitigation is a human intervention to reduce the sources or enhance the sinks of greenhouse gases." — Intergovernmental Panel on Climate Change (2014)[1]

CANADA NEEDS A BOLD PLAN to reduce greenhouse gas emissions that aligns with the science of climate change.

In December 2015, 195 countries reached an historic agreement to hold "the increase in the global average temperature to well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 degrees Celsius above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change."[2]

The agreement was signed by world leaders, including Prime Minister Justin Trudeau, in New York at the United Nations on Earth Day. Ratification in the parliaments of each country is the next step.

A two degree rise in global temperatures is considered the threshold for dangerous warming by the international scientific community. During the Paris talks, many low-lying and island nations successfully advocated for a lower threshold to be included. For these countries, the risk of rising sea levels on their homelands is an immediate threat.

What will it take? Simply put, we will need to achieve net zero emissions by 2050. The Paris Agreement resolves to "reach peak global greenhouse gas emissions as soon as possible to achieve a balance between anthropogenic emissions by sources and removals by sinks in the second half of this century."

Canada must act quickly if we are to meet this international commitment. Starting in 2023, we will be reporting every five years on how we have reduced emissions. There is a substantial gap between Canada's current targets — approximately a 14 per cent GHG reduction by 2030, based on 1990 levels — and the targets needed to put us on a path to achieve net zero emissions by 2050.[3]

1 IPCC, "Fifth Assessment Report Summary for Policymakers" (2014).
2 UNFCCC, "The Paris Agreement" (2015).
3 Canadian Centre for Policy Alternatives, "CCPA Monitor: November/December" (2015)

Canada ranked 58th out of 61 countries (ahead only of Kazakhstan, Australia, and Saudi Arabia) for climate protection performance in 2015.[4]

With an economy heavily dependent on fossil fuel extraction, Canada has struggled to find a credible path forward on climate change. Our country is among the top 10 emitters in the world and of those top 10 emitters, Canada has the highest emissions per capita.[5] We have an enormous task ahead of us to drive down GHG emissions.

Today, 25 per cent of Canada's emissions arise from fossil fuel production.[6] Our GHG emissions are 18 per cent higher today than in 1990.[7] Meanwhile, the National Energy Board projects Canada's use of fossil fuels will increase 22 per cent over the next 25 years at current rates of consumption.[8]

Local governments have a crucial role to play in combatting climate change alongside federal, provincial, and territorial governments. But this will only happen if elected leaders make climate change a priority, and if federal, provincial, and territorial governments take measures to power up low carbon cities and communities.

In Paris, in December 2015, 195 countries reached an historic agreement to hold the increase in the global average temperature to well below 2 degrees Celsius above pre-industrial levels.

4 Climate Change Action Network Europe, "The Climate Change Performance Index: Results 2015" (2014).
5 World Resources Institute, "6 Graphs Explain the World's Top Emitters" (2014).
6 Canadian Centre for Policy Alternatives, "CCPA Monitor: November/December" (2015).
7 Ibid.
8 National Energy Board, "Canada's Energy Future" (2016).

SECTION 2

Making the Case for Local Action

Climate change is a complex issue. It crosses all sectors of society. It will need the co-operation of all orders of government to tackle it.

LOCAL ELECTED LEADERS AROUND THE WORLD are demonstrating their effectiveness in reducing GHG emissions.

Almost 1,000 local leaders gathered in Paris alongside the United Nations meeting and signed the Paris City Hall Declaration.[9] In the same spirit as the world's national leaders, these local leaders made a commitment to take aggressive steps to reduce GHG emissions. Many Canadian mayors were among them.

In Canada, local governments work within a framework of federal, provincial, and territorial leadership. There is no question that framework matters: like using science based targets for GHG reduction, putting a price on carbon, eliminating fossil fuel subsidies, regulatory support for climate friendly industries, and phasing out coal-fired power. However, these measures alone won't be enough to meet the goals of the Paris Agreement.

Climate change is a complex issue. It crosses all sectors of society. It will need the co-operation of all orders of government to tackle it.

While federal, provincial, and territorial governments might have a lot of data on communities, they lack context. Local governments know their community's story best. They know how to mobilize rich and diverse networks of people, businesses, and organizations to encourage innovation and action. They are the most directly-accountable order of government and the closest to the electorate, and their decisions impact, directly or indirectly, more than 50 per cent of greenhouse gas emissions.

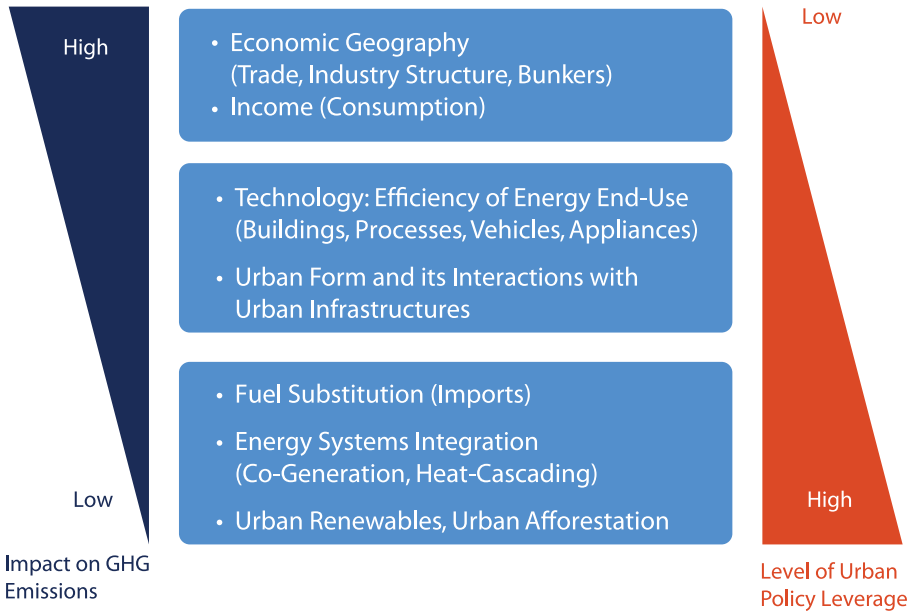
Local decisions are regionally relevant, taking advantage of regional strengths and assets. Innovation is often geographically-specific because of the interactive learning processes involved. Rather than viewing our country's regional energy differences as a liability, communities offer an opportunity to turn our regional energy diversity into a strength.[10] We will need multiple pathways to a low-carbon economy.

9 Climate Summit for Local Leaders, "Paris City Hall Declaration" (2015).
10 Broadbent Institute, "A Green Entrepreneurial State as Solution to Climate Federalism" (2016).

Almost 1,000 local leaders gathered in Paris alongside the United Nation's meeting and signed the Paris City Hall Declaration.

PARIS CLIMATE SUMMIT FOR LOCAL LEADERS PHOTO COURTESY BLOOMBERG.ORG

FIGURE 1: URBAN DRIVERS OF GHG EMISSIONS VERSUS POLICY LEVERS



"Stylized hierarchy of drivers of urban GHG emissions and policy leverages by urban scale decision making. Cities have little control over some of the most important drivers of GHG emissions and have large control over comparatively smaller drivers of emissions."

Source: International Panel on Climate Change "Human Settlements, Infrastructure and Spatial Planning" (2014)

There are four emerging trends pushing local governments to centre stage:

- Localization of energy;
- Mainstreaming of climate change in land use planning;
- Rapid urbanization; and
- Importance of place in a global economy.

Localization of Energy

Local elected leaders can anticipate a growing role in energy decision making.

Canada's energy system is undergoing a fundamental transformation as cost-competitive distributed energy resources, like solar and wind energy, are disrupting a sector that has been historically centrally planned and managed. Local and community-based solutions for meeting our energy needs, including energy efficiency utilities and thermal grids, are one of the reasons local governments are becoming more involved in energy decision making — because they intersect with traditional land use and infrastructure planning responsibilities.[11]

At the same time, energy projects are increasingly being met with local resistance. Communities across the country are expressing their opposition to pipelines, power lines, fossil-fired power plants, wind and solar farms, hydro projects, and oil and gas resource projects.[12] Local governments across Canada are increasingly being drawn into these discussions.

We need better ways to engage Canadians in energy decision making and local governments are an important part of the solution.

Mainstreaming Climate Change

Provincial and territorial legislation is changing so that energy and climate change policies are part of land use planning. These changes are giving local governments more authority to act.

In addition to more than 50 per cent of GHG emissions, local governments influence, directly or indirectly, almost 60 per cent of Canada's energy consumption.[13] The mainstreaming of climate change into land use planning practices reflects the strong relationship between urban form and the energy efficiency of the built environment. Local governments are the decision-making authority on land use planning. Local governments are also responsible for almost 60 per cent of the nation's infrastructure.[14] Infrastructure is a key factor in determining a community's emissions profile and consumption patterns.[15]

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11 QUEST, "Canada's Energy Transformation: The Role for Smart Energy Communities" (2015).
12 Ibid.
13 Natural Resources Canada, "Integrated Community Energy Solutions: A Roadmap for Action" (2009).
14 FCM, "Cities and Communities: Partners in Canada's Future" (2015).
15 IPCC, "Human Settlements, Infrastructure and Spatial Planning" (2014).

More than half of the world's population lives in cities, and by 2050, this will increase to two thirds. Seventy per cent of global GHG emissions arise from cities.

CITY OF VICTORIA, DISTRICT OF SAANICH, TOWNSHIP OF ESQUIMALT, BC, PHOTO COURTESY EWAN MCINTOSH/FLICKREWAN MCINTOSH/FLICKR

Rapid Urbanization

Global urbanization is proceeding at an unprecedented rate. More than half of the world's population lives in cities.[16] By 2050, this will increase to two thirds.[17] Seventy per cent of global GHG emissions currently arise from cities.[18] By 2050, more urban areas and infrastructure will be built than currently exists.

More than 8 out of 10 Canadians currently live in cities (both urban and suburban in form). This is expected to increase to 85 per cent by 2020 while our population continues to grow.[19] Changes to the way we build cities will be crucial to reducing national GHG emissions, particularly in the building and transportations sectors. Policies that promote a more compact urban form support the uptake of low-carbon technologies for electricity and heating and cooling of buildings like district energy and combined heat and power. They also promote less carbon-intensive forms of transportation and protect natural assets that serve as carbon sinks.

16 United Nations Department of Economics and Social Affairs, "World Urbanization Prospects" (2014).
17 Ibid.
18 IPCC, "Human Settlements, Infrastructure and Spatial Planning" (2014).
19 Natural Resources Canada, "Integrated Community Energy Solutions: A Roadmap for Action" (2009).

Importance of Place in a Global Economy

Place matters in a global economy. Canadian cities, large and small, compete globally for talent and investment. Transportation and the Internet have removed geographic barriers and people are freer to choose where they live. Communities that lead the transition to a low-carbon economy will have a considerable global advantage in attracting talent and investment. Leading cities, in particular, will develop much needed expertise that can be exported to meet the demands of growing urban centres around the world. Getting cities and communities right will not only decide the fate of the planet, but will also determine the quality of urban life for billions of people.

BEST PRACTICES: INCREASING ENERGY SECURITY

When the ice storm hit eastern Ontario in 1998, the City of Markham sent crews to help restore power to thousands of people. Seeing the impact on their neighbours, they considered how they could improve their community's resilience to extreme weather events. Today, Markham District Energy, in addition to providing clean, reliable, and affordable thermal energy to numerous buildings, can maintain heat and power to several critical buildings and community centres in the event of a major grid failure.

Benefits of the Low-Carbon Economy

The transition to low-carbon and climate-resilient communities has many co-benefits that contribute directly to our quality of life and well-being — a priority of all elected leaders.[20]

Top of mind when we think about reducing GHG emissions is the benefit to the environment and protecting ecosystems, biodiversity, and food systems.

Reducing fossil fuel consumption also improves air quality. Promoting active transportation gets us moving. Protecting our urban forest supports our mental health. Access to local food promotes healthier lifestyles. And a healthier population overall means lower health care costs.

The productive time lost to traffic congestion in our cities is wasteful — both for the economy and our well-being. It takes us away from family and friends and leisure and cultural activities — all of which are crucial to our sense of well-being. Providing more transportation options also means greater mobility and connection to community life for people of all ages.

When we harness local renewable or low-carbon energy solutions, our communities are made more energy secure and resilient to climate change impacts like severe weather events.

As energy literacy increases in a community, energy consumers gain more control over how much energy they use and what energy source they choose. In Germany, almost half of the renewable energy produced is owned by individuals, communities, and co-operatives. Germany's energy transition has nurtured the growth of the "prosumer" — someone who consumes and produces energy. The barriers to a smooth energy transition are less technology-based, and more associated with the policy and political changes required to shift to more decentralized sources of energy.

The Vancouver Cohousing Community Solar Project, the first of its kind in BC, incorporates a number of solar photovoltaic and electric vehicle features that are co-operatively-owned.[21]

Our communities spend a lot of money on energy — on average $3,000 to $4,000 per capita each year. Most of these dollars leave our communities. More could stay in residents pockets and circulate in the local economy by improving the efficiency of buildings and transport, as well as harnessing local energy.

Through the development of its Community Energy Action Plan, the City of London, Ontario, has estimated it spends over $1.6 billion each year on all forms of energy. Only 12 per cent of those energy dollars stay within the community and only 59 per cent stay within the province. Reducing London's energy use by 1 per cent annually has the potential to keep $14 million within the local economy, improving both the affordability and competitiveness of the community. Similarly, in Duncan, a town of

BEST PRACTICES: COMMUNITY-OWNED POWER

Nelson, BC is the first Canadian city to build a community solar garden, providing residents with clean energy and credits toward their power bill. An initiative of the city-owned utility, Nelson Hydro, the project allows people to purchase power from the solar panel farm. (See nelson.ca Community Solar Garden)

20 QUEST, "Community Energy Planning: The Value Proposition" (2016).
21 Vancouver Cohousing, "BC's First Community Owned Solar Energy Project" (2016).

5,000 on Vancouver Island, most energy dollars (approximately $15 million) leave the community.[22]

Communities are also understanding how they can leverage their climate and energy strategies to promote economic development. Energy efficiency retrofit programs have been demonstrated to create local jobs by facilitating markets for energy products and services. Working to retain existing jobs, by helping a business lower their energy costs, is often an important local priority.

POLYCON PHOTO ELLISDON.COM

Countries like Germany have found that an informed and engaged population is a valuable partner in the transition to a low-carbon economy. It also represents our best chance of ensuring a democratic and just energy transition.

Mitigating climate change involves the implementation of policies and governance tools that facilitate the transition away from fossil fuel dependence toward a renewable energy economy. However, the introduction of new technologies must not occur at the expense of workers, Indigenous peoples, marginalized communities, or people. There are opportunities to take climate action while addressing social inequities. To do this, climate change policies implemented at a federal, provincial, territorial or local level must foster a "just transition."

The International Labour Organization has defined a "just transition" as "the notion that the transition process to a greener economy has to be inclusive of all stakeholders, and that the unavoidable employment and social costs of the transition have to be shared by all."[23] Increasingly, labour movement representatives in Canada have advocated for a just transition as a cushion from the boom–bust cycle of an oil-dependent economy.[24] Workers' unions in Canada have also been vocal about fostering a transition that increases safe and secure employment opportunities, offers re-training opportunities for workers employed in high-carbon industries, and prioritizes First Nation and community ownership in new low-carbon industries.[25]

BEST PRACTICES: PROTECTING LOCAL JOBS

In Guelph, Ontario, energy prices were putting pressure on Polycon Industries, a car parts plant, to relocate. With the support of the local government, the city-owned utility, and the provincial government, the company now produces its own heat and power, saving $2 million annually on its energy bill and improving their competitiveness in the North American market. The project protects over 400 local advanced manufacturing jobs that were at risk of going south.

22 QUEST, "Community Energy Planning: The Value Proposition" (2016).
23 International Labour Organization, "Climate Change and Labour: The Need for A Just Transition" (2010).
24 Canadian Labour Congress, "Canada Needs a Just Transition" (2016).
25 Canadian Centre for Policy Alternatives, "Creating a green social contract for BC's Resource Workers" (2015).

Indigenous peoples in Canada and around the world are calling for a just transition. Climate policy offers an opportunity to address Indigenous rights. Priorities in each community will be influenced by the community's own local story and regional strengths.

We Must Adapt

As global temperatures rise, scientists agree we can expect even more severe weather-related impacts on our daily lives, local infrastructure, safety, and financial resources.

The fire this year, 2016, in the tinder-dry boreal forest surrounding Fort McMurray, Alberta, and in Fort McMurray itself, will by far overshadow previous records of loss from natural catastrophe.

The 2013 floods in Alberta racked up losses reaching $1.74 billion. The ice storm that hit southern Ontario and eastern Canada in 2013 caused $200 million in insured losses and was the second most costly weather event. More recent flash flooding in Toronto resulted in $940 million in damages, becoming Ontario's most-costly weather event.[26]

The Insurance Bureau of Canada recently estimated the increasing impact of Canadian climate trends on two cities: Halifax Regional Municipality and the City of Mississauga. IBC's findings were sobering. For example, the cumulative cost of the impact of extreme wind events in the Halifax region could reach over $140 million of gross domestic product (GDP) by 2040. In Mississauga, the cumulative impact of freezing rain events could reach over $30 million of GDP by 2040.[27] (Both figures in $2013.)

The IBC report notes that while the poor state of local infrastructure across the country increases the risk of damage from climate-related severe weather events, it also represents an opportunity to adapt infrastructure to a changing climate.

While climate change mitigation is the focus of *Top Asks*, there is an urgent need for increased financial support for local governments to help them respond and adapt to a changing climate, including understanding the health risks of climate change for our communities. In some cases, mitigation strategies also offer adaptation benefits.

ICLEI – Local Governments for Sustainability provides a comprehensive set of resources on climate change adaptation for local governments.[28]

26 CBC News, "Extreme Weather Cost Canada $3.2 billion" (2014).
27 IBC, "The Economic Impacts of the Weather Effects of Climate Change on Communities" (2015).
28 ICLEI – Local Governments for Sustainability, "Adaptation Library," (n.d.).

SECTION 3

Enabling Local Government Action on Climate Change

A new era of national, provincial, territorial, and local government collaboration will be needed to deliver on Canada's international climate change commitments.

IF THERE IS ONE THING that all orders of governments should be able to agree on it is a shared desire to see all Canadians living in resilient, sustainable, and prosperous communities. Federal, provincial, and territorial government can act without delay to support local governments and take action on climate change.

There are many exceptional examples of Canadian local governments demonstrating leadership on climate change. However, not everyone has the same access to the resources and tools necessary to act.[29] A new era of national, provincial, territorial, and local government collaboration will be needed to deliver on Canada's international climate change commitments.

This section focuses on five areas where local governments can have the biggest impact on emissions:

1. **CAPACITY BUILDING** to enable local action;
2. Building low carbon communities by adopting **SMART GROWTH** policies;
3. Transitioning to a cleaner and more efficient energy system by **HARNESSING LOCAL ENERGY** resources;
4. Reducing GHG emissions from the **BUILDING SECTOR**; and
5. Reducing GHG emissions from the **TRANSPORTATION SECTOR.**

The report identifies specific policies for federal, provincial, and territorial governments that would enable local governments to take action on climate change. International and/or Canadian best practices accompany each action, along with an explanation.

These potential actions have been vetted by local elected leaders from across the country through an online survey. Survey comments helped inform the content of the report. They also identified the "top asks" of federal, provincial, and territorial governments (see Section 6).

29 Changing the Conversation, "The Solutions Agenda: A Call to Action for and by Canadians" (2015).

3.1 CAPACITY BUILDING

Local Government Capacity

Federal actions in this section are shown with "**F**." Provincial/territorial actions are shown with "**P**." Where the action applies to both, an "**F** / **P**" is used. They are numbered for easier reference.

Building local capacity to address climate change is crucial. Local governments need the right resources and tools to act effectively.

ACTION: LOCAL GOVERNMENT CAPACITY

F1 / **P1:** *Ramp up climate action by empowering low carbon communities.*

Improving the capacity of local governments to take action on climate change, through measures such as setting GHG targets, energy and emissions inventories and mapping, carbon pricing, and local action plans, are considered in this section.

While more than 50 per cent of Canada's GHG emissions are directly or indirectly influenced by local government decisions, these decisions need a strong federal and provincial foundation. Local governments work with limited regulatory and financial resources, receiving only 8 cents on the tax dollar.[30] As all local elected leaders quickly learn, local governments are also the recipients of a growing list of unfunded downloaded responsibilities. In this environment, building local capacity to address climate change is crucial. Local governments need the right resources and tools to act effectively.

Targets

Targets for reducing GHG emissions should be based on two things: a robust inventory and a commitment to international climate change science. The federal government will need to set ambitious GHG targets for 2025 to put the country on course to net zero emissions by 2050. So will provinces and territories. Setting local targets is a key responsibility for local government.

ACTION: TARGETS IN FEDERAL AND PROVINCIAL LEGISLATION

F2 / **P2:** *Adopt climate change legislation that includes targets for reducing GHG emissions to levels consistent with limiting the rise in average global temperatures to below 2 degrees Celsius and as close to 1.5 degrees Celsius as possible, with net zero emissions by 2050.*

30 Environment and Climate Change Canada, "National Inventory Report 1990-2014" (2016).

RATIONALE: Canada currently lacks comprehensive climate change legislation.[31] Some provinces and territories have taken action to reduce GHG emissions, but their records vary significantly. National legislation would affirm Canada's commitment to act, provide a framework for ongoing policy development, and lay a common foundation for action. Provincial and territorial legislation would do the same. Despite the science, there are still people in every community who deny the need to take action. A clear commitment, with legislated targets, would help all local governments move beyond these debates.

INTERNATIONAL BEST PRACTICE: Finland, Denmark, the United Kingdom, and Mexico are among a small but growing group of countries that have adopted science-led and legally-binding emissions reduction targets to 2050.[32] Several countries have pledged to become carbon neutral, including Iceland, Finland, Sweden, and New Zealand.

CANADIAN BEST PRACTICE: In 2007, the BC government passed the *Greenhouse Gas Reduction Targets Act,* which legislated provincial targets to reduce GHG emissions from a 2007 baseline.[33] Alberta has also legislated emission targets.[34] The *Ontario Climate Change Mitigation and Low-Carbon Economy Act* enshrines Ontario's emission reduction targets in legislation; they cannot be relaxed without amending the legislation, although they can be increased.[35]

ACTION: TARGETS IN LOCAL COMMUNITY PLANS

P3: *Require local governments to incorporate GHG reduction targets, policies, and actions in official community plans.*

RATIONALE: While it might seem strange to suggest that a local elected leader would want to be mandated to include targets, policies, and actions in official community plans, legislation would do several things. First, it acknowledges that meeting Canada's commitment to reducing GHG emissions will require the participation of every local government. Second, it will help local elected leaders focus their efforts on local action plans rather than debating whether or not there is a role for a local government in combatting climate change. And finally, it would ensure a level playing field among local governments when they apply for infrastructure funding tied to achieving climate goals.

The inclusion of energy and climate change policies in official community plans will "mainstream climate change" in land use planning and local government decision-making. The faster this occurs, the more quickly local governments will be able to develop and share best practices.

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31 At time of writing, this situation is expected to change given the federal government's public commitment to combat climate change.

32 Global Legislators, "The Global Climate Change Legislation Study" (2015).

33 Government of British Columbia, "Climate Action Legislation" (2014).

34 Government of Alberta, "Climate Change and Emissions Management Act" (2003).

35 Government of Ontario, "Climate Change Mitigation and Low-Carbon Economy Act (Bill 172)" (2016).

CANADIAN BEST PRACTICE: BC's *Local Government (Green Communities) Statutes Amendment Act* requires all municipalities to set GHG emission targets, policies, and actions in their official community plans (OCPS) and regional growth strategies (RGS), building on the work of many national, provincial, and local organizations.[36] As of 2015, at least 114 of BC's 162 local governments have a community energy and emissions plan (CEEP), representing three quarters of the province's population and the highest percentage in Canada.[37] While these plans vary significantly in quality, they are important steps forward.

Data, Inventories, and Mapping

The development of energy and emissions inventories has been identified as the most important tool to promote local action on climate change by local government officials.[38] A clear understanding of how and where energy is used in a community, and where carbon is released and stored, is necessary to develop local targets and action plans, and promote implementation.

Despite the importance of a good inventory, there are not many policies that support the development and monitoring of inventories in Canada.[39] By helping to address this policy gap, federal, provincial, and territorial governments would help to accelerate local action on climate change.

Energy mapping is an important tool to identify opportunities to optimize the energy efficiency in a community. However, few local governments have access to the data and/or resources necessary to use this tool effectively to guide local decision making.

Developing energy and emissions inventories takes time and money. Many local governments are unable to access the data they need or on a consistent basis.

ACTION: ENERGY AND EMISSIONS DATA

F3: *Empower Environment Canada to provide every Canadian local government with community energy and emissions data.*

P4: *Work with the federal government to provide every local government with community energy and emissions data.*

RATIONALE: Developing inventories takes time and money. Many local governments are unable to access the data they need or on a consistent basis. Smaller communities lack resources to develop an inventory. Federal, provincial, and territorial governments could save communities considerable time and money if they collected and provided energy and emissions inventory data to all local governments. This would improve the quality

36 Government of British Columbia, "Frequently Asked Questions about Bill 27 Local Government (Green Communities) Statutes Amendments Act" (2008).
37 Sustainable Prosperity, "Provincial Climate Action Plans and Local Governments: Lessons from BC" (2016); Getting to Implementation, "Project Update" (2014).
38 Getting to Implementation, "National Report on Community Energy Plan Implementation" (2015).
39 Getting to Implementation, "National Report on Policies Supporting Community Energy Plan Implementation" (2015).

of inventories and reporting across the country and allow local governments to direct limited resources toward implementation.

Federal, provincial, and territorial governments also collect a lot of climate and energy-related data. For instance, provincial governments collect vehicle kilometres travelled (VKT) data when a vehicle license is renewed. Access to provincial VKT data would strengthen local inventories.

Federal, provincial, and territorial governments are often much better positioned to secure the release of agency data. Governments across Canada are embracing the principle of open data as a way to promote innovation; the release of climate and energy-related data should be made a priority.

Providing community climate and energy data would level the playing field for local governments across Canada. Today there are wide differences in access to information among communities. With the expectation that infrastructure funding will be tied to achieving climate goals, it is critical that all local governments have the information they need to effectively compete for those dollars — not just those who can afford to develop inventories or have better access to data.

The methodology used to develop inventories varies significantly across the country. A standardized approach, based on the GPC global protocol would improve consistency and comparability of inventory reporting.

Finally, the methodology used to develop inventories varies significantly across the country. A standardized approach, based on the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC), would improve consistency and comparability of inventory reporting and allow Canadian cities to better profile and share their work internationally. The Federation of Canadian Municipalities (FCM) and the Partners for Climate Protection (PCP) program of ICLEI – Local Governments for Sustainability are aligning with the GPC, recognizing the need to balance precision with simplicity for small-urban, rural, and remote communities.

INTERNATIONAL BEST PRACTICE: The World Resources Institute, C40 Cities Climate Leadership Group, and ICLEI partnered to create a protocol standard for measuring GHGs in cities called the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC).[40] The GPC has been adopted by many initiatives and programs, including the Compact of Mayors[41] and over 100 cities.[42]

Amsterdam created an energy atlas to allow the development of "what if" scenarios to optimize plans for energy efficiency. The city provides its energy information as "open data" to promote engagement and innovation. Amsterdam produced the energy atlas in collaboration with local stakeholders, building a bottom-up process that grows support for change.[43]

CANADIAN BEST PRACTICE: Where the development of inventories has been supported in a number of areas in Canada, such as Ontario, British Columbia, and

40 Greenhouse Gas Protocol, "Global Protocol for Community-Scale Greenhouse Gas Emission Inventories" (2012).
41 Compact of Mayors, "Cities Committed to the Compact of Mayors," (n.d.).
42 Greenhouse Gas Protocol, (2012).
43 United Nations Environment Program, "District Energy in Cities: Unlocking the Potential of Energy Efficiency and Renewable Energy" (2015).

the Northwest Territories, more advanced energy planning and implementation is found. Canada has an opportunity to build upon BC's commendable tool called the Community Energy and Emissions Inventory (CEEI).[44] The CEEI provides energy and emissions data to all local governments in BC.

It has been estimated that the CEEI has avoided over $1.5 million in community costs and, in turn, has accelerated the planning process for local governments in the province.[45]

This program along with a suite of enabling, regulatory, and funding tools has reduced barriers for BC communities to take action on climate change.[46] However, it is important to note that additional data would be needed to align the CEEI with the GPC.

Ontario's Municipal Energy Plan Program and Quebec's Climat Municipalités provide funding to local governments to develop inventories as does the FCM Green Municipal Fund.

Carbon Pricing

The cost of releasing carbon into the atmosphere is escalating, which could be attributed to the loss of crops from a "false spring,"responding to the spread of an infectious disease, or property damage caused by an extreme weather event. Putting a price on carbon, either through a carbon tax or cap and trade system, begins to tie these costs to the activities that emit GHGs. Simply put, a price on carbon provides a financial incentive to reduce emissions. On its own, carbon pricing is unlikely to achieve net zero emissions by 2050. Additional policies that promote innovation will also be necessary. However, carbon pricing is recognized as an essential market-based tool for combatting climate change.[47]

As explained below, local governments have a strong interest in seeing this market tool implemented. Local governments under a cap and trade system will want to consider how they can participate in the market as well as benefit from the revenue that is raised. Likewise, local governments under a carbon tax regime will want to consider how they might benefit. For instance, the carbon tax paid by local governments in BC is reimbursed when they make a commitment to reducing GHG emissions in their communities.

ACTION: CARBON PRICING

F4: *Put a price on carbon to serve as a baseline for all provinces and territories. Increase annually to support achieving zero emissions by 2050.*

P5: *Establish a price on carbon.*

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44 BC Ministry of the Environment, "Community Energy and Emissions Inventories (CEEI) Technical Methods and Guidance Document 2007—2010" (2014).

45 Getting to Implementation, "National Report on Policies Supporting Community Energy Plan Implementation" (2015).

46 Sustainable Prosperity, "Provincial Climate Action Plans and Local Governments – Lessons from BC" (2016).

47 Broadbent Institute, "A Green Entrepreneurial State as Solution to Climate Federalism" (2016).

RATIONALE: A price on carbon would create a more positive environment for all local governments to take action on climate change. A national baseline would level the playing field across the country, supporting action by all Canadian communities while respecting regional differences in the chosen approach to carbon pricing. The price set for carbon must be increased regularly to achieve zero emissions by 2050.

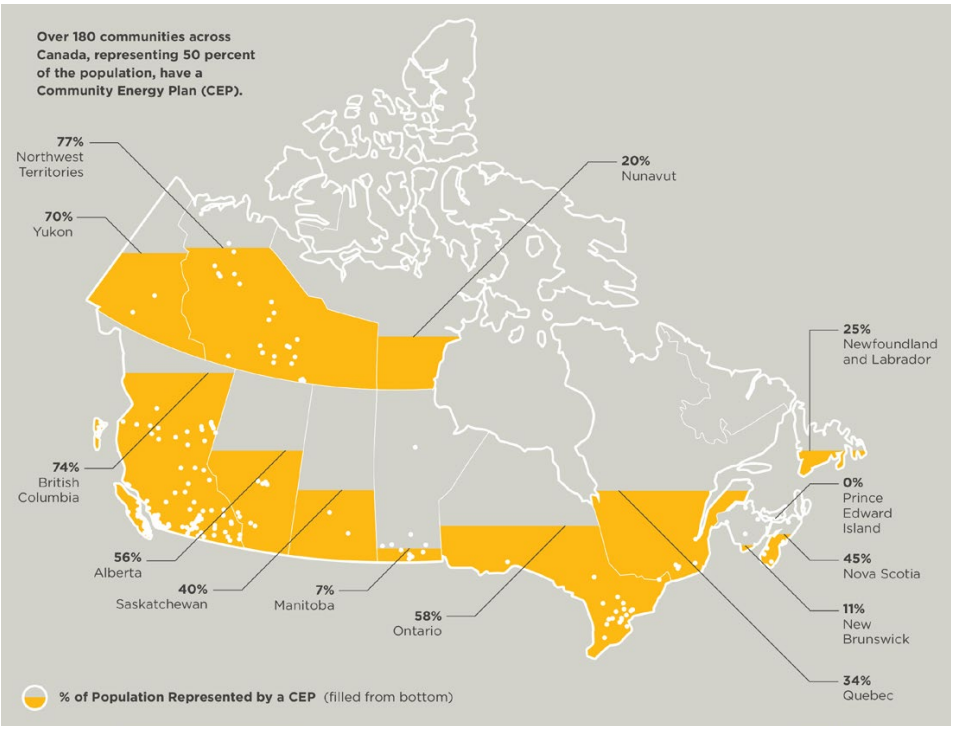
CANADIAN BEST PRACTICE: There remains considerable debate in Canada about what constitutes best practice in carbon pricing. BC's carbon tax has been in place since 2008 and Quebec's cap and trade system was launched in 2013. At the time of writing, Alberta is proceeding to establish a carbon tax while Ontario is designing a cap and trade system similar to that of Quebec and California as a member of the Western Climate Initiative.[48]

Today, more than 180 communities, representing more than half of Canada's population, have a community energy plan.

INFOGRAPHIC: GETTINGTOIMPLEMENTATION.CA

Local Action Plans

Many local governments in Canada are taking action to reduce GHG emissions in their community. For more than 20 years, the Partners for Climate Protection (PCP) program has provided a national platform for engaging local government leaders. PCP has supported and showcased hundreds of innovative local projects and initiatives that are reducing GHG emissions and building more resilient, sustainable, and prosperous communities. For 10 years, Quality Urban Energy Systems of Tomorrow (QUEST) has promoted community energy planning across Canada.[49] Today, more than 180 communities, representing more than half of Canada's population, have a community energy plan.[50]



Despite significant progress over the last decade or more, we are far from achieving the outcomes we need to achieve net zero emissions by 2050. Many local governments still face substantial challenges to developing plans.

48 WCI, "Western Climate Initiative," (n.d.).
49 QUEST, "Quality Urban Energy Systems of Tomorrow," (n.d.).
50 GTI, "Getting to Implementation," (n.d.).

Implementation can be hindered by the lack of funds or appropriately-trained staff. Some communities have yet to address emissions issues as these capacity concerns often become prohibitive barriers to action.

Funding

Infrastructure is a significant driver of GHG emissions.[51] The continued expansion of fossil fuel based infrastructure will only serve to lock in emission profiles and consumption patterns for decades.[52] Federal, provincial, and territorial governments have a significant opportunity to influence the transition to climate-resilient and low-carbon infrastructure by tying infrastructure funding to low-carbon solutions.

The federal Gas Tax Fund (GTF) is a well-developed model for a federal financial support program for local governments. It has successfully supported and enabled the development of sustainable infrastructure in Canadian communities. However, in some cases, like in New Brunswick and Manitoba, the majority of GTF resources have been used to upgrade roads and bridges, with a disproportionately lower percentage of funds being used to improve active transportation or public transit infrastructure.[53] This program, as well as similar ones, could be strengthened if funds were allocated with stricter requirements for local governments to ensure that funding supports sustainable infrastructure development and contributes to reducing reliance on fossil fuels.

The federal government currently spends about $2.2 billion in subsidies for the fossil fuel sector.[54] These subsidies and other forms of financial support for fossil fuel industries should be redirected toward low-carbon solutions, especially at the local level.

The federal government currently spends about $2.2 billion in subsidies for the fossil fuel sector. These funds should redirected toward low-carbon solutions, especially at the local level.

ACTION: INFRASTRUCTURE SPENDING

F5 / **P6** *Line up sustainable infrastructure spending programs with local climate action. Allocate subsidies to GHG-friendly industries.*

RATIONALE: Local governments primarily rely on property taxes and user fees to fund their operations. Competing demands for limited funds can make it difficult for local governments to fund the implementation of climate change action plan initiatives despite their efficacy.

Canadian local governments are also responsible for over 60 per cent of the country's infrastructure.[55] Much of this infrastructure is aging and needs to be replaced. At the same time, new infrastructure is built every day to meet the demands of a growing population. This represents an opportunity to transition to low-carbon solutions,

51 IPCC, "Human Settlement, Infrastructure and Spatial Planning" (2014).
52 Ibid.
53 Manitoba Municipal Governments, "Federal Gas Tax Fund" (2014); and Local Governments New Brunswick, "Gas Tax Fund" (2016).
54 Carol Linnitt, "Canada subsidizes the fossil fuel industry by $2.7 billion every year" (2015).
55 Federation of Canadian Municipalities, "The Road to Jobs and Growth: Solving Canada's Municipal Infrastructure Challenge" (2012).

but only if local governments can make long term plans predicated on sustainable infrastructure funding from federal, provincial, and territorial governments.

CANADIAN BEST PRACTICE: The federal government endowed the FCM with $550 million to establish the Green Municipal Fund (GMF). The purpose of the GMF is to improve air, water, and soil, and to mitigate the impacts of climate change.[56] The federal government announced an additional $31.5 million for the GMF in 2016.

The federal Gas Tax Fund (GTF) provides funding for local infrastructure projects. To date, through the GTF, the federal government has invested over $13 billion in Canadian municipalities and the government aims to invest another $22 billion through the GTF over the next 10 years.[57]

In some provinces and territories, such as Yukon, Nunavut, and Newfoundland and Labrador, the GTF is directed toward supporting Integrated Community Sustainability Plans (ICSP) developed by municipalities.[58] In Prince Edward Island, municipalities are only eligible for funding from a $37.5 million GTF pool if they complete ICSPs that "contribute to at least one of the federally desired outcomes of cleaner air, cleaner water, or reduced GHGs."[59]

In the Northwest Territories, in order to access the GTF, communities are required to complete a community energy plan as part of an ICSP.[60] In Nova Scotia, municipalities must complete a municipal climate action plan and make an amendment to their integrated sustainability plans. Nova Scotia is also the only province that requires local governments to incorporate climate adaptation into ICSPs.[61]

This approach encourages a comprehensive process of creating community energy profiles, evaluating potential energy opportunities, and implementing, monitoring, and revising the plan as necessary.[62]

BC's Climate Action Revenue Incentive Program provides funding to municipalities, equivalent to the carbon taxes they have paid, when they become signatories to the Climate Action Charter.[63] By signing the charter, municipalities agrees to become carbon neutral in their corporate operations, measure and report on their community emissions profiles, and create complete, compact, energy-efficient rural and urban communities. The funding has supported local government to achieve these goals. In 2014, almost 25 per cent of BC municipalities reported achieving carbon neutrality in their operations.[64]

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56 Federation of Canadian Municipalities, "Green Municipal Fund" (2016).
57 Infrastructure Canada, "Federal Gas Tax Fund" (2014).
58 Municipalities Newfoundland, "ICSP Assistance" (2010); Infrastructure Canada, "Administrative Agreement on Gas Tax Fund (Nunavut)" (2014); Yukon Department of Community Services, "Gas Tax Fund" (2013).
59 Government of PEI, "Canada & PEI agreement on the transfer of Federal Gas Tax Revenues" (2005).
60 Arctic Energy Alliance, "Communities," (n.d.).
61 Atlantic Climate Adaptation Solutions, (n.d.).
62 Arctic Energy Alliance, "Communities," (n.d.).
63 Government of British Columbia, "Climate Action Charter" (2007).
64 Government of British Columbia, "CARIP Program" (2014).

Multilevel Governance

Climate change is a complex issue with implications for all sectors of society. It will require the cooperation of all orders of government to tackle it and local elected leaders need a seat at the table. As a consequence of our constitutional history, Canada does not have the same structures in place as other countries that promote all levels of government working together to solve complex issues.[65] This is a disadvantage we must overcome. A new era of national, provincial, territorial, and local government collaboration will be necessary to ensure Canada meets its climate change commitments.

ACTION: PARTNERS FOR CLIMATE PROTECTION

F6 / **P7:** *Support the Partners for Climate Protection program to close the gap between national/provincial/territorial policy and local action on climate change.*

RATIONALE: The Partners for Climate Protection (PCP) program is currently being remodelled to reflect the goals of the Paris Agreement and to embrace new partners and members. The PCP offers a unique platform in Canada to close the gap between national, provincial, and territorial policy and local action on climate change.

CANADIAN BEST PRACTICE: FCM and ICLEI – Local Governments for Sustainability have built a successful platform to promote local action on climate change through the Partners for Climate Protection program. The PCP has a robust membership and knowledge base. FCM has brought a federal voice and access to communities to the partnership while ICLEI has brought considerable expertise in mitigation and adaption, as well as access to international programs, tools, and networks.

Local Planning

Over 180 Canadian communities have developed some form of energy and/or emissions plan, although the quality of community energy planning varies significantly.[66] Some CEPs are being developed at a regional scale or in clusters. There are more than 640 provincial and territorial policies that in some way support the development or implementation of CEPs. However, more work is needed to increase the number and quality of CEPs as well as support successful implementation.[67]

The ICLEI Building Adaptive and Resilient Communities (BARC) program provides municipalities with a tool to support them in climate change mitigation and adaptation planning. The program complements the PCP. Assessing the vulnerabilities of local

65 Robert Young, "Multilevel governance and public policy in Canadian municipalities: Reflections on research results" (2013) Canadian Political Science Association Conference.

66 Getting to Implementation, "National Report on Community Energy Plan Implementation September 2015" (2015).

67 Getting to Implementation, "National Report on Policies Supporting CEP Implementation" (2015).

A suite of complementary policies has resulted in BC having the highest percentage of local governments in Canada with a community energy plan.

SURREY PHOTO COURTESY SURREY.CA

energy systems to extreme weather and increasing local resilience is an important outcome of a CEP. Participation in the program is cost-prohibitive to many local governments, yet it would serve to identify and strengthen the connections between mitigation and adaptation.

ACTION: COMMUNITY ENERGY PLANS

P8: *Provide funding, data, and capacity support to encourage the development of high-quality community energy plans.*

RATIONALE: A community energy plan (CEP) is an important tool to improve end-user energy efficiency in a community, reshape urban forms to support low-carbon energy supply and distribution, and coordinate urban infrastructure systems to reduce GHG emissions.[68] Not all local governments have the capacity to develop a CEP.

CANADIAN BEST PRACTICE: The Ontario government offers a voluntary program that provides successful local government applicants with funding for 50 per cent of eligible costs, up to a maximum of $90,000, to develop a CEP.[69] This program is successfully increasing the number of Ontario communities doing community energy planning.[70]

A suite of complementary policies and programs in BC has resulted in that province having the highest percentage of local governments in Canada with a CEP. The Community Energy and Emissions Inventory (CEEI) was fundamental to the implementation of community-based energy conservation, efficiency, and integrated-planning initiatives.[71]

In British Columbia, Alberta, and Quebec carbon pricing policies have played a role in driving the implementation of CEPs.[72]

68 IPCC, "Human Settlements, Infrastructure and Spatial Planning" (2014).
69 Ontario Ministry of Energy, "Municipal Energy Program" (2013).
70 Getting to Implementation, "National Report on Policies Supporting CEP Implementation" (2015).
71 Ibid.
72 Ibid.

3.2 SMART GROWTH

A core responsibility for local elected leaders is making decisions on land use. Land use planning decisions influence energy consumption and emissions for decades. These decisions can help reduce emissions or make climate change worse.

Smart growth principles support low-carbon and climate-resilient communities by promoting a more compact urban form. Polices that promote smart growth principles also contribute to the well-being of people living in urban environments (see Section 2.3: Benefits of the Low-Carbon Economy).

Actions focused on helping local governments reduce emissions by protecting natural capital and promoting a more compact urban form are considered in this section.

Natural Capital

Natural capital — forests, wetlands, and floodplains — play an essential role in storing carbon as well as providing a variety of other services like filtering drinking water, protecting pollinator habitat, and managing stormwater.

A more compact urban form protects natural capital by curbing urban sprawl. Policies that protect and enhance natural capital within an urban environment combat climate change, improve air quality, and promote well-being.

Local governments face strong resistance to protecting natural capital from the development industry. Most lack the tools needed to build a compelling case for protecting natural capital.

ACTION: NATURAL CAPITAL

F7: *Fund local government baseline assessments of natural capital. Include the carbon storage value of natural capital (e.g., forests, wetlands, and floodplains) in national GHG accounting.*

RATIONALE: The protection of natural capital should be part of a national climate change strategy. Local governments face strong resistance to protecting natural capital from the development industry. Most lack the tools needed to build a compelling case for protecting natural capital.

The report *Planning for Health and Prosperity and Growth in the Greater Golden Horseshoe: 2015–2041* recommends promoting the protection and enhancement of natural systems as one way to "mainstream climate change" into land use planning practices.[73]

73 Ontario Municipal Affairs and Housing, "Planning for Health and Prosperity and Growth in the Greater Golden Horseshoe: 2015-2041" (2015).

BEST PRACTICES: VALUING NATURAL CAPITAL

The Town of Gibsons, BC is the first community in North America to deem nature as its most valuable asset.

GIBSONS, BC PHOTO COURTESY NADENE REHNBY

CANADIAN BEST PRACTICE: The Town of Gibsons, BC is the first community in North America to deem nature as its most valuable asset. Gibsons is integrating natural assets into its municipal asset management practices.[74]

Compact Urban Form

A more compact urban form supports the adoption of low-carbon technologies for electricity as well as the heating and cooling of buildings, like district energy and combined heat and power (see Section 3.4 Harnessing Local Energy).

It also reduces trip distance, promotes more active forms of transportation like walking and cycling, and is more supportive of transit. Density, land-use mix, connectivity, and accessibility all work together to reduce transportation emissions in the urban environment.

A compact urban form also protects natural capital, agricultural lands, and local food production.

ACTION: URBAN SPRAWL

P9: *Introduce policies that promote more compact cities and curb urban sprawl.*

74 Town of Gibsons, "Toward an Eco-Asset Strategy in the Town of Gibsons" (2015).

RATIONALE: Provincial and territorial governments have a central role to play in providing local governments with planning tools to curb urban sprawl.

CANADIAN BEST PRACTICE: BC's *Growth Strategies Statutes Amendment Act* (1995) directed 68 per cent of all population growth to urban centres and frequent transit development areas between 2011 and 2013.[75]

Ontario's *Growth Plan for the Greater Golden Horseshoe* has reduced land consumption rates in one of the fastest growing regions in North America. Between 1991 and 2001, the population of the Greater Toronto and Hamilton Area (GTHA) grew by 19 per cent while the urban area expanded by 26 per cent.[76] In contrast, between 2001 and 2011, the population of the GTHA grew by 18 per cent and the urban area expanded by only 10 per cent.[77] The advisory panel that recently reviewed the growth plan has recommended even more aggressive intensification and density targets to achieve compact, low carbon communities.[78]

ACTION: LAND USE PLANNING

P10: *Change legislation so that energy and climate change policies are part of land use planning.*

RATIONALE: Local elected leaders may struggle to have climate change considered by their colleagues. There may be a perception that climate change is not within the core mandate of a local government. It may also not be the priority of the local administration, especially when it considers the lack of jurisdictional authority to easily implement policies that support emission reductions. Changing legislation so that energy and climate policies are integrated into land use planning would make a difference.

CANADIAN BEST PRACTICE: The BC *Local Government Statutes Amendment Act* (Bill 27) empowers local government to take action by mandating GHG reduction targets in all Official Community Plans (OCP) and Regional Growth Strategies (RGS).[79] Quebec's *Sustainable Regional and Local Land Use Planning Act* (Bill 47) also mandates goals for energy efficiency and reducing emission in local land use plans and regional growth strategies.[80] Additionally, Ontario's Provincial Policy Statements, which guide local government planning policy, were recently amended to include references to climate change and energy.[81]

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75 Getting to Implementation. "National Report on Policies Supporting Community Energy Plan Implementation" (2015).
76 Ontario Municipal Affairs and Housing, "Planning for Health and Prosperity and Growth in the Greater Golden Horseshoe: 2015-2041" (2015).
77 Ibid.
78 Ibid.
79 Government of British Columbia, "Local Government Statutes Amendment Act," (n.d.)
80 Bill 47, Government of Quebec, "Sustainable Regional and Local Land Use Planning Act" (2012).
81 Ontario Municipal Affairs and Housing, "Provincial Policy Statement" (2014).

3.3 HARNESSING LOCAL ENERGY

Canada's energy system is undergoing a fundamental transformation as cost-competitive distributed energy resources, like solar and wind energy, are disrupting a sector that has been historically centrally planned and managed.

A decentralized model for electricity ownership democratizes energy production by creating new opportunities for public engagement, and it strengthens energy security in communities that no longer have to depend on complex transmission networks to source electricity from distant centralized utilities.

The growth of distributed energy solutions within communities is increasing system efficiency, reducing system costs, lowering energy bills, promoting clean vehicles, increasing energy efficiency and competitiveness, reducing emissions, improving system reliability and resilience, and enhancing energy security — all good news for communities.

Actions focused on helping local governments harness renewable energy and thermal energy are considered in this section.

Renewable Energy

The International Energy Association projects significant growth in renewable energy over the next five years and recommends that governments work to eliminate policy barriers that prevent its deployment.[82]

ACTION: RENEWABLE ENERGY

F8 / **P11:** *Develop a renewable energy strategy that promotes local ownership models. Enable publicly-owned utilities to develop renewable energy strategies.*

F9: *Fund community- and Indigenous-owned renewable-energy capacity.*

P12: *Implement a "feed-in-tariff" program that promotes individual, community, and Indigenous-owned projects.*

RATIONALE: Programs that promote local ownership models increase the societal acceptance of renewable energy projects. Community-shared ownership, cooperative, and local government business models engage communities in the energy transition and build consumer understanding.

82 International Energy Association, "Medium-term Renewable Energy Market Report" (2015).

Over the last decade, Indigenous ownership and co-ownership of renewable energy projects has been a significant source of economic development in Indigenous communities.[83] These projects have also enabled remote Indigenous communities to phase-out dependence on diesel generators which have had severe, deleterious impacts on community health and local environments.[84] However, communities and First Nations across Canada that hope to pursue renewable energy development face a number of prohibitive barriers including financial restrictions and limited capacity.[85] Federal, provincial, and territorial programs have played a big role in lifting these barriers and providing communities with the resources to engage in renewable energy development.[86]

INTERNATIONAL BEST PRACTICE: The European Union's *Renewable Energy Directive* requires the EU to source at least 20 per cent of its energy needs from renewable sources by 2020. This would be achieved by individual countries meeting their national targets.[87] All EU countries are also required to source 10 per cent of their transportation fuels from renewable sources by 2020.[88] Each country is required to specify its plans for meeting the 2020 targets in its national action plan, which details individual renewable energy targets for electricity, heating and transportation sectors; the planned mix of renewable energy technologies; and policy measures to meet these targets.[89]

Germany is democratizing its energy sector through the transition to renewable energy by promoting community ownership of renewable energy projects. By doing so, the country is encouraging the rise of the "prosumer" while increasing public acceptance of renewable energy projects. In 2012, 47 per cent of Germany's renewable energy production was owned by individuals, communities and co-operatives. The number of German energy co-operatives grew from 66 to 888 between 2001 and 2013.[90]

Many other countries in the European Union have promoted the development of community-owned energy projects. The United Kingdom, for instance, has developed a community energy strategy that places communities at the centre of national renewable energy planning. This UK strategy aims to ensure that by 2015 "it should be the norm for communities to be offered the opportunity of some level of ownership by commercial developers."[91] The *Danish Promotion of Renewable Energy Act* requires wind turbine projects to offer for sale at least 20 per cent of ownership shares to local citizens.[92]

Germany is democratizing its energy sector through the transition to renewable energy by promoting community ownership of renewable energy projects.

83 Chris Henderson, *Aboriginal Power: Clean Energy and the Future of Canada's First Peoples* (2013).
84 Ibid.
85 Ibid.
86 Ibid.
87 European Commission on Energy, "Renewable Energy Directive" (2016).
88 Ibid.
89 European Commission on Energy, "National Energy Plans" (2016).
90 Germany, "Energy Transition: The German Energie Wende" (2016).
91 UK Department of Energy and Climate Change, "Community Energy Strategy" (2014).
92 Danish Government, "Promotion of Renewable Energy Act" (2008).

CANADIAN BEST PRACTICE: Prince Edward Island (PEI) produces 10 per cent of its energy from wind power, more than any other province. Its success is directly attributed to public ownership which has resulted in greater public acceptance of wind power.[93]

In 2011, Nova Scotia initiated the world's first Feed in Tariff (FIT) program for locally-based renewable energy projects — the Community Feed in Tariff (COMFIT).[94] Through this program, small-scale renewable energy producers were guaranteed a fixed rate for electricity that they fed into the grid.[95] The COMFIT program has added more than 100 MW of community-based renewable energy projects to the grid. The Nova Scotia government suspended the program in 2015, saying it had "achieved its objectives."[96] In response to this cancellation, Nova Scotia residents, climate action organizations, and renewable energy industry representatives expressed their disappointment.[97]

By 2012, the Ontario Feed-in-Tariff (FIT) program had attracted $27 billion in private sector investment, introduced over 30 new clean energy companies to the province, and created more than 20,000 jobs while producing enough renewable energy to power 1.2 million homes.[98] The Ontario *Green Energy and Economy Act, 2009* amended the *Co-operative Corporations Act* by providing support for renewable energy co-operatives through the FIT program.

Similar to Nova Scotia's COMFIT program, the FIT program offers a fixed rate of return to renewable energy producers for electricity that they 'feed' into the provincial grid.[99] The FIT program favours projects with Aboriginal, community, or municipal participation.[100] Ontario's microFIT program provides homeowners and other eligible participants with the opportunity to develop a small or "micro" renewable electricity generation project on their property, such as solar rooftop projects.[101] However, critiques of Ontario's FIT program included recommendations to set more rigorous goals and targets for improving community involvement in renewable energy development.[102] Many large solar and wind projects have met significant opposition because the energy developers did not fully engage the local communities in decision making.

Established in 2011, the ecoENERGY for Aboriginal and Northern Communities Program was established to provide funding to Indigenous and northern communities for renewable energy projects.[103] The program offered funds to successful applicants

93 DESMOG Canada, "The Maritimes: Canada's Secret Trailblazer in Wind Energy" (2016).
94 Energy Nova Scotia, "Community Feed-in Tariff Program Facts" (2011).
95 Ibid.
96 Ibid.
97 Carol Linnitt, "Nova Scotia Pulls Plug on World's First Community Renewable Energy FIT" (2015) *Desmog Blog*; Diane Bailey, "Analysis: Nova Scotia Pulls Plug on Community Feed in Tariff," *Windpower Monthly* (2015).
98 Getting to Implementation. "National Report on Policies Supporting Community Energy Plan Implementation" (2015).
99 Ontario Power Authority, "FIT Program" (2016).
100 Ibid.
101 Ontario Power Authority, "Microfit Program" (2016).
102 Environmental Defence, "Ontario Feed in Tariff Review" (2011).
103 Indigenous and Northern Affairs Canada, "ecoENERGY for Aboriginal and Northern Communities Program" (2015).

to support the evaluation of renewable energy development opportunities, purchase of equipment, or every-day operational expenses.[104]

ACTION: WASTEWATER BIO-GAS

P13: *Promote carbon-neutral wastewater treatment by harnessing bio-gas production.*

RATIONALE: Considerable energy is used to pump and treat water and wastewater. These systems are estimated to use up to 50 per cent of a local government's total energy consumption.[105] Wastewater treatment facilities are also a source of GHG emissions (e.g., methane). Biogas (methane and carbon dioxide) is an underutilized, local, and renewable energy source. Biogas-fueled combined heat and power (along with nutrient recycling through the land application of biosolids and water reuse) utilizes this local energy source while reducing emissions. Provincial and territorial governments have a role to play in supporting local innovation in wastewater treatment practices.

Thermal Energy

District energy systems offer a highly-efficient source of heating and cooling for buildings. Community energy plans continue to identify district energy as an important strategy to conserve energy and reduce emissions while providing a more secure local energy supply.[106] District energy systems, when combined with combined heat and power, can achieve double the efficiency of a traditional fossil fuel power.[107] At least 128 operating district energy systems have been identified in Canada, with the majority in Ontario, and their numbers have been growing in recent years.[108]

WHAT IS A DISTRICT ENERGY SYSTEM? District energy systems supply thermal energy (heating and/or cooling) to multiple buildings, as either water or steam, through highly-insulated underground pipes.

WHAT IS COMBINED HEAT AND POWER? Combined heat and power produces electricity and thermal energy from a single fuel source like natural gas or biomass. Unlike traditional power generation, waste heat is captured and distributed to end users, thereby significantly improving energy efficiency.

Communities need significant resources to adopt thermal energy.

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104 Ibid.

105 Ontario Municipal Affairs and Housing, "Planning for Health and Prosperity and Growth in the Greater Golden Horseshoe: 2015-2041" (2015).

106 Government of British Columbia, "Exploring Transformational Change: Local Government Climate Change Pathways to 2050" (2014).

107 Ontario Sustainable Energy Association, "The New District Energy: Building Blocks for Sustainable Community Development" (2008).

108 Canadian Industrial Energy End-use Data and Analysis Centre, "District Energy Inventory for Canada" (2015).

Biomass heating plant with district heating at Université St. Anne in Church Point, Nova Scotia.

PHOTO COURTESY FDAVID DODGE/FLICKR

ACTION: THERMAL ENERGY

F10 / **P14:** *Develop a thermal energy strategy, including funding and capacity support, to promote the uptake of district energy, combined heat and power, and other thermal energy systems in communities.*

RATIONALE: Federal, provincial, and territorial governments have a significant opportunity to influence the uptake of thermal energy systems in Canada. Annual thermal energy produced in Canada accounts for less than 2 per cent of total building energy consumption for space heating, space cooling, and water heating.[109] This represents a significant opportunity for improving the energy efficiency of the building sector. A thermal energy strategy would provide policy direction, financing, and planning tools to support local governments deploy district energy, combined heat and power, and other thermal energy systems in their communities.

A recent review of leading British Columbia communities confirmed the importance of district energy in the transition to a low-carbon economy.[110]

INTERNATIONAL BEST PRACTICE: District energy systems, with heat provided by combined heat and power systems, are a key part of low carbon communities in European Union.[111]

In Copenhagen, a district energy system supplies 97 per cent of the city with its heating needs.

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109 Ibid.

110 Government of British Columbia, "Exploring Transformational Change: Local Government Climate Change Pathways to 2050" (2014).

111 Ibid.

Thermal energy in Canada accounts for less than 2 per cent of total building energy consumption for space heating, space cooling, and water heating. This represents a significant opportunity for improving the energy efficiency of Canada's building sector.

NESJAVELLIR GEOTHERMAL POWER PLANT IN ÞINGVELLIR ICELAND, PHOTO COURTESY GRETAR ÍVARSSON/FLICKR

Due to the importance of district energy to combatting climate change, the United Nation Environment Program (UNEP) has launched a campaign to promote the uptake of district energy in cities. They identify several best practices that support the uptake of district energy by local governments including: incentives for combined heat and power (CHP), national regulation on tariffs, incorporation of district energy into building efficiency standards and labels, supportive tax regimes, clear planning guidance and regulations that provide local governments with a mandate to act, polluter taxes, grants and subsidies, and cities engaged in the design and development of vertically-integrated provincial and national polices.[112]

CANADIAN BEST PRACTICE: The BC Energy Plan and Ontario Long-term Energy Plan both promote the expansion of distributed energy resources like renewable energy, district energy and storage. The Geothermal Manitoba Funding Program has assisted over 1,000 Manitobans to install geothermal heat pump technology in their homes and buildings. It has also supported five district geothermal systems.[113] The federal government and FCM recently supported the development of a district energy feasibility study in the City of Burlington.[114] Markham District Energy provides efficient heating and cooling to over 9 million square feet of building. The Alexandria district energy utility in Richmond, BC, provides renewable geo-exchange heating to over 600 residents and commercial units. It provides a dividend to the local government and created jobs for construction and ongoing operations.[115]

112 UNEP, "District Energy in Cities" (2015).
113 Getting to Implementation. "National Report on Policies Supporting Community Energy Plan Implementation" (2015).
114 Federation of Canadian Municipalities, "Green Municipal Fund" (2015).
115 City of Richmond, "Alexandria District Energy Utility," (n.d.).

3.4 BUILDING SECTOR

The building sector represents 12 per cent of Canada's total GHG emissions.[116] When electricity is included, the number grows to 20 to 30 per cent. Our homes account for about half of these emissions.

Emissions from the building sector have increased since 1990.[117] Cities are expected to use 75 per cent more energy compared to 2006 levels in 2050.[118] Without intervention, this sector will continue to add to Canada's GHG emissions.

Energy efficiency is the quickest and least expensive means to reduce emissions from the building sector.[119] Since the majority of buildings are found in cities, local government energy policies and programs can have a big impact on the emissions from this sector.

Improving the capacity of local governments to reduce emissions from the building sector through building code amendments, energy retrofits and mandatory disclosure of the energy performance of homes and buildings are considered in this section.

Building Code

While the energy standards found in Canada's building codes are improving, there is more energy efficiency to be achieved in the building sector.[120] Retrofitting homes that have poor energy performance is more challenging than ensuring they are built to a higher energy standard.

Changes to the building codes are also being explored to make homes more resilient to climate change impacts like flooding and wind.[121]

ACTION: NET-ZERO ENERGY BUILDINGS

F11 / **P15:** *Lead the transition toward net zero energy buildings by amending building codes.*

RATIONALE: Local governments implement building codes. With the exception of the City of Vancouver and Halifax Regional Municipality, they do not have the authority to amend them. While local governments can encourage higher energy standards for new

116 Environment Canada, "Canada's Emission Trends 2014" (2014).
117 Environment Canada, "Canada's Greenhouse Gas Emission" (2016)
118 Natural Resources Canada, "Integrated Community Energy Solutions: A Roadmap for Action" (2009).
119 International Energy Association, "25 Energy Efficiency Policy Recommendations" (2015).
120 Pembina Institute, "The Path to 'Net Zero Energy' Buildings in BC" (2015).
121 Institute for Catastrophic Loss Reduction, "Built to a New Code" (2010).

construction, they cannot enforce it. Federal, provincial, and territorial governments must lead the way.

INTERNATIONAL BEST PRACTICE: The building code in the State of California will require all new residential construction to be Net Zero Energy (annual energy consumption is equal to its annual production of renewable energy) by 2020. All new commercial buildings should aim to achieve this goal by 2013.[122] The European Union and the State of Washington are also leading jurisdictions.[123]

CANADIAN BEST PRACTICE: The BC government has made a commitment to lead the way to Net Zero Energy buildings, but the province has yet to establish targets or a plan to achieve them.[124] The Ministry of Natural Resources Canada (NRCan) recently partnered with Owens Corning to support the construction of several Net Zero Energy homes in four provinces: Nova Scotia, Quebec, Alberta, and Ontario.[125]

F12 / **P16:** *Change the building code to make renewable-energy-powered new homes and buildings.*

RATIONALE: Retrofitting homes to install renewable energy technologies can be cost-prohibitive. Building code regulations can ensure all new homes and buildings are renewable energy-ready. This would be a useful tool for local governments to encourage the uptake of renewable energy.

CANADIAN BEST PRACTICE: The BC Solar Hot Water Readiness Program is a provincial regulation, which local governments can voluntarily adopt, requiring all new single family homes to be built to accommodate a solar hot water system.[126] Forty-eight local governments have signed on to the regulation.[127]

Energy Retrofits

Not surprisingly, most of the emissions from the building sector are associated with older buildings constructed when there were no, or lower, energy standards.[128]

ACTION: RETROFIT PROGRAMS

F13: *Incentivize energy efficiency retrofits in homes and commercial buildings.*

P17: *Fund ambitious retrofit programs. Include a program to address energy poverty.*

122 Pembina Institute, "The Path to 'Net Zero Energy' Buildings in BC" (2015).
123 Ibid.
124 Ibid.
125 Natural Resources Canada, "Integrating Renewables and Conservation Measures in a Net-Zero Energy Low-Rise Residential Subdivision" (2015).
126 Government of British Columbia, "Solar Hot Water Ready Regulation" (2013).
127 Ibid.
128 Environment Canada, "Canada's Emission Trends 2014" (2014).

RATIONALE: Local governments lack the regulatory and financial tools to influence emissions from existing homes and buildings. Financial incentives go a long way in encouraging energy retrofits. Local governments are well positioned to help deliver federal, provincial, and territorial energy retrofit programs in partnership with local utilities and community groups.

Many energy retrofits programs end up being marketed to more affluent homeowners despite the fact that low income homeowners or tenants stand to benefit the most from energy efficiency.[129] Care should be taken to design and deliver programs that ensure all homeowners as well as tenants will benefit from improved energy efficiency.

CANADIAN BEST PRACTICE: The former ecoENERGY Retrofit—Homes program provided grants of up to $5,000 to help homeowners make their homes more energy-efficient and reduce the burden of high energy costs.[130] Much was learned about how program design affects participation and outcomes.[131]

Yukon's Good Energy Program promotes energy efficiency and the use of renewable energy sources in Yukon homes and businesses.[132] The program offers one of the highest per capita subsidies in Canada and has displaced 29,000 tonnes of carbon dioxide while saving $15.3 million in energy costs.[133]

The City of Toronto established the Toronto Atmospheric Fund (TAF) in 1991 with a $23 million endowment from the sale of a city-owned property to finance local initiatives to combat global warming and improve air quality in Toronto.[134] The Province of Ontario has recently contributed $17 million to TAF.[135]

New Brunswick's Low Income Energy Savings program offers energy retrofits for insulation, air sealing and heat pumps to homeowners that are already battling poverty.[136] Prince Edward Island has a similar initiative, the Home Energy Low Income Program (HELP), which offers free home air sealing to low income households.[137]

ACTION: ENERGY EFFICIENCY UTILITIES

P18: *Enable the establishment of publicly-owned energy efficiency utilities to promote energy efficiency and conservation activities.*

RATIONALE: The regulatory environment for utilities supports the sale of a commodity—either electricity or natural gas—not the most efficient service for providing light and heat. Ironically, utilities are often called upon to deliver conservation

129 CCPA–BC, "Fighting Energy Poverty in the Transition to Zero Emission Housing" (2011).
130 Natural Resources Canada, ecoENERGY Retrofit Home Program, (2014).
131 Christina Hoicka et al., "Residential energy efficiency retrofits: How program design affects participation and outcomes" (2014), *Energy Policy*, 65, 594-607.
132 Yukon Energy, Mines, and Solutions, "Good Energy Yukon" (2016).
133 Getting to Implementation, (2015).
134 Toronto Atmospheric Fund, "Toronto Atmospheric Fund" (2016).
135 Toronto Atmospheric Fund, "News Release" (2016).
136 New Brunswick Power, "Low Income Energy Savings Program" (2015).
137 Office of Energy Efficiency PEI, "Household Energy Low-Income Program (HELP)" (2008).

and demand management (CDM) programs to their customers. On the one hand, their business model is based on the sale of electricity or gas, while on the other they are regulated to reduce those sales through CDM.

One solution would be establishing publicly-owned energy efficiency utilities whose primary business mandate is to deliver energy efficiency and conservation activities to the communities they serve as a competitive supply to the electricity and gas systems.

CANADIAN BEST PRACTICE: In 2014, the Nova Scotia government passed legislation enabling the creation of Canada's first electricity efficiency utility (Efficiency Nova Scotia). This established efficiency and conservation activities as a competitive supply to the electricity system. Both Alberta and Ontario have indicated plans to develop energy efficiency utilities.

ACTION: RETROFIT SUPPORTS

P19: *Support local government-led programs that deliver high volumes of home and building energy retrofits, including regulatory change to allow a property-assessed financing tool.*

While federal, provincial, and territorial financial incentives encourage property owners to upgrade the energy performance of their buildings, there are many other barriers that can get in the way.

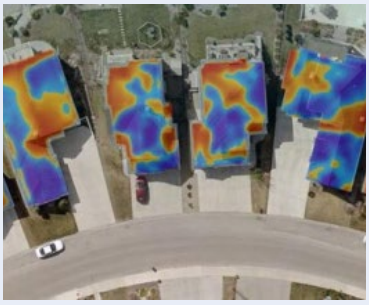
RATIONALE: While federal, provincial, and territorial financial incentives encourage property owners to upgrade the energy performance of their buildings, there are many other barriers that can get in the way. Local governments are well positioned to help by:

- Providing one-stop shopping so homeowners avoid being bounced between different departments, agencies and levels of government;
- Ensuring good community engagement by mobilizing local networks including neighbourhood groups and business associations; and
- Providing property-assessed financing for energy retrofits to address barriers associated with high upfront costs, the cost of consumer credit and payback periods that are longer than a homeowner may plan to own the property.

Local governments could serve as a platform, either directly or through provincial and territorial partnerships, to consolidate the delivery of energy retrofits, to make programs as user-friendly as possible for the consumer, and drive deeper market penetration of energy retrofit programs.

CANADIAN BEST PRACTICE: The Columbia Institute publication "*This Green House II: Building Momentum on Green Jobs and Climate Action Through Energy Retrofits Across Canada* provides an overview of the local improvement charges (LIC) financing model and on-bill financing and how they are being used in Canada.[138]

138 Columbia Institute, "This Green House II" (2016)



BEST PRACTICES: ENERGY EFFICIENCY TOOLS

The Town of Okotoks has launched an online Energy Efficiency Engagement Platform that will be integrated with an energy rebate program. Using aerial thermal imaging, homeowners can see the heat being wasted from their homes, and can compare their home's energy performance with other homes. (See okotos.ca MyHEAT Okotoks)

Property-Assessed Financing

Property-assessed financing, also known as local improvement charges (LIC), offers a low-risk tool to encourage investment in energy retrofits with long term paybacks by giving building owners access to capital to complete improvements. These investments lead to utility bill savings while the building owner pays back the investment through their property taxes. Property tax payments are matched to actual energy savings ensuring the building owner is kept whole each month. Since the LIC is a special charge on the tax role, LIC assessments stay with the property when it is sold. This is important because payback periods are often longer than a building owner might intend to own the property.

In 2012, Ontario amended its LIC rules to allow local governments to enter into voluntary LIC financing agreements with individual property owners to finance energy retrofits.[139] The Toronto Atmospheric Fund (TAF) launched the Collaboration on Home Energy Efficiency Retrofits in Ontario (CHEERIO) to advance the use of the LIC financing tool by Ontario local governments to promote energy retrofits.[140] In 2015, Toronto launched the Home Energy Loan Program (HELP) offering low interest loans using LIC financing.[141] Other Ontario local governments are contemplating how to use LICs to promote energy retrofits.

139 Clean Air Partnership, "Local Improvement Charge Financing Pilot Program Design for Residential Buildings in Ontario" (2013).
140 Toronto Atmospheric Fund, "Collaboration on Home Energy Retrofits in Ontario" (2016).
141 City of Toronto, "Home Energy Loan Program" (2016).

Halifax Regional Municipality (HRM) has successfully used property-assessed financing to promote the uptake of solar technologies.[142] The legislation that enabled HRM was extended to the entire province in 2014.[143] Several local governments in Nova Scotia have passed supporting by-laws and are in the process of launching retrofit programs that include LIC financing options.

On-bill Financing

Manitoba Hydro's Power Smart Residential Loan offers on-bill financing for energy retrofits. The loan becomes due and payable when the house is sold. However, Manitoba has more recently launched a transferable program. Their Power Smart PAYS Financing program is transferable between homeowners when the property is sold. It is also transferable from a landlord to a tenant where the tenant is responsible for the paying the energy bill. Manitoba Hydro is also using on-bill financing to support the adoption of geothermal heat pump technology though its Residential Earth Power Loan program.[144]

Mandatory Disclosure

Shining a light on the energy performance of a building changes behaviour and expectations.

ACTION: HOME ENERGY LABELLING

P20: *Implement a mandatory program for home energy labelling.*

BACKGROUND/RATIONALE: The International Energy Agency (IEA) recommends mandatory energy labelling of buildings to promote efficiency in this sector.[145] A home energy labelling program requires the seller to obtain an energy rating for the home.[146] The energy rating of the home is included in the home's listing to disclose the operating energy costs of the home to potential purchasers. Disclosure of a home's energy performance allows home buyers to make a better informed decision. Disclosure transforms the market for home efficiency.

According to the Pembina Institute, the uptake of voluntary home labelling programs in Canada has been hampered by a lack of familiarity with the rating system and a shortage of comparator homes in the market. Both barriers would be addressed through a mandatory program.[147]

142 Halifax, "Solar City" (2015).
143 Columbia Institute, "This Green House II" (2016).
144 Ibid.
145 International Energy Agency, "25 Energy Efficiency Policy Recommendations" (2011).
146 Natural Resources Canada, "EnerGuide Home Evaluation" (2015).
147 Pembina Institute, "Home Energy Labelling Requirement at Point of Sale: Pilot Program Design" (2012).

INTERNATIONAL BEST PRACTICE: More than 30 countries have implemented mandatory home energy labelling programs, including Germany, Denmark and the United Kingdom.[148]

CANADIAN BEST PRACTICE: The federal government has a *voluntary* home energy labelling program.[149] The federal government has limited jurisdiction with respect to energy and no jurisdiction over energy use in buildings so it is up to the provinces to implement mandatory home energy labelling.[150]

The Council of Energy Ministers have included home energy labelling in their mandate.[151] Ontario committed to mandatory home efficiency disclosure in the 2009 *Green Energy and Economy Act* but has yet to act on the legislation. At the local level, Edmonton is reportedly in the process of developing a *voluntary* home energy labelling program.[152]

ACTION: LOCAL DISCLOSURE

P21: *Require mandatory disclosure of local governments' own energy consumption, GHG emissions, and carbon-neutral transition plans.*

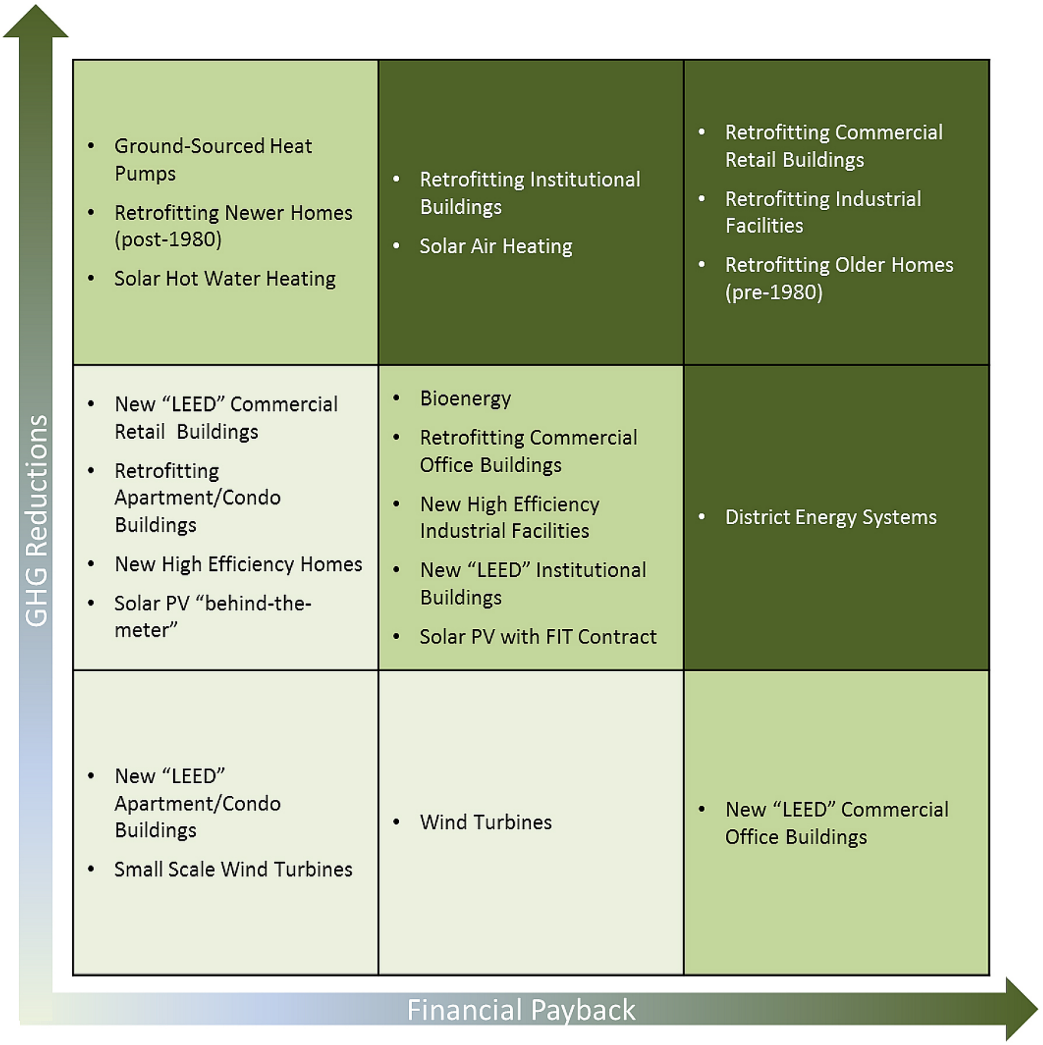
RATIONALE: Mandatory disclosure levels the playing field, encourage the sharing of best practice and ensures government are accountable for reducing GHG emissions. Local elected leaders need to know how much money is being spent on energy. Energy costs comprise a significant part of a local government's annual operating budget. The risk of rising energy costs, and the pressure it places on taxes and the delivery of services, is a concern for local budgets. Yet, energy efficiency initiatives often don't make it to budget deliberations or funding goes elsewhere.

CANADIAN BEST PRACTICE: Ontario requires all local governments (along with universities, colleges, schools and hospitals) to report annually on their energy consumption and GHG emissions. These annual reports must be made available to the public. The Ontario government consolidates the information and provides it as open data. A plan to reduce energy use and GHG emissions must be adopted by the municipality and updated every 5 years.[153] This regulatory requirement places energy efficiency on municipal agendas.

British Columbia is the first province in North America to achieve carbon neutrality across all of its Public Sector Organizations (PSO), achieving its fifth consecutive year of carbon neutral government operations in 2015.[154]

148 Green Communities Canada, "Mandatory Home Energy Labelling" (2010).
149 Natural Resources Canada, "EnerGuide Evaluation Report, Rating and Label" (2016).
150 Natural Resources Canada, "Energy Rating and Labelling Systems in Canada" (2008).
151 Council of Energy Ministers, "Buildings and Houses" (2013).
152 City of Edmonton, "Home Energy Labelling" (2012).
153 Ontario Ministry of Energy, "Conservation for Public Agencies" (2015).
154 Government of British Columbia, "Carbon Neutral Government" (2010).

FIGURE 2: IMPACT OF BUILDING AND RENEWABLE ENERGY TECHNOLOGY STRATEGIES ON LONDON'S GHG EMISSIONS



Source: City of London, "Community Energy Action Plan" (2014)

The City of London, Ontario's Community Energy Action Plan illustrates the benefits of strategies like retrofits in reducing GHGs.

LONDON, ONTARIO HOMES PHOTO COURTESY PETER DANIEL/FLICKR

3.5 TRANSPORTATION SECTOR

Federal and provincial governments can support local government efforts to reduce transportation-related GHG emissions by allocating infrastructure funding to projects that promote public transit and active transportation.

The transportation sector represents almost 25 per cent of Canada's total GHG emissions.[155] Almost half of these emissions arise from the use of personal automobiles.

This sector is perhaps one of the most challenging for local governments to address.

Actions focused on helping local governments reduce emissions from the transportation sector, through such measures as public transit, active transportation and green vehicles, are considered in this section.

Transit and Active Transportation

Local governments are responsible for a significant amount of Canada's transportation infrastructure. As our communities grow, the demand for safe, reliable, and efficient modes of transportation will only increase.

Transportation infrastructure for parking, roads, transit, walking, and cycling is a major driver of local emissions.[156] The expansion of fossil-fuel based infrastructure locks in emission profiles and consumption patterns for decades.[157] Investments in low-carbon solutions, promoting walking, cycling, and public transit, reduce emissions.

While increasingly tasked with reducing traffic on their roads, local governments often lack the resources to establish high quality and efficient public transit networks. There are a number of measures that provinces can undertake to actively facilitate this process—for example, passing legislation to promote the use of transit, financing the improvement of transit infrastructure, and developing plans to better integrate and connect regions of the province via public transit systems.

Federal, provincial, and territorial governments can support local government efforts to reduce transportation-related GHG emissions by allocating infrastructure funding to projects that promote public transit and active transportation.

ACTION: NATIONAL TRANSPORTATION STRATEGY

F14: *Develop a national transportation strategy in collaboration with provincial, territorial, and local governments, as well as Indigenous peoples.*

155 Environment Canada, Canada's Emission Trends, (2014).
156 IPCC, "Human Settlement, Infrastructure and Spatial Planning" (2014).
157 Ibid.

RATIONALE: A comprehensive national transportation strategy would provide a framework for ongoing policy development and lay a foundation to support all local governments in Canada.

INTERNATIONAL BEST PRACTICE: Canada is the only G8 country without a national transportation strategy.

F15: *Match provincial and territorial government transit funding to local governments.*

F16: *Prioritize transit and active transportation infrastructure projects over auto-only infrastructure.*

P22: *Support local governments to improve public transit and active transportation in urban and rural communities.*

RATIONALE: FCM concludes that "transit riders [in Canada] pay a higher percentage of the total costs required to build, maintain and operate transit than do riders in almost all other Western countries."[158] The Canadian Urban Transit Association (CUTA) further estimates that transit infrastructure across the country needs a minimum of $4.2 billion annually to maintain services and expand to meet demand-side pressures.[159]

In a 2007 report produced by FCM, a series of key elements were proposed for a national transit strategy.[160] First and foremost, the report recommended a baseline of $2 billion for maintaining existing transit systems and supporting the expansion of systems which must grow to meet burgeoning demands. The report also asserted that funding for transit should be restricted to local governments with transportation plans that prioritize public transportation as the primary means for addressing future transportation needs. Another core recommendation was the introduction of federal tax incentives for transit users. Finally, the report recommended provisions to encourage on-going transit innovation and policy research, as well as mechanisms to ensure accountability.

CUTA recommends the adoption of federal, provincial, and territorial programs that support local governments with covering capital operational costs, deploying rapid transit technologies (particularly in city centres), and growing service in smaller cities.[161]

CANADIAN BEST PRACTICE: Many of the FCM and CUTA recommendations were integrated in Bill C-305, a *National Public Transit Strategy,* which was introduced in parliament in 2011 and voted down a year later.[162] The bill aimed to improve the accessibility and affordability of public transit; increase federal investment; establish

158 Federation of Canadian Municipalities, "National Transit Strategy" (2007).
159 Ibid.
160 Ibid.
161 Canadian Urban Transit Association, "Transit Vision 2040" (2009).
162 Open Parliament, "National Public Transit Strategy Act" (2012).

A comprehensive national transportation strategy would provide a framework for ongoing policy development and lay a foundation to support all local governments in Canada. Canada is the only G8 country without a national transportation strategy.

SEPARATED BIKE LANE, VANCOUVER PHOTO PAUL KRUEGER/FLICKR

funding mechanisms for improving and maintaining infrastructure; work with provinces; and support transit research.

Quebec public transit policy recognizes that while municipalities hold the primary responsibility for public transit, the province must serve as a coordinator and assume the bulk of the cost of upgrading and improving transit infrastructure.[163] Through this policy, the government is dedicated to allocating $130 million to a Green Fund to improve public transit services. Municipalities must match provincial funds.[164] This program also offers tax incentives to consumers to encourage public transit use and offers financial assistance programs to encourage the implementation of accessibility retrofits such as wheelchair ramps.[165]

The Ontario government has also taken measures to promote the use of public transit, establishing protocols to facilitate the use of provincially-owned lands for transportation facilities.[166]

Alberta's Green Transit Incentive Program (GreenTRIP) has expanded light rail transit in Calgary and Edmonton and funded new buses and transit facilities throughout the province. Two billion dollars in community funding has been provided over the life of the program.

Through the 1999 Velonce I program, Quebec invested $146 million into the creation of the Route Verte a 5,000 km bicycle network that connects the different regions of the province.[167] The province's investments were directed towards improving cyclist safety within cities and communities by widening the shoulder on existing lanes and integrating bikeways on to roads, bridges and structures. Initially

163 Ministère des Transports du Québec, "Public Transit Policy" (2006).
164 Ibid.
165 Ibid.
166 Metrolinx, "The Big Move: Transforming Transportation in the GTAH" (2008).
167 Ministère des Transports du Québec, "An active transportation strategy in Quebec" (2014).

this program was more effective at promoting recreational cycling than the everyday use of cycling for commuting.[168] In response, in 2008, the province initiated the Velonce II program which supported municipalities in preserving active transport pathways. The additional $35 million that was invested for the follow up program, along with capacity building efforts, resulted in an increased use of cycling for utilitarian purposes by 35 per cent.[169]

Other provincial governments have also undertaken policies that promote active transport. Since 2006, BC has invested substantially in the development of cycling infrastructure—with municipalities eligible for up to $250,000 in funds.[170] Ontario also has a cycling strategy.

Provincial and territorial governments can play a role in supporting the creation of new cycling infrastructure and promoting active transportation by providing funds and filling capacity gaps. It is crucial for provinces and territories to alleviate some of the most fundamental barriers to active transportation. In the context of cycling, inadequate infrastructure, particularly in urban environments, leaves potential cyclists feeling unsafe and vulnerable to vehicle traffic. It is recommended that provinces and territories work with municipalities to establish an active transportation strategy that promotes safe cycling as an alternative to reliance on GHG-intensive vehicles.

Green Vehicles

Local governments maintain large fleets to deliver numerous services to their community. They can demonstrate leadership by supporting the purchase of more fuel-efficient vehicles, low-carbon vehicle fuels and low- or zero-emission vehicles (where low-carbon power is available) for your local fleet.

ACTION: LOCAL FLEETS

F17 / **P23:** *Incent the purchase of low- and zero-emission vehicles for local government fleets.*

RATIONALE: Fiscal constraints often prevent local governments from purchasing low- and zero-emission vehicles.

CANADIAN BEST PRACTICE: Ontario, British Columbia, and Quebec provincial governments provide financial incentives to local governments to help with the purchase of low- or zero-emission vehicles and electric vehicle charging stations.[171]

168 Ibid.
169 Ibid.
170 British Columbia Ministry of Environment, "BC Climate Action Plan, "(2015).
171 Ministry of Ontario, "Modernized Electric Vehicle Incentive Program" (2016); Government of British Columbia, "New Initiative to Make Electric Vehicles More Affordable" (2015); Government of Quebec, "Drive Electric Program" (2016).

EV-ready building codes ensure that the conduit and capacity to accommodate an electric vehicle is included in new construction.

SOLAR POWERED EV CHARGING STATION IN TORONTO PHOTO COURTESY SASS PERESS RENEWZ SUSTAINABLE SOLUTIONS INC.

ACTION: EV-READY CONSTRUCTION

F18 / **P24:** *Change building codes to make electric-vehicle-ready homes and buildings.*

RATIONALE: The costs of retrofitting a home or building to accommodate electric vehicle charging stations, along with the lack of public and private electric vehicle charging stations, can discourage the uptake of low- or zero-emissions vehicles in a community. An electric-vehicle-ready building code ensures that the conduit and capacity to accommodate an electric vehicle is included in new construction. An amendment to the building codes to ensure new homes and buildings are electric-vehicle-ready would provide an effective tool for local governments to encourage the uptake of electric vehicles in their community where low-carbon power is available.

INTERNATIONAL BEST PRACTICE: The State of California has passed legislation that requires new homes be electric-vehicle-ready. Builders must include the conduit and capacity to accommodate an electric vehicle charging station.[172] New multi-residential units (17 units or more) and parking lots (with more than 100 spaces) must make at least 3 per cent of their parking spaces electric-vehicle-ready. California has also passed legislation to reduce barriers for tenants to install electric vehicle charging stations.[173]

CANADIAN BEST PRACTICE: Vancouver was the first North American city to require electric vehicle charging stations for all new homes and for 20 per cent of units in new multi-residential developments. Vancouver created a collaborative working group to develop electric-vehicle-readiness strategies.[174]

172 The News Wheel, "California Building Code to Require Electric Car Charging Stations" (2014).
173 Bill AB 2565, Government of California, "Rental Property: Electric Vehicle Charging Stations" (2014).
174 Government of British Columbia, "Building Act" (2015).

Sustainable Water and Waste Management

TOP ASKS highlights capacity building, energy, transportation, and land use. Water conservation and efficiency and sold waste management are also important.

WATER CONSERVATION AND EFFICIENCY: The pumping and treating of water is estimated to use up to 50 per cent of a corporate local government's total energy consumption.[175] Heating of water for a variety of uses in a community also consumes energy. As a result, water conservation and efficiency programs can play an important role in reducing energy use and GHG emissions.

WASTE MANAGEMENT: According to the National Inventory Report 1990–2014 from Environment and Climate Change Canada, emissions from waste make up 4 per cent of Canada's total GHGs and the number of landfill sites capturing GHGs is "rapidly rising."[176] Local governments are playing an important role.

- Programs that divert organic waste from landfills reduce emissions from this sector. The Nova Scotia Solid Waste-Resource Management Strategy, which bans the landfilling or incineration of organic waste, has reduced emissions from this sector by 50 per cent.[177]
- Programs that support the capture and use of landfill gas to produce electricity also reduce emissions from this sector. British Columbia's *Landfill Gas Management Regulation* establishes province-wide criteria for landfill gas capture from municipal solid waste landfills to reduce GHG emissions.[178]

Emissions from waste make up 4 per cent of Canada's total GHGs and the number of landfill sites capturing GHGs is "rapidly rising."

OTTAWA WASTE DISPOSAL
PHOTO COURTESY IAN A. MCCORD

175 Ontario Municipal Affairs and Housing, "Planning for Health and Prosperity and Growth in the Greater Golden Horseshoe: 2015-2041" (2015).
176 Environment and Climate Change Canada, "National Inventory Report 1990-2014" (2016).
177 Getting to Implementation. "National Report on Policies Supporting Community Energy Plan Implementation" (2015).
178 BC Ministry of the Environment, "Landfill Gas Management Regulation" (2009).

SECTION 4

Summary of Federal Government Actions

This section summarizes actions the federal government can take to enable local governments to take action on climate change.

Capacity Building

Local Government Capacity

F1: *Ramp up climate action by empowering low carbon communities.*

Targets

F2: *Adopt climate change legislation that includes targets for reducing GHG emissions to levels consistent with limiting the rise in average global temperatures to below 2 degrees Celsius and as close to 1.5 degrees Celsius as possible, with net zero emissions by 2050.*

Data, Inventories and Mapping

F3: *Empower Environment Canada to provide every Canadian local government with community energy and emissions data.*

Carbon Pricing

F4: *Put a price on carbon to serve as a baseline for all provinces and territories. Increase annually to support achieving zero emissions by 2050.*

Local Action Plans

F5: *Line up sustainable infrastructure spending programs with local climate action. Allocate subsidies to GHG-friendly industries.*

F6: *Support the Partners for Climate Protection program to close the gap between national/provincial/territorial policy and local action on climate change.*

Natural Capital

F7: *Fund local government baseline assessments of natural capital. Include the carbon storage value of natural capital (e.g., forest, wetlands, and floodplains) in national GHG accounting.*

Harnessing Local Energy

Renewable Energy

F8: *Develop a renewable energy strategy that promotes local ownership models. Enable publicly-owned utilities to develop renewable energy strategies.*

F9: *Fund community- and Indigenous-owned renewable energy capacity.*

Thermal Energy

F10: *Develop a thermal energy strategy, including funding and capacity support, to promote the uptake of district energy, combined heat and power, and other thermal energy systems in communities.*

Building Sector

Building Code

F11: *Lead the transition toward net zero energy buildings by amending building codes.*

F12: *Change the building code to make renewable-energy-powered new homes and buildings.*

Energy Retrofits

F13: *Incentivize energy efficiency retrofits in homes and commercial buildings.*

Transportation Sector

Transit and Active Transportation

F14: *Develop a national transportation strategy in collaboration with provincial, territorial, and local governments, as well as Indigenous peoples.*

F15: *Match provincial and territorial government transit funding to local governments.*

F16: *Prioritize transit and active transportation infrastructure projects over auto-only infrastructure.*

Green Vehicles

F17: *Incent the purchase of low- and zero-emission vehicles for local government fleets.*

F18: *Change building codes to make electric-vehicle-ready homes and buildings.*

SECTION 5

Summary of Provincial and Territorial Government Actions

This section summarizes the actions that provincial and territorial governments can take to enable local governments to take action on climate change.

Note: There is some repetition in this section as many federal policy levers for climate action also apply provincially. However, given that local governments are granted their legal standing through provincial and territorial legislation there are also actions specific to this order of government.

Capacity Building

Local Government Capacity

P1: *Ramp up climate action by empowering low-carbon communities.*

Targets

P2: *Adopt climate change legislation that includes targets for reducing GHG emissions to levels consistent with limiting the rise in average global temperatures to below 2 degrees Celsius and as close to 1.5 degrees Celsius as possible, with net zero emissions by 2050.*

P3: *Require local governments to incorporate GHG reduction targets, policies, and actions in official community plans.*

Data, Inventories and Mapping

P4: *Work with the federal government to provide every local government with community energy and emissions data.*

Carbon Pricing

P5: *Establish a price on carbon.*

Local Action Plans

P6: *Line up sustainable infrastructure spending programs with local climate action. Allocate subsidies to GHG-friendly industries.*

P7: *Support the Partners for Climate Protection program to close the gap between national/provincial/territorial policy and local action on climate change.*

P8: *Provide funding, data, and capacity support to encourage the development of high-quality community energy plans.*

Smart Growth

Compact Urban Form

P9: *Introduce policies that promote more compact cities and curb urban sprawl.*

P10: *Change legislation so that energy and climate change policies are part of land use planning.*

Harnessing Local Energy

Renewable Energy

P11: *Develop a renewable energy strategy that promotes local ownership models. Enable publicly-owned utilities to develop renewable energy strategies.*

P12: *Implement a "feed-in-tariff" program that promotes individual, community, and Indigenous-owned projects.*

P13: *Promote carbon-neutral wastewater treatment by harnessing bio-gas production.*

Thermal Energy

P14: *Develop a thermal energy strategy, including funding and capacity support, to promote the uptake of district energy, combined heat and power, and other thermal energy systems in communities.*

Building Sector

Building Code

P15: *Lead the transition to net zero energy buildings by amending building codes.*

P16: *Change the building code to make renewable-energy-powered new homes and buildings.*

Energy Retrofits

P17: *Fund ambitious retrofit programs. Include a program to address energy poverty.*

P18: *Enable the establishment of publicly-owned energy efficiency utilities to promote energy efficiency and conservation activities.*

P19: *Support local government-led programs that deliver high volumes of home and building energy retrofits, including regulatory change to allow a property-assessed financing tool.*

Mandatory Disclosure

P20: *Implement a mandatory program for home energy labelling.*

P21: *Require mandatory disclosure of local governments' own energy consumption, GHG emissions, and carbon-neutral transition plans.*

Transportation Sector

Transit and Active Transportation

P22: *Support local governments to improve public transit and active transportation in urban and rural communities.*

Green Vehicles

P23: *Incent the purchase of low- and zero-emission vehicles for local government fleets.*

P24: *Change building codes to make electric vehicle-ready homes and buildings.*

Top Asks

In addition to adopting scientific GHG reduction targets and putting a price on carbon, Top Asks identifies five immediate actions that federal, provincial, and territorial governments can take to enable local governments to act on climate change.

Through an online survey, approximately 100 elected officials from across Canada ranked several potential federal, provincial, and territorial actions. These actions are focused in five priority areas:

1. **CAPACITY BUILDING** to enable local action;
2. Building low carbon communities by adopting **SMART GROWTH** policies;
3. Transitioning to a cleaner and more efficient energy system by **HARNESSING LOCAL ENERGY** resources;
4. Reducing GHG emissions from the **BUILDING SECTOR;** and
5. Reducing GHG emissions from the **TRANSPORTATION SECTOR.**

The Columbia Institute agrees with the comments of several survey participants that all of the actions are important. Our goal is to identify some early wins for local government as we transition to net zero emissions by 2050.

Comments provided by survey participants helped inform the development of the report that supports the Top Asks.

The Columbia Institute agrees with the comments of several survey participants that all of the actions are important. Our goal is to identify some early wins for local government as we transition to net zero emissions by 2050.

Summary of Survey Results

Actions tied to funding were a high priority among survey participants. This is not surprising given that local governments work with limited financial resources, receiving only 8 cents on the tax dollar. There was strong support among the survey participants to line up spending with local climate action.

There was healthy support for actions promoting local ownership models for renewable energy along with a desire to see new homes powered by renewable energy.

This reflects the growing role of local government in energy decision making as local solutions for meeting energy needs continue to emerge.

There was consistent support for funding energy retrofits as an immediate priority. This reflects the challenge of retrofitting older buildings and that the majority of emissions from the building sector are associated with older buildings. There was also strong support for local governments leading retrofit program delivery and taking advantage of emerging property-assessed financing tools.

Funding for transit and active transportation was an immediate priority for survey participants. There was also strong support for a national transportation strategy which reflected comments concerned about meeting the regional transportation needs of rural and remote communities.

There was strong support for helping local governments assess the carbon storage value of natural capital. This action would strengthen the role for rural and remote communities in a national climate change strategy. Survey participants were also looking for the right tools from their provincial and territorial governments to make energy and climate policies part of land use planning.

Top Asks for Federal and Provincial/Territorial Governments

Canada can and must ramp up climate action by empowering low carbon communities. Our country can't be a climate leader without local government action.

Where to start:

FEDERAL TOP ASKS	
Capacity building	Adopt science-based greenhouse gas targets. Put a price on carbon for net-zero emissions by 2050. Address capacity shortfalls that stand in the way of local government climate action.
Funding	Line up sustainable infrastructure spending programs with local climate action. Allocate subsides to GHG-friendly industry.
Natural capital	Fund local government baseline assessments of natural capital. Include the carbon storage value of natural capital in national GHG accounting.
Harnessing local energy	Fund community- and Indigenous-owned renewable energy capacity.
Building sector	Incentivize energy efficiency retrofits in homes and commercial buildings.
Transportation sector	Prioritize transit and active transportation infrastructure projects over auto-only infrastructure.

PROVINCIAL & TERRITORIAL TOP ASKS	
Capacity building	Adopt science-based greenhouse gas targets. Put a price on carbon for net-zero emissions by 2050. Address capacity shortfalls that stand in the way of local government climate action.
Funding	Line up sustainable infrastructure spending programs with local climate action. Allocate subsides to GHG-friendly industry.
Smart growth	Change legislation so that energy and climate change policies are part of land use planning.
Harnessing local energy	Change the building code to make renewable-energy-powered homes and buildings.
Building sector	Fund ambitious retrofit programs. Enable property-assessed financing and on-bill financing. Support low income households to address energy poverty.
Transportation sector	Support local governments to improve public transit and active transportation in urban and rural communities.

Where to Raise Top Asks for Empowering Low Carbon Communities

You can discuss these asks with your:

- Council;
- Constituents, community groups, and staff;
- Federal, provincial, and territorial elected representatives;
- Provincial, territorial, and national local government associations; and
- Government-led climate change consultations.

Appendix: Survey

Survey Methodology

The Columbia Institute developed an online survey based on the findings of our literature review regarding top federal, provincial, and territorial actions for climate action. The survey included 21 questions organized into five categories: capacity building, smart growth, harnessing local energy, building sector, and transportation sector. Each category was further divided into two sub-categories, demarcating federal actions and provincial or territorial actions.

In each question, survey participants were given a list of actions and were asked to rate them in order from "most impactful" to "least impactful." The survey also contained open text questions after each rating question for open text comments and feedback.

A total of 104 people completed the survey over approximately four weeks.

Survey Questions

Report for Top Asks for Climate Action

1. Capacity Building: One - Federal Government Actions Please rate the following in order of preference - that is, what you think will be the most impactful actions the federal government can take to enable local governments for Capacity Building.

Overall Rank	Item	Rank Distribution	Score	Total Respondents
1	Speed the transition to a low-carbon economy by aligning federal spending with local action on climate change (including infrastructure funding, economic stimulus programs, the Federal Gas Tax Fund and the reallocation of subsidies away from GHG-intensive industries).		439	94
2	Introduce a national price on carbon to serve as a baseline for all provinces and territories. Increase annually to support achieving zero emissions by 2050.		341	91
3	Adopt climate change legislation that includes targets for reducing GHG emissions to levels consistent with limiting the rise in average global temperatures to below 2oC and as close to 1.5oC as possible, with net zero emissions by 2050.		329	87
4	Promote low-carbon cities and communities as a solution.		288	90
5	Empower Environment Canada to provide local governments with community and energy emissions data.		272	92
6	Support the Partners for Climate Protection (PCP) program to close the gap between national policy and local action on climate change.		266	90

2. Capacity Building: Two - Provincial and Territorial Government Actions Please rate the following in order of preference - that is, what you think will be the most impactful actions provincial or territorial governments can take to enable local governments for Capacity Building.

Overall Rank	Item	Rank Distribution	Score	Total Respondents
1	Speed the transition to a low-carbon economy by aligning provincial/territorial spending to local action on climate change (including infrastructure funding, economic stimulus programs, the gas tax funding and the reallocation of subsidies for GHG-intensive communities).		531	90
2	Provide funding, data and capacity support to encourage the development of community energy plans.		455	90
3	Adopt climate change legislation that includes targets for reducing GHG emissions to levels consistent with limiting the rise in average global temperatures to below 2oC and as close to 1.5oC as possible, with net zero emissions by 2050.		433	87
4	Establish a price on carbon.		409	85
5	Promote low-carbon cities and communities as a solution.		378	88
6	Require local governments to incorporate GHG reduction targets, policies and actions in official community plans.		373	87
7	Support the Partners for Climate Protection (PCP) program to close the gap between provincial/territorial and national policy and local action on climate change.		347	88
8	Work with the federal government to provide all Canadian local governments with energy and emissions data.		331	89

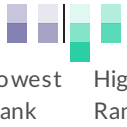
3. Building Sector: One - Federal Government Actions Please rate the following in order of preference - that is, what you think will be the most impactful actions the federal government can take to enable local governments for the Building Sector.

Overall Rank	Item	Rank Distribution	Score	Total Respondents
1	Re-establish the eco-Energy Retrofit – Homes Program to provide an incentive for energy efficiency retrofits.		167	96
2	Lead the transition towards Net Zero Energy (NZE) buildings through building code amendments by establishing targets for NZE buildings and a plan to achieve them.		117	91

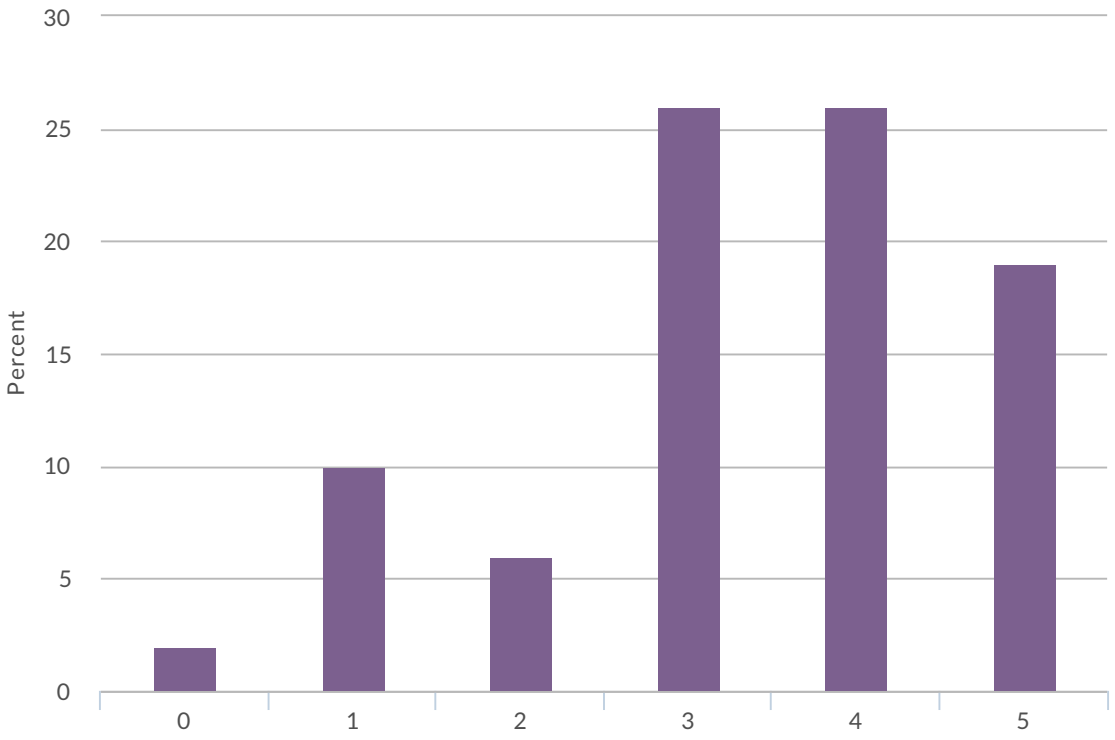
4. Building Sector: Two - Provincial and Territorial Government Actions Please rate the following in order of preference - that is, what you think will be the most impactful actions provincial or territorial governments can take to enable local governments for the Building Sector.

Overall Rank	Item	Rank Distribution	Score	Total Respondents
1	Implement a financial incentives program for home and building energy retrofits including support for low low income households to address energy poverty.		693	93
2	Support local government-led retrofit programs that deliver high volumes of home and building efficiency retrofits, including a property-assessed financing tool.		612	92
3	Lead the transition towards Net Zero Energy (NZE) buildings through building code amendments by establishing targets for NZE buildings and a plan to achieve them.		471	84

Overall Rank	Item	Rank Distribution	Score	Total Respondents
4	Enable the establishment of publicly-owned energy efficiency utilities to promote energy efficiency and conservation activities.		463	90
5	Amend provincial and territorial legislation to promote the integration of energy and climate change policies into land use planning.		433	86
6	Develop a provincial/territorial thermal energy strategy to promote the uptake of district energy, combined heat and power and other thermal energy systems in communities.		397	88
7	Introduce policies to promote more compact cities and curb urban sprawl.		390	87
8	Require mandatory disclosure of local energy consumption, GHG emissions and carbon-neutral transition plans.		318	86
9	Implement a mandatory program for home energy labelling.		299	87



5. Smart Growth: One - Federal Government Actions Please give the following action a ranking from not impactful (0) to very impactful (5). Do you think the following action will enable local governments on Smart Growth? Establish a fund for local governments to support baseline assessments of natural capital and include the carbon storage value of natural capital (i.e. forests, wetlands and floodplains) in national GHG accounting.



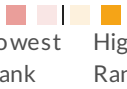
6. Smart Growth: Two - Provincial and Territorial Government Actions Please rate the following in order of preference - that is, what you think will be the most impactful actions provincial or territorial governments can take to enable local governments for Smart Growth.

Overall Rank	Item	Rank Distribution	Score	Total Respondents
1	Amend provincial and territorial legislation to integrate energy and climate change policies into land use planning.		155	95
2	Introduce policies for more compact cities and curbing urban sprawl.		130	94

Lowest Rank Highest Rank

7. Harnessing Local Energy: One - Federal Government Actions Please rate the following in order of preference - that is, what you think will be the most impactful actions the federal government can take to enable local governments for Harnessing Local Energy.

Overall Rank	Item	Rank Distribution	Score	Total Respondents
1	Provide funding and capacity support for community and Indigenous-owned renewable-energy production.		249	92
2	Develop a renewable energy strategy that promotes local ownership models.		242	94
3	Provide funding and capacity support for combined heat and power and other thermal energy systems in communities.		239	93
4	Develop a national thermal energy strategy for district energy, combined heat and power and other thermal energy systems in communities.		215	93



8. Harnessing Local Energy: Two - Provincial and Territorial Government Actions Please rate the following in order of preference - that is, what you think will be the most impactful actions the provincial and territorial governments can take to enable local governments for Harnessing Local Energy.

Overall Rank	Item	Rank Distribution	Score	Total Respondents
1	Amend the building code to make new homes and buildings renewable energy-ready.		328	92
2	Develop a renewable energy strategy that promotes local ownership models.		311	93

Overall Rank	Item	Rank Distribution	Score	Total Respondents
3	Develop a provincial/territorial thermal energy strategy for district energy, combined heat and power and other thermal energy systems in communities.		281	90
4	Implement a provincial "feed in tariff" program that promotes individual community and Indigenous owned projects.		266	90
5	Develop a program to promote carbon-neutral wastewater treatment by harnessing biogas production.		205	91

Lowest Rank Highest Rank

9. Transportation Sector: One - Federal Government Actions Please rate the following in order of preference - that is, what you think will be the most impactful actions the federal government can take to enable local governments for the Transportation Sector.

Overall Rank	Item	Rank Distribution	Score	Total Respondents
1	Give priority to infrastructure projects that promote transit and active transportation.		349	92
2	Develop national transportation strategy in collaboration with provincial, territorial, and local governments, as well as Indigenous peoples.		317	92
3	Match provincial and territorial government transit funding.		283	93
4	Provide a financial incentive for the purchase of low- and zero-emission vehicles for local fleets.		253	92
5	Amend building codes to require new homes and buildings to be electric vehicle-ready.		192	89

Lowest Rank Highest Rank

10. Transportation Sector: Two - Provincial and Territorial Government Actions Please rate the following in order of preference - that is, what you think will be the most impactful actions the provincial and territorial governments can take to enable local governments for the Transportation Sector.

Overall Rank	Item	Rank Distribution	Score	Total Respondents
1	Support local governments to improve public transit and active transportation, including providing funding for walking and cycling infrastructure.		235	93
2	Provide a financial incentive for the purchase of low- and zero-emission vehicles for local fleets.		176	91
3	Amend the building code to require new homes and buildings to be electric-vehicle-ready.		142	90

Selected Survey Comments

Incentives are preferred to penalties

Fund local governments to do the work. They can't do more without proper funding.

Time federal funding for municipalities with new climate change/GHG legislation, targets, carbon tax etc, so that funds to help local governments make those transitions are available right away. Many of us are ready with shovel ready projects.

For small communities such as ours 325 funding is always a detriment to getting anything done, without funding we do not have the tax base to take on large initiatives, we can do our best with what we have.

We need a national housing strategy that is federally funded and rental incentives to allow people to live close to work their work environments.

Carbon pricing should be increased regularly until zero emissions are reached.

Massive provincial and local retrofit initiative. We're a cold country! Insulation everywhere!

Focus on sun power, if Germany can do it so can we.

Fund the eco-Energy Retrofit initiative very generously. Provide adequate funding to make a war time style effort to retrofit it all

... you seem to think we have lots of time, there is considerable science indicating that we are already in the danger zone, 1.5 degrees warming is likely now unavoidable, 2 degrees may be as well,

LIC program like in Nova Scotia, with as broad applications as there.

MUCH OF THIS IS DIFFICULT IN RURAL AREAS.

Train building inspectors to be able to go beyond code for energy efficiency.

Introduce policies to limit sprawl...

Big financial incentives for green energy. It shouldn't take 40 years to pay back a solar system installation.

Encourage businesses who do not need to be in large centers move to smaller rural centers. Taking x number of vehicles off the road to a walk to work scenario. There should be an incentive for small rural communities within 2 hours of large centers to attract these businesses to their communities.

Carbon cap & trade whereby smart municipalities can benefit.

Incentivize LG conversion to rechargeable vehicles in their fleets. Building code revisions to insist on building being oriented to the sun for max potential for photo voltaic and water heating installations. Again every building we allow to be built should supply a portion of its energy needs.

We are already able to integrate energy and climate policies into land use planning. Legislation should make it a requirement.

Amend the building code to make new homes and buildings install renewable energy systems that reduce power draw from the grid now.

The focus on transit funding needs to be on regional connections as well, not just within cities. We need to get between communities easily for work, travel and play.

The federal government needs to provide more than matching funding for public transit projects. Local government does not have the financial capacity Tove a third partner.

Previous national transportation strategies have turned into big subsidies for auto infrastructure. Federal gov't should explicitly reject cost-shared funding for projects that increase carbon significantly such as the Massey Bridge.

Ensure a national commitment to Climate Action that can be adapted at the local level.

The timing of any actions taken by the federal or provincial/territorial governments is critical. Some actions need to be taken as soon as possible, especially in terms of funding and capacity-building, due to the sensitive and aggressive timeline for curbing emissions.

One of the most significant obstacles to implementing significant improvements in energy efficiency and local generation is the availability of capital...

Plant lots of trees. Establish a climate resilient fund that communities can draw on if they present a well thought out business plan. get rid of land fill sites. take a look at energy for waste.

here is a lot more to say. But, I find this questionnaire very frustrating for the reasons identified earlier. Just about all of the offered actions need to be done, should have been done 25 or 30 years ago when some of us said they were necessary. We are so late in the game that dramatic response is required (well beyond Paris), meaning action on all fronts is needed.

...We're facing a need to change our values in a quantum way. Away from the values that got us into the spot we're in to values that are Earth and human centred.

CITY OF VICTORIA, DISTRICT OF SAANICH, TOWNSHIP OF ESQUIMALT, BC, PHOTO COURTESY EWAN MCINTOSH/FLICKR

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